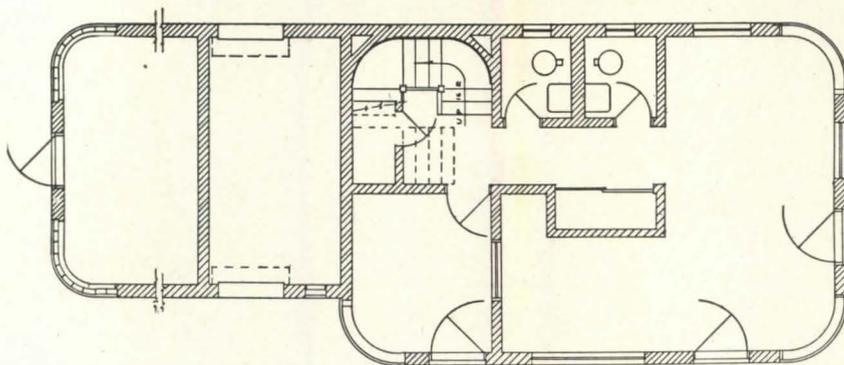


Save time, labor, materials with these short cuts in drafting!



1. UNNECESSARY DRAFTING ELIMINATED

Assume that you want additional tracings of the above floor plan so that you can add the plumbing layout to one copy, the air-conditioning layout to the next, and so on.

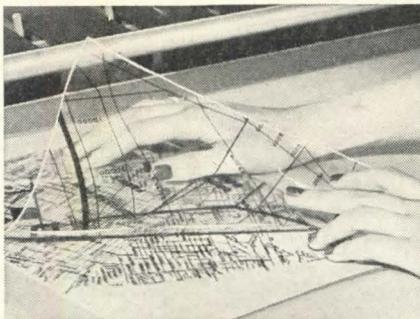
With Ozalid, you need never redraw your original tracing! Just make translucent Ozalid Intermediate prints of it . . . and on these, add the individual details in pencil or ink. Then from each "Intermediate" you can produce the desired number and type of positive OZALID PRINTS.

This is just one example that probably suggests dozens of uses for Ozalid in your everyday work!

2. SEPARATE DESIGNS COMBINED

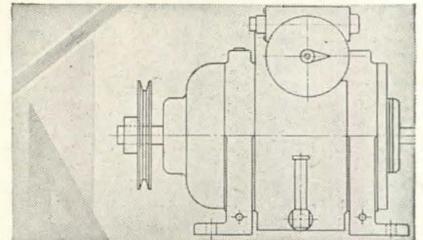
The extreme transparency of Ozalid

foil permits the production of composite prints, which are generally made to show the relationship of separate design details to each other.

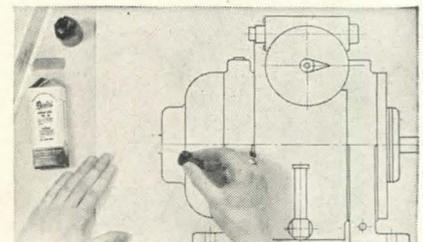


To do this, you merely make a foil print of each tracing . . . then overlay the foils in the desired position on Ozalid sensitized material . . . and feed into your Ozalid machine.

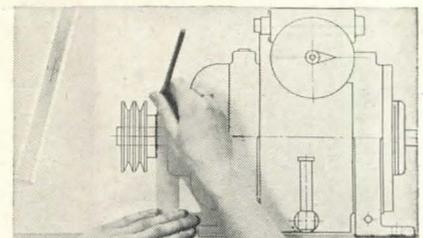
3. OBSOLETE DETAILS REMOVED



• This is an Ozalid Intermediate (translucent) print of the original drawing.



• Draftsman eradicates obsolete lines with quick-drying OZALID CORRECTOR FLUID.



• New design is drawn in. Any number of prints can now be made from this up-to-date "Master."



SEE the 10 different types of Ozaprints you can make. Learn all about the new Ozalid Streamliner! Write today for free booklet No. 217.

NEW OZALID STREAMLINER

. . . Designed for Average Printmaking Requirements!

This completely new, moderately priced machine gives you these five extra values in *printmaking* at no extra cost—

Efficiency: You get positive (not negative) prints direct from your tracings in *two* simple steps: Exposure and Dry Development.

Speed: Your prints are delivered completely dry, ready for use in only 25 seconds.

Economy: An 8½ x 11" print costs one cent; 11 x 17", two cents. You can make

prints up to 42 inches wide, any length. Your Streamliner requires only 11 sq. feet of floor space.

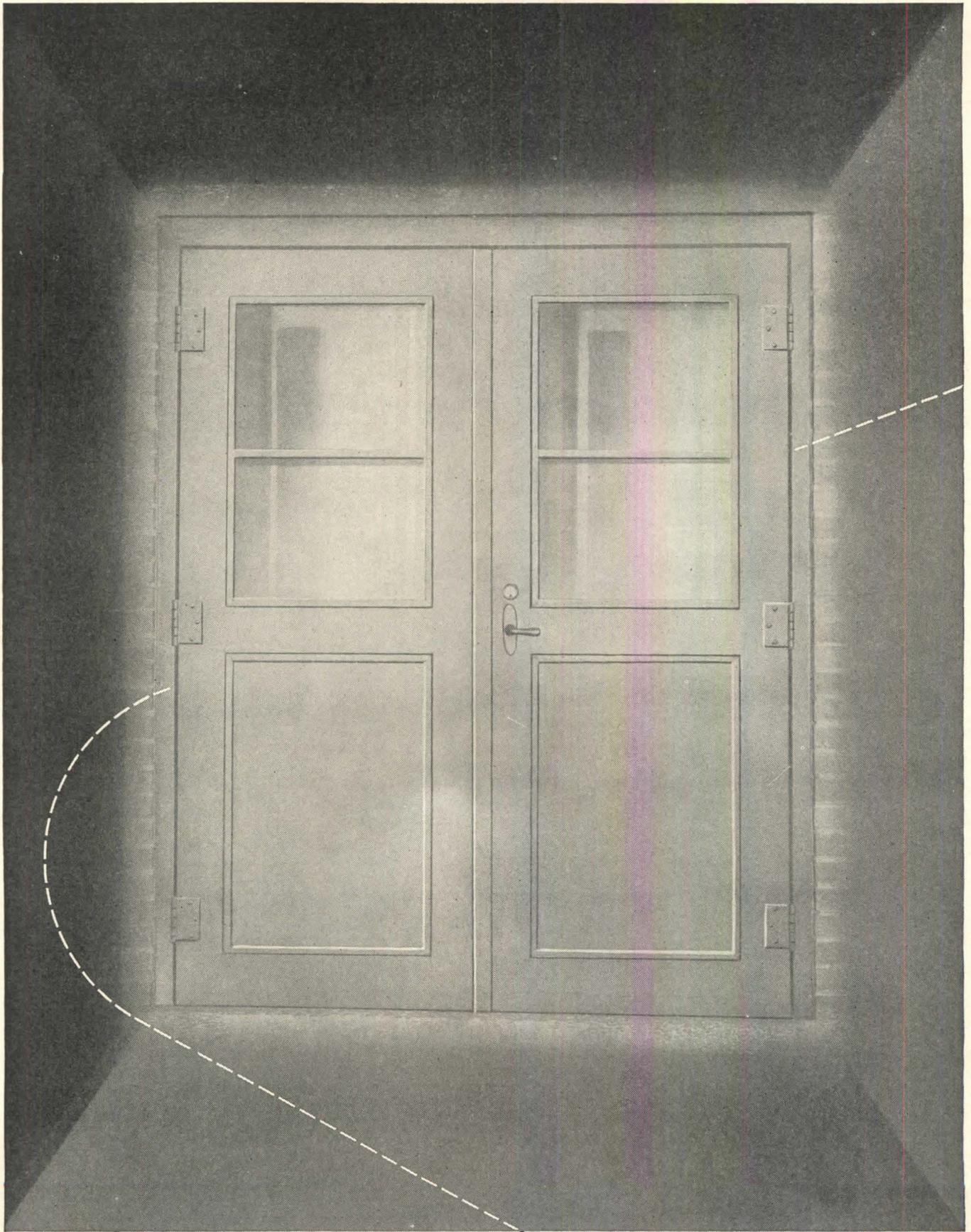
Versatility: The lines and images on your originals can be reproduced in black, blue, red, sepia, yellow . . . on paper, cloth, foil, film, or plastic. All prints are made in *same manner* . . . simply choose type of Ozalid material best for job at hand.

Simplicity: Anyone can be the operator. Prints are delivered on top, stacked in order, within easy reach.

OZALID

DIVISION OF GENERAL ANILINE AND FILM CORPORATION
Johnson City, N. Y.

Ozalid in Canada—Hughes Owens Co., Ltd., Montreal



In construction products **CECO ENGINEERING**



Industrial Steel Doors ?

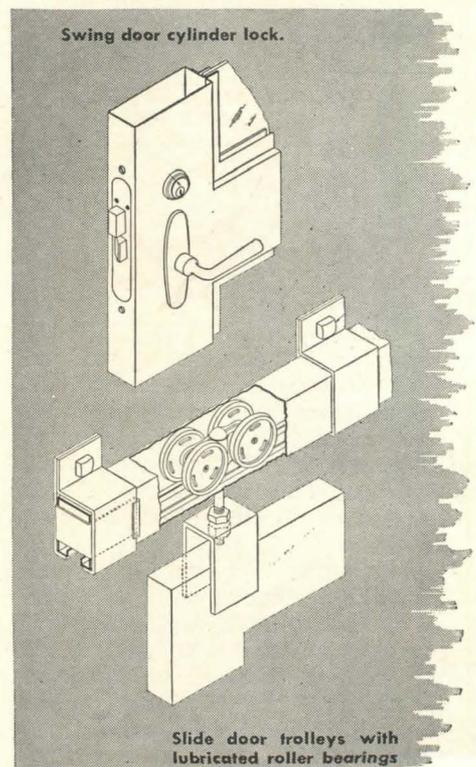
In any commercial, industrial, or public building, maintenance costs are a problem. One way to reduce such costs is to use industrial steel doors. That is because the initial cost is the final cost when steel doors are used. You can say "goodbye" to costly repairs. They are built to last and last. Just put the door in place and forget it. Here is another important advantage—steel doors are fire resistive. They are adaptable for service entrances, also suited for fire escapes, factory, office and penthouse entrances.

WHY SPECIFY CECO?

- 1** Accurately constructed of steel for hard usage as "working" doorways.
- 2** Glazing angles and stops hold glass solidly in place with screws.
- 3** Bottom panels spot-welded to stiles—no rattling.
- 4** Stiles and rails formed square. Corners mitred and solidly welded.
- 5** Accurately machined for easy installation of hardware.

WHY CECO HARDWARE IS BETTER . .

Ceco gives you the finest industrial steel door hardware—specially designed for easy application and strong attachment to the door. All hardware is attached by through-bolting or by use of screws in reinforced tapped holes. No self-tapping screws are used. What is more, CECO uses the best non-ferrous locks—designed to prevent vandalism. There are no lock set screws on the outside.



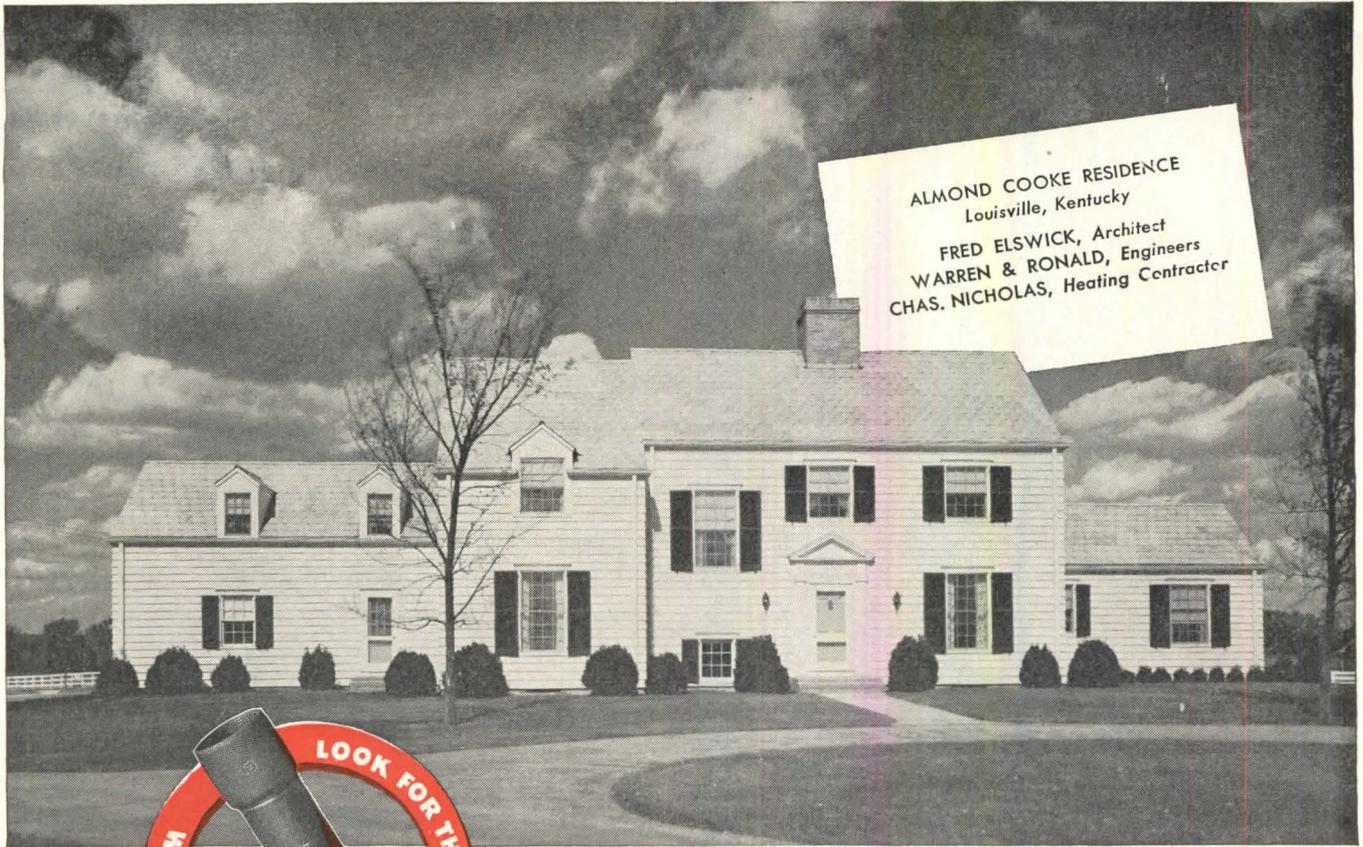
CECO STEEL PRODUCTS CORPORATION
GENERAL OFFICES: 5701 West 26th Street, Chicago 50, Illinois
Offices, warehouses and fabricating plants in principal cities



makes the big difference

Partial list of Ceco Products:

- METAL WINDOWS • ALUMINUM FRAME
- STORM PANEL FOR METAL CASEMENTS
- MEYER STEELFORMS • REINFORCING
- STEEL • METAL FRAME SCREENS • METAL
- WEATHERSTRIPS • STEEL JOISTS • METAL
- LATH AND ACCESSORIES



Radiant Heating with

BYERS WROUGHT IRON PIPE

warms this fine new Residence

Designed to include every modern convenience, this fine new residence is naturally equipped with a modern radiant heating system. The ten room, all wood structure is 2½ stories with basement, and is located on Shelbyville Road, east of Louisville.

Byers Wrought Iron pipe, fabricated into sinuous coils, was laid on top of the floor joists in the first story, and covered with a double wood floor secured to sleepers. Similar coils were installed on the second floor. No insulation was placed around these, so they provide heat for both levels. Additional coils were installed in the ceiling of the second story. The heating medium is water, warmed in an oil-fired American Radiator

boiler, and circulated by three B & G pumps. Minneapolis-Honeywell controls are used, and the system is automatically zoned.

The extra protection afforded by Byers Wrought Iron is extended to the plumbing services, also, where it is used in hot and cold water lines.

If you have followed any of the thousands of radiant heating installations now serving, you know that wrought iron is practically the universal choice of designers. You'll find the reason in the unusual combination of desirable features offered by the material. It is readily formed and welded, which speeds installation. It has a high rate of heat emission. It expands and contracts at practically

identical rates with concrete and plaster, and so can be safely embedded in these materials. And its unique structure—tiny fibers of glass-like silicate slag threaded through the body of high-purity iron—gives an unusual degree of corrosion resistance, which has been demonstrated in countless varied applications.

Our bulletin, "Byers Wrought Iron for Radiant Heating" is a complete text-book on the subject. We will be happy to send you a copy, on request.

A. M. Byers Co., Pittsburgh, Pa. Established 1864. Boston, New York, Philadelphia, Washington, Atlanta, Chicago, St. Louis, Houston, Salt Lake City, Seattle, San Francisco.

"ETERNALLY YOURS"—professionally-produced 16mm sound motion picture. An entertaining saga of the wrought iron industry, available to technical groups. New, authentic, informative. Write Modern Talking Picture Service, Inc., 9 Rockefeller Plaza, N. Y. 20, N. Y.

Corrosion costs you more than wrought iron

BYERS

GENUINE WROUGHT IRON

TUBULAR AND HOT ROLLED PRODUCTS

ELECTRIC FURNACE QUALITY ALLOY AND STAINLESS STEEL PRODUCTS

ARCHITECTURAL RECORD



Copyright 1946 with all rights reserved F. W. DODGE CORPORATION • Vice-President in charge of Magazine Division, H. Judd Payne • **EDITORS:** Editor-in-Chief, Kenneth Kingsley Stowell, A.I.A.; Managing Editor, Emerson Goble; Senior Associate Editor, Douglas Haskell; Associate Editors, John W. Ragsdale, James S. Graham, Jr.; Associate in South America, Edmund J. Whiting, A.I.A.; News Editor, Florence A. van Wyck • **ART DEPARTMENT:** Myron S. Hall, 3rd; Peter Piening, Consultant • **CONSULTANTS:** Industry Relations Consultant, Thomas S. Holden; Statistical Consultant, Clyde Shute; Building Economics Consultant, Norbert Brown; Field Research Consultant, Clifford Dunnells, Jr.

Architectural Record (combined with American Architect and Architecture) is published monthly by F. W. Dodge Corporation, 10 Ferry St., Concord, N. H., with Editorial and Executive Offices at 119 West 40th Street, New York 18, N. Y. Thomas S. Holden, Pres.; Howard J. Barringer, Vice-Pres. and Treas.; Irving W. Hadsell, Vice-Pres.; Chauncey L. Williams, Vice-Pres.; Sanford D. Stockton, Jr., Secy.; Walter F. De Saix, Asst. Treas.; Edwin H. Freed, Asst. Treas. Member Audit Bureau of Circulations and Associated Business Papers, Inc. Architectural Record is indexed in Reader's Guide, Art Index and Industrial Arts Index. Subscription rates: United States and Possessions, Canada, Cuba, Mexico, Central and South America, and Spain, \$4.50 the year, \$7.50 for two years, \$9 for three years; elsewhere, \$6.50 the year, \$11.50 for two years, \$15 for three years. Single copy, \$1. Circulation Manager: Marshall T. Ginn. Every effort will be made to return material submitted for possible publication (if accompanied by stamped, addressed envelope), but the editors and the corporation will not be responsible for loss or damage. Other Dodge Services: Real Estate Record & Builders' Guide, Sweet's Files, Home Owners' Catalogs, Dodge Reports & Dodge Statistical Research Service.

FREEDOM TO DESIGN	65
An Editorial . . . by Kenneth K. Stowell	
Y. P. F. RESEARCH LABORATORIES	66
Florencio Varela, Argentina. Jorge de la Maria Prins, Hugo M. Rosso, Jorge M. Verbrugge and Jorge Ros Martin, Architects	
COMBINING RESEARCH AND PRODUCTION	74
Plant for Productos Roche, Rio de Janeiro, Argentina. Louis Parnes, Architect	
DESIGN FOR DISPLAYING MERCHANDISE	78
Richard Bennett, Chicago; Eugene Back and Theodore Yonkler, Architects	78
Saks Fifth Avenue, New York; S. S. Silver & Co., Designers	79
Goubaud Beauty Bar, New York; Hans Weiss and William Basser, Designers	80
Pinaud, Inc., New York; Paul Bry, Designer	80
Barton's Bonbonniere, New York; Hans Weiss and William Basser, Designers	81
Lightolier, Inc., New York; Robert Heller Associates, Designers	82
Wilf Brothers, Philadelphia; Solomon Kaplan, Architect	83
Lees-Cochrane Company, New York; Raymond Loewy, Associates, Designers	84
BUILDING TYPES STUDY NO. 123 . . . APARTMENTS	85
THE BUILDING COST FIXATION	85
By Emerson Goble	
WHAT KIND OF GROUP HOUSING?	94
By Arthur C. Holden, F.A.I.A.	
PROJECTS	
Parkmerced, San Francisco. Leonard Schultze and Associates, Architects	90
Peachtree Hills, Atlanta, Ga. Burge & Stevens and Associates, Architects	92
Highland Lakes, Orlando, Fla. Burge & Stevens and Associates, Architects	93
Varied-level Apartments, Pittsburgh, Penn. William C. Young, Architect	99
Rock Creek Park Project, Washington, D. C. Berla & Abel, Architects	100
Valley Avenue Project, Washington, D. C. Berla & Abel, Architects	102
Georgia Tech Student Apartments. Burge & Stevens and Associates, Architects	103
Balcony Apartments, New York City. Sylvan Bien, Architect	104
Park Avenue Apartments, New York City. George F. Pelham, Architect	105
Terrace Apartments, New York City. Leonard Schultze and Associates, Architects	106
ARCHITECTURAL ENGINEERING Technical News and Research	107
COMPARATIVE COSTS IN APARTMENT HEATING	107
PRECAST FLOOR SYSTEM FOR APARTMENTS	110
WHY HANDICAP WELDING?	112
By James F. Lincoln	
PRODUCTS for Better Building	113
MANUFACTURERS' LITERATURE	114
TIME-SAVER STANDARDS Playground Equipment	117
THE RECORD REPORTS News from the Field	7
MR. OUD REPLIES	18
CONSTRUCTION COST INDEXES	26
REQUIRED READING	28
EMPLOYMENT OPPORTUNITIES	176
INDEX TO ADVERTISEMENTS	190
COVER: Head by William Zorach, courtesy The Downtown Gallery; plot plan of Jersey Victory Homes, Holden McLaughlin & Associates, Architects	

Basically Different

... and measurably better



In its ability to handle the job, handle it dependably, and stay on the job, the Imperial "Floatless" Sump Pump has written an enviable service record. The reasons are not hard to find. Three of them are pointed out below—three distinguishing features that mark a soundly engineered advance beyond the ordinary sump pump design. Remember this for the next job that presents a drainage, backwater or seepage problem—the Imperial "Floatless" Sump Pump is basically different . . . and measurably better.

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



DEPENDABLE FLOATLESS CONTROL

Uses motionless electrodes to start and stop pump automatically. Pump starts when water reaches upper electrode; stops when water drops below lower electrode. No float to stick or leak. Entirely electrical—the kind of equipment used on critical industrial devices.

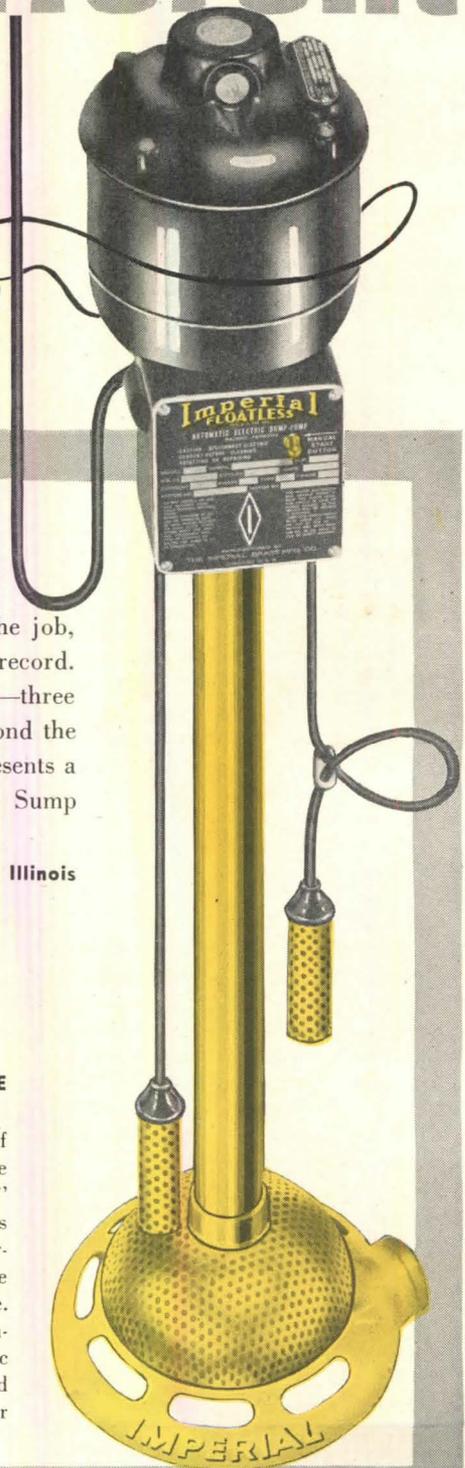


HIGH-CAPACITY POWER-PELLER

An amazing development by outstanding pump engineers, product of intensive hydrodynamic research, which helped to rocket sump pump capacity to new heights. It is made of forged brass for extreme durability, perfect hydraulic balance and flow characteristics.

BRASS AND BRONZE THROUGHOUT

There's no danger of rust—all parts of the Imperial "Floatless" Sump Pump are of brass or bronze. Pump bearings are special bronze water-lubricated type. Pump shaft is totally enclosed. General Electric motor, with oil-sealed ball thrust bearing for vertical operation.



IMPERIAL

SELECTION AND INSTALLATION DATA—with simple easy-to-follow diagrams are yours in Bulletin 441. Write for your copy.



THE RECORD REPORTS

Senate Small Business Committee Considers Housing Meetings on Housing Begin • Building Code Bulletin Issued • FHA Shifts Gears for More Rental Housing

A four-point program put forth by the Senate Small Business Committee epitomizes the housing problems pending before the Congress. In a sense it reflects the fact that, with the heavy chains of governmental controls expected to be lifted, the 1947 responsibility for homes will rest on industry — in sharp contrast to a year ago when the government sought and obtained emergency powers.

For the long range, however, the Committee stresses legislation similar to the unsuccessful 1946 Wagner-Ellender-Taft General Housing Bill. The other three points — for the immediate picture — emphasize (1) rental housing (construction, reconversion and re-use); (2) removal of impeding restrictions applied by government, industry or labor; and (3) measures to spur building of low-cost houses.

Other Suggestions Made

Since the Small Business Committee was reconstituted by the Senate in spite of the general paring down of Congressional Committees, weight attaches to certain other suggestions which it passes on to the units writing new housing laws. In brief, it wants to continue the limit on non-residential construction with priority for schools, stores, hospitals and other community facilities related to the new housing developments; it would abolish premium payments, maintain rent controls only on existing units, have the federal government stimulate private industry in low-rent multi-family building, provide 90 per cent guaranteed loans for mass-produced houses, speed up apprentice training programs, and continue export-import controls.

On a long-range housing program, which the Congress may or may not get to this year, the Small Business group's ideas are summarized as follows:

"We recommend that the Congress give immediate attention to the passage of legislation designed to accomplish the objectives of public low-rent housing, slum clearance, aid to rural housing, grants-in-aid to local communities for housing and planning studies; to develop formula for acquiring substandard areas by local communities and for reducing costs for sale or lease of such land for private or public housing; to liberalize lending powers of home loan bank boards and building and loan associations and other institutions through FHA incentives, to induce investment by private capital in large-scale housing."

Legislation Proposed

A variety of legislative proposals came tumbling in during the opening days of the Congress. These include a bill (H.R. 43) by Representative Celler to establish a national housing policy, a comprehensive 117-page measure touching on all phases of housing.

In his message on continuing the war powers, President Truman pointed out to Congress that VEHP powers continue until next January. "During the balance of 1947, I anticipate a further reduction in the use of these powers," he said, "but it will be necessary to continue some limits on construction and to continue assistance to the producers of some bottleneck materials. I understand that voluntary arrangements are being made with a number of producers to meet the needs of the building materials industries so that the use of allocation powers can be held to a minimum."

Portal Pay Suits Filed

The portal pay suits which swiftly accumulated after the famous Mt. Clemens Pottery decision include claims against industries allied with construction. For instance, early in the game, briefs were filed against lumber companies, covering time to and from lumber camps. Claims similarly were filed against other branches.

Congress wanted to sweep away all of the claims at once, but didn't know exactly how. The great danger was that,

notwithstanding action by Congress, working men might sue anyway, winning on constitutional grounds. Hence most of the testimony tried to show that an amended law, a reinterpreted law or a completely new law would pass court muster.

Million Homes Foreseen

Meanwhile the general assumption in government and industry is that a million homes will go up in 1947. John W. Haynes, of the Commerce Department's Construction Division, goes so far as to say that "the construction and building materials fraternity are beginning the biggest year of all time" — \$22 billion in all. He sees a "decrease in inefficiency" and a slackened advance in construction costs.

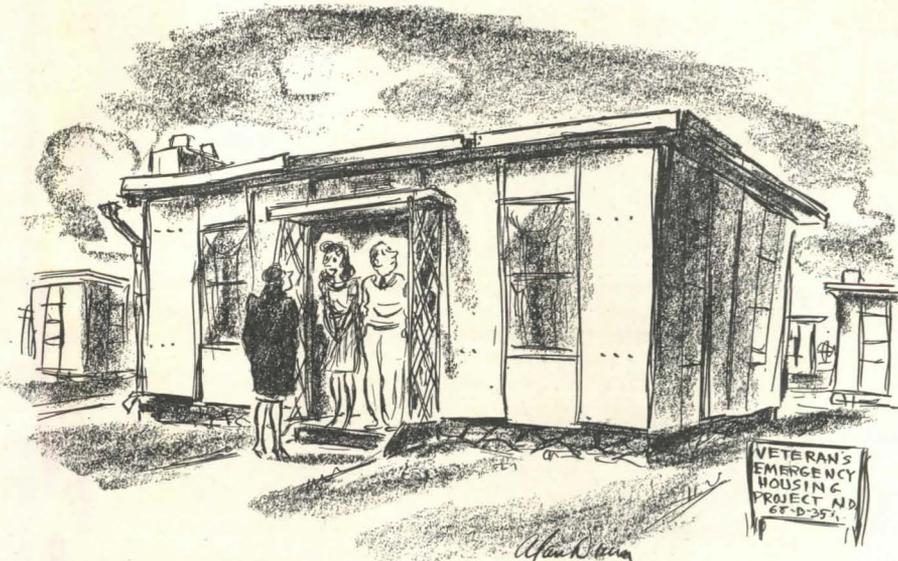
The National Association of Home Builders, anticipating a million houses before the year's end, says that "removal of many government controls in December has already aided home building and release of most of the remaining controls should make possible a further acceleration." It expects rental housing will be the big job. This ties in with the forecast made by Thomas S. Holden and Clyde Shute of the F. W. Dodge Corp. in the December ARCHITECTURAL RECORD (pp. 70-72).

It should be noted, too, that NHA counts on normal construction time being restored in most areas.

Nation-wide Meetings Held

Late in January there began a series of meetings all over the nation at which the building industry, local government and federal agency representatives discussed means to stimulate a large volume of rental housing through conversions and small and large new projects. Cooperative effort is being solicited from

(Continued on page 10)

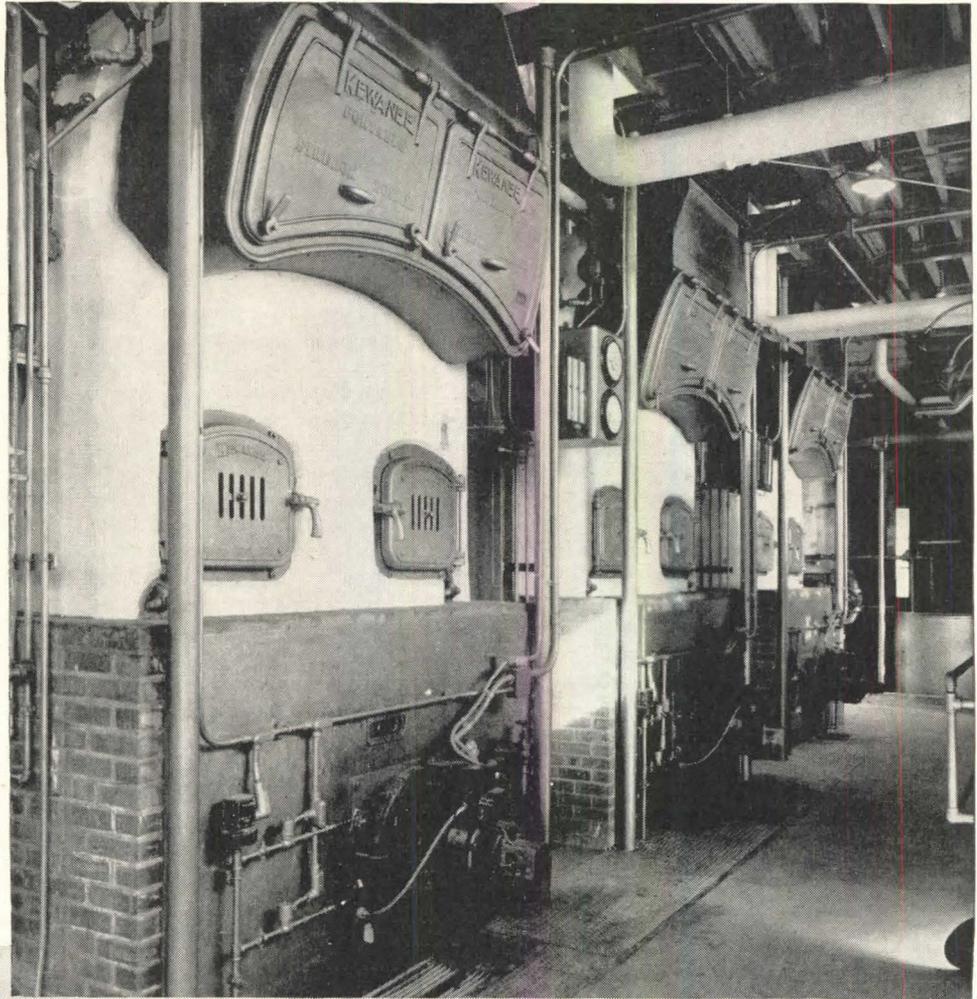


"Just think, in 20 years it will be all ours!"

— Drawn for the RECORD by Alan Dunn

**Oil Fired,
Heavy Duty
KEWANEE**

Typical set-up of a Kewanee Oil Fired, Heavy Duty Firebox Boiler as used by the U.S. Army and Navy for numerous installations.



KEWANEE

HEAVY DUTY STEEL BOILERS

Under the strain of extra strenuous service this Kewanee Series... whether used for power, process steam or heating... remains on the job many additional years delivering steam at minimum costs.

For mechanical firing with Oil, Gas and Coal, or for hand firing, Heavy Duty Kewanees are made in sizes to produce from 10 to 304 Horse Power at steam working pressures of 100, 125 and 150 pounds.



**OVER
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



Hospitals Require Draftless Air-Diffusion

Prescribed atmospheric conditions are assured in the nursery at Doctors Hospital, Washington, D. C., with Anemostat draftless air-diffusion.

... that calls for ANEMOSTAT!

Architects, engineers and air-conditioning contractors face a more intricate problem in hospital air-conditioning than in many other types of installation. In hospitals they must meet atmospheric requirements which vary with each of the services. For example, nurseries for premature-born infants, air-conditioning must contribute to the constant stabilization of the babies' body-heat (because their thermal regulating system is not yet fully developed) by equalizing temperature and humidity in the nursery. In operating rooms sterile air must be delivered—not only sterile—but without drafts. And so on, through the general wards, isolation wards, private rooms, offices, waiting rooms, etc.—each requiring its own specific atmospheric conditions.

Air-conditioning experts agree that an air-conditioning system can never be better than its air-distribution. That is why *draftless* air-diffusion—through Anemostats—is the answer to air-conditioning problems.

Anemostat air-diffusers distribute conditioned air in pre-determined patterns, assuring uniform air-changes throughout the room. Anemostats eliminate drafts . . . prevent dead air pockets . . . equalize temperature and humidity. And—they operate *silently*. The installation in the Doctors Hospital at Washington, D. C., again proves that Anemostats provide the air-diffusion required in hospital air-conditioning.

If you have an air-distribution problem, an Anemostat engineer can help. Ask your Architect or Engineer to arrange a consultation. There is no obligation.

Write for full details!

PROMPT DELIVERIES
All Anemostats are especially designed to solve individual air-diffusion problems. However, the great variety of types that have been developed and standardized, permits us to assure prompt delivery from stock.

ANEMOSTAT

REG. U. S. PAT. OFF.

ANEMOSTAT CORPORATION OF AMERICA
10 East 39th Street, New York 16, N. Y.

REPRESENTATIVES IN PRINCIPAL CITIES

"NO AIR-CONDITIONING SYSTEM IS BETTER THAN ITS AIR-DISTRIBUTION"



Princeton University's new library, scheduled for completion in June, '48. R. B. O'Connor and W. H. Kilham, Jr., Architects. (See ARCHITECTURAL RECORD, Jan. '47, pp. 99-101)

city officers on the questions of zoning, planning and building codes. Other phases under discussion include financial aids both private and governmental, site selection and development, streets, sewer and water supply, availability of stores and shopping centers, and labor supply. FHA technicians are provided to assist in setting up rental projects.

In a broad discussion of the municipal role in building for 1947, NHA Chief Raymond M. Foley told the January meeting of the U.S. Conference of Mayors of the need for building code revision and of the need for an inventory which "goes beyond zoning and building codes." Such an inventory, he advised, includes tax burdens, smoke, soot and noise abatement, general planning and neighborhood development as well as greater state and municipal participation in the cost of publicly-aided housing. He reported that 87 cities had taken action on their codes.

Code Bulletin Drafted

In connection with the 2000 or more building codes in the country, the National Bureau of Standards has come out with a revised bulletin entitled "Building Code Requirements for New Dwelling Construction." The recommendations made were developed by NHA along with the Standards Bureau and other government agencies, and are concerned chiefly with moderate size individual and multiple family dwellings of the type used under the veterans' program. Covered are design loads, fire protection, construction, construction requirements for masonry, wood, structural steel, etc. The publication is designed as a guide for local communities in changing their codes.

Rental Policy Changes

FHA has shifted its policy and procedures to encourage more rental housing. Its cost estimate system has been simplified to cut processing time on financing; it will allow mortgage terms to be readjusted; it will develop rental investment opportunities; it will seek to speed handling of wage determinations by the Department of Labor.

Concurrently, NHA Chief Foley has

brought about the organization of an NHA Coordinating Council with representatives from the Department of Agriculture, Veterans Administration, RFC, Federal Deposit Insurance Corporation, and the Housing Expediter's office as well as NHA units.

In a move to improve housing statistics he recently called a conference of government and private industry authorities on housing.

Federal Findings Issued

As the government statisticians get around to shuffling their data on 1946, varying pictures come to light. For instance, the Commerce Department puts new construction at \$10.1 billion, of which \$7.8 was private and \$2.2 public construction, \$3.3 was private residential, \$1.6 private industrial, and \$0.8 privately-owned public utilities. The year's total at two-and-one-fifth times that of 1945 showed big percentage gains for warehouses, office and loft buildings, stores, restaurants and garages, public and private residential.

The Bureau of Labor Statistics expects 1947 expenditures for new construction to run 50 per cent more than 1946 with nonfarm home building claiming the greatest number of dollars. It warns, however, that the physical volume may not hit a record high "since it will take more dollars than in former years to pay for the necessary lumber, brick, wages, blueprints, etc."

BLS foresees more than 2½ million workers needed on the site of new con-

(Continued on page 12)



Proposed armory features rooftop helicopter field and underground base for combat unit

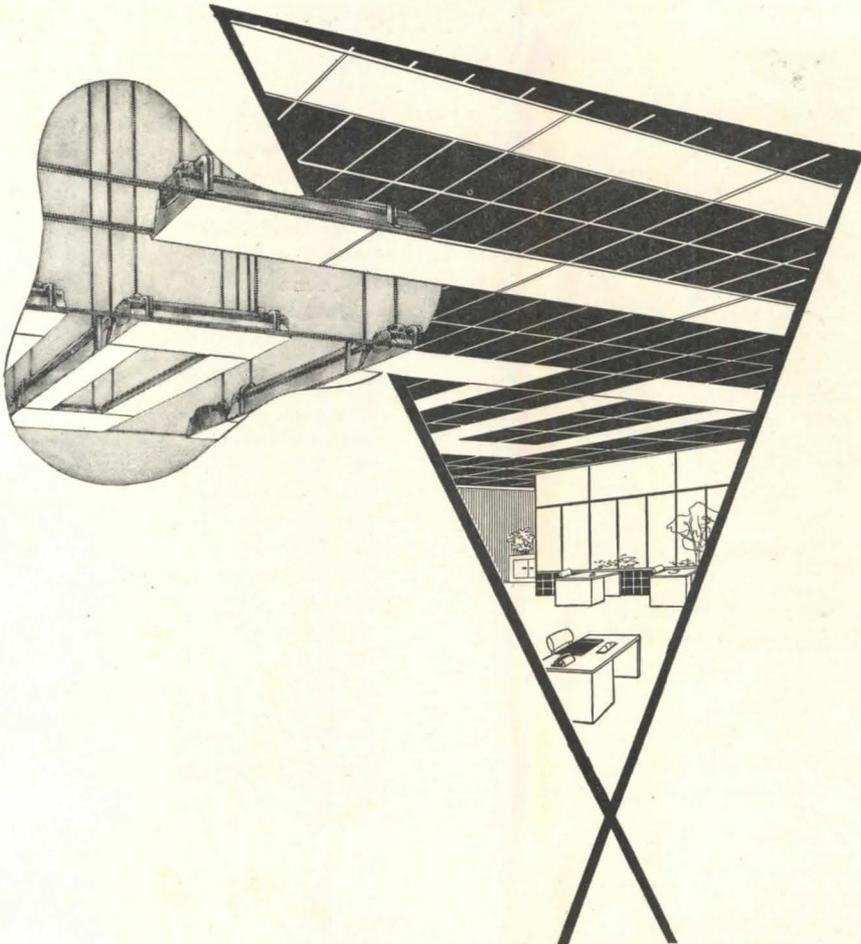
PROPOSED ARMORY

A huge roof for helicopter operations and an underground bomb-proof base accommodating a complete National Guard combat unit are features of a proposed "Armory of Today," designed by James C. Mackenzie, of New York.

Plans for the underground base call for recreational as well as housing and feeding facilities for the troops; com-

mand posts, message centers, communications and briefing rooms; and areas for the fueling and maintenance of the unit's vehicles, including tanks and self-propelled guns.

The entire building is air conditioned and mechanically ventilated, with special rooms in which the temperature may be adjusted to simulate tropical or arctic climatic conditions.



Good lighting, plus ceilings unlimited .. one lighting system gives you both

CEILINGS UNLIMITED — a boundless new field for the use of light as a structural aid in interior design is the added benefit offered stores, offices, schools, factories and public buildings through the installation of MILLER FLUORESCENT TROFFER LIGHTING SYSTEMS.

THE MILLER CEILING FURRING HANGER (patented) — which supports structural ceiling and TROFFER lighting system — simplifies installation and makes possible a versatility of lighting applications to form any ceiling pattern desired — CEILINGS UNLIMITED.

More! Installation is simplified. Less than half usual number of supports needed from structural ceiling. Wiring costs cut up to 50%, and conduit and conduit fitting costs up to 80%.

Miller Lighting service is all-inclusive. Its 50 and 100 FOOT CANDLERS (Continuous Wireway Fluorescent Lighting Systems) have been established as standard for general factory lighting. And its Incandescent and Mercury Vapor reflector equipment have broad factory and commercial application.

MILLER field engineers and distributors,
conveniently located, are at your call.

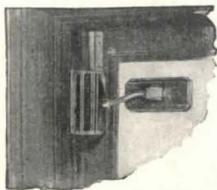
THE MILLER  **COMPANY**
ILLUMINATING DIVISION, MERIDEN, CONNECTICUT

ILLUMINATING DIVISION: Fluorescent, Incandescent, Mercury Lighting Equipment, HEATING PRODUCTS DIVISION: Domestic Oil Burners and Liquid Fuel Devices, ROLLING MILL DIVISION: Phosphor Bronze and Brass in Sheets, Strips and Rolls.

**IF
your goal is
more efficient
more economical
heating
DUNHAM
"TEAMWORK"
will help you!**



• The component parts of the Dunham Differential Vacuum Heating System are designed to work as a unit — quickly, surely, automatically — to provide exact temperature control under the most varying weather conditions . . . through the circulation of a continuous flow of steam at variable sub-atmospheric pressures from 212° F. or higher to as low as 133° F. Architects have specified the Dunham System for such installations as Rockefeller Center and Parkchester in New York, as well as for thousands of small homes. You'll find it ideally suited for your plans. Write for Bulletin 631. C. A. DUNHAM COMPANY, 450 East Ohio Street, Chicago 11, Illinois.



**AUTOMATIC
SELECTOR**



HEAT BALANCER



CONTROL PANEL

**RESISTANCE
THERMOMETER**



**CONTROL
VALVE**



DUNHAM

HEATING MEANS BETTER HEATING

D347-2/3E

THE RECORD REPORTS

(Continued from page 10)

struction projects at the peak of the 1947 program next September, a figure exceeding last year's top on-site employment by three-quarters of a million workers. About 35 per cent of the manpower required, it assumes, will be used on nonfarm housing, 30 per cent on non-residential building and 35 per cent on non-building and farm construction.

Plan Man-Hour Studies

A measure of the man-hours of labor required for principal building materials is now under way in a series of surveys by the Bureau of Labor Statistics. The Bureau has found that it now takes 12 per cent less labor to produce 100 barrels of cement than in the middle 1930's while 34 per cent more man-hours are required to produce a thousand board feet of dressed Southern pine lumber.

Increased production and plant utilization largely account for the change in cement production, it finds, while greater requirements in Southern pine production arise from inadequate labor force and the cutting of smaller trees.

Other products under survey include plywood, hardwood and hardwood flooring, insulation products, fabricated steel assemblies, plumbing and heating materials, and sand and gravel.

The Bureau points out that for every dollar spent on work at the site of a construction job, additional employment is created in mines, factories, and transportation systems. When the above studies are complete, they will permit estimates of the "behind-the-lines" employment involved in any given level of construction activity.

From Here and There

From numerous sources come items of interest:

1. The War Assets Administration has put out a pamphlet to guide business, institutions, banks, local governments, etc., in buying federally-owned surplus real property. It is entitled "How to Buy or Lease Surplus Real Estate."

2. Construction applications denied since last March 26 run approximately \$2 billion, the Office of Temporary Controls advises. Items granted had passed \$2.6 billion by February.

3. NHA reports that HH authorizations under the veterans' program put Pacific Coast states ahead, followed respectively by East North Central, Middle Atlantic, New England, West North Central, South Atlantic, East South Central, West South Central, and Mountain states.

4. A 51-page veterans' guide on "Mutual Housing" has been issued by NHA.

5. New home mortgage loans by sav-

(Continued on page 14)

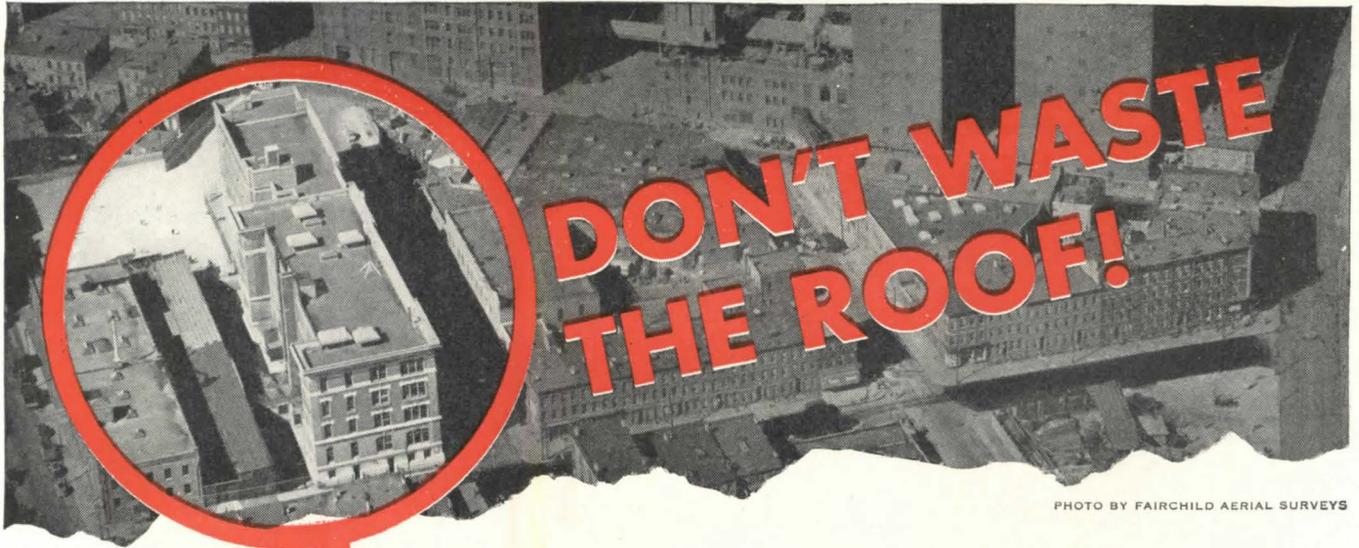
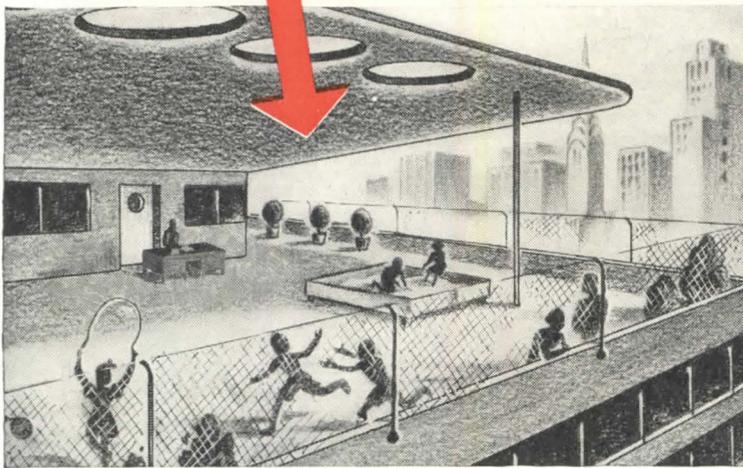


PHOTO BY FAIRCHILD AERIAL SURVEYS



“ROOFS OF THE FUTURE” —AVAILABLE TODAY!

Up in the fresh air and sunshine, far above dangerous traffic—this school playground is one of the many new roof developments that Ruberoid specifications now make available for immediate planning.

NO WAITING for some time in the dim future—full utilization of those valuable roof areas is possible and practicable today! Now you can plan hospitals with outdoor decks for convalescents, apartment houses with gardened roofs, department stores with recreational roofs for employees, and factory roofs with husky concrete surfaces for traffic and storage.

The old hampering difficulties that prevented ideal use of roof space need no longer stand in the way. Specifications for these new developments are available to you *now*. As worked out by

Ruberoid engineers, these new roof developments are tested and thoroughly feasible. For full details get in touch with your local Ruberoid Approved Roofer—there’s one located in every part of the country. Backed by Ruberoid’s years of experience and complete line of materials he can give practical, unbiased help on your roof problems!

The RUBEROID Co.

**Executive Offices: 500 Fifth Ave., N. Y. 18, N. Y.
Asphalt and Asbestos Building Materials**

The RIGHT roof for any job—from one source!



Remember that Ruberoid makes every type of built-up roof—Smooth Surfaced Asbestos, Coal Tar Pitch with gravel or slag surfacing, or smooth or gravel-and-slag surfaced Asphalt—in specifications to meet any need. Hence a Ruberoid Approved Roofer is not prejudiced in favor of any one type. His services assure you of one source for all materials, centralized responsibility, smoother operation, uniform quality!

EXCLUSIVE—

**THERE'S ONLY ONE
LEANING TOWER
OF PISA . . . AND**



ONLY ONE—

AW SUPER-DIAMOND

FLOOR PLATE

Often imitated, but never duplicated, AW Super-Diamond Pattern Floor Plate gives you three distinctive advantages that no ordinary floor plate can offer. It grips without a slip (prevents costly slipping accidents). It's easy to clean (water drains and dries rapidly). It's easy to match (prevents cutting waste). Insist on AW Super-Diamond Floor Plate for your every flooring need, and get the most for your money.

FREE Write for a copy of our New 16-Page Booklet LOO. It's packed full of helpful information. Alan Wood Steel Co., Conshohocken, Penna.



GRIP WITHOUT A SLIP!



EASY TO CLEAN!



EASY TO MATCH!



AW SUPER-DIAMOND

FLOOR PLATES THAT GRIP



A Product of **ALAN WOOD STEEL COMPANY**

Other Products: Billets • Plates • Sheets • Carbon & Alloy



THE RECORD REPORTS

(Continued from page 12)

ings and loan associations in the first 11 months last year exceeded by 74 per cent those of the full year 1945 and were more than double any previous yearly total. In reporting this, the Federal Home Loan Bank Administration sets the 11-month total at \$3.3 billion.

6. The new Congress received a report on the final liquidation of the U.S. Housing Corporation, created in the wake of World War I 28 years ago.

7. Commerce Department reports a 78 per cent increase in January in total dollar construction compared to January a year ago.

8. The Senate Banking and Currency Committee has set up a housing subcommittee headed by Senator Buck of Delaware. The four other members are Cain of Washington, Bricker of Ohio, Wagner of New York, Fulbright of Arkansas.



ARCHITECTS NOMINATED

TO U.N. DESIGN BOARD

Twenty-six architects were nominated early in February by 21 nations for the Board of Design Consultants of the United Nations capital. From these the 10 members of the Board will be chosen by Wallace K. Harrison, director of planning for the East River site.

The 26 nominees are: Geronimo Remorino of Argentina; Gustave Brunfaut, Jean van den Bosch Hendricks, Alexis Dumont, Charles Malcause and Hugo van Kuyck all of Belgium; Oscar Niemeyer, Brazil; Ernest Cormier, Canada; Hermogenes Del Canto, Chile; Ssu-cheng Liang, China; Josef Havlicek, Czechoslovakia; Edvard Thomsen, Denmark; Basile Kouremenos, Greece; Roberto Irigoyen, Guatemala; Bunt Laugur Halldorsson, Iceland; Ivan Eyvind Moestue, Norway; Alfredo Dammert, Peru; Juan Arellano, Philippines; Matthew Nowicki, Poland; Ragnar Hjort, Sweden; Gordon Leith, S. Mullins, Jan Juta, all Union of South Africa; N. D. Bassov, U.S.S.R.; Howard Robertson, United Kingdom; Guilio Vilamajo, Uruguay; Ernest Weismann, Yugoslavia.

TRUCK TERMINAL PLANNED

Authorization has been granted by CPA to the Port of New York Authority for the construction of "the world's largest union motor truck terminal" in downtown Manhattan.

The huge \$5,000,000 terminal, the first in a series to be built by the Port Authority, will be 1000 ft. long and 160 ft. wide. The roof is planned to accommodate possible helicopter cargo pick-up

(Continued on page 16)



MOUNTAINSIDE HOSPITAL, MONTCLAIR, N. J.
York & Sawyer, architects

FOR WALLS - WHERE APPEARANCE AND PERFORMANCE ARE IMPORTANT

Fabron
REG. U. S. PAT. OFF.

for walls subject to hard usage

canvas-plastic-lacquer wall finishes
decorative — structural — practical
economical

Detron
REG. U. S. PAT. OFF.

for a more luxurious atmosphere

- decorate the walls permanently
- protect and reinforce sub-surface materials
- bind and strengthen weakened or patched plaster
- prevent plaster cracks
- easy to apply • easy to clean • sunfast
- afford years of uninterrupted service

FREDERIC BLANK & COMPANY, INC.

Established 1913

230 PARK AVENUE, NEW YORK 17, N. Y.



- Hospitals
- Hotels
- Schools
- Theatres

FREDERIC BLANK & Co., Inc. AR 3-47
230 Park Ave., New York 17, N. Y.

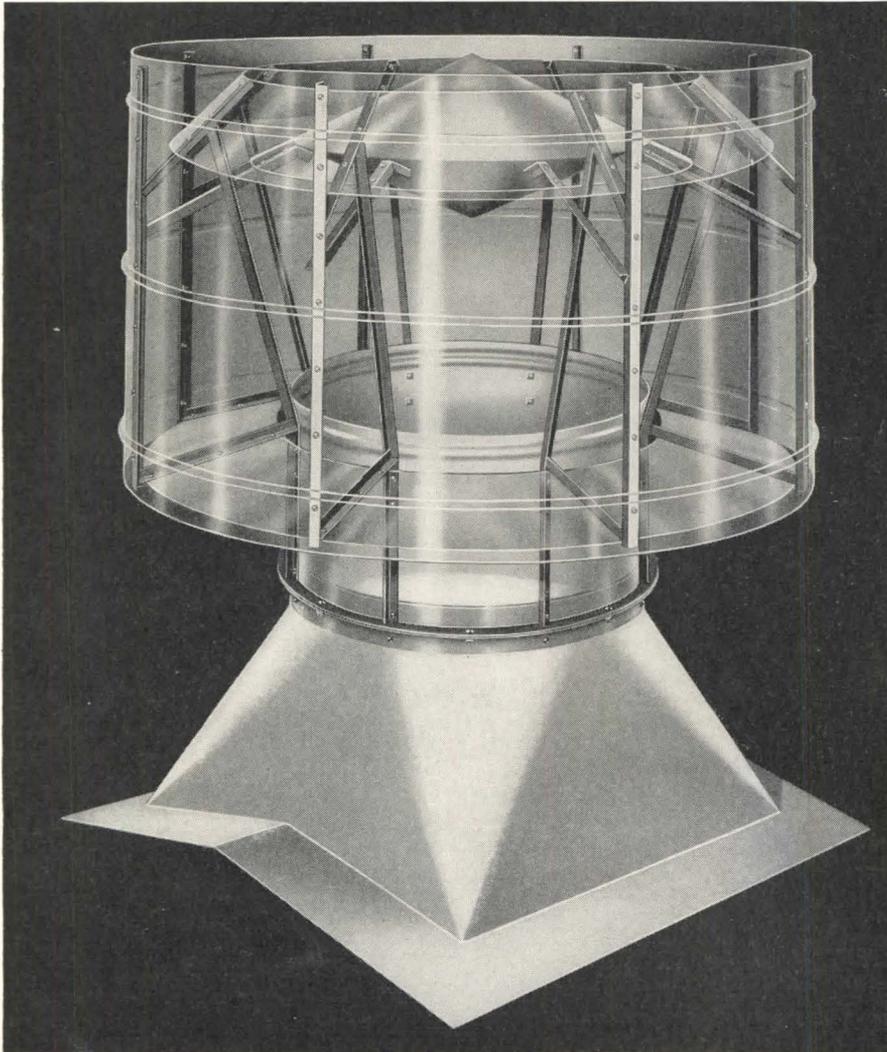
In reference to type of building checked please send further information about Fabron and/or Detron.

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

- Offices
- Apartments
- Restaurants
- Residences



BURT FREE-FLOW GRAVITY



GIVES YOU TOP EFFICIENCY IN GRAVITY VENTILATORS

Internal louvers that block discharge and reduce capacity are eliminated in the improved Burt Free-Flow Gravity Ventilator. Air is exhausted freely—discharged vertically upward for greater efficiency and to eliminate condensation of moisture onto the roof beneath the ventilator. Engineered to prevent back draft, provide ample drainage and storm-proofing. Where a large capacity stationary ventilator is required, the Burt Free-Flow is your best installation. See Sweet's for complete details or write for catalog and data sheets.

WRITE FOR CATALOGS AND DATA SHEETS

The **BURT MFG. Co.**

48 E. South Street

Akron 11, Ohio, U.S.A.

MANUFACTURERS OF VENTILATORS, LOUVERS
OIL FILTERS AND SHEET METAL SPECIALTIES

THE RECORD REPORTS

(Continued from page 14)

and delivery, and to furnish parking space for 70 complete tractor-trailer units.

The terminal will have off-the-street bays for 144 trucks, will be capable of handling over 2000 tons of merchandise freight daily. It will occupy the area bounded by Washington and Greenwich, Spring and West Houston Sts., only a few blocks from the Holland Tunnel and close to the steamship piers.

CANTERBURY RESTORATION

A gift of \$500,000 has been made by Thomas W. Lamont toward the restoration of Canterbury Cathedral, badly damaged by German incendiary bombs on May 31, 1942. Although spared a direct hit, the historic cathedral's roof was burned and many of its windows were blown out. Complete restoration, therefore, is possible, and now is made feasible by Mr. Lamont's generous gift.

ARCHITECTURE SHOW

On view at the Museum of Modern Art, New York City, through April 6th, is an interesting review exhibition, "Henry Hobson Richardson Architectural Masterpieces." Consisting of eight greatly enlarged photos selected from the Museum's own historical collection, the exhibition shows several of Richardson's best-known buildings, among them Brattle Square Church in Boston, Crane Memorial Library in Quincy, Mass., and Allegheny County Courthouse, Pittsburgh, Penn.

MATERIALS ROUNDUP

"Stocks of cement in the hands of producers are on the increase for the first time since early last year." — The Department of Commerce.

"The output of some types of plumbing fixtures in 1946 exceeded that for any prewar year or the output during the war period. Further substantial increases are expected in 1946." — Plumbing and Heating Industries Bureau.

"Past production records are being equalled or exceeded in substantially all lines of building materials." — Tyler S. Rogers, president, The Producers' Council, Inc.

ON THE CALENDAR

March 19-22: American Society of Tool Engineers, 15th Annual Convention, Houston, Texas.

March 22-27: Western Metal Congress and Exposition, Oakland Municipal Auditorium, Oakland, Calif.

March 25-28: 17th annual Safety Convention and Exposition, Hotel Pennsylvania, New York City.

April 19-27: Metropolitan Home

(Continued on page 124)

NEW Series "40" BENJAMIN FLUORESCENT UNITS

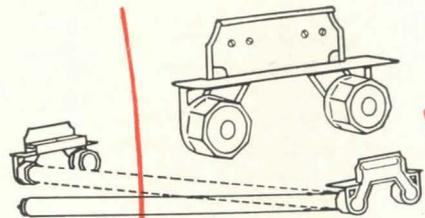
bring these **3** exclusive

Benjamin Developments

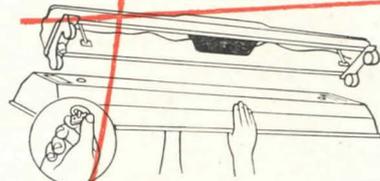
● You'll find new beauty... new utility... high efficiencies in the new Series "40". Important and exclusive Benjamin developments, such as are illustrated here impart a new streamlined smartness... a new ease of installation... greater freedom from glare... quicker maintenance. One outstanding advancement is the new exclusive BENJAMIN SPRINGLOX Safety Lamp Holder... a practically indestructible, one-piece socket that actually makes it easy to insert and remove the lamps! No more forcing... no more difficulty positioning prongs. Only when you actually use SPRINGLOX can you appreciate the great forward stride represented by this exclusive Benjamin development.

Along with all these new features you get that same famous Benjamin built-like-a-battleship construction... Benjamin Life-Time porcelain enameled heavy gauge steel lighting reflectors... conformance with all applicable RLM standards and other industry specifications... for all these things are essential to *finest* lighting at *lowest* per-year-cost. With Series "40" as with all other Benjamin units, you can be sure you "Light Right when you Light with Benjamin."

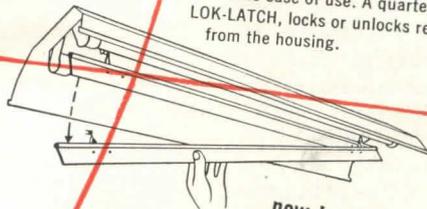
Series "40" units are NOW IN PRODUCTION. For delivery dates consult your Electrical Wholesaler; for CATALOG BULLETIN on new Series "40" write Sales Promotion, Dept. Q-1, Benjamin Electric Mfg. Co., Des Plaines, Illinois.



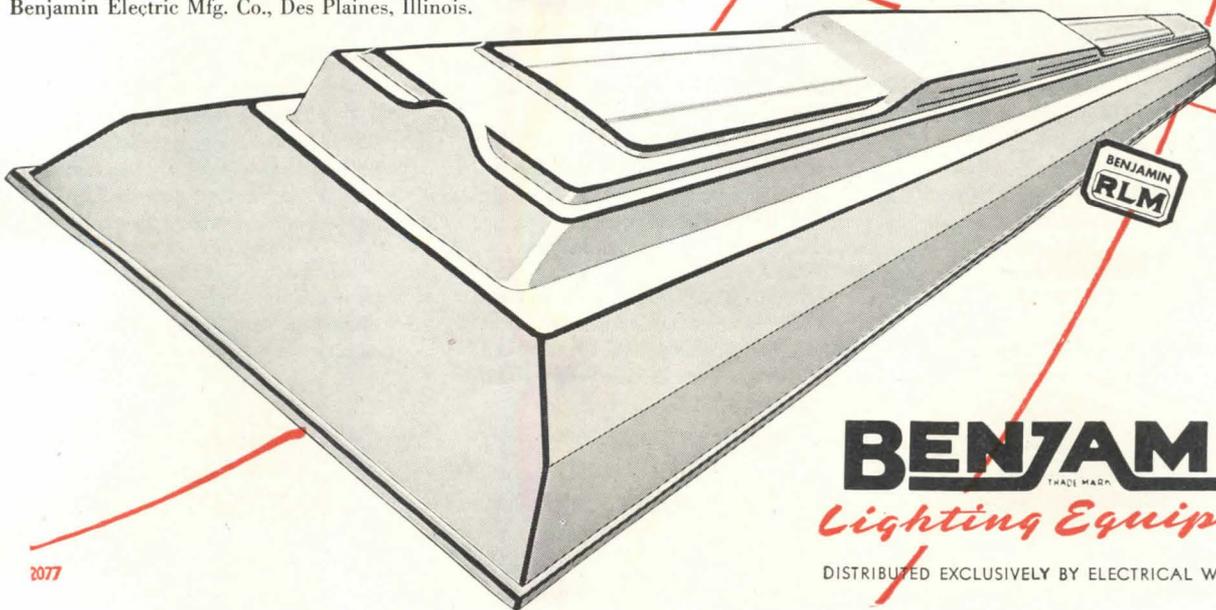
new SPRINGLOX safety lamp holder—Simply push one end of lamp into the holder and let the resulting spring pressure push other end into facing socket. Spring pressure locks lamp into position; it can't drop out!



new LOK-LATCH is a new adjustable reflector fastener that combines positive fastening of reflector to channel with extreme ease of use. A quarter turn of LOK-LATCH, locks or unlocks reflector from the housing.



new longitudinal SHIELD increases overall shielding from 13° to 27°. An optional attachment which may be attached to all Series "40" and previous models of Benjamin 2 lamp fluorescent units. Meets RLM standard specifications.



BENJAMIN
Lighting Equipment

DISTRIBUTED EXCLUSIVELY BY ELECTRICAL WHOLESALERS

MR. OUD REPLIES

In the December issue of the RECORD there was published a highly provocative building, the Shell "I.B.M." office building at the Hague, with critical comment, under the title "Mr. Oud Embroiders a Theme." Invited to add his own remarks, Mr. Oud has written so expressively, even in a foreign tongue, that his wording has been left untouched:

My dear Editors,

The wish to challenge sharply what I am doing is a wish I can understand.

Meaning that when someone is fixed to a style of development which seems clear enough, it must be a disappointment to see him escape the rules one based upon this belief. Yes, I comprehend very well your wish to go at me!

But let me defend myself and allow me to state that this is not my mistake. I have always tried to keep myself far away from all "rules." Seeing something "new" the world is immediately willing to give it a label and to place it in a partition.

I know definitely that I myself never succumbed to this labeling.

Since I attempted to go my own way in architecture I always had only one device — a device which has guided me up to now! — "seeking clear forms for clearly expressed needs." This proved to me not to be a matter of static, it was a thing of dynamic order. The rules it brought were not of a formal nature but very informal ones. It became evident that they were changing, within distinct limits, with the development of the idea.

In the beginning I was working on laborer-dwellings and my aim was to find a good and agreeable form for them; a form — so to speak — as exact and as clear as the form of a good car, a good steamer, a good electrical tool. In other words, I was searching for a good "common" form. And we have attained much in this respect.

The world, however, does not exist only out of cars, steamers, tools, neither out of houses, factories, etc. There are grades in the usual things of our existence and in my opinion there are for that reason also grades in our architecture. Even in good democracy there will be order of precedence in the family: the father has — or should have — another function from that of the son. Analogous with this, domestic building in our Society has another function from that of an office-building, a town-hall or a church.

Little by little, I discovered that the form of a laborer-dwelling or a factory

cannot be the end of all architectural wisdom. It is an error to imply that this is true and that we have already reached "new architecture" by this means. It seems to me at present quite all right that the new domestic architecture is the base of new architecture; that it should be already new architecture itself, I deny emphatically.

Architecture itself — old or new — can and must give: emotion. It has to transport the esthetic vision of one man (the architect) to another man (the on-looker). And why should it not? Are we in our modern times so condemned that we dare not set our own stages? Are we really so dried up that we don't allow ourselves to play a bit now and then? It is a very important fact which is too often forgotten in the case of new architecture!

We know now how to make "new building" by the application in a clear manner of concrete, plate-glass, steel, etc. We did this, as previously mentioned, with success. But we never dare forget that the esthetic emotion emanating from simple works like the work in question is an esthetic emotion on a very low level. Building like this — and the majority of building is of this kind — is a wonderful start toward new architecture but new architecture itself has still to be found. One could say with some exaggeration: it is the bass to the music but not its essence. In some cases: the lyric, not the epic side of architecture.

Now: new architecture is what I strived at in my "Shell Building." It may be that it has more traditional ballast in it than former work of mine. I don't know. But it would not be the first time in my efforts that I went back a bit to make myself fit for going further on the way I seek to explore: in this case a more difficult way to tread than the way of the laborer-dwellings!

Should you have time and opportunity to study the "Shell Building" in reality [on the ground] I make bold that you shall have to establish the fact that I succeeded in finding new solutions. I agree with one of the critics you quoted

that my ornament is not at all traditional. That it is developing after new directions and that it functionally is well placed into the composition.

And by the way: do you know that the "Shell Building" up to now already has been used for 5 years — sometimes by 600, sometimes by 1000 employees — and that I never heard one complaint about the practical functioning of the building? What do you think could "functionalism" do more in this respect? And why should it be forbidden to give functional doing a spiritual form? Functioning alone as a leading principle — my experience taught me this — results in esthetical arbitrariness. Don't forget this.

Yes, I am sure the "Shell Building" is an effort to arrange new practical needs in a well-considered and esthetically well-shaped form. I must confess here that I have no belief in the application of the form of laborer-dwellings and factories to office-buildings, town-halls and churches!

The whole world in laborer-dwelling-style must be unorganic and dull!

To resume: I tried to bring all that what we gained up to now in the field of new architecture to a cultural higher level. You think I went back on my way. I am not so sure of it. Look for instance one day at the building itself and see what I reached in the light and bright tone of the building as a whole: not like with plastering in a semi-permanent manner but by the use of fine and durable material. Well, trials of the same kind you will find in the whole shape as well as in the form of the details of the building. Trials to come to a new architecture on a more spiritual base.

Did I succeed? Other people may judge this. I can only say for myself that I hope to be able to try it again and again to make further progress in this direction. To have the opportunity to help new building rise to new architecture. And this, my dear editors, still on the base of my old device: "seeking clear forms for clearly expressed needs."

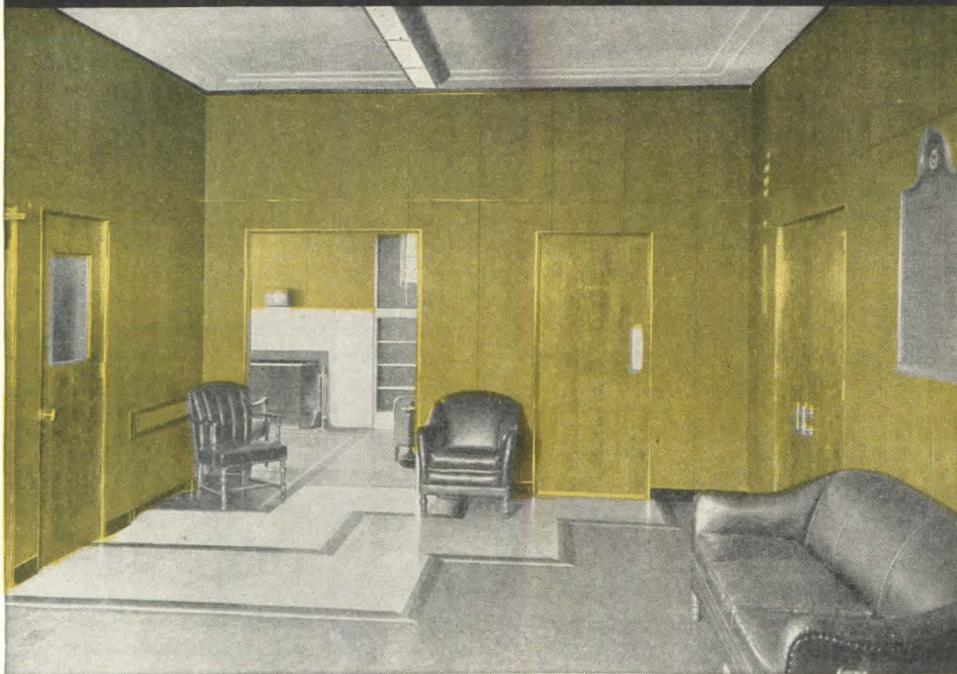
With my very best wishes, etc.

J. J. P. Oud

This clarifies the difference in viewpoint. The undoubted fact that a house, an office building, a factory, each creates a different problem has somehow been twisted into a question of rank and caste. Again, Oud's critics are not against joy. They are against the small increment obtainable at great expense by decorative embroidery. Far better today to save funds by adhering to industrialized building methods under clear design; then put these funds into real embellishment of the building by top-notch artists who have real joy to convey.

— Further comment is invited. DH

A NEWER, BETTER, FASTER WAY TO DIVIDE SPACE



This 10-Minute Demonstration Brings New Ideas in Partitioning and Paneling



Write or phone the nearest Distributor listed at the right and let him show you the 10-minute demonstration of M/P Metlwal Paneling and Movable Partitions. By use of a few standardized parts and fittings, M/P Metlwals eliminate the need for plaster in new construction . . . and permit fast, clean, simple installation in dividing space. They combine rich beauty, quiet and fire resistance with low initial cost and permanent economy.

Pre-Fabricated . . . Pre-Decorated

Made in lifelike wood grains and soft color finishes . . . providing an all-flush surface from floor to ceiling . . . eliminating the need for filler boards of other materials at ends or above the cornice level . . . M/P Metlwals of Bonderized steel make possible an endless variety of new, modern decorative effects. And you can use these distinctive interiors for executive, factory and general offices, stores, banks, theatres, hotels, hospitals, schools, residences and other buildings of every kind.

Write or Phone For Demonstration

Get in touch with the nearest M/P Distributor and let him bring the demonstration to your office. Also, for your A. I. A. file, send for booklet No. 35-H-6, containing Metlwal specifications, drawings and installation photographs. Address: Martin-Parry Corporation, Fisher Bldg., Detroit 2, Michigan. Plants: Toledo, Ohio; York, Penna.

CALL YOUR NEAREST M/P DISTRIBUTOR

- ALABAMA
Birmingham Acousti Engineering Co.
- ARKANSAS
Little Rock Acoustics & Specialties
- CALIFORNIA
Los Angeles The Harold E. Shugart Co.
San Francisco F. K. Pinney, Inc.
- COLORADO
Denver Lauren Burt, Inc.
- CONNECTICUT
Hartford The C. A. Bader Co.
- DISTRICT OF COLUMBIA
Washington John H. Hampshire, Inc.
- FLORIDA
Jacksonville Acousti Engineering Co. of Fla.
- GEORGIA
Atlanta Acousti Engineering Co.
- ILLINOIS
Decatur Hugh J. Baker & Co.
- INDIANA
Evansville }
Ft. Wayne } Hugh J. Baker & Co.
Indianapolis }
Wabash }
- KENTUCKY
Louisville E. C. Decker & Co.
- LOUISIANA
New Orleans Acoustics & Specialties
- MARYLAND
Baltimore John H. Hampshire, Inc.
- MASSACHUSETTS
Boston Pitcher & Co., Inc.
- MICHIGAN
Detroit R. E. Leggette Co.
Grand Rapids Leggette-Michaels Co.
- MINNESOTA
Minneapolis Insulation Sales Co.
- MISSOURI
Kansas City }
St. Louis } Henges Company, Inc.
- NEW JERSEY
Elizabeth Jacobson & Co., Inc.
- NEW MEXICO
Albuquerque The Jay Gear Corp.
- NEW YORK
Albany }
Buffalo } Collum Acoustical Co.
Jamestown }
Rochester }
Syracuse }
New York City Jacobson & Co., Inc.
- NORTH CAROLINA
Charlotte Acousti Engineering Co.
- OHIO
Cincinnati E. C. Decker & Co.
Cleveland The Mid-West Acoustical & Supply Co.
- OREGON
Portland Asbestos Supply Co. of Oregon
- PENNSYLVANIA
Philadelphia The W. M. Moyer Co.
Pittsburgh Harry C. Leezer Co.
- TENNESSEE
Knoxville }
Nashville } Len Herndon Co., Inc.
Memphis } Acoustics & Specialties
- TEXAS
Dallas }
Houston } S. W. Nichols Co.
El Paso Jay Gear Corp.
- UTAH
Salt Lake City Lauren Burt, Inc.
- VIRGINIA
Richmond John H. Hampshire, Inc.
- WASHINGTON
Seattle }
Spokane } Asbestos Supply Co.
Tacoma }
- WEST VIRGINIA
Huntington E. C. Decker & Co.
- WISCONSIN
Milwaukee Edward T. VerHalen, Inc.



METLWALS

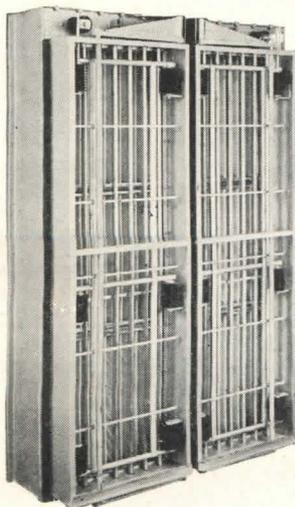
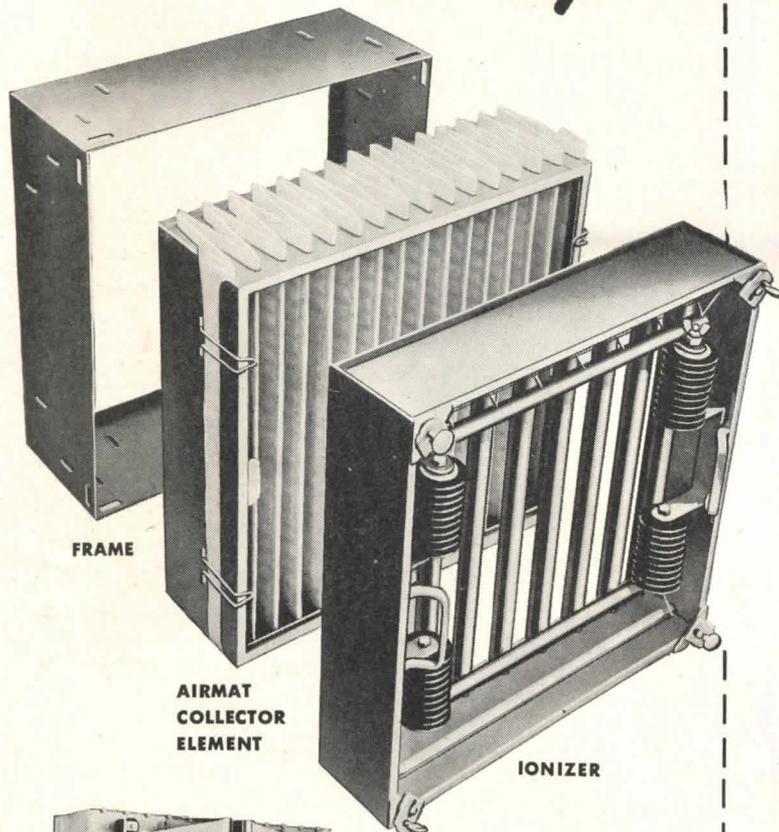
ALL-FLUSH PANELING
MOVABLE PARTITIONS

66 Years of Service ENGINEERING AND ERECTING SERVICE AND WAREHOUSE STOCKS FROM COAST-TO-COAST

Electro. AIRMAT

serves you better

5 ways



Electro-Airmat
Size No. 253
Straight Bank Arrangement
Capacity 6000 CFM

Exclusive AAF development combines top features of modern electronic precipitation and mechanical air filtration not found in any other type of electronic precipitator.

1. Easy, Positive Maintenance

Airmat paper, a proved filtering media for the past 20 years, serves as the collector element. Electrostatic charging increases its dust holding capacity 30% but, when dust loaded, it is discarded and replaced quickly at small cost with clean paper to return unit to its original efficiency. There's no sludge to remove, no flushing of collector plates with water and no spraying with oil.

2. Fireproof Design

When using non-combustible Airmat paper, the Electro-Airmat eliminates all possible fire hazards. There is no oil film required to hold the collected material in place—no oiling by immersion or spraying—no sludge to accumulate.

3. Simplified Installation

The Electro-Airmat requires no water connections, sewer drains or water-tight base. Modern, compact design reduces unit weight 40% and floor area requirements 30% under that of electronic precipitators using metal plate collectors.

4. High Operating Efficiency

85% to 90% cleaning efficiency at normal precipitator velocities.

5. Stops Dust Infiltration

Functioning as a mechanical filter when system is shut down, the Electro-Airmat protects against dust infiltration due to "stack effect".

COMPARE!

Check these 5 important advantages against those of other types of electronic precipitators. The Electro-Airmat is the only unit which combines the best in both electronic and mechanical air filtration. Bulletin No. 253 gives you the complete story. Write for it and name of your nearest AAF representative.

AMERICAN AIR FILTER CO., INC.

389 Central Ave., Louisville 8, Ky.

In Canada: Darling Bros. Ltd., Montreal, P. Q.

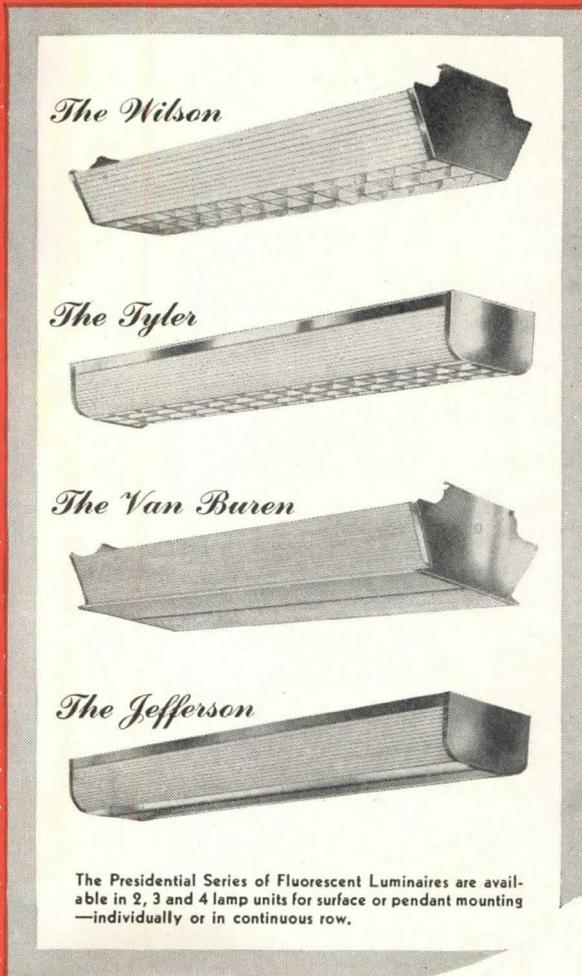
AAF

ELECTRO·AIRMAT
ELECTRONIC AIR FILTER

Light-to Order

with

PITTSBURGH
PERMAFLECTOR
LIGHTING
EQUIPMENT



★ Scientifically Engineered

★ Distinctively Styled

★ Economically Installed

★ Low Cost Maintenance

Modern illuminating practice requires the use of diversified and flexible lighting equipment which is functional, efficient and distinctive. These qualifications make Pittsburgh Permaflector Equipment outstanding in the fluorescent and incandescent lighting field.

1. The illuminating results and design effects obtainable with the exclusive use of Pittsburgh Permaflector Fluorescent and Incandescent Lighting Equipment are unlimited.
2. The full range of Pittsburgh Permaflector Equipment as to type, use and wattage assures you the "right light in the right place."
3. The cooperation of competent Lighting Engineers insures you the most efficient application of Pittsburgh Permaflector Equipment.

There are many ways you can design Pittsburgh Permaflector Lighting Equipment into commercial, institutional and industrial applications. For more information . . . contact your nearest Pittsburgh Permaflector Representative—or write direct.

Something Better has Come To Light

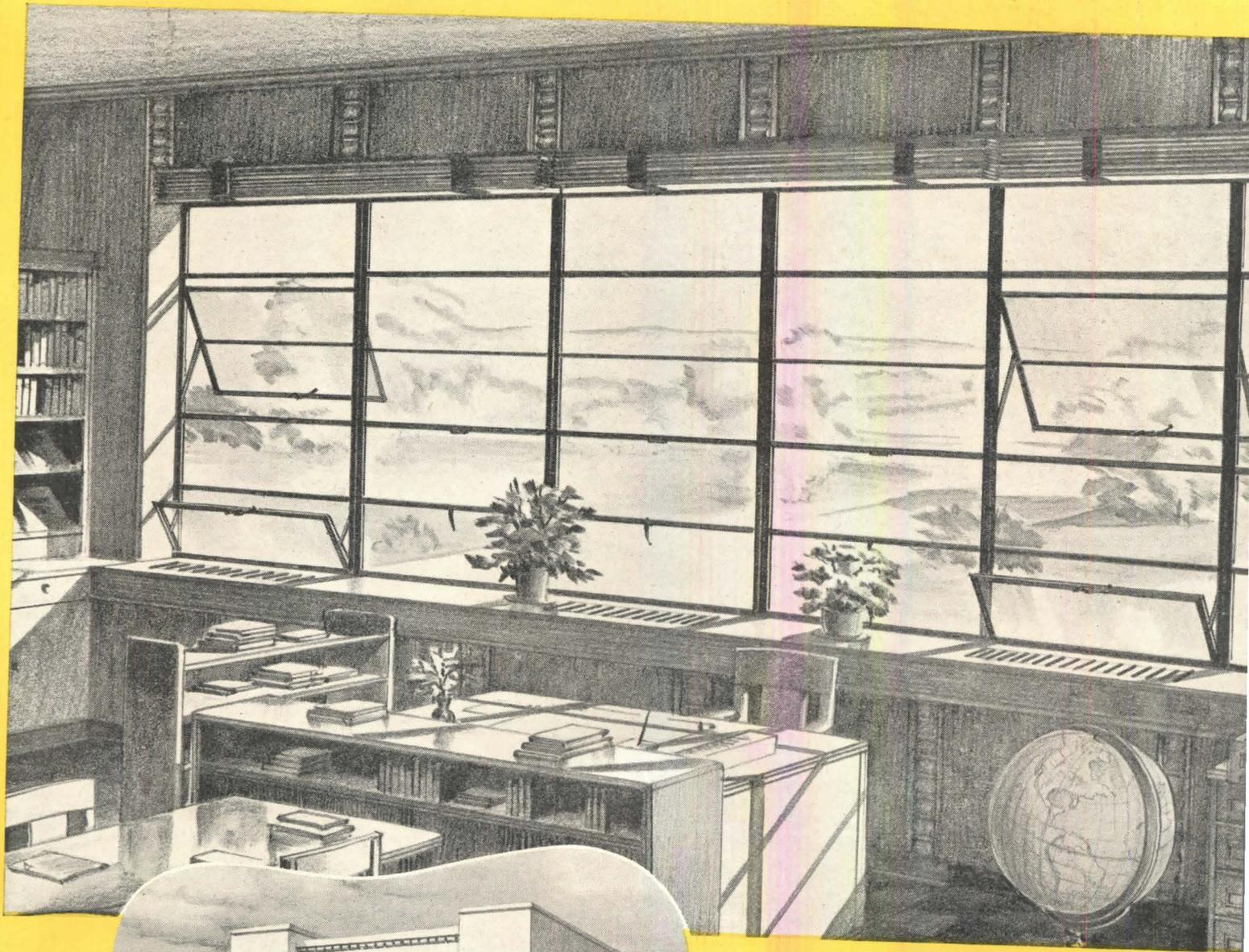


PITTSBURGH REFLECTOR COMPANY · PITTSBURGH 22, PA.

Manufacturers of Fluorescent and Incandescent Lighting Equipment

DISTRIBUTED THROUGH BETTER ELECTRICAL WHOLESALERS EVERYWHERE

Announcing- THE NEW



Suggestion:

THE RIGHT WINDOW FOR THE PURPOSE

The above illustration shows how distinctive fenestration is accomplished in a school library with Standard Fencraft Intermediate Projected Window, Type 416.

STANDARDIZED FENCRAFT

FAMILY OF INTERMEDIATE WINDOWS

Casement . . . Projected . . . Combination

There's a look of character and distinction in these beautiful new Fenestra Fencraft Windows.

Assembled from high-grade casement sections—fitted with fine hardware—constructed by Fenestra craftsmen—these quality windows offer a new opportunity for finer fenestration in the buildings you are planning today.

In all three groups of Fencraft Windows—Casement, Projected and Combination—muntin lines are slender and graceful, providing better daylighting and vision. Ventilator arrangements are designed for excellent air control. In the over-all functions of a good window, these new Fencraft Windows surpass the best of the past.

They surpass in economies, too. Concentration of production on standard types and sizes results in

high values with marked savings. And there are installation economies in the use of uniform installation details for many types of windows, and from the co-ordination of window sizes with collateral masonry.

From the three groups of Fencraft Windows, you may choose exactly the right window for the particular purpose and architectural characteristics of the building—Casement for one, Projected for another, Combination for a third. These groups provide a wide choice in amount and control of ventilation.

Fencraft Windows are now being manufactured, on order, for many types of buildings in many localities. For product details, see Fenestra's catalog in Sweet's (Section 16a-9). Or mail coupon below.



Fenestra



FENCRAFT INTERMEDIATE STEEL WINDOWS

Detroit Steel Products Company,
Dept. AR-3
2252 East Grand Blvd.,
Detroit 11, Michigan

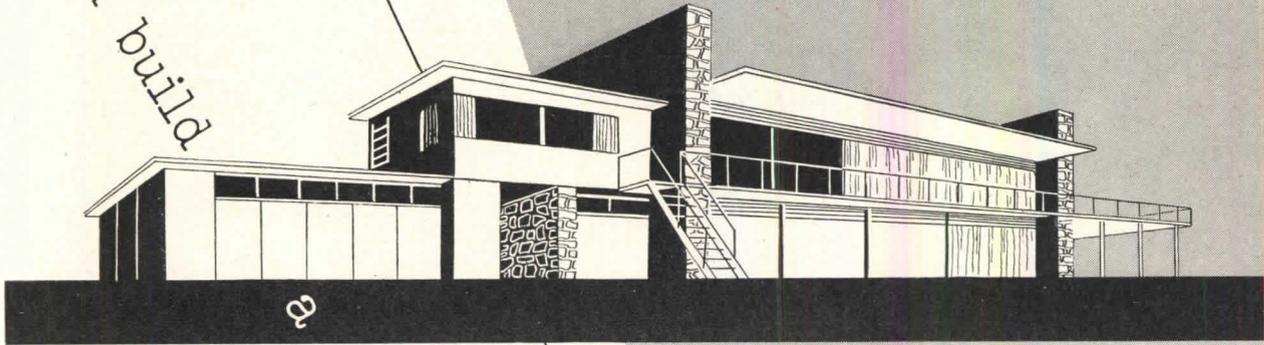
Please send me data on types and sizes of the new Fencraft family of Fenestra Windows:

Name _____

Company _____

Address _____

If you build



a

"modern" home

—YOU NEED A TAR-AND-GRAVEL ROOF

Most houses in "Modern" styles have flat roofs. Sometimes, of course, they are flat for purely architectural reasons; sometimes they are flat because the roofs can then be used for recreational purposes or because a film of water can be kept on them to keep houses cool in summer.

In either event, water may lie for long periods on the roof. One of the few built-up roofing materials which can resist either continual or intermittent exposure to water is coal tar pitch.

If you are planning a flat roofing area, you and your client are better protected if you specify coal tar pitch.

Not only is this type of roof impervious to water; it is also only slightly affected by the sun's rays and other severe weather conditions. It has the unique quality of self-healing: Should small cracks occur because of the structural movement of the building, they heal themselves by the process of self-healing "cold-flow."

.....

Koppers Old Style Pitch and Tarred Felt Roofs have enviable records of performance on flat-roofed buildings. When you plan a modern home, be sure it includes a Koppers roof.

Koppers roofing

Koppers waterproofing

KOPPERS COMPANY, INC., PITTSBURGH 19, PENNSYLVANIA



There is no substitute for

TRUE CHURCH TONE

or for strict conformity to the specifications
of The American Guild of Organists

PARTIAL LIST OF AMERICAN GUILD OF ORGANISTS SPECIFICATIONS TO WHICH THE WURLITZER ORGAN CONFORMS:

PEDAL CLAVIER

Compass: 32-note, CCC to G
Radiation: 8'-6" radius
Concavity: 8'-6" radius
Vertical: 29½" between playing surfaces of middle E natural pedal key and the playing surfaces of the natural keys of the Great manual.

PEDAL ACCESSORIES

Swell and Crescendo Pedals: Heel end of playing surface of shoes overhang sharp keys of pedal clavier within the 1¼" maximum forward position, and the 3/4" maximum distance back of them.
Swell Pedal located directly in the center of middle E—F gap on pedal clavier.

SWELL AND GREAT MANUALS

Compass: CC to c⁴, 61 notes.
Keys overhang a distance of 4" from the front edge of the Swell manual to a perpendicular line touching the front edge of the Great manual keys.
Surface-to-surface: Swell manual is 2½" above Great manual.

ORDER OF STOPS

Divisions of stop tablets have the following sequence from left to right on console: Pedal, Swell and Great.

The order of stops within these divisions are: 16'-8'-4'-2½'-2' and mixtures. Stops assume their normal position according to pitch in the Major Bass, Diapason, Flute, and String divisions. Loudest to softest is the order within pitch-groups. Reeds follow the highest pitch stops of the above groupings.

Organists who complain, quite naturally, that electronic organs have been unfamiliar and inconvenient will find that the new Wurlitzer Organ completely dispels this objection. All essential playing dimensions specified for modern two-manual pipe organs are faithfully adhered to in the design of this superb new instrument.

Pastors and laymen who might not be equally interested in such technical details will, however, be equally enthusiastic about the Wurlitzer's tonal structure. By utilizing the almost infinite variety of electrical impulses produced by free reeds, the Wurlitzer Organ provides a rich family of reverent tones comparable only to the pipe organ itself.

The result is perfection of church music, coupled with amazing economy of space. Your further inquiry is suggested; write Dept. AR-3, Organ Division, The Rudolph Wurlitzer Co., N. Tonawanda, N. Y.



The WURLITZER ORGAN

Series 20 Two-Manual

CONSTRUCTION COST INDEXES — Labor and Materials

United States average 1926 — 1929 = 100

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

NEW YORK

ATLANTA

Period	Residential		Apts., Hotels, Office Bldgs. Brick and Concr.	Commercial and Factory Buildings Brick and Concr.		Brick and Steel	Residential		Apts., Hotels, Office Bldgs. Brick and Concr.	Commercial and Factory Buildings Brick and Concr.		Brick and Steel
	Brick	Frame					Brick	Frame				
1920	136.1	136.9	123.3	123.6	122.6		122.8	122.9	108.6	109.8	105.7	
1925	121.5	122.8	111.4	113.3	110.3		86.4	85.0	88.6	92.5	83.4	
1930	127.0	126.7	124.1	128.0	123.6		82.1	80.9	84.5	86.1	83.6	
1935	93.8	91.3	104.7	108.5	105.5		72.3	67.9	84.0	87.1	85.1	
1939	123.5	122.4	130.7	133.4	130.1		86.3	83.1	95.1	97.4	94.7	
1940	126.3	125.1	132.2	135.1	131.4		91.0	89.0	96.9	98.5	97.5	
1941	134.5	135.1	135.1	137.2	134.5		97.5	96.1	99.9	101.4	100.8	
1942	139.1	140.7	137.9	139.3	137.1		102.8	102.5	104.4	104.9	105.1	
1943	142.5	144.5	140.2	141.7	139.0		109.2	109.8	108.5	108.1	108.7	
1944	153.1	154.3	149.6	152.6	149.6		123.2	124.5	117.3	117.2	118.2	
1945	160.5	161.7	156.3	158.0	155.4		132.1	133.9	123.2	122.8	123.3	
Jan. 1946	173.1	173.7	169.8	170.4	167.0		137.9	138.4	127.4	127.3	127.0	
June 1946	180.7	181.0	177.9	179.7	175.1		144.9	147.4	133.5	131.2	131.5	
Oct. 1946	188.0	188.5	181.9	184.8	179.9		155.6	156.5	143.0	144.7	142.2	
Nov. 1946	188.9	189.7	182.3	185.1	180.3		156.2	157.0	144.0	146.0	142.7	
Dec. 1946	192.6	194.4	183.4	185.9	182.3		159.2	160.8	144.9	146.6	143.9	
			% increase over 1939				% increase over 1939					
Dec. 1946	55.9	58.7	40.3	39.3	40.1		84.5	93.6	52.0	50.5	52.0	
			ST. LOUIS				SAN FRANCISCO					
1920	118.1	121.1	112.1	110.7	113.1		108.8	107.5	115.2	115.1	122.1	
1925	118.6	118.4	116.3	118.1	114.4		91.0	86.5	99.5	102.1	98.0	
1930	108.9	108.3	112.4	115.3	111.3		90.8	86.8	100.4	104.9	100.4	
1935	95.1	90.1	104.1	108.3	105.4		89.5	84.5	96.4	103.7	99.7	
1939	110.2	107.0	118.7	119.8	119.0		105.6	99.3	117.4	121.9	116.5	
1940	112.6	110.1	119.3	120.3	119.4		106.4	101.2	116.3	120.1	115.5	
1941	118.8	118.0	121.2	121.7	122.2		116.3	112.9	120.5	123.4	124.3	
1942	124.5	123.3	126.9	128.6	126.9		123.6	120.1	127.5	129.3	130.8	
1943	128.2	126.4	131.2	133.3	130.3		131.3	127.7	133.2	136.6	136.3	
1944	138.4	138.4	135.7	136.7	136.6		139.4	137.1	139.4	142.0	142.4	
1945	152.8	152.3	146.2	148.5	145.6		146.2	144.3	144.5	146.8	147.9	
Jan. 1946	157.7	158.3	150.8	152.6	149.5		148.6	146.4	146.7	148.3	149.3	
June 1946	165.8	165.0	159.9	163.8	159.5		158.0	156.5	156.2	156.9	156.6	
Oct. 1946	174.6	175.1	165.3	167.0	164.7		166.0	163.1	164.3	167.2	168.2	
Nov. 1946	174.9	175.4	165.8	167.2	164.9		166.4	163.5	164.8	167.6	168.6	
Dec. 1946	178.9	179.8	167.2	168.3	166.5		169.6	166.8	165.9	168.4	169.8	
			% increase over 1939				% increase over 1939					
Dec. 1946	62.4	68.0	44.6	44.2	39.9		60.6	68.0	41.3	38.1	45.7	

The index numbers shown are for combined material and labor costs. The indexes for each separate type of construction relate to the United States average for 1926-29 for that particular type — considered 100.

Cost comparisons, as percentage differences for any particular type of construction, are possible between localities, or periods of time within the same city, by dividing the difference between the two index numbers by one of them; i.e.:

index for city A = 110

index for city B = 95

(both indexes must be for the same type of construction).

Then: costs in A are approximately 16 per cent higher than in B.

$$\frac{110-95}{95} = 0.158$$

Conversely: costs in B are approximately 14 per cent lower than in A.

$$\frac{110-95}{110} = 0.136$$

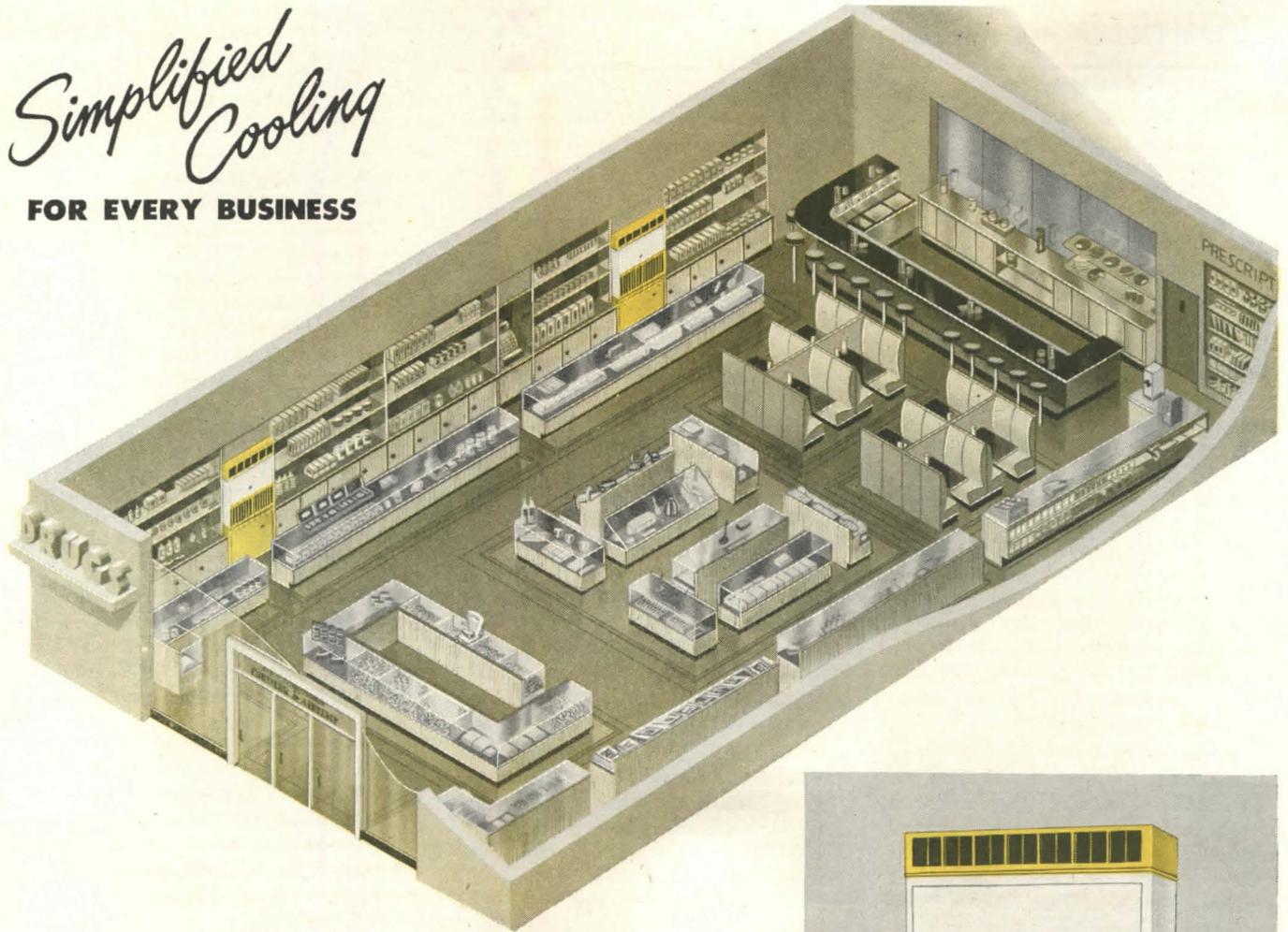
Cost comparisons cannot be made between different types of construction because the index numbers for each type relate to a different U. S. average for 1926-29.

Material prices and wage rates used in the current indexes make no allowance for payments in excess of published legal prices, thus, indexes reflect minimum costs and not necessarily actual costs.

These index numbers will appear whenever changes are significant.

Simplified Cooling

FOR EVERY BUSINESS



A Drug Store Designed to Draw More Customers

A BUSINESS-MINDED architect planned it that way. He knew that air conditioned stores get more traffic—that cool, comfortable customers stay longer, *buy more*, and that employes are more contented, efficient, and that there is less absenteeism.

Chrysler Airtemp Packaged Air Conditioners were chosen because they simplify air conditioning installations in stores large and small. They can be installed singly or in multiples. Each is a complete, self-contained, automatic, "fool-proof" air conditioner. Packaged Air Conditioners are noted for great dependability, long life, low operating and upkeep costs. For details, write Airtemp Division of Chrysler Corporation, Dayton 1, Ohio; in Canada—Therm-O-Rite Products, Ltd., Toronto.



Any Chrysler Airtemp Packaged Air Conditioner can be converted to a year-round air conditioner simply by adding a heating coil.

Automatically Yours

© 1947 Chrysler Corporation



PACKAGED AIR CONDITIONERS

HEATING • AIR CONDITIONING • COMMERCIAL REFRIGERATION

REQUIRED READING

HOSPITALS

Hospitals — Integrated Design. By Isadore Rosenfield. New York (330 W. 42nd St.), Reinhold Publishing Corp., 1947. 8½ by 11½ in. 308 pp. illus. \$10.75.

In the spring of 1944 a series of lectures on hospital planning was given by Isadore Rosenfield under the joint sponsorship of the New York chapter of the A.I.A. and the Department of Public Works of New York City. Attended by architects, members of the medical and nursing professions and hospital officials, the lectures proved so popular that Mr. Rosenfield has now expanded them to book form. His decision to include the discussions following the lectures was a good one: these discussions not only heighten the interest of the volume (the reason given for their inclusion), but also answer a number of questions not dealt with in the main body of the text, and add valuable comment by doctors, nurses and hospital authorities.

For background material there is an introductory chapter on the need for hospital facilities, which, together with the following one on comprehensive planning, gives a general picture of the types of hospitals needed, and their preferred location. There follows a discussion of siting, budgeting, and integration of the functional elements of the hospital. The various elements are then taken up in detail in separate chapters.

Mr. Rosenfield is at his best in the eight chapters he devotes to the planning of the facilities required by the general hospital. These include the nursing unit, diagnostic and therapeutic facilities, x-ray and radiation therapy, laboratories and necropsy, operating, maternity and pediatrics, service departments (administration, stores and storage, dietary, laundries), and the outpatient department. These chapters, with the ones on lighting and other technical aspects, comprise the main section of the volume.

Only one chapter is given to the special hospitals — contagious, tuberculosis, cancer, chronic, psychiatric, convalescent and cardiac. There is so urgent a need for an exhaustive study of this subject that to find Mr. Rosenfield contenting himself with such brief coverage of it is somewhat disappointing. Yet in proportion to the size of the book as a whole, the amount of space allotted is fairly generous, and the main points at least are covered. This is particularly true of the mental hospital, which is discussed in more detail than are the other special types.

Certain mechanical faults of the volume detract from its overall effective-

ness. Many of the plans are out of scale, many of them have no scale given, and a number of them are not wholly legible. References in the text are by chapter and figure number, not by page, which makes them rather difficult to locate; one of them, at least, is incorrect. One large and important plan is incorrectly keyed in its entirety. These are minor faults which undoubtedly will be corrected in a later edition.

GARDEN CITIES, INC.

Green-Belt Cities: The British Contribution. By F. J. Osborn. London, W.C. 1, Eng. (24 Russell Sq.), Faber and Faber Ltd., 1946. 5½ by 8½ in. 192 pp. illus. 12s. 6d.

Anyone at all familiar with the so-called Garden City idea is familiar also with the two London suburbs developed under the tutelage of Ebenezer Howard — Letchworth and Welwyn. This volume is largely a recounting of the history to date of the two, and an appraisal of their merit as a way of life.

Mr. Osborn's personal connection with the actual development of these two "young" towns here stands him in very good stead. Known as a proponent of the Garden City, he nonetheless appreciates and expresses freely the difficulties, disadvantages and criticisms. As is to be expected, he harks back constantly to Howard's *Garden Cities of Tomorrow* (a new edition of which he prepared only a few months ago). But he goes further back than Howard for historical background: he quotes the Bible, early Greeks and Romans, and, of course, Sir Thomas More's *Utopia*. Of particular interest in this connection is the diagram he includes of a typical Levitical city "derived from description in Numbers 35, and the modern excavation of Gezer." This diagram shows a square town area of about 22 acres, surrounded by an enclosing square of 300 acres of pasture lands.

Ezekiel's plans for Jerusalem, too, are referred to by Mr. Osborn: there was to be "a perimeter belt . . . 450 ft. wide around it, and beyond, on the east and west, 'food lands' extending for another 3½ miles. . . ."

To return to Letchworth and Welwyn, Mr. Osborn tells their story in some detail, and describes their various sections. He includes one chapter on their administration and finance. With this as background he then proceeds to discuss their social life and culture — a formidable job! Interesting facts he points to include:

1. The average age of the inhabitants is below that of England as a whole.
2. In the main the employed people first went to the two towns because they found employment there; only a small

minority sought jobs there because they liked the towns.

3. Income extremes are relatively absent.

4. "Common to the social life of both towns is the background of a decent home for virtually every family, and of local employment for most."

5. Life is more communal than in a large city.

Mr. Osborn, naturally enough, predicts a wider acceptance of the green belt principle, and sees no reason why such town planning should not be lastingly successful. He presents his arguments forcefully.

TO HAVE AND TO HOLD

On Trust for the Nation. By Clough Williams-Ellis. London, E.C.1, Eng. (36-38 Hatton Garden), Paul Elek, Ltd., 1947. 7 by 9½ in. 172 pp. illus. 25s.

This unusual book records the accomplishments of the National Trust for Places of Historic Interest and Natural Beauty. Founded in 1895, the National Trust is strictly a private-enterprise organization, not affiliated in any way with the British government. In 1946 it owned outright 115,000 acres, and had nearly half as much again under its wing to protect by covenant. These acres are spread over the length and breadth of England, "in a thousand scattered fragments."

As by rights it should be, this is a sentimental volume. Like a guide book, it follows a geographic trail southward from the Scottish border, and furnishes maps dotted with the properties under the National Trust aegis. It is rife with lush descriptions of scenery, buildings, parks, etc. It is crowded with photos (unusually good ones, the great majority of them) of landmarks both famous and little known which are included among the Trust's preserves: landmarks such as a good section of the Roman Wall, a number of handsome old country houses and estates, cottages and public buildings, churches, lakes, and even one of the famous "chalk cliffs of Dover."

CHURCHES

Christian Science Church Edifices. By Charles Draper Faulkner, A.I.A. 2nd ed. Chicago 6, Ill. (307 N. Michigan Ave.), Charles Draper Faulkner, 1946. 9 by 12 in. 418 pp. illus. \$6.50.

Intended expressly for the use of building committees, this handsome volume is devoted exclusively to Christian Science churches. It covers every problem the committees must face from the selection of the site to the letting of contracts.

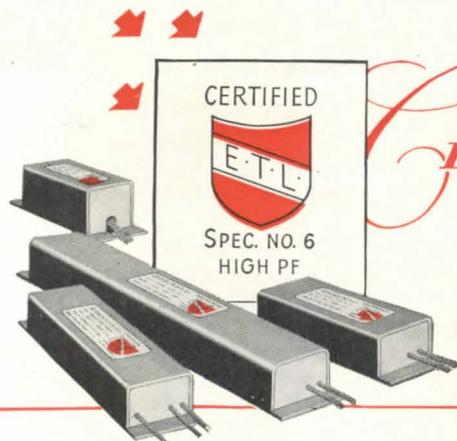
Mr. Faulkner not only is an architect, but has himself designed a number of Christian Science churches. He understands their special needs, their dis-

(Continued on page 30)

*"Streamlined performance is important
in fluorescent lighting, too!"*



... *And* there's a way to assure it—through Certified Ballasts. The ballast, in a fluorescent lighting fixture, is the *heart* of the lamp and fixture operation. And Certified Ballasts, built to exacting specifications, tested, checked and CERTIFIED by independent experts, Electrical Testing Laboratories, Inc., as definitely meeting those specifications, mean—to you—longer fluorescent lamp life—most light from lamps—greater economy. Insist on the ETL Certified label on the ballasts you specify and use!



CERTIFIED BALLAST MANUFACTURERS

Makers of Certified Ballasts for Fluorescent Lighting Fixtures

Acme Electric Corporation
Cuba, New York
Chicago Transformer Div.
Essex Wire Corporation
3501 Addison St., Chicago, Illinois

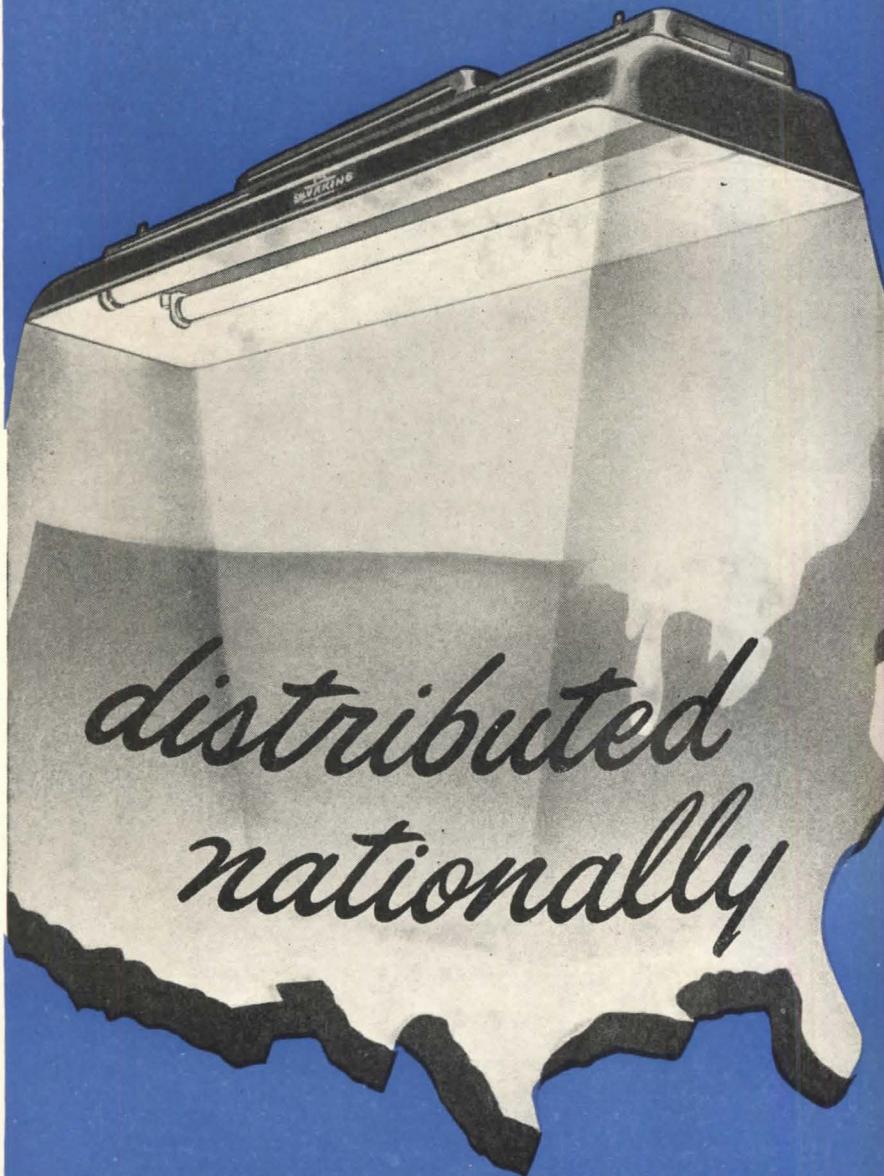
General Electric Co.
Specialty Transformer Division
Fort Wayne, Ind.
Jefferson Electric Co.
Bellwood, Illinois

Sola Electric Co.
2525 Clybourn Avenue
Chicago 14, Illinois
Starrang and Company
Bridgeport, Conn.

Wheeler Insulated Wire Co., 378 Washington Ave., Bridgeport, Conn.

SILV-A-KING

RLM LIFETIME PORCELAIN ENAMEL
FLUORESCENT UNITS



From Coast to Coast . . . wherever lighting engineers demand equipment of the highest standard for commercial and industrial installations . . . There's where you'll find SILV-A-KING fluorescent units! Built to ideals of quality, SILV-A-KING products have earned their reputation.



Bulletin 46FS upon request
BRIGHT LIGHT REFLECTOR COMPANY
Fairfield at State, Bridgeport 5, Conn.

Atlanta, Ga.
Baltimore, Md.
Boston, Mass.
Chicago, Ill.
Cleveland, Ohio
Dallas, Texas

SALES OFFICES:
Denver, Colorado
Detroit, Mich.
Indianapolis, Ind.
Kansas City, Mo.
Los Angeles, Cal.
Minneapolis, Minn.

New York, N. Y.
Philadelphia, Pa.
Pittsburgh, Pa.
Portland, Ore.
San Francisco, Cal.
St. Louis, Mo.

REQUIRED READING

(Continued from page 28)

tinguishing characteristics. To illustrate the points he makes, he has assembled in this volume some 200 photographs and plans of Christian Science churches throughout the country. Of all sizes and architectural styles, these will be of particular interest and help to the architect designing a church of this type. The structures vary amazingly, both outside and in — more, probably than do churches of other denominations; the plans themselves, however, are fundamentally the same.

CITY PLANNING

NEW YORK

Planning Recommendations for the Washington Square Area. Prepared for the Washington Square Assn. by Arthur C. Holden. New York 3 (65 Fifth Ave.), Washington Sq. Assn., 1946. 8½ by 11 in. 102 pp. illus. \$1.50.

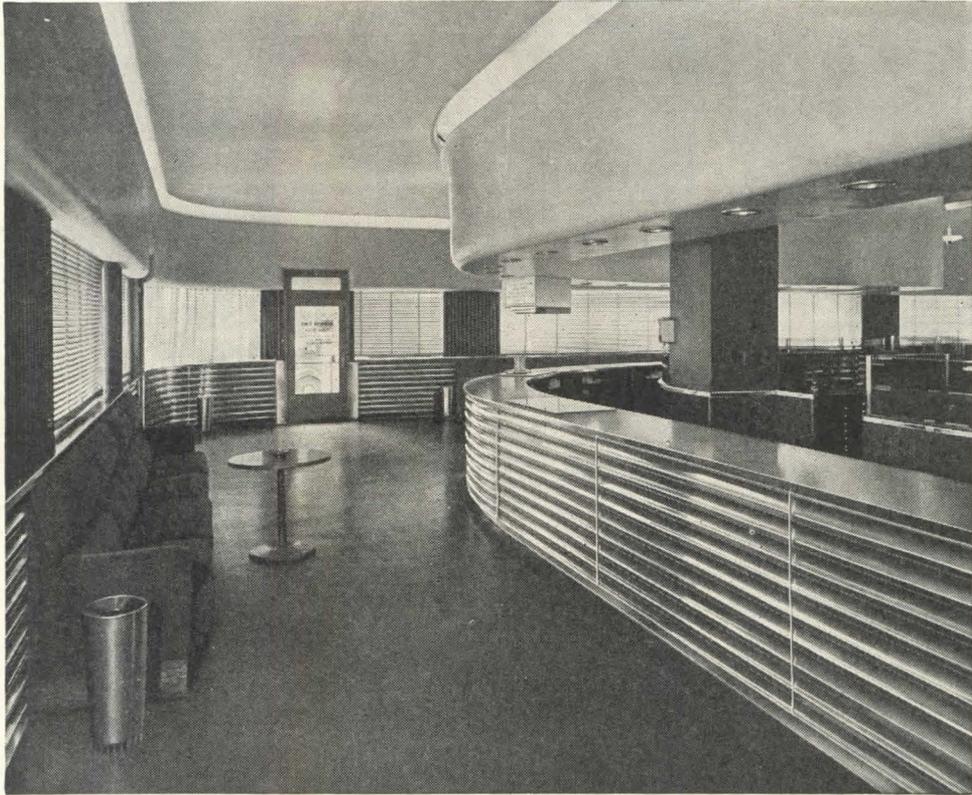
The persistence with which the old residential area around Washington Square in lower Manhattan has withstood the inroads of commerce certainly merits the careful study which it now has received in this booklet. The area extends from 14th Street to Canal, Broadway to the Hudson River, and takes in the whole of Greenwich Village; for planning purposes it has been subdivided into five smaller areas, three of which have been found suitable for replanning and redevelopment.

Very few specific recommendations are made in this report. The character of the district is analyzed, the shortcomings and the needs are squarely faced, and the good features pointed out. General recommendations include more parks, new express streets, a whole new loft and manufacturing area south of the Square, an extension of the residential areas, and revision of the zoning laws to provide future protection.

BOSTON

The Boston Metropolitan District: A Bibliography. Compiled by Katherine McNamara. Cambridge 38, Mass. (215 Littauer Center), Harvard University Graduate School of Public Administration, 1946. 8½ by 11 in. 198 pp. \$2.00.

Here is a bibliography of about 1500 items, arranged both topically and chronologically, on the "local governmental developments and attendant problems of urbanism within the area of Greater Boston" from 1784 through the first half of 1945. Included are items on subjects ranging from airports, railroads and harbors to building regulations, housing and land reclamation. There is a separate index of authors.



LASTING BEAUTY

Stainless steel highlights ticket office

This attractive railway ticket office has stainless steel service counters and trim. Architects are increasingly specifying stainless steel because it is modern in appearance and adaptable to streamlined design. Just as important is its durability—stainless steel stands up under years of hard wear. Maintenance costs are cut to a minimum, since scratches, rust, and tarnish will not dull the gleaming finish.

If you are interested in new uses of stainless steel in architecture and in other fields, ask to receive the monthly publication, ELECTROMET REVIEW. Or, if you need information on the

fabrication or properties of these steels, write our Technical Service Department. We do not make steel, but we do produce the ferro-alloys which are used in its manufacture, and our engineers have accumulated a fund of information on the use of steel in many industries.

ELECTRO METALLURGICAL COMPANY

Unit of Union Carbide and Carbon Corporation



30 East 42nd Street, New York 17, N. Y.

In Canada: Electro Metallurgical Company of Canada, Limited, Welland, Ontario



BEAUTIFUL ENDURING STRONG TOUGH

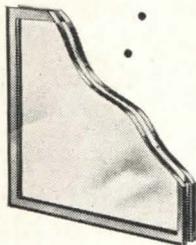
Thermopane

REG. U.S. PAT. OFF.

NOW MADE IN

55

STANDARD SIZES



Thermopane*, the original windowpane that insulates, keeps on gaining in popularity. Its insulating efficiency makes practical the modern trend to larger windows in architectural design... an efficiency proved through actual use from Iceland to Mexico.

That's why we have expanded our standard sizes to 55—based on American Standards' Association 4-inch modular

PICTURE WINDOWS

($\frac{1}{4}$ " Plate Glass and $\frac{1}{2}$ " air space)

Width	Height	Width	Height
35 $\frac{1}{2}$	x 48 $\frac{1}{8}$	48 $\frac{1}{2}$	x 50
55 $\frac{1}{4}$	x 48 $\frac{1}{8}$	56 $\frac{1}{2}$	x 50
75	x 48 $\frac{1}{8}$	64 $\frac{1}{2}$	x 50
35 $\frac{1}{2}$	x 60 $\frac{3}{8}$	72 $\frac{1}{2}$	x 50
55 $\frac{1}{4}$	x 60 $\frac{3}{8}$	80 $\frac{1}{2}$	x 50
75	x 60 $\frac{3}{8}$	96 $\frac{1}{2}$	x 50
42	x 66	64 $\frac{1}{2}$	x 58
42	x 72	72 $\frac{1}{2}$	x 58
84	x 66	80 $\frac{1}{2}$	x 58
84	x 72	96 $\frac{1}{2}$	x 58
96	x 66	116 $\frac{1}{2}$	x 58
96	x 72		

DOUBLE HUNG WOOD WINDOWS

(DSA Window Glass and $\frac{1}{4}$ " air space)

2-Light		4-Light	
Width	Height	Width	Height
24	x 24	24	x 11 $\frac{5}{8}$
28	x 24	28	x 11 $\frac{5}{8}$
32	x 24	32	x 11 $\frac{5}{8}$
36	x 24	36	x 11 $\frac{5}{8}$
40	x 24	40	x 11 $\frac{5}{8}$
44	x 24	44	x 11 $\frac{5}{8}$
24	x 28	24	x 13 $\frac{5}{8}$
28	x 28	28	x 13 $\frac{5}{8}$
32	x 28	32	x 13 $\frac{5}{8}$
36	x 28	36	x 13 $\frac{5}{8}$
40	x 28	40	x 13 $\frac{5}{8}$
44	x 28	44	x 13 $\frac{5}{8}$

RESIDENTIAL STEEL SASH

(DSA Window Glass and $\frac{1}{4}$ " air space)

Width	Height	Width	Height
16	x 12	14	x 10
16	x 11 $\frac{5}{16}$	14	x 9 $\frac{5}{16}$
14	x 12	14 $\frac{3}{4}$	x 12
14	x 11 $\frac{5}{16}$	17 $\frac{1}{4}$	x 12
		12	x 12

construction. This means greater design flexibility for the architect, more opportunity for the use of this time-proved insulating glass unit.

Consult your nearest L·O·F distributor for latest information about delivery dates and the complete range of non-standard sizes. Or write for our latest *Thermopane* folder. Libbey·Owens·Ford Glass Co., 2237 Nicholas Bldg., Toledo 3, Ohio.

*Reg. U.S. Pat. Off.



LIBBEY·OWENS·FORD

a Great Name in **GLASS**

GET THIS Complete Set of Valuable Data Sheets

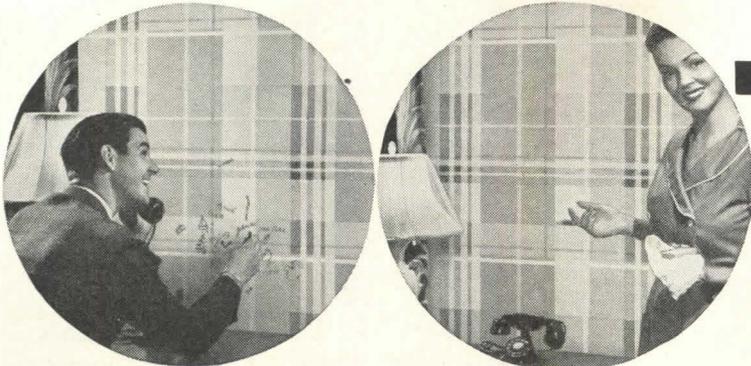
The inside facts on Varlar! How this miracle wall covering resists greases, pencil and ink marks, water, fire, vermin, dirt—stains of all kinds! How it begins a new day of low-cost wall beauty and maintenance for homes and buildings!

HERE—in 6 easy-to-read, easy-to-file data sheets—is the complete, factual report on Varlar, the new kind of wall covering that RESISTS STAINS OF ALL KINDS.

Read what *independent* testing laboratories say about Varlar. See why this miracle wall covering that's made

with plastics an entirely new way, begins a new day in low-cost wall upkeep and beauty!

See with your own eyes how Varlar stands up under every type of test! See how Varlar resists water, fire, steam, vermin, abrasion, mildew and bacteria!



Looks NEW After 25,000 Washings!

See how pencil, ink, crayon, lipstick, oil, perfume, jam, dirt accumulation, hot kitchen grease—STAINS OF ALL KINDS—easily, quickly wash clean from Varlar with ordinary soap and water. Wash clean as many as 25,000 times without dimming its original good looks!

These valuable data sheets, too, tell how Varlar is applied . . . where it is best used. So get the COMPLETE story! Now, while quantities last, send for *your* free copies of these valuable laboratory reports. The coupon below will bring them to you.

Never Before Such Enduring Beauty

VARLAR

Stainproof Wall Covering

VARLAR, Inc., Division of UNITED WALLPAPER INC. Merchandise Mart, Chicago 54, Ill.

VARLAR, INC., Dept. 136-347
Merchandise Mart, Chicago 54, Illinois

Please send me—without cost or obligation—the complete, independent test reports on Varlar.

Name _____

Address _____

City _____ State _____

Orchids to...

Ferro-Therm

Ferro-Therm
STEEL INSULATION

Fully Protected By U. S. and Foreign Patents Issued and Patented

Bus. Telephone 203

"Say It With Flowers"
EDGAR KLUG
BLUE POINT, N. Y.

Res. Telepho

December 10, 1946

American Flange & Manufacturing Co., Inc.
30 Rockefeller Plaza
New York 20, N.Y.

Gentlemen:

This will confirm the facts given to you regarding the performance of your product, Ferro-Therm Steel Insulation, in the fire of November 7 in one of our buildings.

The Ferro-Therm installation consists of a walk-in refrigerated room. The walls, floor, and ceiling of this room are insulated with 4 sheets of #38 U.S.S.G. Ferro-Therm.

This room is located in the boiler house of our building.

On the morning of November 7, fire broke out and completely gutted the interior of the boiler house. The fire was freely blazing by the time it was discovered, and it is probable that 4 or 5 hours elapsed from the outbreak of the fire to the time it was completely extinguished.

The fire burned freely around the Ferro-Therm insulated room and charred the wood sheathed refrigerator door of the room.

However, after the fire was extinguished and we opened the refrigerated room, we found that the temperature had risen no more than 20° above normal operating temperature of the room, and no smoke had entered the room. In consequence, our cut flowers stored in this refrigerated room were entirely undamaged.

These facts are given to you with the understanding that they may be reproduced in your Ferro-Therm data as they provide to interested parties pertinent information regarding the insulation value and fire protection of your product.

Very truly yours,

Edgar Klug

AMERICAN FLANGE & MANUFACTURING CO., INC.,
30 ROCKEFELLER PLAZA,
NEW YORK 20, N. Y.

AMERICAN FLANGE & MANUFACTURING CO., INC.
Ferro-Therm Division, Dept. AR
30 Rockefeller Plaza, New York 20, N. Y.
Please send me, without obligation, complete information on Ferro-Therm Steel Insulation.

Name

Firm

Street

City

Zone

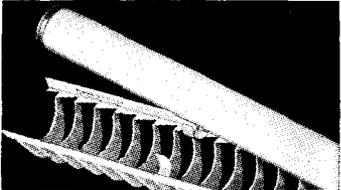
State



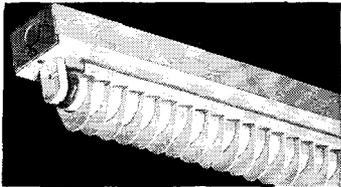
This photo was taken in the Law Library, Loyola University Loop Center, Chicago, Illinois, and illustrates efficiency and attractiveness of Fluor-O-Shields.



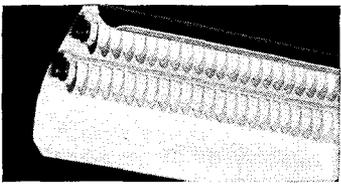
No trick to install Fluor-O-Shields. Just snap them on. No bolts or tools needed.



Snap-on clips permit instant attachment or removal for changing burned out lamps.



No flat surfaces to catch dust and dirt. 92% of the light and none of the glare.



3 sizes to fit most exposed lamp fixtures. For continuous or unit mounting.

Light weight, ease of attachment and all around efficiency make Fluor-O-Shield the most practical light diffuser on the market.

How a glare problem was solved at Loyola University

Fluorescent lighting is the most modern way of lighting today, but it also presents the problem of glare. The installation of eleven hundred fluorescent fixtures in the classrooms and libraries of Loyola University's loop center at 820 N. Michigan Ave., Chicago, required the use of some sort of light diffuser.

The ceilings are 9' 5" and fixtures were placed parallel to general vision direction (see illustration above). To produce an even intensity of light at reading level, Fluor-O-Shields (a total of 2,200) were specified for each of the 2-tube 40 watt fixtures by the lighting engineers. This is the most practical and economical way known to get the most efficient lighting with the least amount of glare.

Fluor-O-Shields are endorsed by lighting engineers, lamp tube manufacturers and electrical testing laboratories for use in factories, offices, schools—wherever good lighting is essential to better working conditions. For more data, specifications and information, write to address below.

THREE SIZES

\$1⁹⁵ 40 watt
46⁷/₈ inch

NEW!

\$1²⁵ 20 watt
22⁷/₈ inch

\$2⁹⁵ 100 watt
58¹/₈ inch

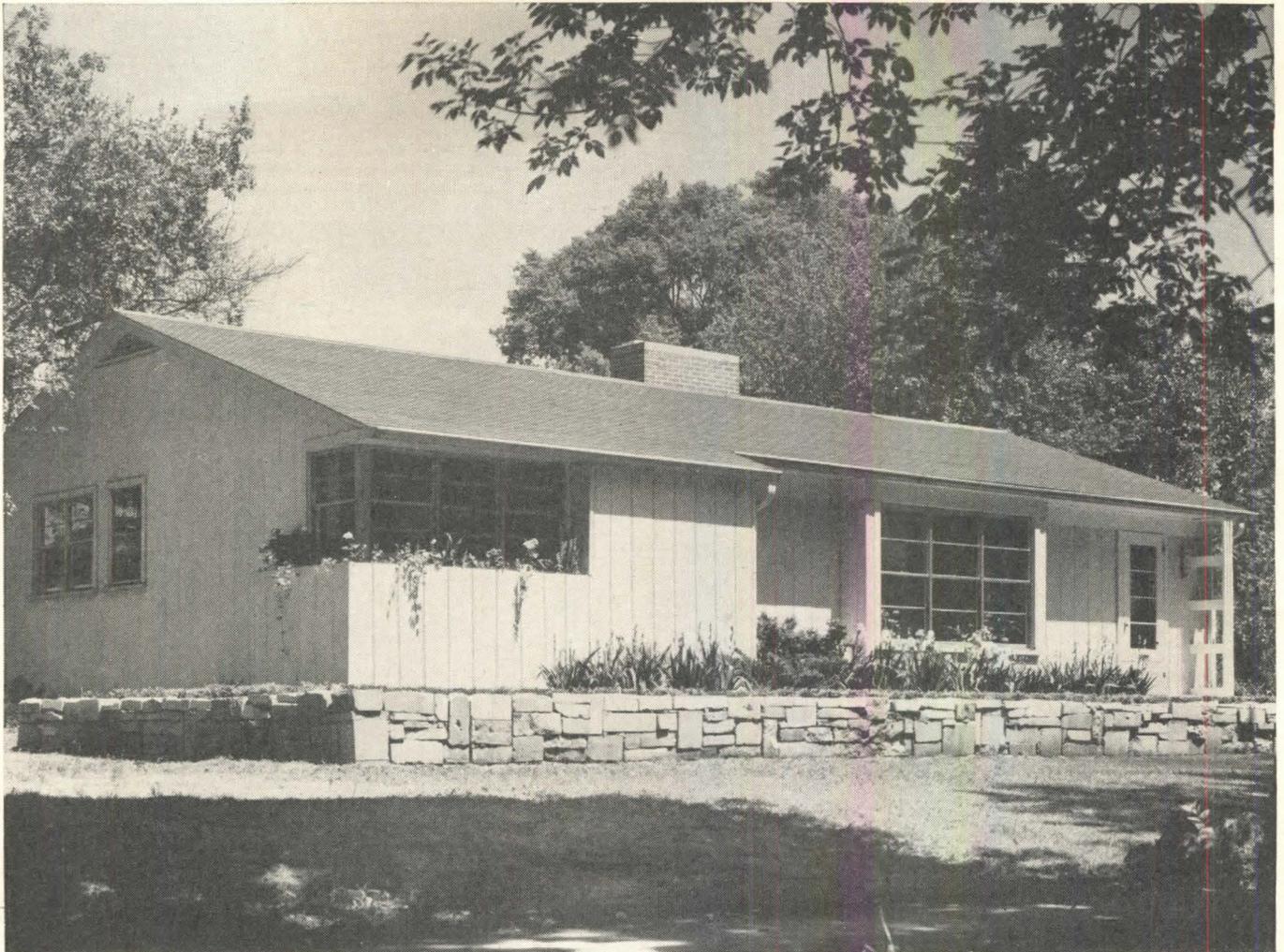
FLUOR-O-SHIELD*

Light Diffuser for Fluorescent Lamps

Aluminum finished in white baked enamel

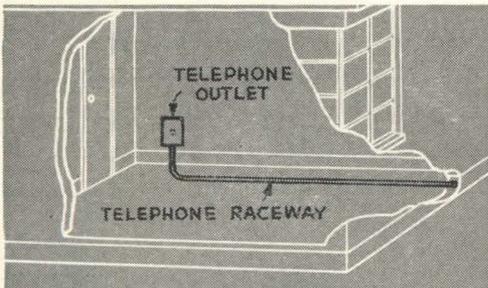
*Trade Mark—Patent Pending.

CAMFIELD MANUFACTURING COMPANY • GRAND HAVEN, MICHIGAN



Granville Keith, Architect

EVEN MODERN MIDGETS SHOULD BE "TELEPHONE CONDITIONED"



What the up-to-the-minute home misses in size, it makes up for in planning. For one thing, a raceway for concealing telephone wires is provided for *in the plans*.

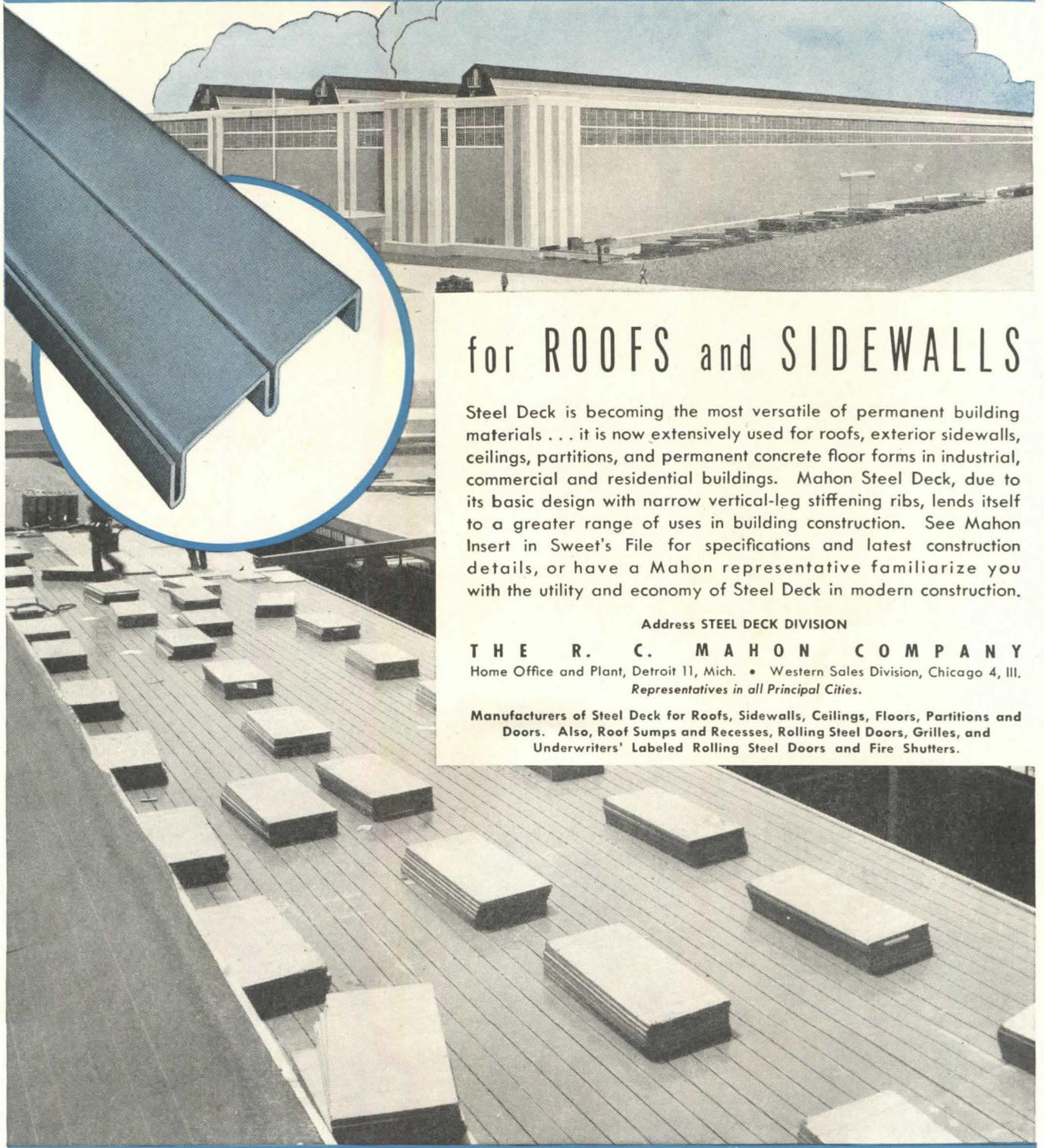
When there is no basement, the telephone installer generally cannot run wires up through the floor to the telephone location. But a simple wiring channel *installed before the floor is laid*, avoids attaching telephone wires in plain sight on baseboards and around window and door frames.

Every small home should have raceways for telephone wires. Your Bell Telephone Company will be glad to help you plan economical telephone wiring facilities. Just call your Telephone Business Office and ask for "Architects and Builders Service."

BELL TELEPHONE SYSTEM



STEEL DECK



for ROOFS and SIDEWALLS

Steel Deck is becoming the most versatile of permanent building materials . . . it is now extensively used for roofs, exterior sidewalls, ceilings, partitions, and permanent concrete floor forms in industrial, commercial and residential buildings. Mahon Steel Deck, due to its basic design with narrow vertical-leg stiffening ribs, lends itself to a greater range of uses in building construction. See Mahon Insert in Sweet's File for specifications and latest construction details, or have a Mahon representative familiarize you with the utility and economy of Steel Deck in modern construction.

Address STEEL DECK DIVISION

THE R. C. MAHON COMPANY

Home Office and Plant, Detroit 11, Mich. • Western Sales Division, Chicago 4, Ill.
Representatives in all Principal Cities.

Manufacturers of Steel Deck for Roofs, Sidewalls, Ceilings, Floors, Partitions and Doors. Also, Roof Sumps and Recesses, Rolling Steel Doors, Grilles, and Underwriters' Labeled Rolling Steel Doors and Fire Shutters.

Above are illustrations showing a Typical Mahon Steel Deck Sidewall application, and Insulation and Roofing Material being applied to Mahon Steel Deck Roof.

MAHON



A house, too, can be “painted into a corner!”

● No architect or builder needs to be told that, of all home-heating fuels, Bituminous Coal is the most economical and most dependable.

So, even when a client of yours *insists* on some other fuel for his new home, it's wise to give him the chance to change his mind at some time in the future—and turn to coal!

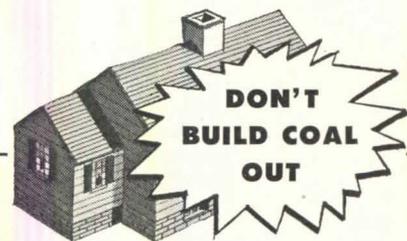
Otherwise, he's apt to find his house “painted into a corner” when stoker developments, local coal services and cost differentials dictate the use of coal.

Just be sure that the house plan provides: (1) A chimney with sufficient flue capacity to burn coal efficiently; (2) Sufficient space adjacent to the heating unit for eventual coal storage and stoker installation.

Such sensible precautions involve but trifling cost—and they may add greatly to the future value of a house.

Coal supplies uniform, *steady* warmth throughout every portion of each room. For there's always a fire in the furnace—no “pop on and pop off” periods that permit accumulated heat to rise to the ceilings and leave floor areas dangerously cold. That, plus its low cost, is why more than 4 out of every 7 homes in the United States now heat with coal!

BETTER AND BETTER THINGS ARE COMING FROM COAL!

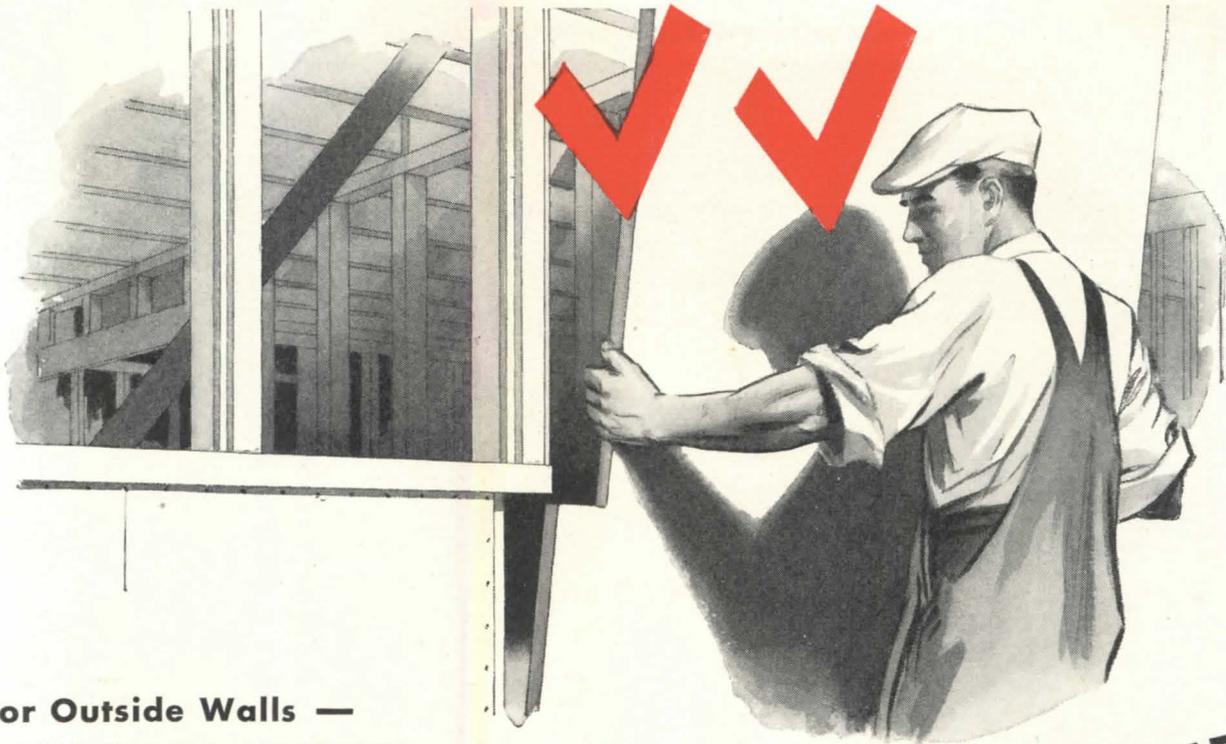


As you undoubtedly know, the modern research facilities of the Bituminous Coal industry are hard at work not only to make coal a still better fuel, but also to devise new, low-cost *automatic* equipment that will make coal-heating even cleaner, more comfortable, more convenient and more economical. This makes it all the more important that every new home built today be planned to permit the eventual burning of coal — no matter what fuel may initially be selected.

BITUMINOUS COAL

BITUMINOUS COAL INSTITUTE
Washington, D. C.

Affiliate of NATIONAL COAL ASSOCIATION



For Outside Walls —
GIVE YOUR CLIENTS

Double FOR THEIR MONEY!

Specify double-duty Insulite Sheathing. It does *two* things for the price of one:

(1st) *Sheathes* (2nd) *Insulates*

One product—double usage!—double service for the money!

In this day of excessive construction costs, here at least is one place where you can tell a client "You get *two* uses for the money you spend."

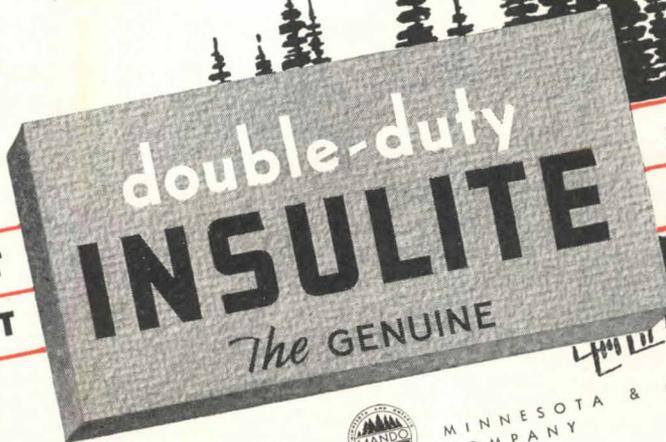
Tests prove Insulite Sheathing provides bracing strength superior to ordinary wood sheathing horizontally applied. Its insulation value over wood is common knowledge.



ONE MATERIAL
Double USAGE

Refer to Sweet's File,
Architectural Section 10 a/9

INSULATES AS IT
BUILDS AS IT



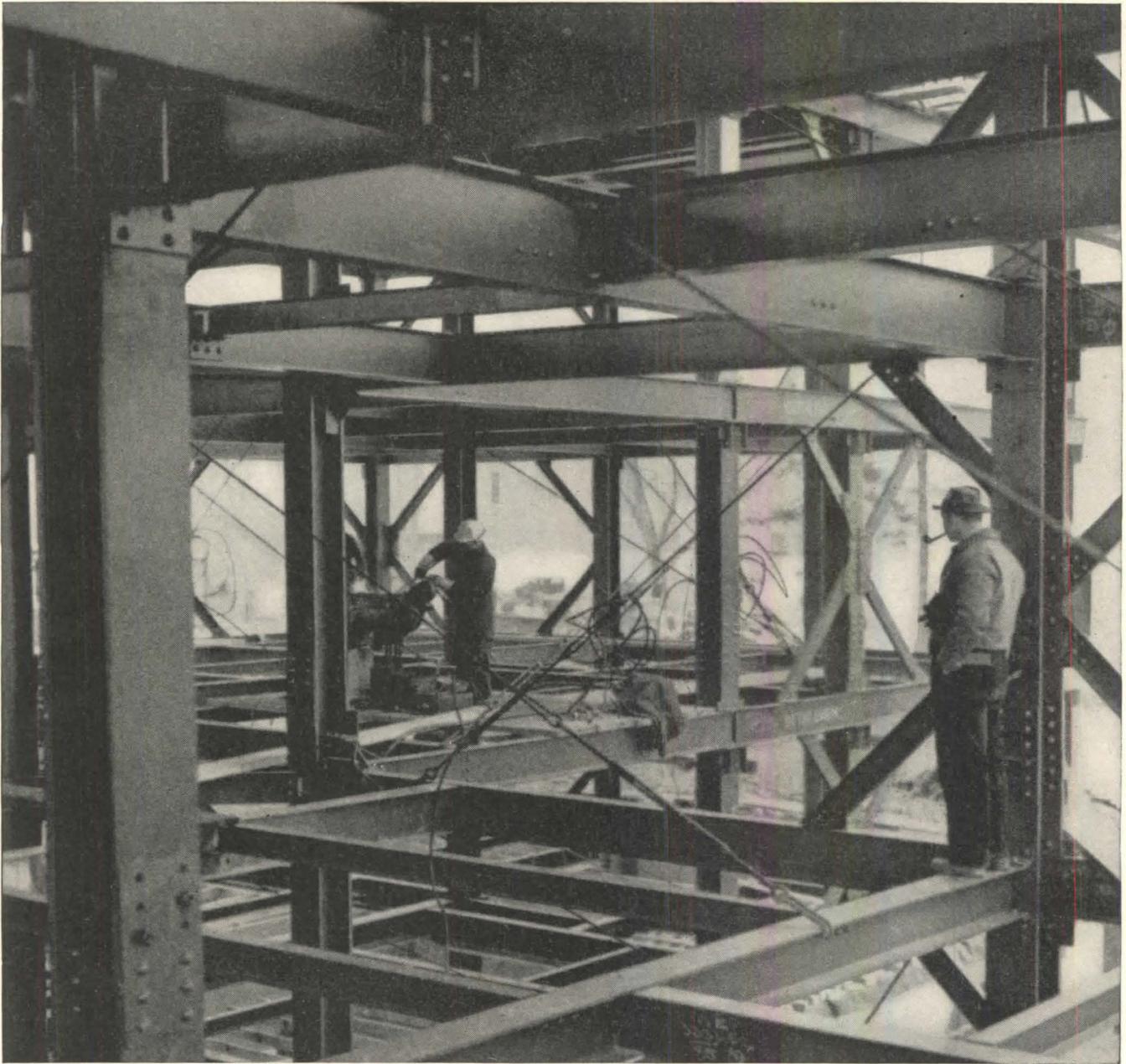
BUILDS
INSULATES

"Insulite" is a registered
trade mark, U.S. Pat. Off.

DIVISION OF
PAPER



MINNESOTA & ONTARIO
COMPANY



As blueprints come to life

Up and down the land, in cities large and small, long-withheld blueprints are coming to life—steel skeletons of new buildings are triumphantly moving skyward.

In this current work, Bethlehem Structural Shapes are playing a leading part, as they have done in building construction ever since the beginning of the era of the modern skyscraper.

BETHLEHEM STEEL COMPANY
BETHLEHEM, PA.

*On the Pacific Coast Bethlehem products are sold by
Bethlehem Pacific Coast Steel Corporation*

Bethlehem
**STRUCTURAL
SHAPES**



Sized*

TO FIT THE JOB!

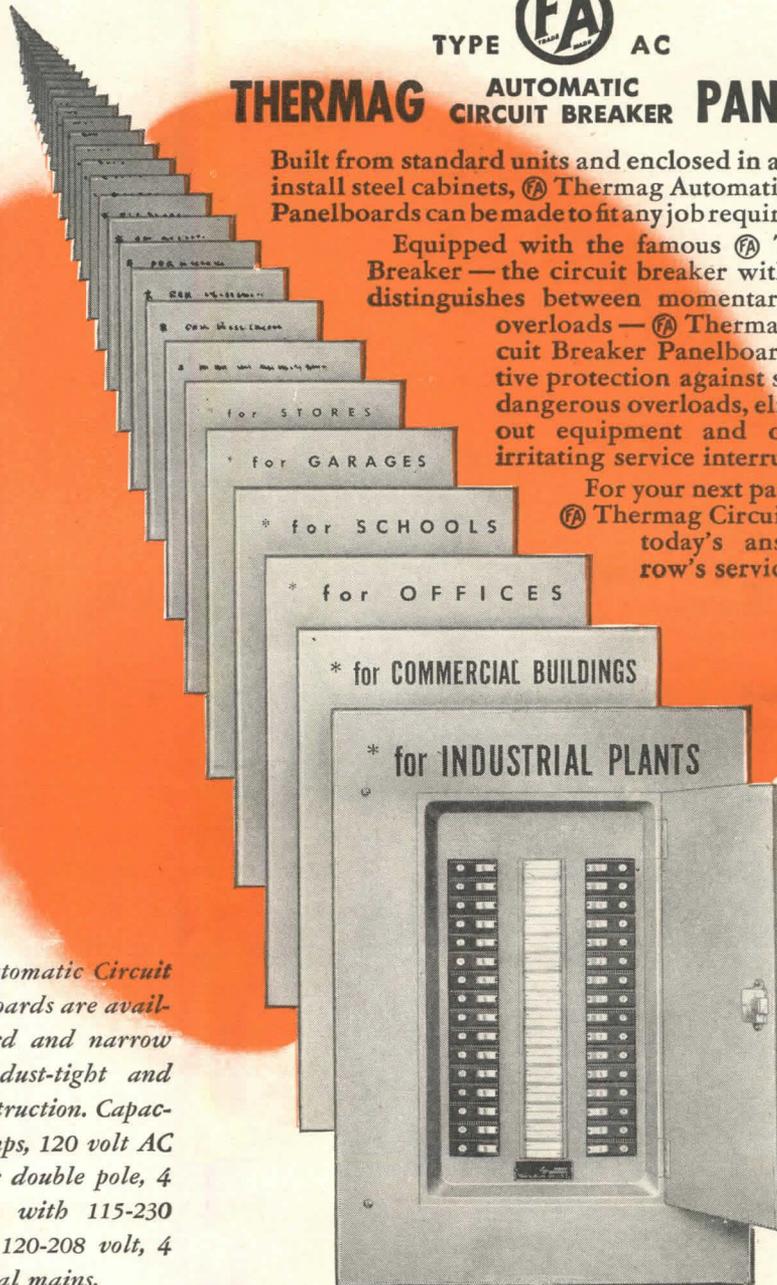
TYPE  AC

THERMAG AUTOMATIC CIRCUIT BREAKER PANELBOARDS

Built from standard units and enclosed in attractive, easy-to-install steel cabinets,  Thermag Automatic Circuit Breaker Panelboards can be made to fit any job requiring panelboards.

Equipped with the famous  Thermag Circuit Breaker — the circuit breaker with a brain, which distinguishes between momentary and sustained overloads —  Thermag Automatic Circuit Breaker Panelboards provide positive protection against short circuits and dangerous overloads, eliminating burned out equipment and other costly and irritating service interruptions.

For your next panelboard, specify  Thermag Circuit Breaker type — today's answer to tomorrow's service problem.



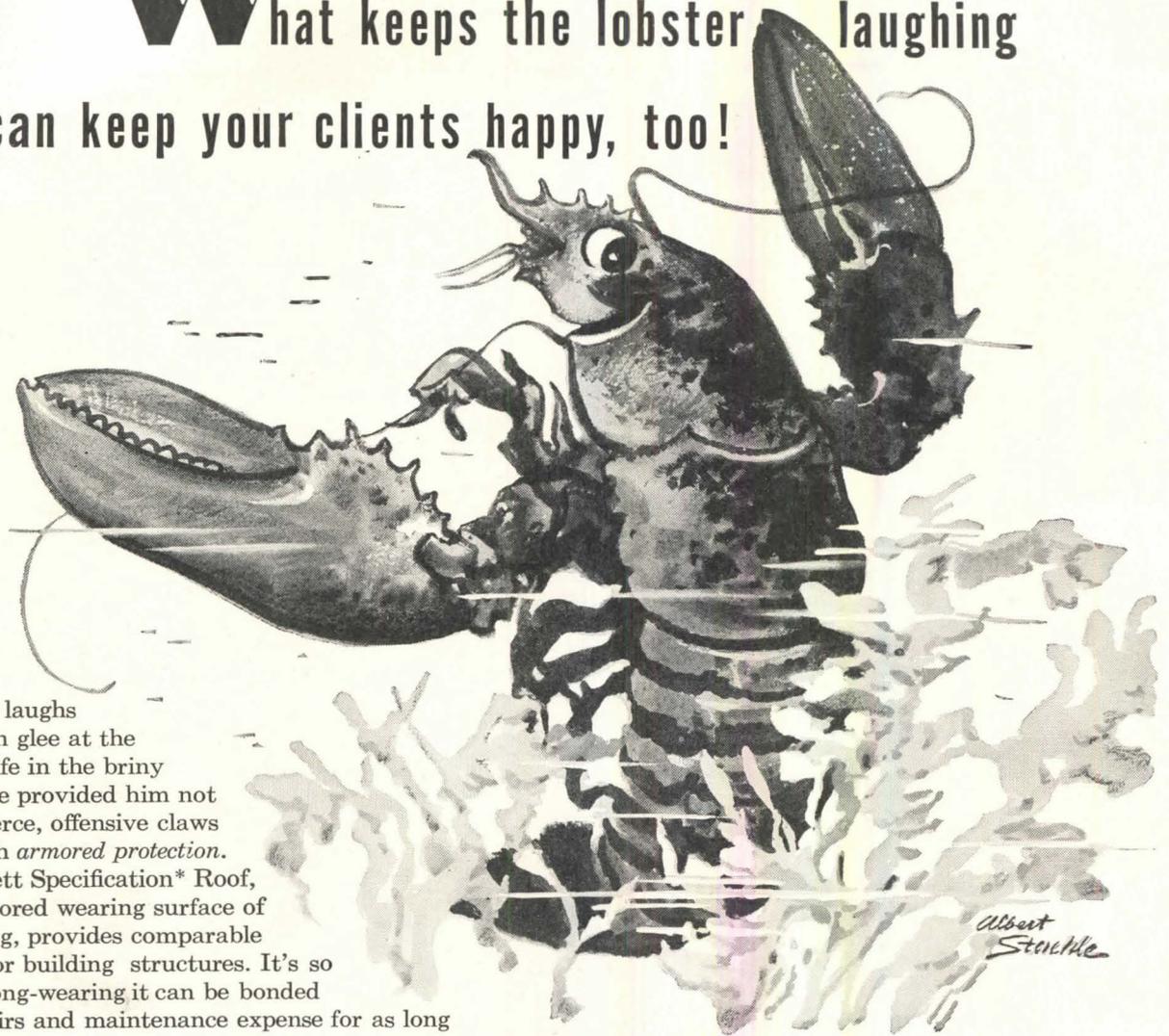
 Thermag Automatic Circuit Breaker Panelboards are available in standard and narrow column types, dust-tight and vapor-proof construction. Capacities 15 to 50 amps, 120 volt AC only — single or double pole, 4 to 42 branches with 115-230 volt, 3 wire or 120-208 volt, 4 wire solid neutral mains.

MAKERS OF...
BUSDUCT
PANELBOARDS
SWITCHBOARDS

Frank Adam
ELECTRIC COMPANY
ST. LOUIS, MISSOURI

SERVICE EQUIPMENT
SAFETY SWITCHES
LOAD CENTERS
ELECTRIC QUIKHETER

What keeps the lobster laughing can keep your clients happy, too!



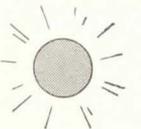
The Lobster laughs in crustacean glee at the dangers of life in the briny deep. Nature provided him not only with fierce, offensive claws but also with *armored protection*.

The Barrett Specification* Roof, with its armored wearing surface of gravel or slag, provides comparable protection for building structures. It's so tough and long-wearing it can be bonded against repairs and maintenance expense for as long as 20 years.

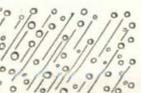
Over 90 years of successful roofing experience has demonstrated the sound value of the gravel or slag wearing surface of a Barrett Specification Roof:



1. It holds in place the heavy-poured (not mopped) top coat of coal-tar pitch—providing a doubly thick waterproof covering.



2. It provides protection against the sun's actinic rays which otherwise dry out the valuable oils in roofing bitumens.



3. It protects the roof against mechanical damage, hail and wind, wear and tear.



4. It interposes a surface of fireproof rock between the building and flying embers—makes a roof that carries Fire Underwriters' Class A Rating.

Built up of alternate layers of coal-tar pitch and felt, topped by a thick *pouring* of pitch to *anchor* the gravel or slag wearing surface, it is the toughest, longest-lasting built-up roof made. It is waterproof, fire-safe, sun-resistant, and armored against mechanical damage. Provide the best for the buildings you design. Include Barrett Specification Roofs in your building specifications. The Atomic Bomb Plant at Oak Ridge, Tenn., the Chrysler and R.C.A. buildings in New York, the Field Building in Chicago and many other famous American buildings—all Barrett-roofed—will confirm the soundness of your choice.



THE BARRETT DIVISION

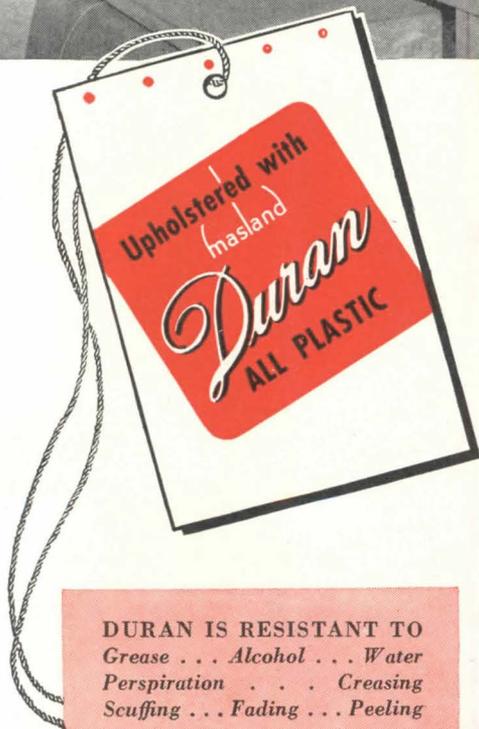
Allied Chemical & Dye Corporation
40 Rector Street, New York 6, N. Y.
2800 So. Sacramento Ave. Birmingham
Chicago 23, Ill. Alabama
In Canada: The Barrett Company, Ltd.,
5551 St. Hubert Street, Montreal, Que.

*Reg. U. S. Pat. Off.

In a restaurant of renown



Courtesy of Lindy's
1655 Broadway,
New York



DURAN IS RESISTANT TO
Grease . . . Alcohol . . . Water
Perspiration . . . Creasing
Scuffing . . . Fading . . . Peeling
CANNOT CHIP OR CRACK

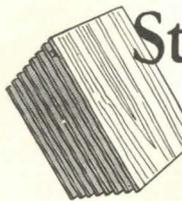
Duran is beautiful, resistant to wear and so easy to clean . . . small wonder it was selected for upholstery in Lindy's famed New York restaurant. *Duran is a new all plastic material . . . not a fabric.* Food stains, spilled drinks and smears cannot mar its tough yet resilient surface for Duran cleans as easily as porcelain.

There are literally dozens of places where Duran can add its inviting touch of luxury in cafe, lounge and guest rooms. On furniture, walls, paneling, booths and loges . . . wherever beauty and durability count specify Duran.

Whether the decorative motif is smart modernity or quiet conservatism, select from Duran's many lovely colors and finishes for that note of distinctive emphasis. Full information and samples on request.



MASLAND DURALEATHER COMPANY • 3236-3290 AMBER STREET • PHILADELPHIA 34, PA.

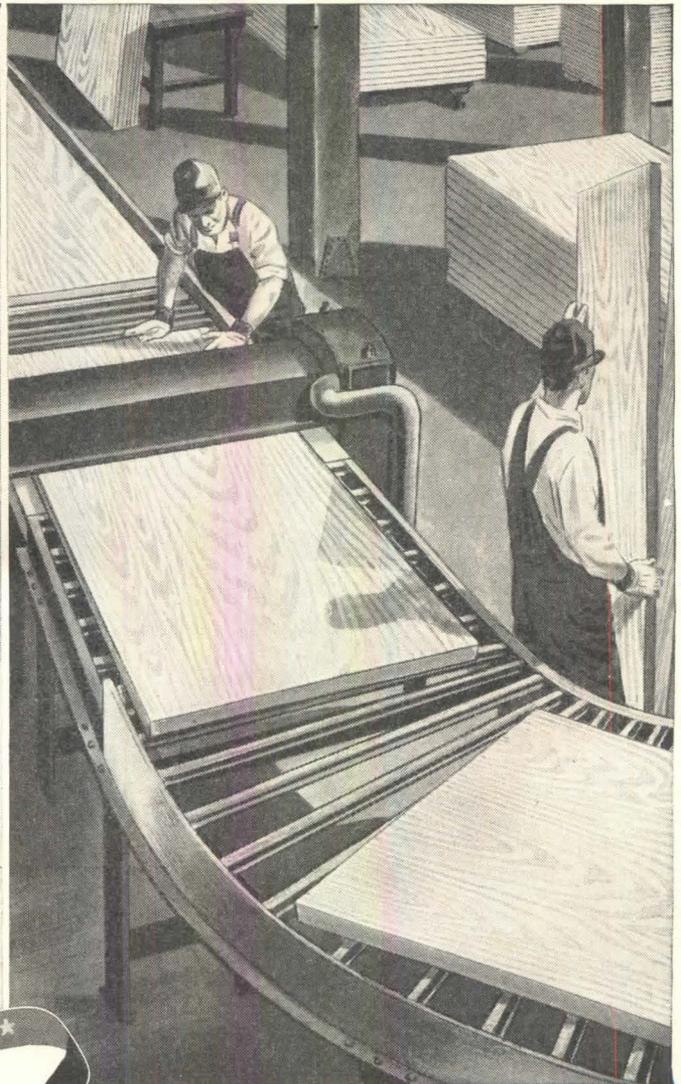
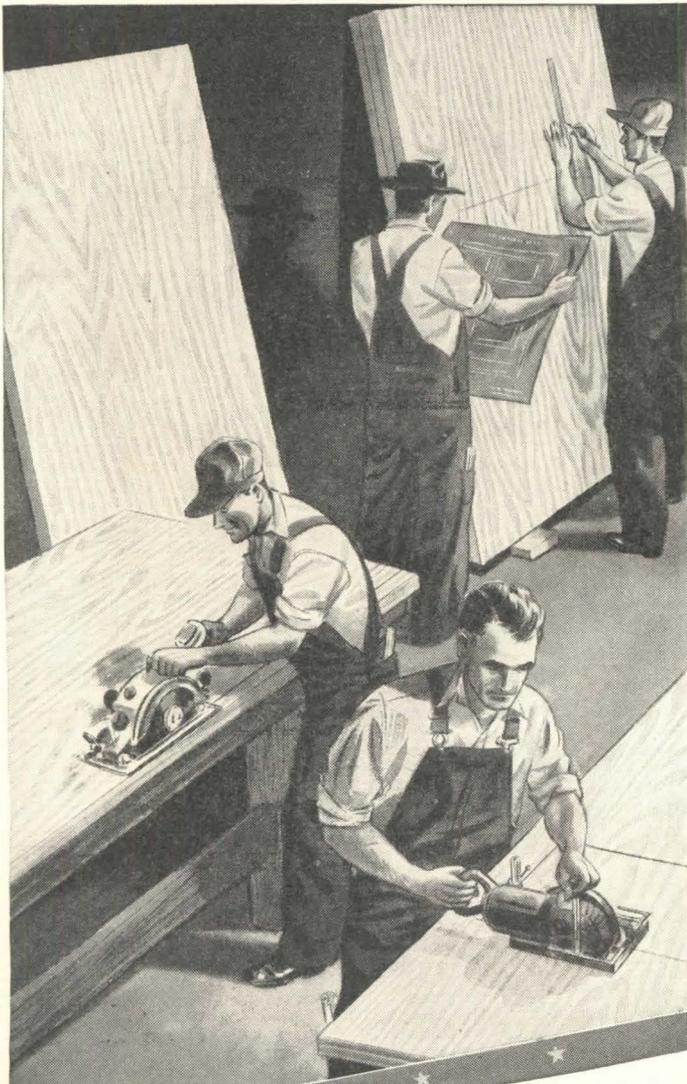


Stock Sizes Mean *Door and Plywood* Dividends for Our Customers—

Percentage-wise, it's quite a dividend. By concentrating all our production on stock size doors and plywood, production can be increased a minimum of one-third.

For instance, the man-hours required to cut three lights, will produce a complete stock door. Odd sizes and other special details further limit production

by added labor and material demands. The elimination today of all special doors — and concentration of our manpower and machines on stock sizes is a policy dictated by our customers' needs. It means more Roddiscraft Doors and Plywood for everybody — plus stocks in the warehouses for delivery where and when you want them.



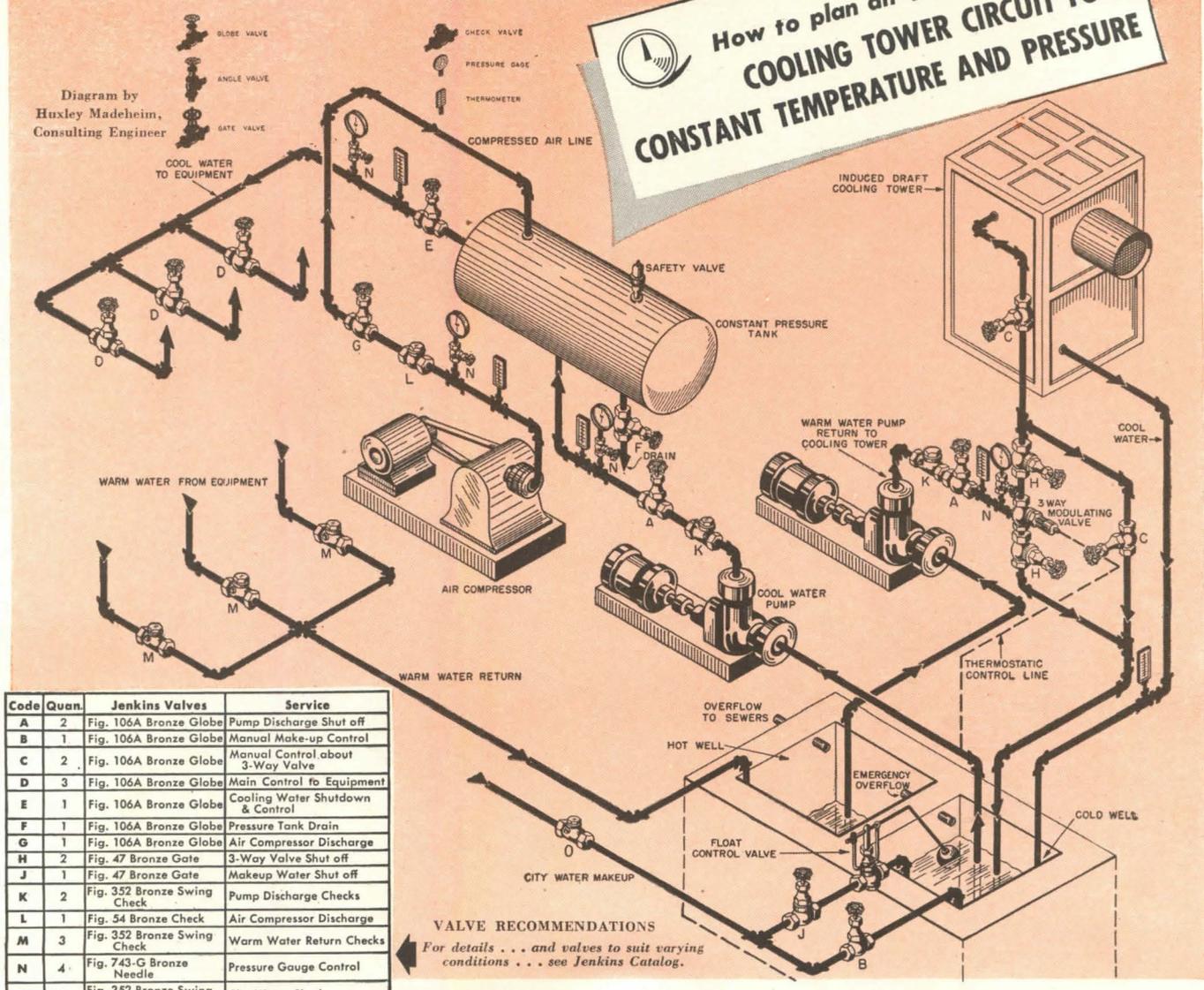
Roddiscraft
Roddis Lumber & Veneer Co.
MARSHFIELD, WISCONSIN

Roddiscraft WAREHOUSES

CAMBRIDGE 39, MASS. 229 Vassar Street
CHICAGO 8, ILL. 1440 W. Cermak Road
CINCINNATI 2, OHIO. 457 E. Sixth Street
DALLAS 10, TEXAS. 2800 Madill Street
DETROIT, MICH. 11855 E. Jefferson Ave.
KANSAS CITY 8, MO. 2729 Southwest Blvd.
LOUISVILLE 10, KENTUCKY ... 1201-5 S. 15th Street
LONG ISLAND CITY, N. Y. Review & Greenpoint Ave.
MARSHFIELD, WIS. 115 S. Palmetto Street
MILWAUKEE 8, WIS. 4601 W. State Street
NEW YORK CITY, N. Y. 920 E. 149th Street
SAN ANTONIO, TEXAS. 727 N. Cherry Street

DEALERS IN ALL PRINCIPAL CITIES

How to plan an INDUCED DRAFT COOLING TOWER CIRCUIT FOR CONSTANT TEMPERATURE AND PRESSURE



Code	Quan.	Jenkins Valves	Service
A	2	Fig. 106A Bronze Globe	Pump Discharge Shut off
B	1	Fig. 106A Bronze Globe	Manual Make-up Control
C	2	Fig. 106A Bronze Globe	Manual Control about 3-Way Valve
D	3	Fig. 106A Bronze Globe	Main Control to Equipment
E	1	Fig. 106A Bronze Globe	Cooling Water Shutdown & Control
F	1	Fig. 106A Bronze Globe	Pressure Tank Drain
G	1	Fig. 106A Bronze Globe	Air Compressor Discharge
H	2	Fig. 47 Bronze Gate	3-Way Valve Shut off
J	1	Fig. 47 Bronze Gate	Makeup Water Shut off
K	2	Fig. 352 Bronze Swing Check	Pump Discharge Checks
L	1	Fig. 54 Bronze Check	Air Compressor Discharge
M	3	Fig. 352 Bronze Swing Check	Warm Water Return Checks
N	4	Fig. 743-G Bronze Needle	Pressure Gauge Control
O	1	Fig. 352 Bronze Swing Check	City Water Check

VALVE RECOMMENDATIONS
For details . . . and valves to suit varying conditions . . . see Jenkins Catalog.

● **Constant Temperature and Pressure** are essential to some processes, such as the cooling of plastic molds. In such cases, a mechanical cooling system like the one shown is often preferred to the use of well water or city water.

Constant Temperature of the cooling water is maintained by automatically controlling the amount of warm water sent to the cooling tower. A three way modulating valve on the warm water pump line to the cooling tower is made responsive to a thermal control point in the suction line from

the cold well to the cooling water pump. When regulated, it will divert some of the warm water directly to the cold well.

Constant Pressure is maintained in the circuit by means of an air cushion in the cooling water tank, automatically controlled by an air compressor. This removes from the system all surges resulting from the operation of control valves on process equipment.

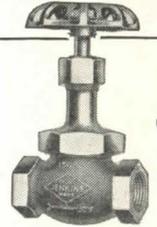
Consultation with accredited piping engineers and contractors is recommended when planning any major piping installation. Copies of Layout No. 20, enlarged, with

additional information, will be sent on request . . . also future Piping Layouts. Just mail coupon.

A CHOICE OF OVER 600 JENKINS VALVES
To save time, to simplify planning, to get the advantage of Jenkins specialized engineering experience . . . select all the valves you need from the Jenkins line, fully described in the Jenkins Catalog. It's your best assurance of the *lowest cost in the long run.*

Jenkins Bros., 80 White St., New York 13; Bridgeport, Conn.; Atlanta; Boston; Philadelphia; Chicago; San Francisco. Jenkins Bros., Ltd., Montreal.

LOOK FOR THIS  DIAMOND MARK
Since *Jenkins Bros* 1864



JENKINS VALVES

For every Industrial, Engineering, Marine, Plumbing-Heating Service . . . in Bronze, Iron, Cast Steel, and Corrosion-resisting Alloys . . . 125 to 600 lbs. pressure.

Sold Through Reliable Industrial Distributors Everywhere

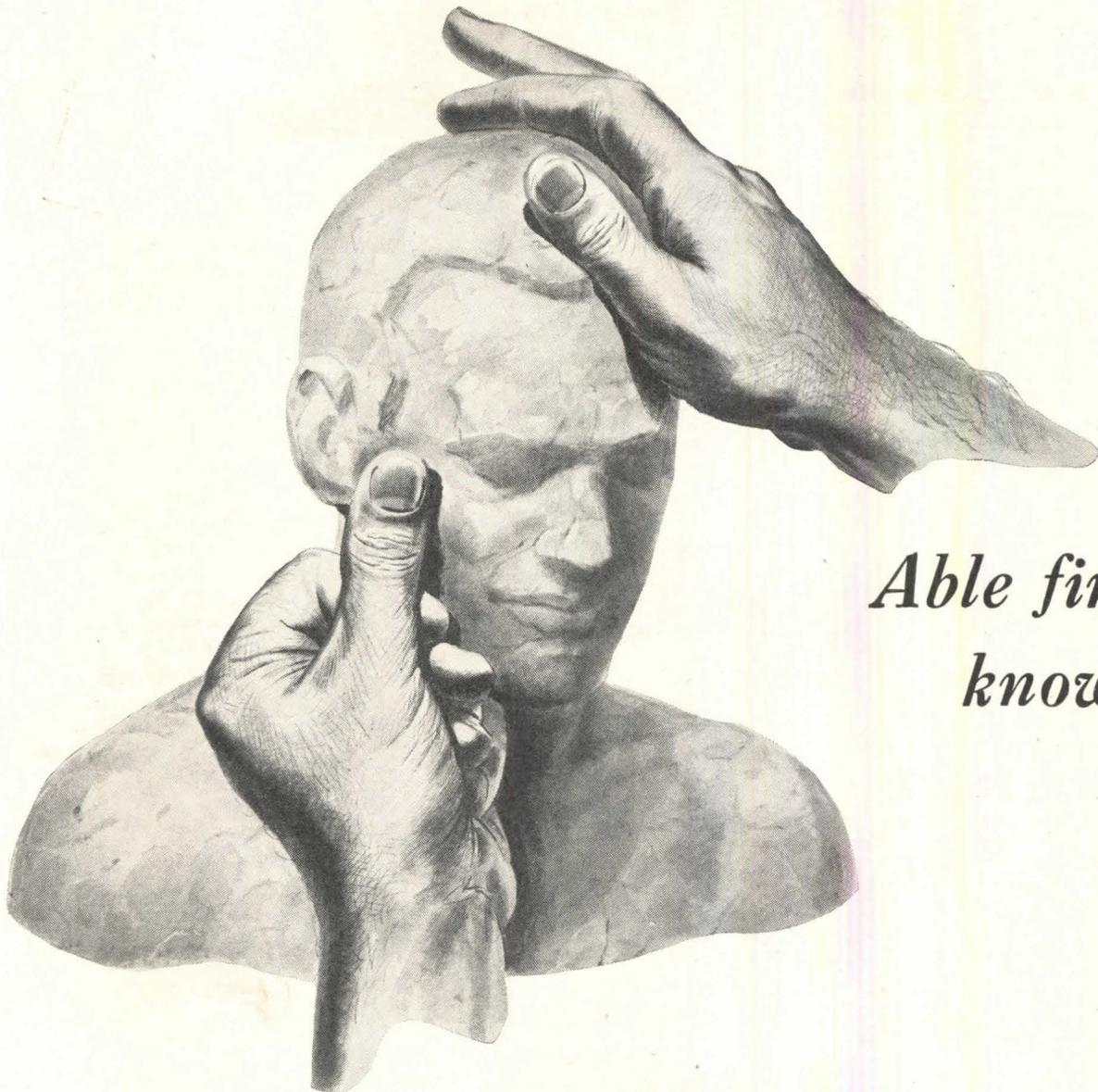
JENKINS BROS., 80 White St., New York 13, N. Y.

Please send us a reprint of Piping Layout No. 20 and future Layouts as they become available.

Name

Address

Company



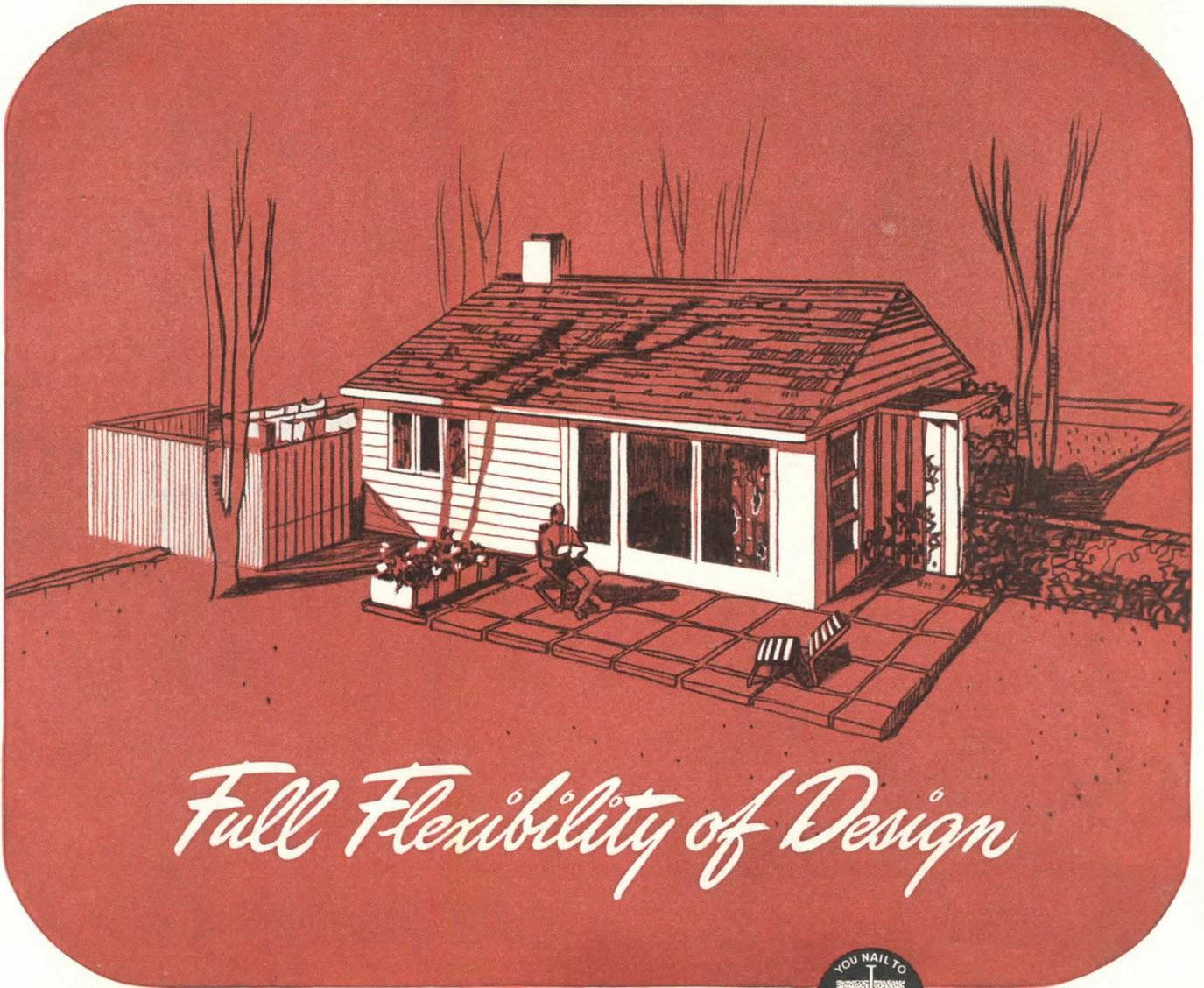
*Able fingers
know!*

Like sculpture, draftsmanship is dependent upon the *right* medium in the right fingers—Typhonite Eldorado pencils put smoother, crisper lines in your drawings—leave professional satisfaction in your heart.

**DIXON'S TYPHONITE
ELDORADO**



PENCIL SALES DEPT. 225-J3, JOSEPH DIXON CRUCIBLE CO., JERSEY CITY 3, N. J.



Full Flexibility of Design

Stran-Steel framing is a building product of Great Lakes Steel Corporation



Stran-Steel is versatile. It gives full scope to architectural planning, asks no compromise of beauty, utility or individuality of design. Its great flexibility is mainly the result of three factors:

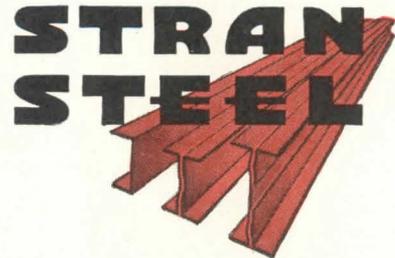
The Nailing Groove. This patented feature, found exclusively in Stran-Steel members, permits collateral materials to be *nailed directly to the frame*. Nails are bent and clenched in a "grip of steel," held 40% more firmly than in wood.

Assembly Methods. Practically any type of joint or connection can be accomplished, simply and efficiently, with Stran-Steel. Members are joined directly by self-threading screws or with the aid of specially designed Stran-Steel fittings. On large construction projects, erection can be further speeded by welding.

Pre-Cut Members. Stran-Steel members are cut to architect's exact specifications, for fast erection at the building site. Designing is simplified because the Stran-Steel system is simplified, utilizing only a few basic members.

Stran-Steel is especially economical for multiple dwelling units . . . highly practical for all light-load buildings. Fire-resistant, rigid and durable, it protects the building investment. For further information, see Sweet's File, Architectural, Sweet's File for Builders, or the January issue of Building Supply News.

BUILD WITH



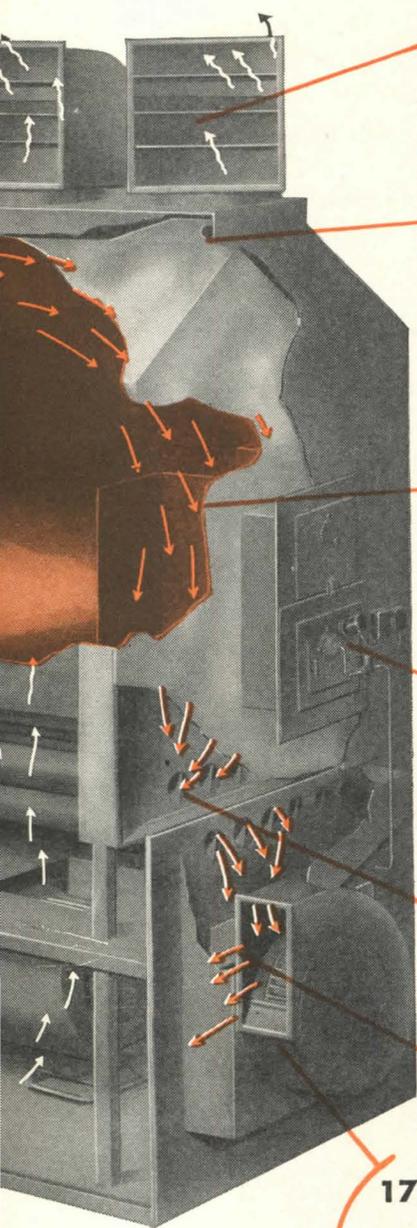
GREAT LAKES STEEL CORPORATION

Stran-Steel Division • Dept. 36 • Penobscot Building • Detroit 26, Michigan
UNIT OF NATIONAL STEEL CORPORATION

- 1 **Discharge nozzles** for warm air have directional vanes and can be rotated 360 degrees, to warm all parts of the working area. To heat an office or partitioned area, ducts can be utilized to divert heat from one or more nozzles.
- 2 Because of its heat resisting qualities, the **Stainless Steel Combustion Chamber** guarantees longer heater life and sustained heater efficiency, reduces weight of heater and eliminates refractory lining. Differential between operating and oxidizing temperatures is three times greater using stainless, as compared with designs employing carbon steel, with resulting greater protection.
- 3 The **outer casing** consists of two sheets of metal with an air space between. The inner sheet, which is cooled on both sides by the high velocity air stream, absorbs radiant heat from the combustion chamber and transmits it to the air stream, resulting in a minimum heat loss through the outer casing and keeping the exterior of the heater only warm to the touch. All seams are sealed with asbestos gaskets. Casing sections, fastened with sheet metal screws, are easily removable.
- 4 Every precaution has been taken to make Dravo Heaters **safe to operate**. Proper safety controls protect the unit in case of flame failure, ignition failure, power failure, excessive temperature in the air discharge or motor failure. In addition, combustion cannot take place unless main fans are blowing air over the chamber. In gas burning models, combustion chamber is automatically purged prior to ignition.
- 5 Full magnetic **automatic controls** are provided and mounted in totally enclosed box to keep out dirt and dust. An air space separates control box from heater casing to prevent heat transfer. Operation is thermostatically controlled and delivers usable heat within a few seconds. Selector switch permits manual operation and enables heater fans to be operated for ventilation without combustion taking place.
- 6 **White arrows indicate path of air.** Drawn in through the louvered base, air is warmed as it passes first over economizer tubes, then over every square inch of the stainless steel combustion chamber and finally, fully heated, is discharged with high velocity above working zone through louvered nozzles. **Counterflo Heat Transfer** is effected here when the coolest gases meet the coolest air. The temperature of the air is raised approximately 80°F. and that of the gases is lowered to about 500°F.
- 7 Strong, stiff **rotor shaft** carries air supply fans and exhauster. All fans are mounted on same shaft and are equipped with heavy duty ball bearings. Ample capacity **motor** is mounted on special hinge arrangement to permit self-adjustment of V-belt drive.
- 8 The Dravo Counterflo Heater uses a **minimum of floor space**. The wide range of sizes, 400,000 to 2,000,000 Btu per hour output, permits the use of a minimum number of units. Larger heat requirements are satisfied by using multiple units. Where floor space is not available, Dravo Heaters can be wall hung or suspended from roof trusses.
- 9 This Dravo Heater design is the result of over twelve years experience in building direct fired heaters for **thousands of successful installations**. It is the nearest approach to the ideal plant for open space heating of industrial and commercial buildings. The list of users of Dravo Heating contains hundreds of names of outstanding American and Canadian firms.
- 10 Many contractors use Dravo Heaters for **temporary heat** while building construction is in progress. Heaters are moved as required while construction is underway and later placed in permanent positions. No other heater is **simpler to install** than a Dravo Heater, because it is self-contained, uses no combustion chamber refractory lining, and the only field requirements are: Fuel supply pipe, power line and exhaust stack.



HEATER IS SUPERIOR FOR OPEN SPACE HEATING!



11 The Dravo Heater **recirculates** warm air at the **working level**, giving maximum comfort with **minimum roof heat loss** and no noticeable drafts. Warm air discharged by the Dravo Heater (approximately 11,000-cfm per million Btu) does not readily rise to the roof because it is replacing the cold air drawn from the floor. In buildings where vapor, fumes and smoke rise to the roof ventilators, the Dravo recirculation intake is at floor level and does not interfere with their journey.

12 The Dravo Heater is of simple design and is **sturdily constructed** of welded stainless and carbon steel. It is **easily moved** as requirements dictate and has lifting eyes for handling by crane. It is a compact, self-contained unit, **flame tested** at the factory, ready to operate. It does not require a special attendant and maintenance is negligible.

13 Here is how the Dravo Heater **efficiency of 80 to 85%** is obtained. Colored arrows illustrate the four-pass principle of Dravo design by showing the path of the flame and hot gases. Starting first at the burner the fuel and air are mixed and then electrically ignited and are sent swirling to the rear of the heater in a radiant flame and then, in a second pass, return in a "Counterflo" motion to the front of the chamber giving a combustion path length of $2\frac{1}{2}$ to 3 times that of a single pass chamber. This "Counterflo Combustion" method provides time and space to complete combustion. On the third and fourth passes the hot gases are "whirlcooled" through two sets of economizer tubes and thence discharged at relatively low temperatures through the exhauster. This results in maximum efficiency, uniform heat transfer and relatively uniform temperatures from all warm air discharge nozzles.

14 Dravo Heaters are so designed that **oil burners** and controls may be replaced with **gas burners** and controls or vice versa to take advantage of the most economical fuel. Both types take air for combustion from main supply fans, the quantity and velocity being controlled by an adjustable damper. New type oil burner (shown here) is dependable, simple in construction and free from maintenance trouble. The heater can be equipped with either a light or heavy oil burner. The gas burner is designed to burn natural, manufactured, coke oven, butane or propane gas.

15 Two staggered banks of **economizer tubes** equipped with inside whirlers "whirlcool" the hot gases. The coolest gases here meet the coolest air resulting in true "Counterflo" heat transfer. In this way, the heat is fully utilized before the gases are exhausted. The tubes are round, easily accessible and the whirlers are removable for easy cleaning.

16 An **adjustable damper** controls the draft created by the exhaust fan to maintain a constant negative pressure within the combustion chamber.

17 The **exhaust fan**, propelled by the same shaft which operates the main fans, controls combustion by exerting a constant negative pressure within the combustion chamber; pulls gases through economizer tubes, and discharges them into the stack. No high stack is needed to produce draft, nor is a high stack necessary to get rid of smoke and fly ash as flue gases are clear.

18 **Circulation of air in summer** is possible with a Dravo Heater because a selector switch permits operation of fans only. Special applications are available for **tempering make-up air** in cases where dust-laden or otherwise objectionable air is exhausted to atmosphere. Dravo Heaters provide a simple method of heating, in conjunction with complete **air conditioning systems**. Inlet louvers are of correct size to hold standard filters. Frames can be furnished for filters.

Write for Complete Descriptive Bulletin BC 516. Heating Section, Dravo Corporation, 300 Penn Avenue, Pittsburgh 22, Pa.



DRAVO CORPORATION

CHOOSING FLOORS FOR QUIET AREAS



With the public more aware of the ill effects of noise than ever before, architects are being confronted today with many questions and problems on how to eliminate it.

There are two basic solutions to noise problems. One is to absorb the noise that is originated within the room, which is the function of acoustical material. The other is to minimize the amount of sound that is produced. Resilient flooring materials can help in solving this problem by reducing the amount of sound from floor traffic.

Sources of Noise

Noises which come from loud voices, typewriters, telephones, and other equipment are difficult to silence or subdue. However, noises which originate from floor impact are more easily controlled.

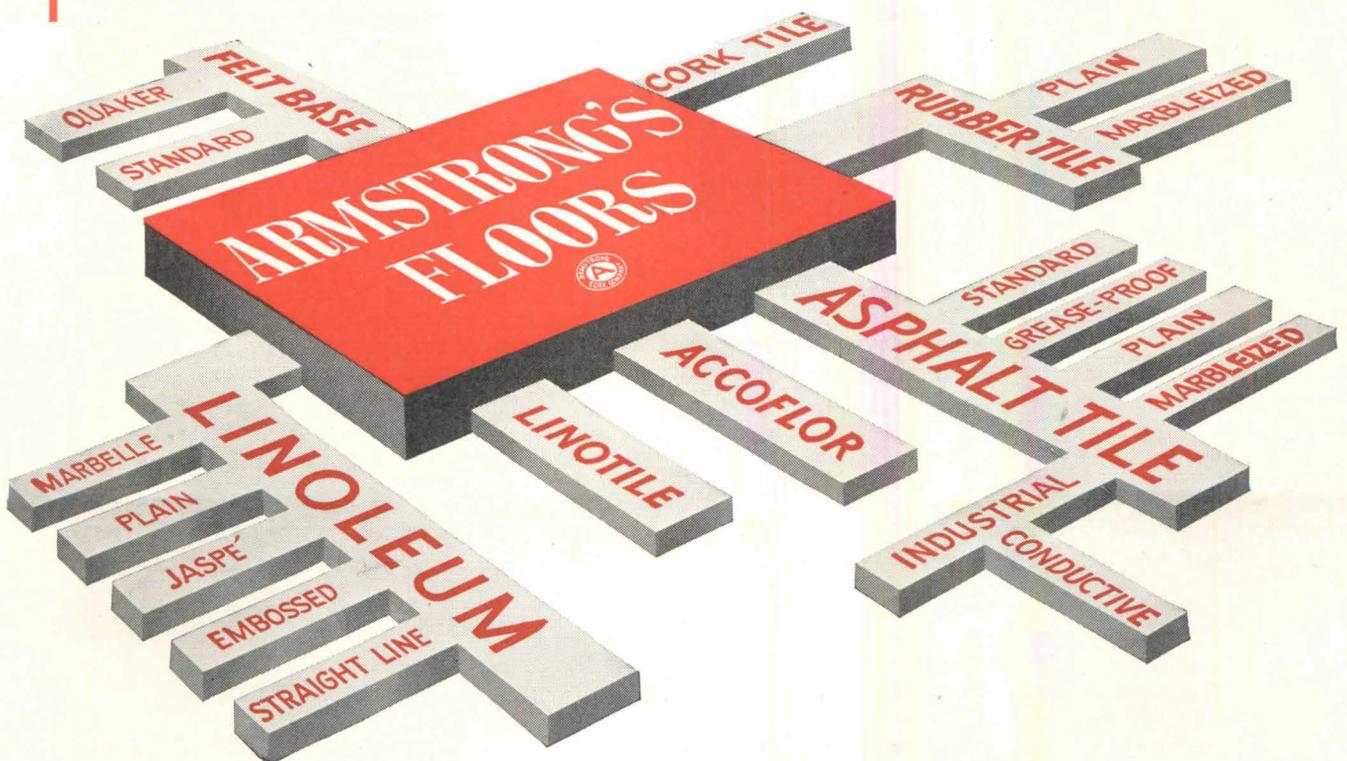
For example, the impact of footsteps on hard floors is a common source of annoyance. If a hard

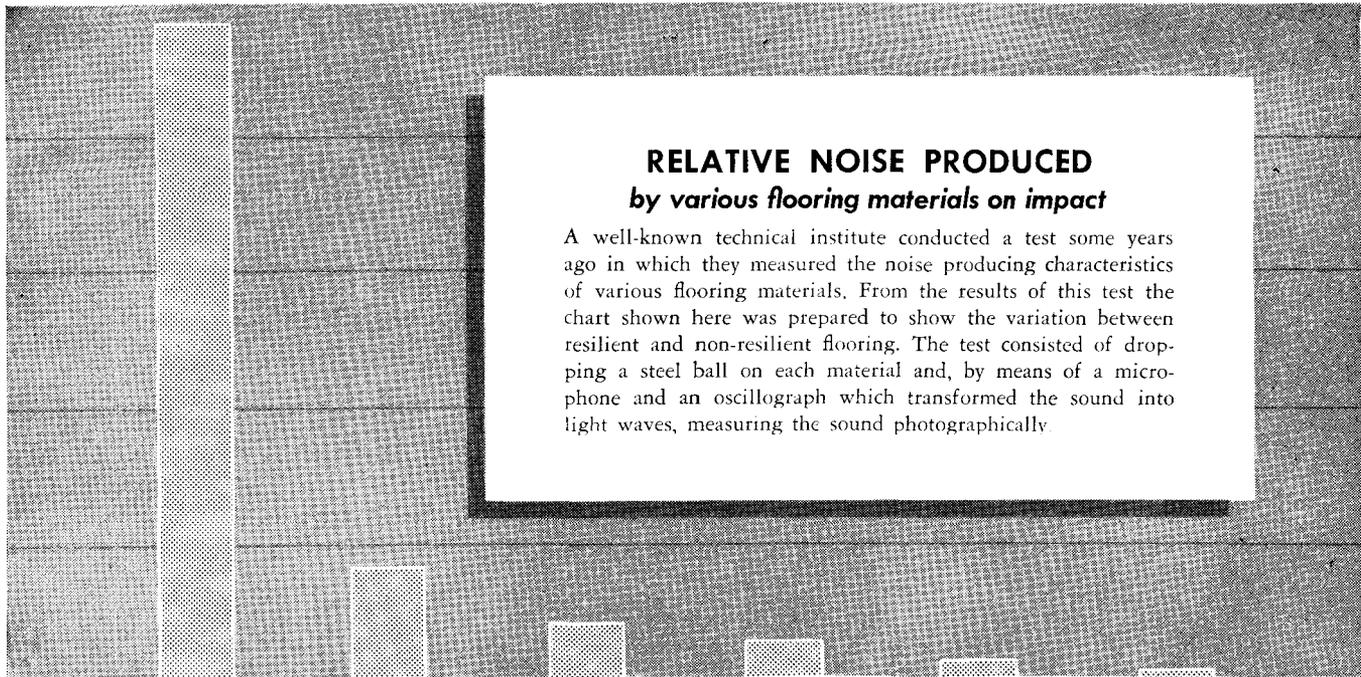
floor is used in a corridor with other hard surfaces, the noise of footsteps reverberates, and its effect is magnified many times until it becomes a serious disturbance not only to persons in the corridor itself but also to those in the rooms leading from the corridor. If a resilient floor is used, the amount of noise produced is so small that it is seldom a problem.

Resilient Floors Produce Less Noise

Resilient floors, because of their composition, give under the impact of footsteps, dropped objects, and rolling wheels. This cushioning effect which makes resilient floors so comfortable to walk on also reduces the noise of impact. For this reason, footsteps are much less audible in buildings having resilient floors than in those having hard floors.

All types of resilient floors rate well as "low noise producers," but some are better than others. For example, cork and rubber tile are the most quiet of the resilient floors. However, even in areas where maintaining quiet is a problem of great concern, many other factors should also be taken into con-





The average of all hard floors tested

Asphalt Tile

Linotile

Linoleum

Rubber Tile

Cork Tile

Non-resilient floors

Resilient Flooring Materials

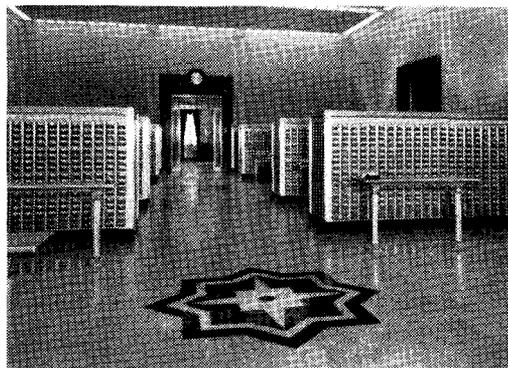
sideration in choosing a flooring material. Each resilient floor has its own unique advantages, and they should all be considered in making a selection for any area. Differences in the costs of the various materials usually are important. The ability to resist the effects of grease, alkali, moisture, or other unusual conditions to which the individual floor will be subjected, also needs to be given consideration. Color variety and decorative possibilities are other factors which enter into the selection of the floor material.

Resilient Floors Absorb Little Noise

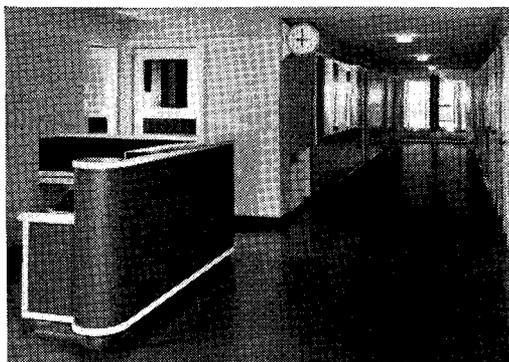
Although resilient floors have many advantages, sound absorbing qualities cannot be listed among them. Because resilient floors are referred to as "quiet" floors, people frequently make the mistake of believing that their use will stop the passage of sound from one room in a building to another. A resilient floor will soften footsteps so that they are less audible in a neighboring room or in the room on the floor below, but it will not stop the passage of noise through the building structure.

While acoustical or other materials may also be required to solve severe noise problems, the use of resilient floors is an inexpensive way, in nearly every case, to provide the most quiet conditions possible. These quiet floors involve little or no extra cost over hard and noisy materials.

If you have a noise problem, Armstrong will be glad to help you by making a thorough study of the problem and offering a recommendation based on its wide experience with both resilient floors and acoustical materials. Just contact any Armstrong office or write direct to the Armstrong Cork Company, Building Materials Division, 2403 Duke Street, Lancaster, Pa.



ARMSTRONG'S RUBBER TILE combines long wear and ease of maintenance with noise-reducing properties. In the Library of Congress Public Index Room, an air of dignity is achieved by the formality of design, as well as the quietness of this rubber tile floor. David Lynn, Architect.



ARMSTRONG'S LINOLEUM, a highly resilient flooring, is ideal for hospitals and other interiors where long wear, ease of maintenance, and a high degree of quiet are essential. The corridor above is one of the Armstrong's Linoleum installations in the Midland Hospital, Midland, Michigan. Alden Dow, Architect.

Who says you can't please Everybody!



ARCHITECTS...

Charm and beauty combined with long-lived practical utility... the aim of every architect.



BUILDERS...

Self-adjusting sleeves make installation quick and easy.



DEALERS...

Every dealer likes a well-known, fast-moving, 'no comeback' line.



... and that all important lady

Mrs. Public . . .

... and she's getting *more* important every day. Nationwide surveys and thousands of requests for literature prove how right Stanley designers were when they created this startling new and different line of Kitchen Cabinet Hardware.

This new hardware combines unsurpassed beauty with down-to-earth practical utility. It is one product you can suggest to home buyers and owners with absolute confidence... a product that will *stay* beautiful and practical on through the years. Write for a copy of "Jewels in the Kitchen". The Stanley Works, New Britain, Connecticut.



Strikingly beautiful latch handles, with ample finger room and studded with bright, jewel-like plastics... matching or contrasting pull knobs... hinges... catches... a complete new line of kitchen cabinet hardware that pleases EVERYBODY.

STANLEY

Trade Mark



2 Ways **RED LEAD** NEUTRALIZES ACIDS ...Retards Rusting

Those responsible for making metal last have long accepted Red Lead as the "standard" metal protective paint.

Now scientific research discloses sound reasons why Red Lead gives plus protection. For example, one important factor is Red Lead's ability to counteract the acid conditions which accelerate rusting.

Red Lead accomplishes this in two ways.

1. Red Lead Counteracts Environmental Acids: The uses to which structural steel is put normally expose it to acid environments. For one thing, it is usually subjected to the attacks of industrial gases and smoke. Certain of these, in contact with moisture, produce acid-forming compounds that speed up rusting. Then, too, pollution of waterways also results in acidity. Red Lead effectively neutralizes all such acids, and thus counteracts their rust-accelerating effect.

2. Red Lead Controls Inherent Acids: Many paint

vehicles, such as linseed oil, synthetic resin varnishes and other commonly used types, *themselves* produce organic acids during the natural process of ageing. Many of these inherent acids, too, hasten corrosion. However, when Red Lead is the pigment in a metal protective paint, this rust-causing acidity is kept in check. Thus, a "controlled" acid level is maintained in the paint film. This is a singular property of Red Lead and contributes greatly to its film flexibility, impermeability and long life.

* * *

Remember that Red Lead is compatible with practically all vehicles commonly used in metal protective paints, including the fast-drying resin types.

Specify **RED LEAD** for ALL Metal Protective Paints

The rust-resistant properties of Red Lead are so pronounced that it improves any metal protective paint. So, no matter

what price you pay, you'll get a better paint if it contains Red Lead.

WRITE FOR BOOKLET: "*Red Lead in Corrosion Resistant Paints*" is an authoritative guide for those who specify and formulate metal paint. It also includes typical specification formulas. For your copy, address nearest branch listed below.

* * *

The benefit of our experience with metal protective paints for both underwater and atmospheric use is available through our technical staff.

NATIONAL LEAD COMPANY: New York 6; Buffalo 3; Chicago 8; Cincinnati 3; Cleveland 13; St. Louis 1; San Francisco 10; Boston 6, (National Lead Co. of Mass.); Philadelphia 7, (John T. Lewis & Bros. Co.); Pittsburgh 30, (National Lead Co. of Pa.); Charleston 25, W. Va., (Evans Lead Division).



DUTCH BOY
Reg. U.S. Pat. Off.
RED LEAD



When the blueprints call for
RADIANT HEATING . . .

here's why you'll want *Copper Tube*

YOU'RE designing for *lasting* appreciation. So, for the radiant heating system, be sure to include *copper tube* in your specifications. The great durability and long-range economy of Chase Copper Tube mean a satisfied client, and satisfied clients build business and prestige for you.

You boost your stock with heating contractors, too, when the specifications call for Chase Copper Tube.

It's easy to bend, light in weight, comes in long lengths, and is sold through plumbing and heating wholesalers throughout the country.

The demand for Chase Copper Water Tube is so great that we are not able to satisfy it at all times. However, the technical information is now available to you for future planning. For a complimentary copy of our new handbook write, on business letterhead, to Dept. AR37.

**7 Reasons
WHY CHASE COPPER TUBE
FOR RADIANT HEATING**

1. EASY TO BEND
2. LIGHT IN WEIGHT
3. SOLDERED FITTINGS
4. SMALL DIAMETERS
5. LONG LENGTHS
6. LOW COST
7. LONG LIFE



Chase
BRASS & COPPER CO.

Waterbury 91, Connecticut
SUBSIDIARY OF KENNECOTT COPPER CORPORATION

This is the Chase Network—handiest way to buy brass

INCORPORATED

ALBANY† ATLANTA† BALTIMORE BOSTON CHICAGO CINCINNATI CLEVELAND DETROIT HOUSTON† INDIANAPOLIS JACKSONVILLE† KANSAS CITY, MO. LOS ANGELES MILWAUKEE
MINNEAPOLIS NEWARK NEW ORLEANS NEW YORK PHILADELPHIA PITTSBURGH PROVIDENCE ROCHESTER† SAN FRANCISCO SEATTLE ST. LOUIS WASHINGTON† (†Indicates Sales Office Only)

ATLAS LABOR-*SAVING* *SPEED* FORMS



SPEED PLUS ECONOMY

WITH
**LABOR-*SAVING*
ATLAS *SPEED* FORMS**

Some More Users

- The Austin Company
- Brown & Matthews
- V. Barletta
- Caisson Foundation Corporation
- Clevorock
- Consolidated Engineering Company
- Cayuga Construction Company
- Day & Zimmerman
- E. I. du Pont de Nemours
- James Stewart & Co.
- Sinclair Refining Co.
- McCloskey Homes

WHEN LEADING Architects, Engineers and Builders everywhere use and recommend the Atlas process of Concrete Form Construction again and again on job after job you can be sure of this—it is doing a better job at a worthwhile saving in time, material and money compared with the forms previously used. Savings of 25 to 50% are not unusual with Atlas *SPEED* Forms.

A *Designed* Steel Form with strength built in—good for re-use indefinitely without repair. Easy to assemble with non-clog wedge bolts—only a hammer is needed . . . a particular advantage where skilled labor is scarce, for semi-skilled or unskilled labor can set, move and strip these new forms easily and rapidly.

Forms line up straight and true. No studs needed in wall forms, no joists in slab forms. Adjustable to suit any condition.

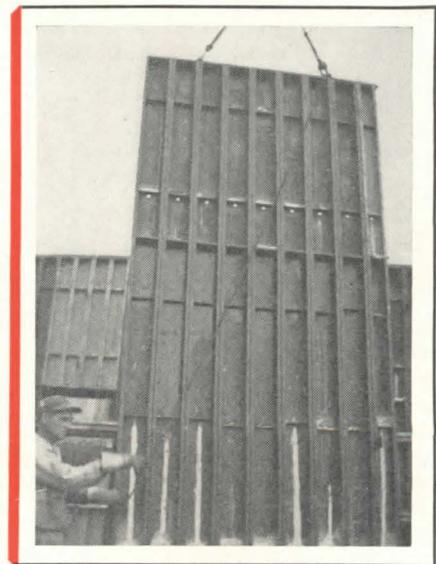
Available Now For Early Delivery

Write For Complete Facts and Prices

Irvington Form & Tank Corp.

WRITE Dept. A
New York City Sales Office: 43 Cedar Street

IRVINGTON 24, NEW YORK
Telephone BOWling Green 9-4030



Forms are set and moved most economically in large panels by using a crane, but can be easily set, stripped and moved in smaller units by hand. Weight per unit only 45 lbs.

Atlas Labor-Saving Concrete Forms for every Purpose

FLEXSTONE BUILT-UP ROOFS

"Made of asbestos,
each ply is a flexible
covering of stone"



RESISTS FIRE: Burning embers or brands, blown from neighboring fires, burn out harmlessly on Flexstone Roofs. In spite of the intense heat and flame, the asbestos felts prevent the roof deck from catching fire. Here's further assurance that you get greater fire-safety with Johns-Manville Flexstone Built-Up Roofs.

BUILT-UP with asbestos felts which are fireproof, rotproof, and weatherproof, Johns-Manville Flexstone Roofs offer the most enduring and reliable protection for your buildings.

Flexstone Roofs are *smooth-surfaced*, permitting quick and thorough roof drainage. They won't dry out from the sun . . . require no periodic coating. Upkeep expense is minimized, as actual roof can be seen—any damage is easily found and repaired.

All Johns-Manville Flexstone Roofs are engineered to the particular requirements of your building—whether it's new construction or a re-roofing project. To insure skilled application, they are applied by Johns-Manville Approved Roofers.

Three grades are available: *Flexstone Super "A"*, *Flexstone Standard*, and *Flexstone Service*—each the finest that can be specified for its purpose. Write for our brochure BU-51A. Johns-Manville, Box 290, New York 16, N. Y.

Because of unprecedented demand, there may be times when we cannot make immediate delivery of materials. Please anticipate your needs.

Johns-Manville **FLEXSTONE BUILT-UP ROOFS**

THE BUILDING *that had no basement* EVERY TIME IT RAINED!

The finest home, store, or building you plan and build may be subjected to needless damage . . . unless you provide proper backwater control. If the sewage and drainage facilities of the community are not adequate to carry off the deluge of heavy rains and thaws, the water in the sewers will back up through drain lines and basement floor drains into the basement. Equipment and goods stored in the basement will become waterlogged . . . there will be deposits of unsanitary residue . . . expensive repairs may result! Actually, the building loses the use of the basement with every heavy rain! To guard against this ever happening to your homes or buildings, include a Josam Backwater Sewer Valve in every plan. The cost is so little compared with the protection it provides!



PLAN FOR
constant
ACTION!

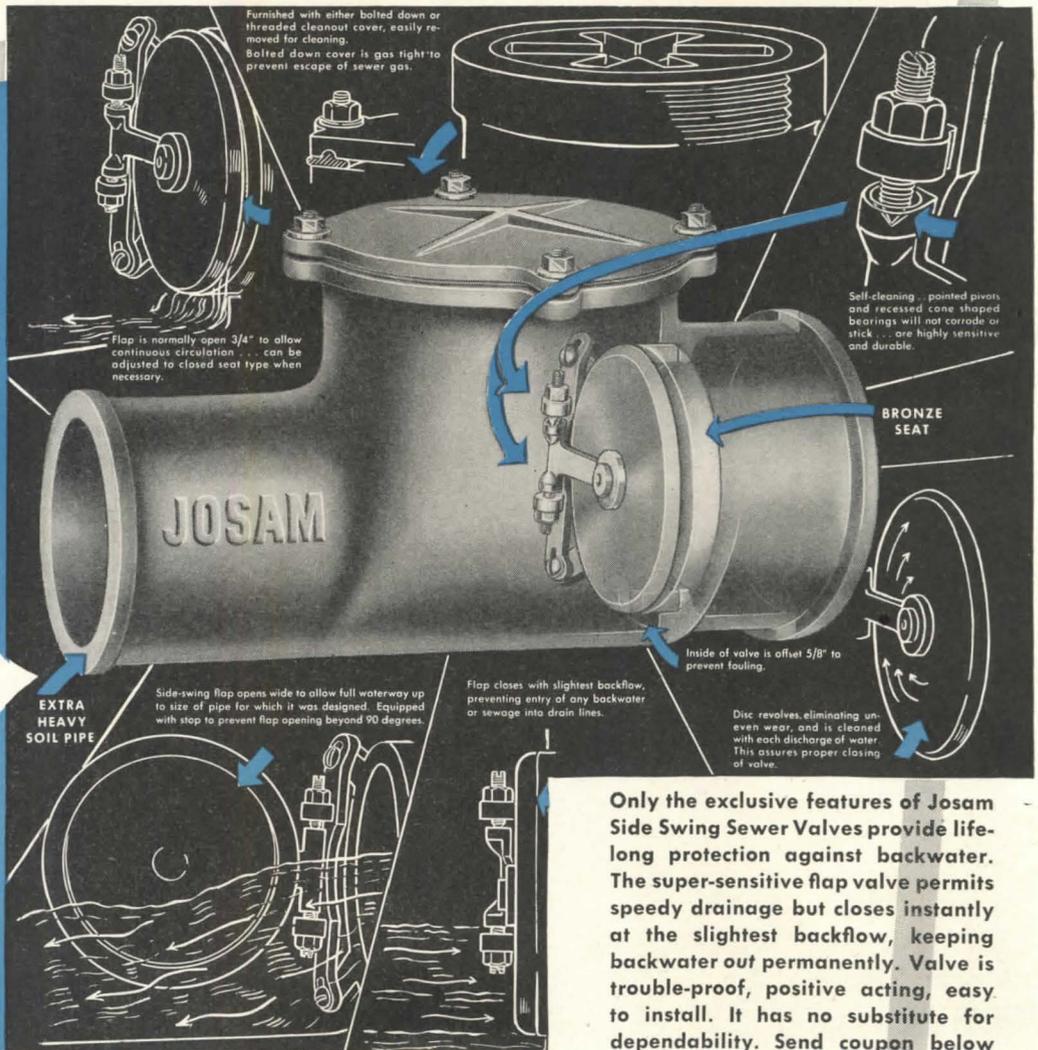
only

Josam

**Side Swing
Backwater
Sewer Valves**

provide this

*Exclusive
Protection.*



Only the exclusive features of Josam Side Swing Sewer Valves provide life-long protection against backwater. The super-sensitive flap valve permits speedy drainage but closes instantly at the slightest backflow, keeping backwater out permanently. Valve is trouble-proof, positive acting, easy to install. It has no substitute for dependability. Send coupon below for complete information on installation details, sizes, etc. No obligation.

To be sure—Put Josam on the Job!

JOSAM MANUFACTURING COMPANY

Executive Offices, 302 Empire Bldg., Cleveland 14, O. • Manufacturing Div., Michigan City, Ind.

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



See our Catalog in Sweets'. Member of the Producer's Council

FILL OUT AND MAIL THIS COUPON TODAY!

JOSAM MANUFACTURING CO., 302 EMPIRE BLDG., CLEVELAND 14, OHIO
Please send me free folder on "Backwater Control"

Name _____
Firm _____
Address _____
City _____ State _____

A typical use industrial architects are making of Insulux Glass Block is seen in Rock Island Lines' new Chicago shops. Exterior design is dominated by Insulux panels with continuous windows below. The interior is flooded with diffused daylight. Architects: DeLeuw & Cather.



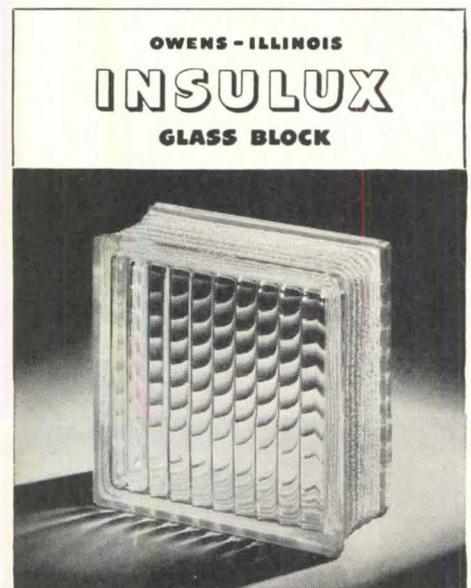
Ceiling-high Insulux panels distribute daylight across broad work areas, cut off distracting views. Clear windows furnish ventilation and vision out. Insulux Glass Block has proven advantages in all classes of construction.

How an architectural material works for industry

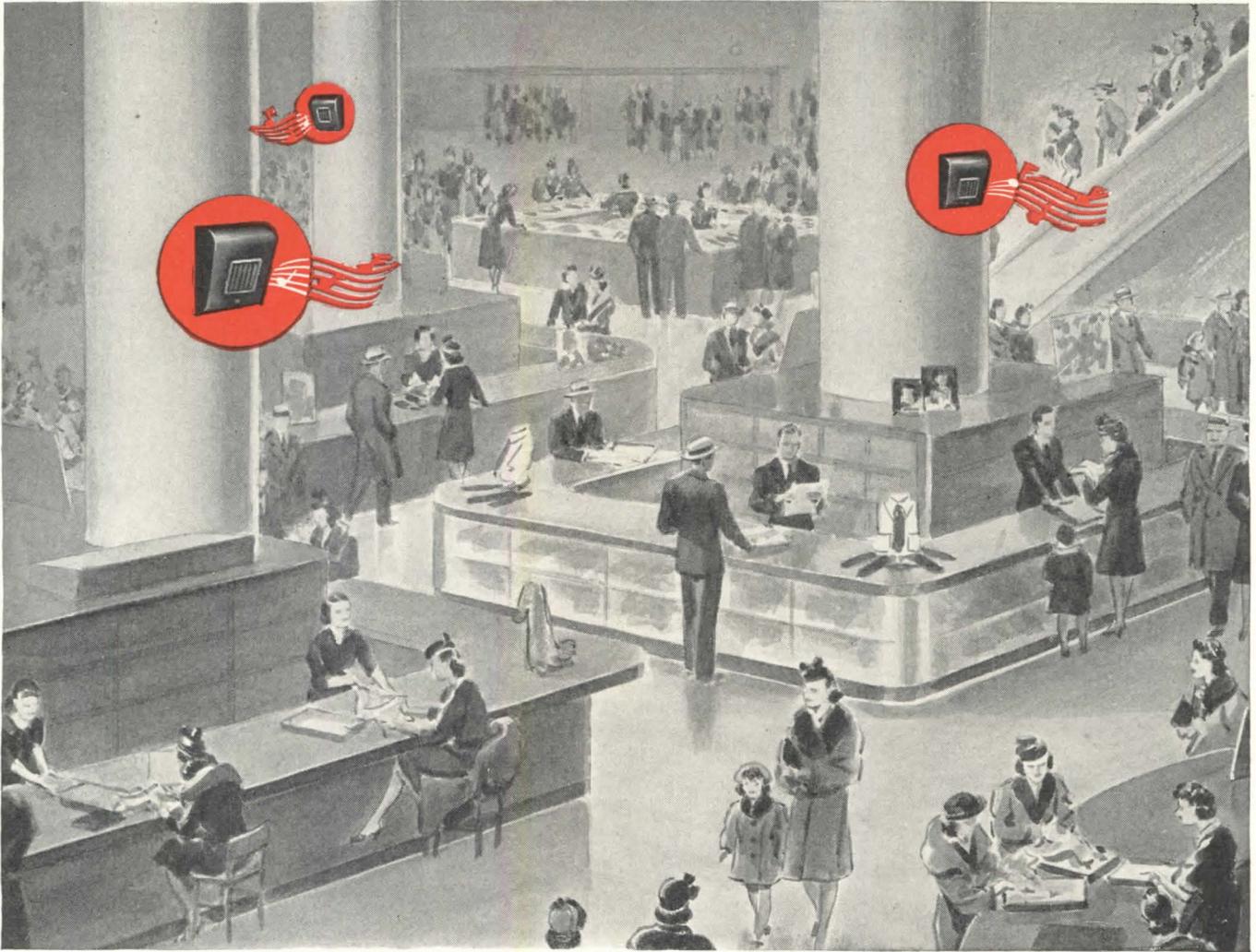
IMPROVED working conditions and low maintenance costs come automatically with Insulux Glass Block—a material of recognized architectural merit.

In key with contemporary architectural thinking for industrial buildings, Insulux has also won enthusiastic industrial approval. Management favors the prevention of rot, rust and corrosion—elimination of painting—the ease of cleaning. High insulating value makes possible *economical* air conditioning of wide areas. Heat loss in winter and heat gain in summer are materially reduced.

For the many practical uses of Insulux Glass Block in industrial, commercial and residential construction, consult the "Glass" section of Sweet's Architectural Catalog. You will find technical data, specifications and installation details. Or write Dept. D-3, Owens-Illinois Glass Company, Insulux Products Division, Toledo 1, Ohio.



Insulux Glass Block is a functional building material—not merely a decoration. It is designed to do many things other materials cannot do. Investigate!



When SOUND takes over-- SALES go into high gear

DEPARTMENT-STORE EXECUTIVES find that the friendly, relaxing atmosphere of music broadcast in the store builds customer good will . . . induces shoppers to stay longer and make more purchases.

Many stores use sound systems for making spot announcements to customers . . . calling their attention to bargains, slow-moving items, and store services. Some managers devote the few minutes before opening time to instructing their sales people *at their stations*, in matters pertaining to the day's work.

In case of fire or other emergency, the RCA Sound System helps to control and prevent panic.

All of the above benefits are designed into an RCA Sound System . . . unit-built to standardized dimensions . . . styled to harmonize with modern interiors . . . composed of precision-matched units, to provide exactly the services desired.

For specifications and further information on RCA Unit-Built Sound Systems, write: Dept. 10-C, Sound Systems, Radio Corporation of America, Camden, New Jersey.



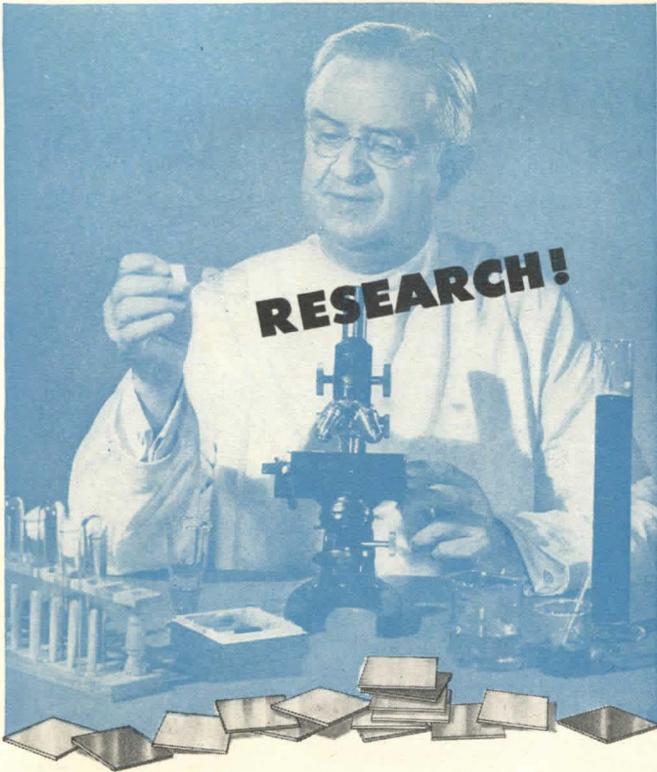
RCA's *Unit-Built* SOUND CONTROL SYSTEM

The console illustrated provides complete paging and announcing service . . . recorded music and radio (AM, FM, and short wave) to as many as 128 loudspeaker zones. Other console combinations are available to satisfy the needs of all types and sizes of stores.



SOUND SYSTEMS
RADIO CORPORATION of AMERICA
ENGINEERING PRODUCTS DEPARTMENT, CAMDEN, N.J.

In Canada: RCA VICTOR Company Limited, Montreal



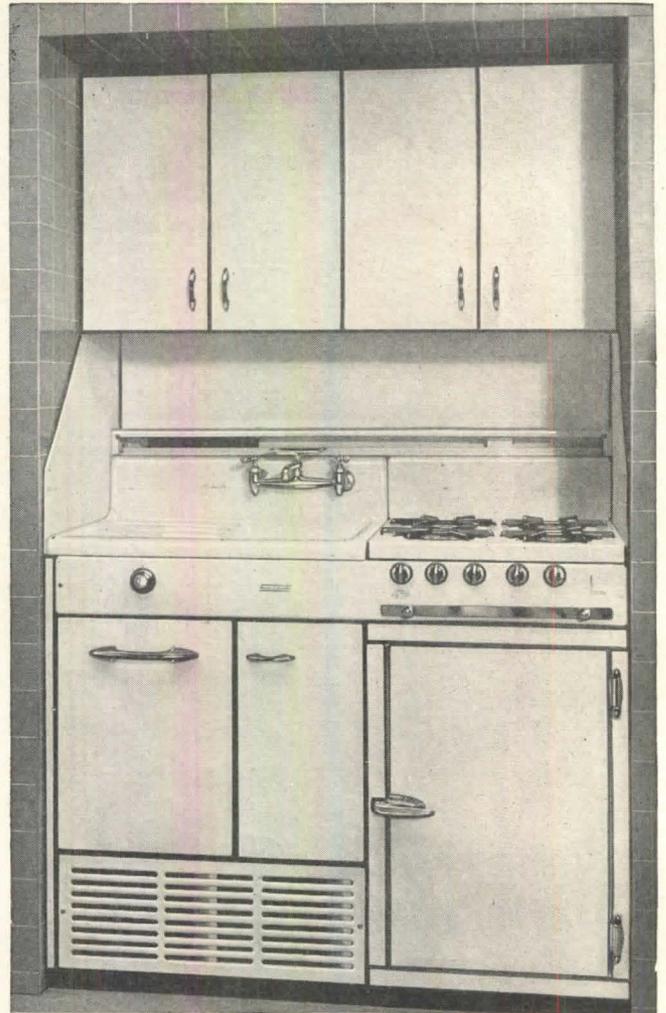
HOOD

Rubber Tile Flooring

For 53 years Hood has based the superiority of its products on *research*. Today, the research laboratories of both B. F. Goodrich and the Hood Rubber Company stand squarely behind every block of Hood Rubber Tile.

The advantage of such research facilities becomes obvious when you specify. They protect your best judgment and assure unquestioned quality. However, it is actual test-by-wear that makes Hood Rubber or Asphalt Tile the choice of so many architects and designers.

Specify Hood Rubber or Asphalt Tile and you specify flooring that satisfies the most particular client. For an idea of what you can do with color, pattern and design, see *Sweet's*, or send for the new color catalog on Hood Resilient Flooring—America's leader since 1925.



Engineered for Apartments

Designed to make maximum use of precious inches . . . and thus provide GENUINE kitchen convenience in unbelievably compact space.

MURPHY CABRANETTE KITCHENS

Made for long, tough service without trouble to tenants . . . with negligible upkeep costs for owners.

Ranges (electric or gas) and refrigerators are improved models of those which proved their worth in more than 40,000 prewar installations. Exposed surfaces are genuine vitreous porcelain . . . quickly cleansable with soap and water and forever free from need of repainting.

Write for catalog showing available models and name and location of our nearest representative.

(Model shown is Murphy Cabranette Kitchen No. 480 . . . full kitchen convenience in two by four feet)

DWYER PRODUCTS CORPORATION
Michigan City Dept. R3 Indiana

WITH COPPER TUBES;

you subtract installation time . . .

add years of rust-free service



WHETHER it's a heating installation like this one, or a simple plumbing job for a small home, Anaconda Copper Tubes offer the advantages of comparatively easy installation, freedom from rust, light weight, smooth flow through solder-type fittings, moderate cost and long-term service.

The economies afforded by copper tubes make them a paying investment not only for water lines, but also in forced circulation hot water heating, as well as for lawn sprinkler systems, tank-to-oil-burner, bottled gas and other connections.

Anaconda Copper Water Tubes, Types K and L, together with solder-type fittings are supplied by wholesale distributors from coast to coast. Further information in Sweet's, 1946, A-26-1.

4776-B

ANACONDA
from mine to customer

Anaconda
COPPER TUBES

THE AMERICAN BRASS COMPANY
General Offices: Waterbury 88, Connecticut
Subsidiary of Anaconda Copper Mining Company
In Canada: ANACONDA AMERICAN BRASS LTD.
New Toronto, Ont.

TONCAN IRON

Contains Extra Copper PLUS Molybdenum



Yes, it's extra copper—actually, twice as much as contained in copper-bearing steel—plus molybdenum that gives Toncan Iron the *greatest rust-resistance of all ferrous materials in its price class.*

For nearly 40 years, Toncan Iron has been a leader in its field—imparting longer life, lower cost and greater user-satisfaction to all types of sheet metal products. In countless installations Toncan Iron repeatedly has demonstrated its ability to outlast other ferrous materials.

Made from highly refined open-hearth iron, Toncan Iron is uniformly ductile . . . fabricates readily and easily by all methods.

For low-cost, unfailing rust protection in every type of sheet metal product, make it a point always to specify long-lasting Toncan Iron. Full information on request.

REPUBLIC STEEL CORPORATION
GENERAL OFFICES • CLEVELAND 1, OHIO
Export Department: Chrysler Building; New York 17, New York

See SWEET'S FILE
—or write us for detailed information on these Republic Steel Building Products:
Pipe—Sheets—Roofing
Enduro Stainless Steel
Toncan Enameling Iron
Electrunite E.M.T.
Fretz-Moon Rigid Steel Conduit
Taylor Roofing Ternes
Berger Lockers, Bins, Shelving and Kitchen Cabinets
Truscon Steel Windows, Doors, Joists and other building products



—for ducts, gutters, conductor pipes, roofing, siding, tanks, ventilators, skylights, hoods and other sheet metal applications requiring rust-resistance—and for corrugated metal drainage products

All electrical systems are "SUBJECT TO CHANGE"

Electrical distribution systems ought to be tagged "Subject to Change."

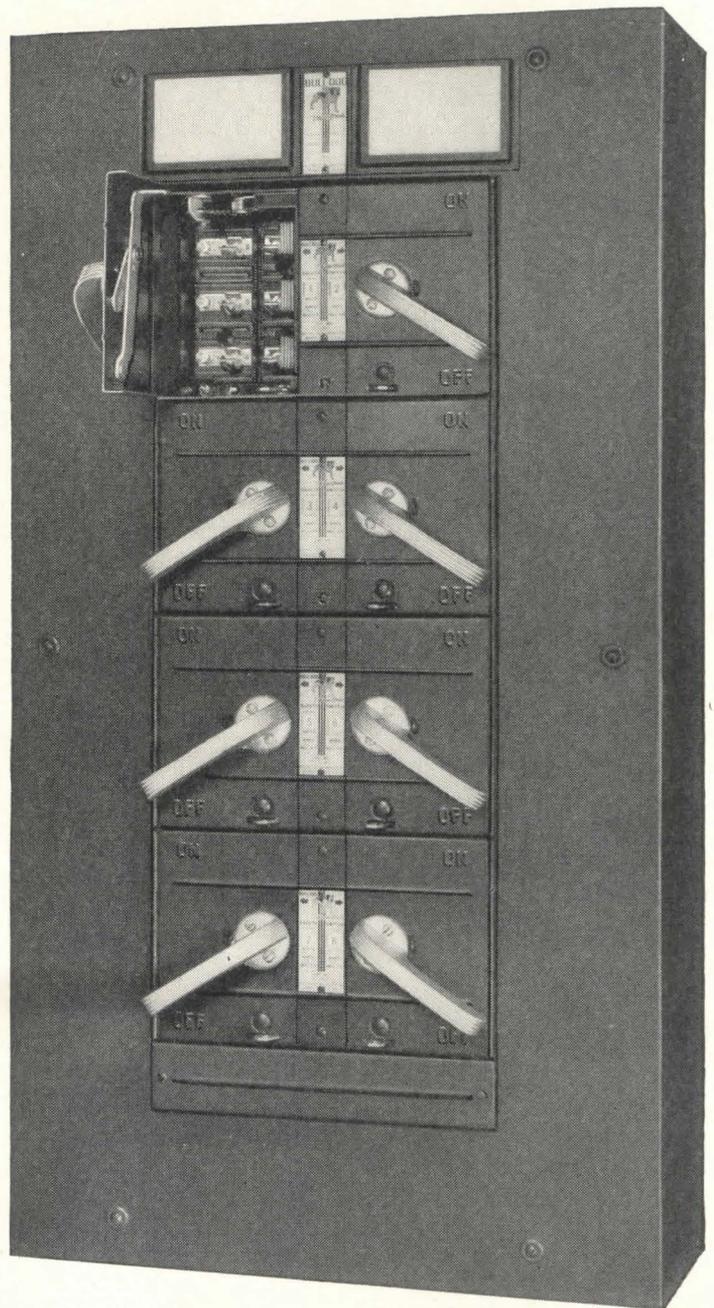
Architects know that it's a rare installation that doesn't have need for replacements, removals or additions among existing circuits—sooner or later.

You can give every distribution system a headstart that helps lick these problems by specifying BullDog Vacu-Break Switchboards. These modern distribution control centers feature flexibility, convertibility and ample provision for any and all future expansion.

Front-operated switch units embody the unique Vacu-Break principle to smother arcs quickly and safely, preventing burning and pitting of contacts. And BullDog's self-aligning "Clampmatic Contacts" provide bolt-tight pressure to assure high conductivity, low heat losses, longer life and less maintenance.

Horsepower-rated and equipped with "quick-make" and "quick-break" operating mechanism, BullDog Vacu-Break Switchboards can be used for operating switches as well as for disconnect switches.

Act now to eliminate inefficient "ganging" of switches on makeshift racks. Our nearby field engineer will explain BullDog Vacu-Break Switchboards and their marked advantages in flexibility and performance. Call him today, or write BullDog direct for descriptive literature.



Vacu-Break Switchboards are available in 30 Amp. to 600 Amp., 2 & 3 Pole Circuits, 575 Volts and less.

BullDog manufactures Vacu - Break Safety Switches - SafToFuse Panelboards - Superba and Rocker Type Lighting Panels - Switchboards - Circuit Master Breakers - "Lo-X" Feeder BUS - Distribution DUCT - "Plug-in" Type BUS - Distribution DUCT - Universal Trol-E-Duct for flexible lighting - Industrial Trol-E-Duct for portable tools, cranes, hoists.



BULLDOG

ELECTRIC PRODUCTS COMPANY



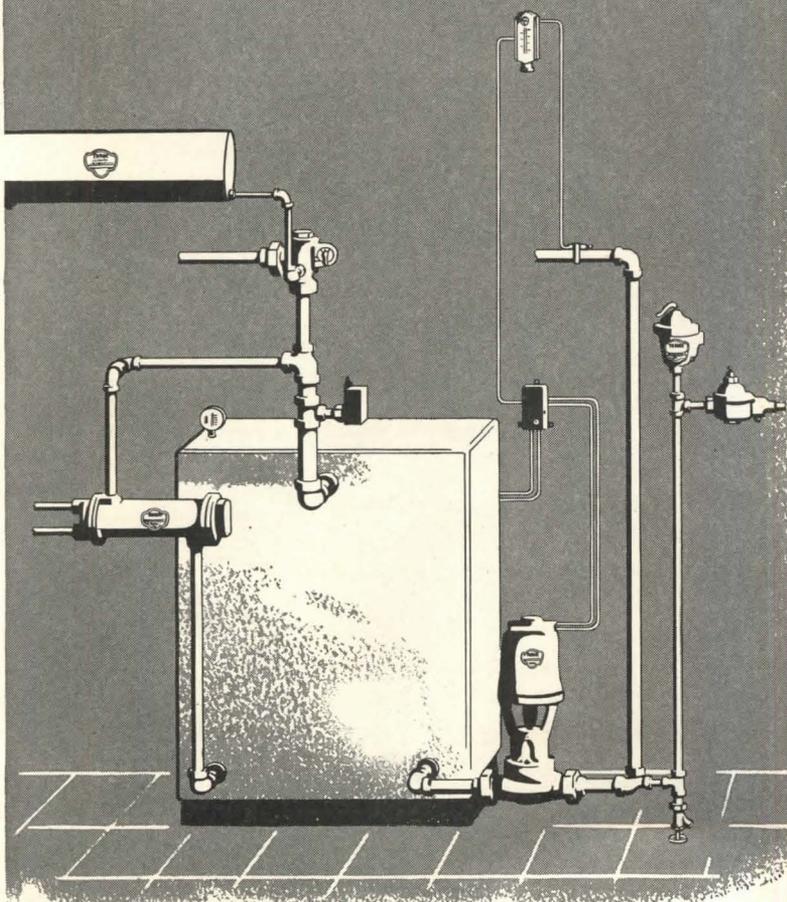
Detroit 32, Michigan. Field Offices in All Principal Cities. In Canada: BullDog Electric Products of Canada, Ltd., Toronto

Thrush

FLOW CONTROL
HOT WATER
HEATING SYSTEM

PROVIDES CONTINUOUS RADIANT HEAT

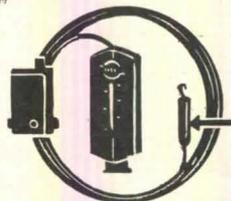
WITH INTERMITTENT FORCED CIRCULATION



CHOOSE a Thrush controlled, forced circulating, hot water system for real "solid comfort." It provides continuous radiant heat . . . *without* requiring continuous Circulator operation. Thrush Flow Control System automatically regulates water temperature to maintain absolutely uniform comfort regardless of outdoor weather changes. Operating cost is low because the Thrush Circulator normally operates only a few minutes out of each hour, and firing unit operating periods are shorter.

YEAR 'ROUND HEAT, HOT WATER

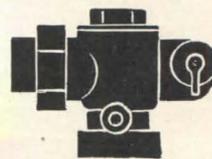
FORCED circulating Thrush Flow Control Hot Water Heating System is completely automatic, convenient, and economical of fuel. It also provides Summer-Winter domestic hot water from the same boiler at low cost. Heat distribution is quicker and there is no wasteful overheating. Installation costs less because forced circulation permits the use of smaller pipe, valves, and fittings. If you are not familiar with Thrush Systems, see your wholesaler or write for literature. Address Dept. J-3.



THRUSH RADIANT
HEAT CONTROL



THRUSH WATER
CIRCULATOR



THRUSH FLOW
CONTROL VALVE

H. A. THRUSH & COMPANY

PERU • INDIANA

FREEDOM TO DESIGN

It is foolish, of course, to express or to admit a fear. We have only to fear fear itself. But I have heard otherwise sane architects mentioning a fear that all was not well in development of Modern Design — architectural design, that is, with a capital M. The fear is that modern designers are afraid of their freedom, that well-won freedom of the functionalist who stripped off the stylistic strait jackets and left their buildings bare, naked, but unabashed in all their structural beauty. It is the fear that a new style, modern, is imposing too many rigid taboos and that the young designer may be too tempted to copy the established formal clichés, the outward forms rather than the inner spirit, the underlying philosophy of great exponents of functional and organic beauty. But such imitation is part and parcel of the traditional art of architecture.

One should have no such fears, in spite of the evidence to the contrary. In the period of building expansion just ahead there will be designers, young and old, who will no longer fear to depart from the seemingly meager palette of their art, men (and women) who will declare their freedom from any impending stagnation or sterility of a "style." They will no longer strive so hard to be "different," all in the same way with the same forms, like the iconoclastic girls who, in their desire to be different, adopted the rolled-up blue jeans, flying shirt tails and moccasins, a rigid uniform.

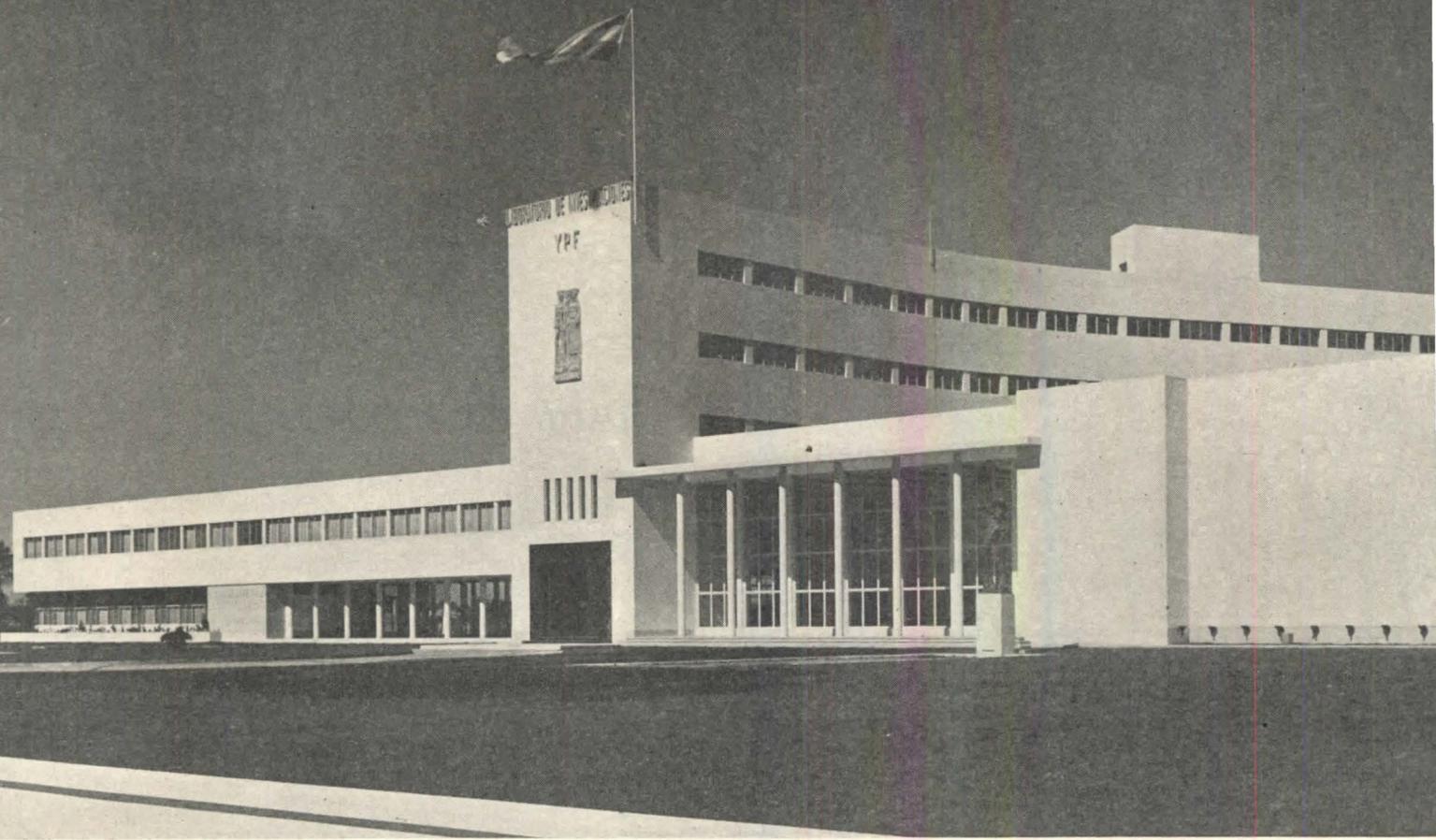
The urge to create will transcend the learning stage with its tendency to copy or adopt each experimental form from the current magazines. Critical judgment will dictate the exercise of some discrimination, the choice of the *better solution* rather than merely the novel or the different. The mistakes of others will be discovered by personal critical analysis of the published works. Most of our architectural schools are endeavoring, each in its own way, to make its students think, and think their problems through from every aspect, functional, structural, efficiency, economic, social and esthetic.

And so I believe there will be heretics who will rebel against any hardened style, Period, or Modern; heretics who will provide designs for buildings both functional physically and significant and vital spiritually. We need have no fear of sterile stagnating standardization. Designers will continue to develop a finer sense of proportion and scale, of fitness of form to function. They may even discover the uses of forms now taboo because the despised traditionalist used them. There are functions of the play of light and shade on form and surface, of pattern, of contrasting forms that give life and meaning to designs. There is too much vitality and enthusiasm in our rising architectural talent to warrant any fear that their designs will be dry and tight and circumscribed. We will see rather a new freedom, a new, more individual expression, brighter, more lively, juicy, and intensely human designs, sincere and studied in conception, bold and stimulating in execution.

Architecture will continue to be a fine art, the mistress art, even within the framework imposed by economics, mechanics, sociology and what have you. Architects will continue, now and always, to exercise their freedom to design.

Kenneth K. Stowell

EDITOR



"YPF" RESEARCH LABORATORY

IN FLORENCIO VARELA, ARGENTINA

Office of Architecture of the Engineering Department of
the Yacimientos Petroliferos Federales (Federal Oil Fields)

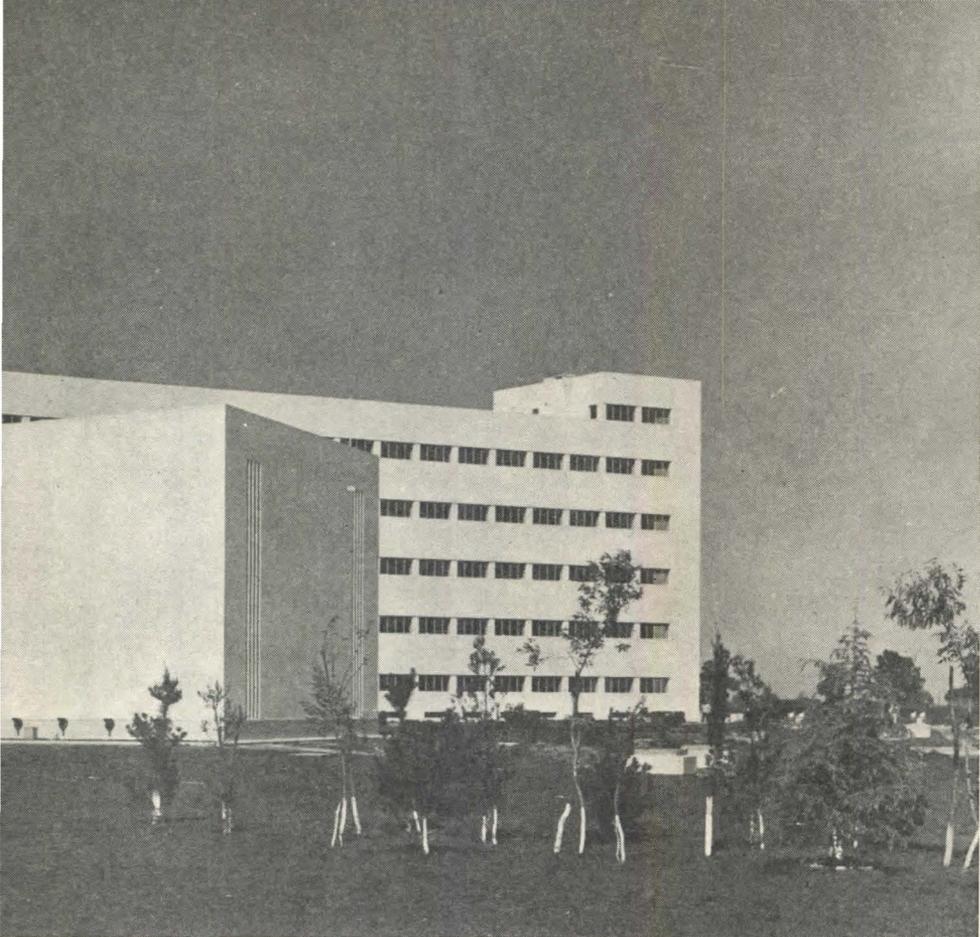


THE increase in oil exploitation in the Argentine Republic made it necessary for the "YPF" to build this extensive modern laboratory in which to carry on an intensive program of scientific research.

The plan of the building logically and functionally divides into four main elements: (1) laboratories; (2) administration and social; (3) public display and auditorium; and (4) shops and pilot plants, each in its own wing of the building. The main facade parallels the highway but the laboratory wing is carefully oriented to obtain the best possible natural lighting.

One entire five-story wing is devoted to the 35 individual laboratories (shown in detail on pages 72-73) and to their library, archives, storage, and small shops.

The lower wings of the building, flanking the curving laboratory structure, provide, at the right of the entrance, the museum and auditorium, and at the left, the open gallery, the dining rooms and the administrative offices. The shop section with its studios and offices pro-



Ernesto Lewin Photos

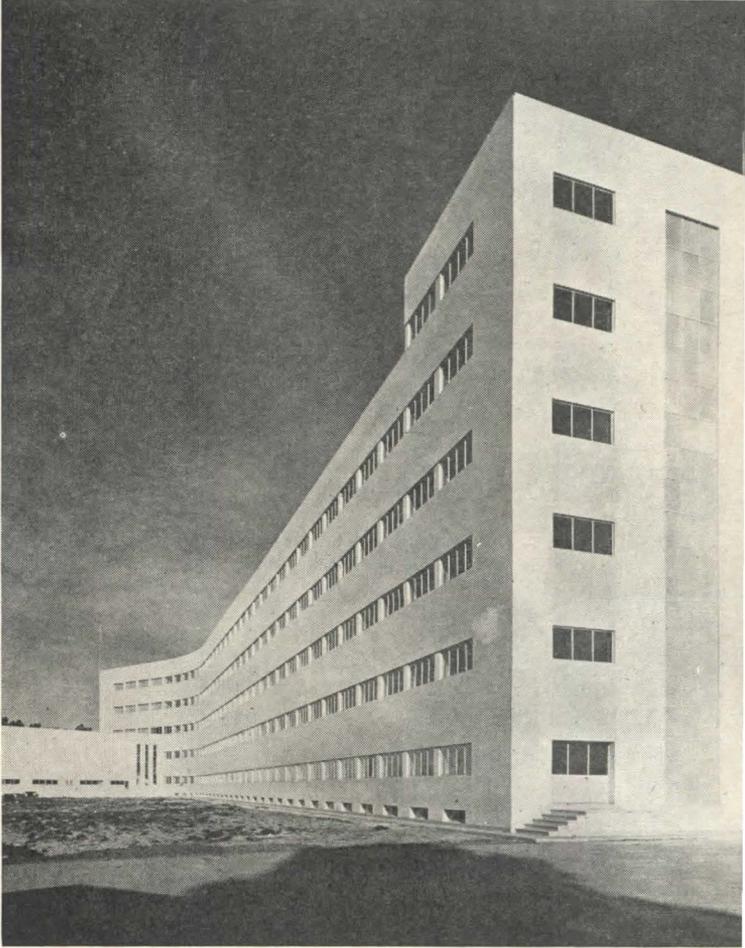
The laboratory wing dominates the composition, its end forming the vertical element of the entrance front. The high-ceilinged museum wall is glass from floor to ceiling, protected by the projecting roof of the slender colonnade. Below: converging lines of corridor-windows looking from the far end of the laboratory

Jorge de la Maria Prins, Hugo M. Rosso, Jorge M. Verbrugge and Jorge Ros Martin . . . Architects

vides, in a wing paralleling the laboratories, large facilities for pilot plant construction and testing. This wing is connected to the laboratories, and by an open gallery, to the administrative wing.

The site was chosen to be relatively near the General Administration Building of the YPF and its La Plata distillery, and yet far enough removed from the industrial centers to eliminate physical and electrical disturbances which might interfere with the accuracy of meticulous research experiments. The building faces highway No. 2 and is served also by another highway between La Plata and Buenos Aires at the rear.

Comfort and ideal climatic working conditions are provided by a complete air-conditioning system, using furred-down corridors for main ducts, and by steam radiation and concealed convectors. Intercommunicating telephones and call systems assure efficient communication. The laboratory equipment, planning and finish have been carefully studied for efficient use.

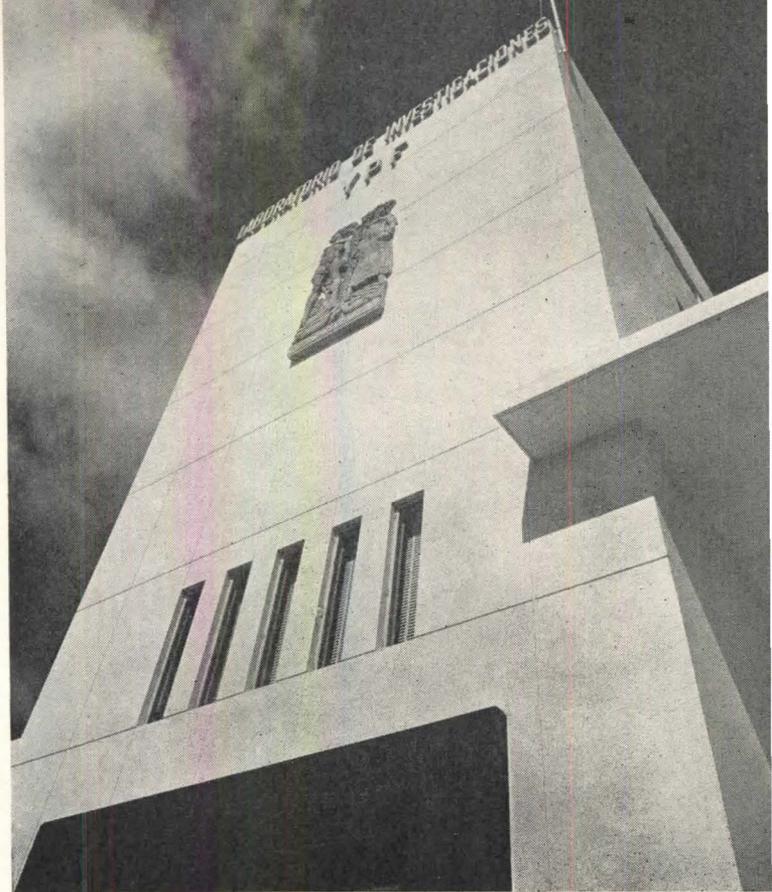


GROUND FLOOR PLAN

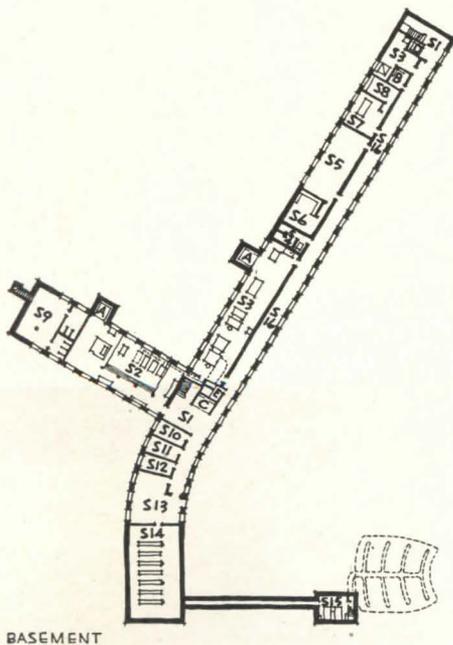
1. Main lobby
2. Information and control
3. Gallery
4. Museum
5. Lobby of the auditorium
6. Auditorium
7. Stage and adjoining rooms
8. Washrooms
9. Watchman's quarters
10. Dining room lobby
11. Dining room for employees and technical men
12. Serving pantry
13. Kitchen and services
14. Office
15. Hall
16. Laboratories
17. Ladies' dressing and washrooms
18. Men's dressing and washrooms
19. Infirmary
20. Shops
21. Experimental rooms or plants
22. Offices
23. Offices
24. Dressing and washrooms
25. Passageway

BASEMENT PLAN

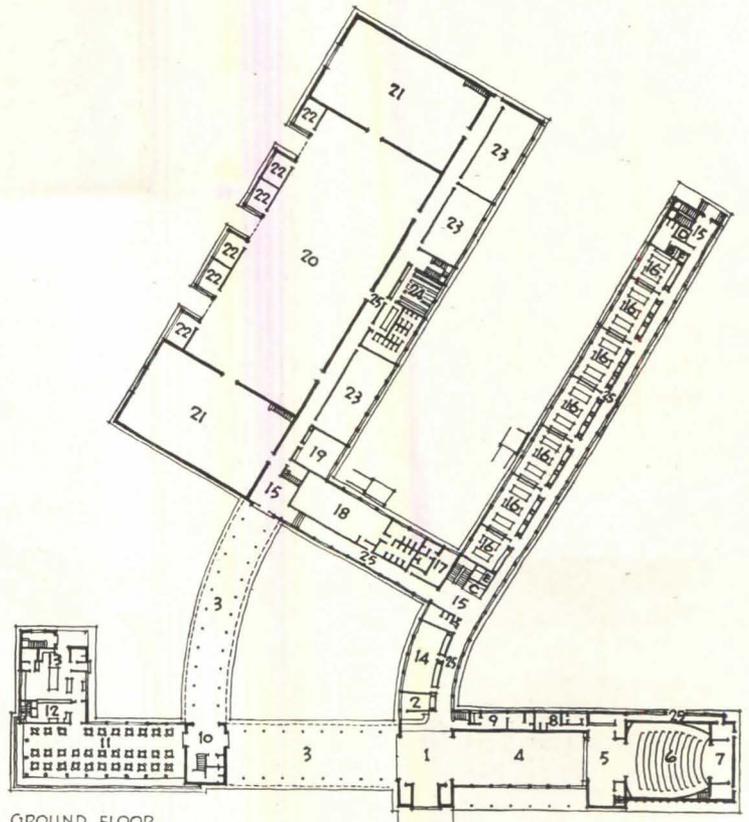
- S-1 Hall
- S-2 Machinery and boiler room
- S-3 Compressor and ventilating machine room
- S-4 Cold storage room
- S-5 Photographic laboratory
- S-6 Dark room
- S-7 Physics laboratory
- S-8 Dark room
- S-9 Workmen's dressing and washrooms
- S-10 Electric switchboard central
- S-11 Storage batteries
- S-12 Scales
- S-13 Filing room
- S-14 Filing shelves
- S-15 Machine room of the auditorium
- S-16 Passageway
- A Trapdoor for bringing in machines
- B Garbage incinerator
- C Elevators
- D Hoists
- E Ventilating, conduits, piping, etc.



Above the entrance a symbolic bas-relief by sculptor Carlos de la Carcova embellishes the facade. Vertical windows light one end of the meeting room shown on the opposite page



BASEMENT

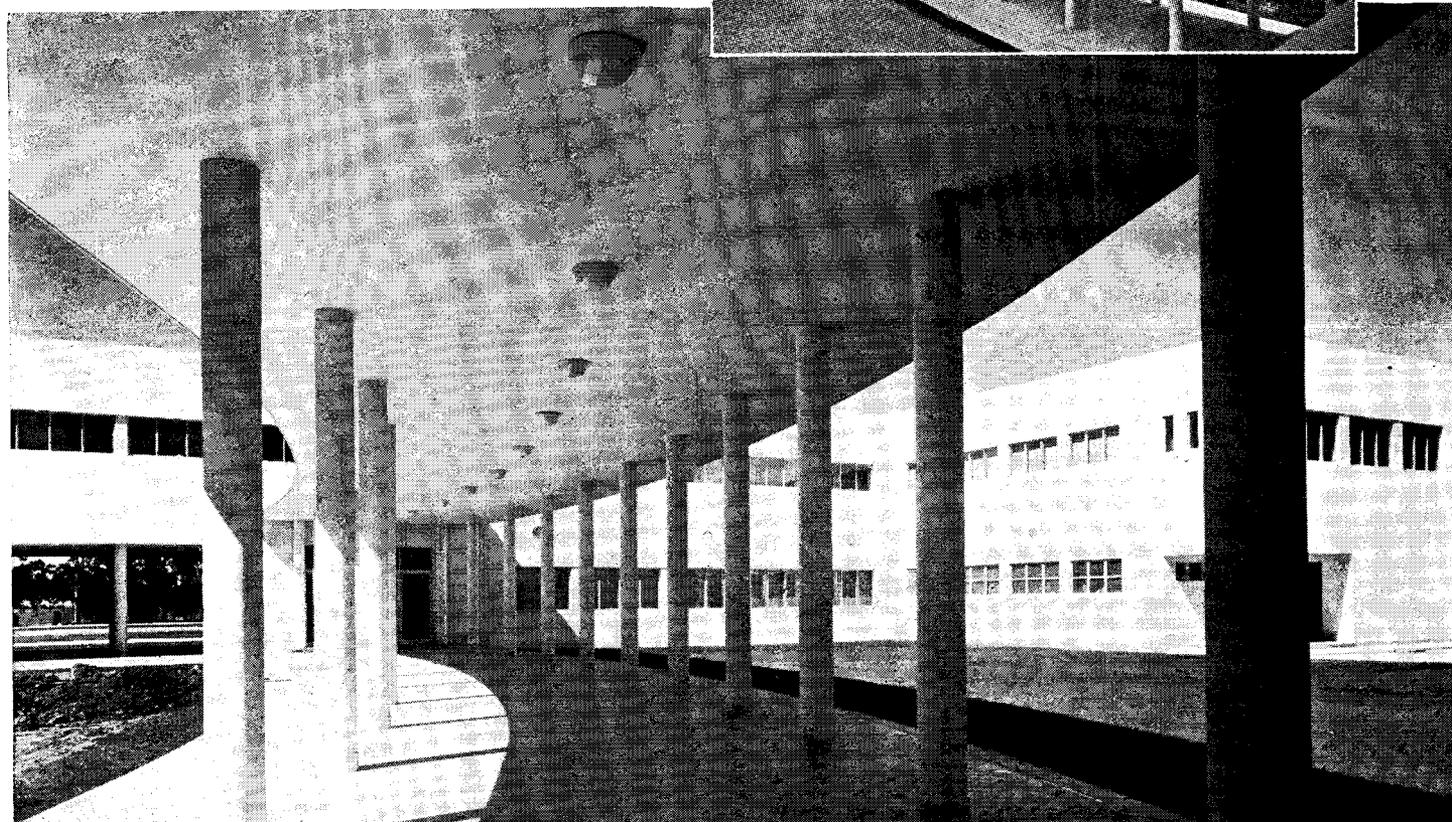
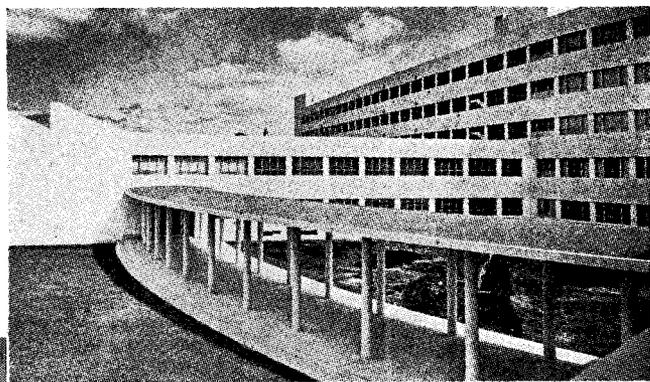


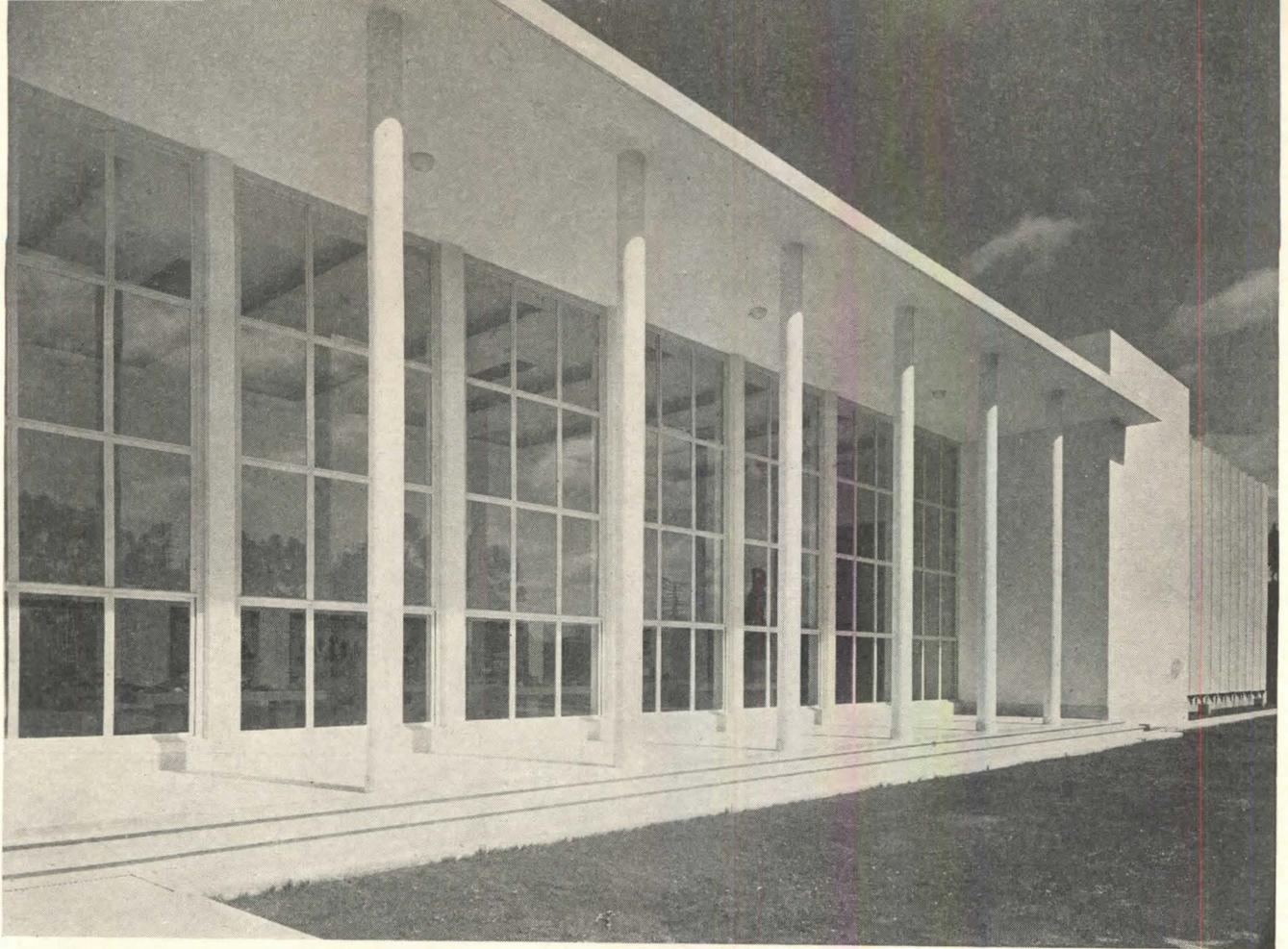
GROUND FLOOR



Below: two views of the curved colonnade or open gallery connecting the shop wing with the main building, and showing the office link connecting the laboratory wing with the shops and pilot plant areas

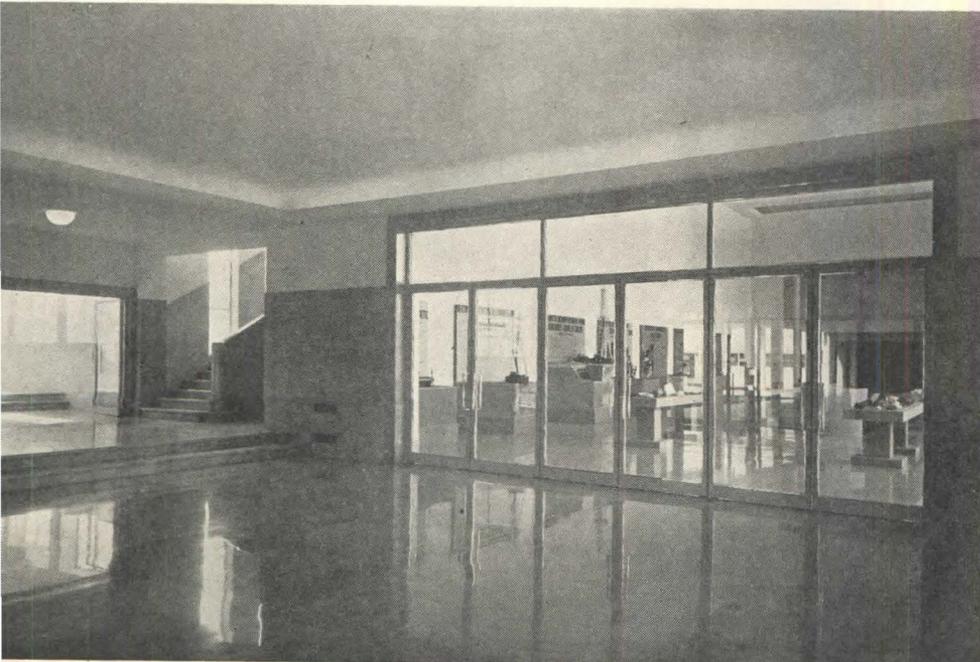
Above: the formal meeting room, paneled in oak, is centrally placed on the second floor above the main entrance lobby. Its acoustical ceiling has recessed panels for indirect lighting





The great windows of the museum are protected from the glare of direct sunlight by the extended roof of the graceful portico

The entrance lobby provides access to the museum, to the laboratory wing, to the gallery, and, by stairs, to administrative offices



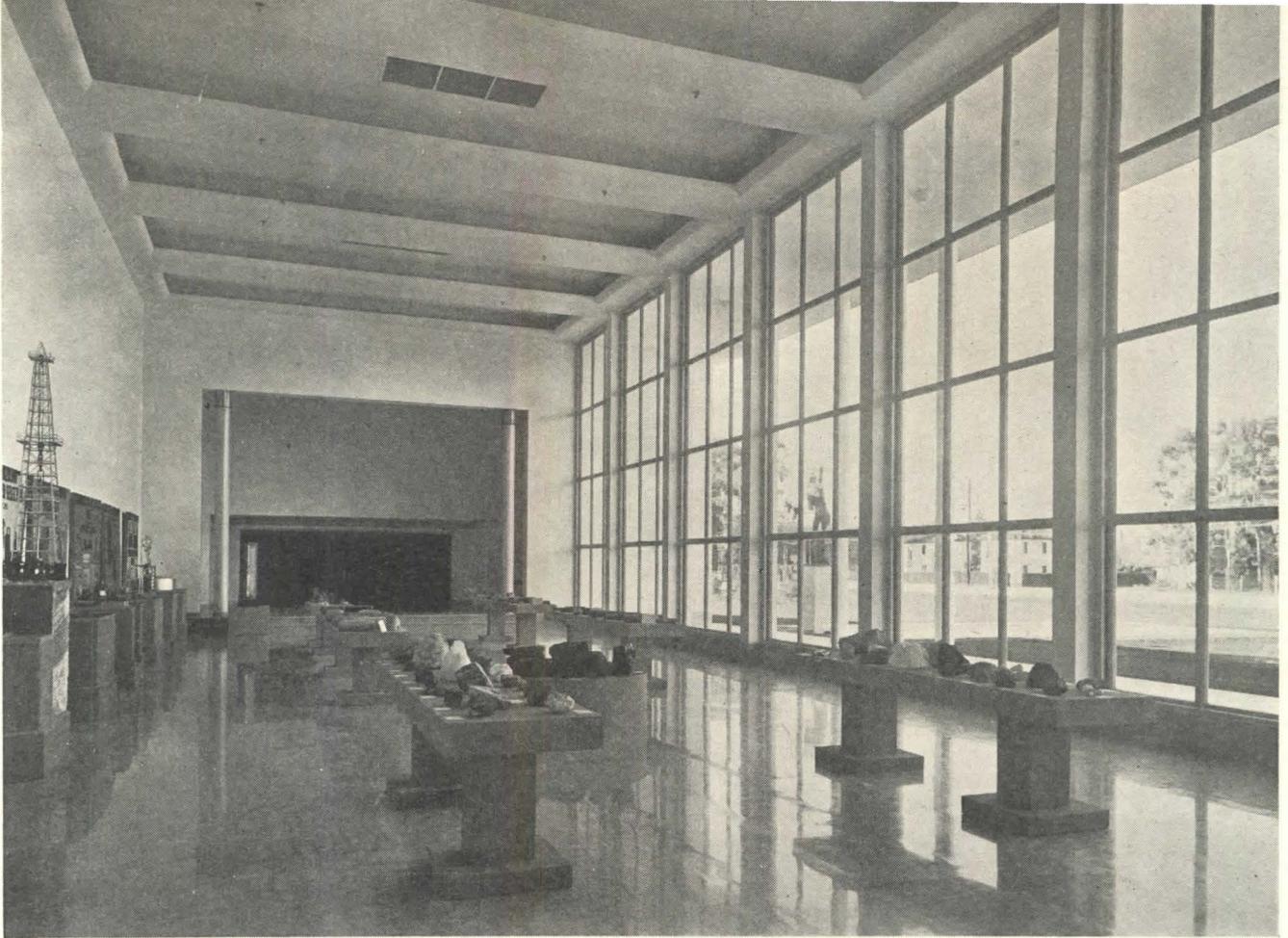
KEY TO PLANS →

FIRST FLOOR

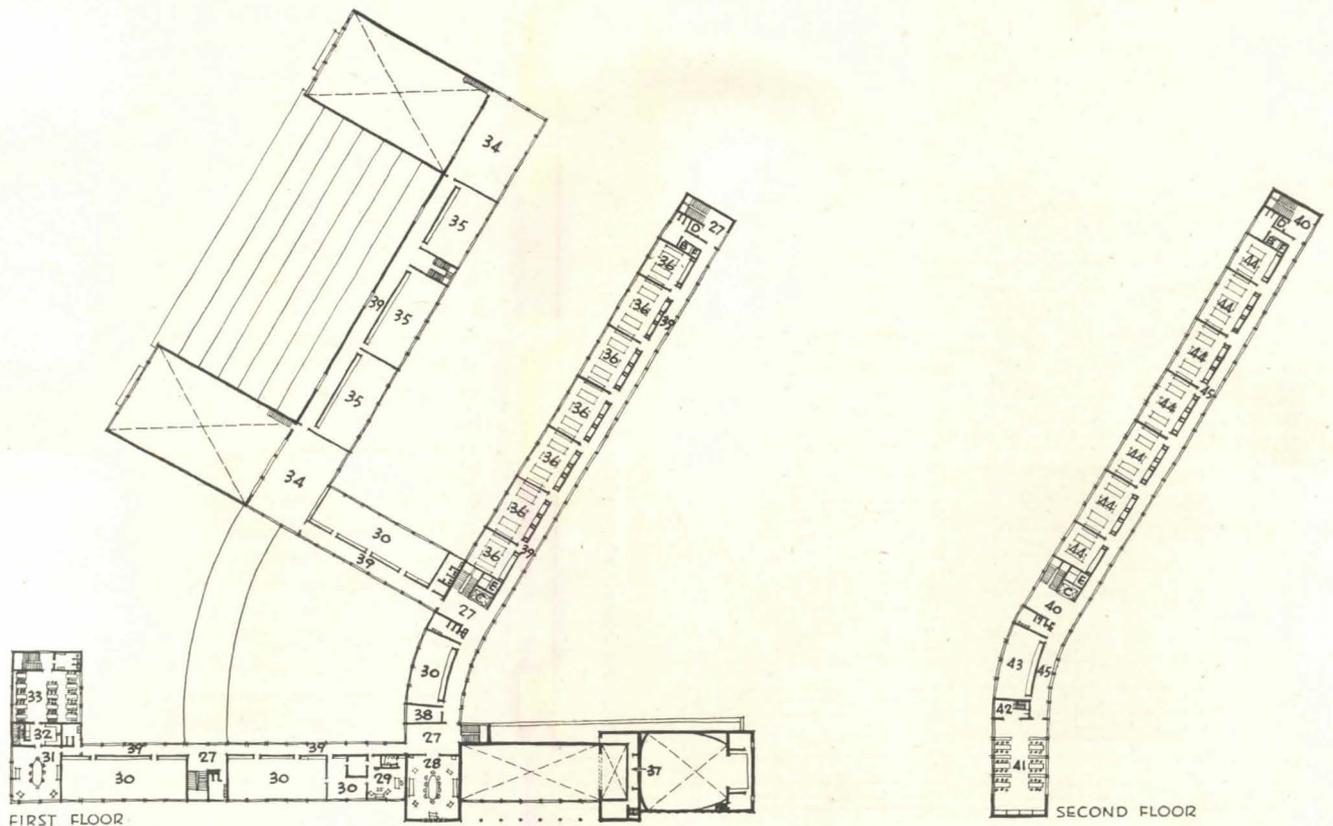
- 27. Hall
- 28. Meeting room
- 29. Chief office
- 30. Offices
- 31. Dining room
- 32. Office
- 33. Workmen's mess room
- 34. Studio
- 35. Offices
- 36. Laboratories
- 37. Projection booth
- 38. Telephone central
- 39. Passageways

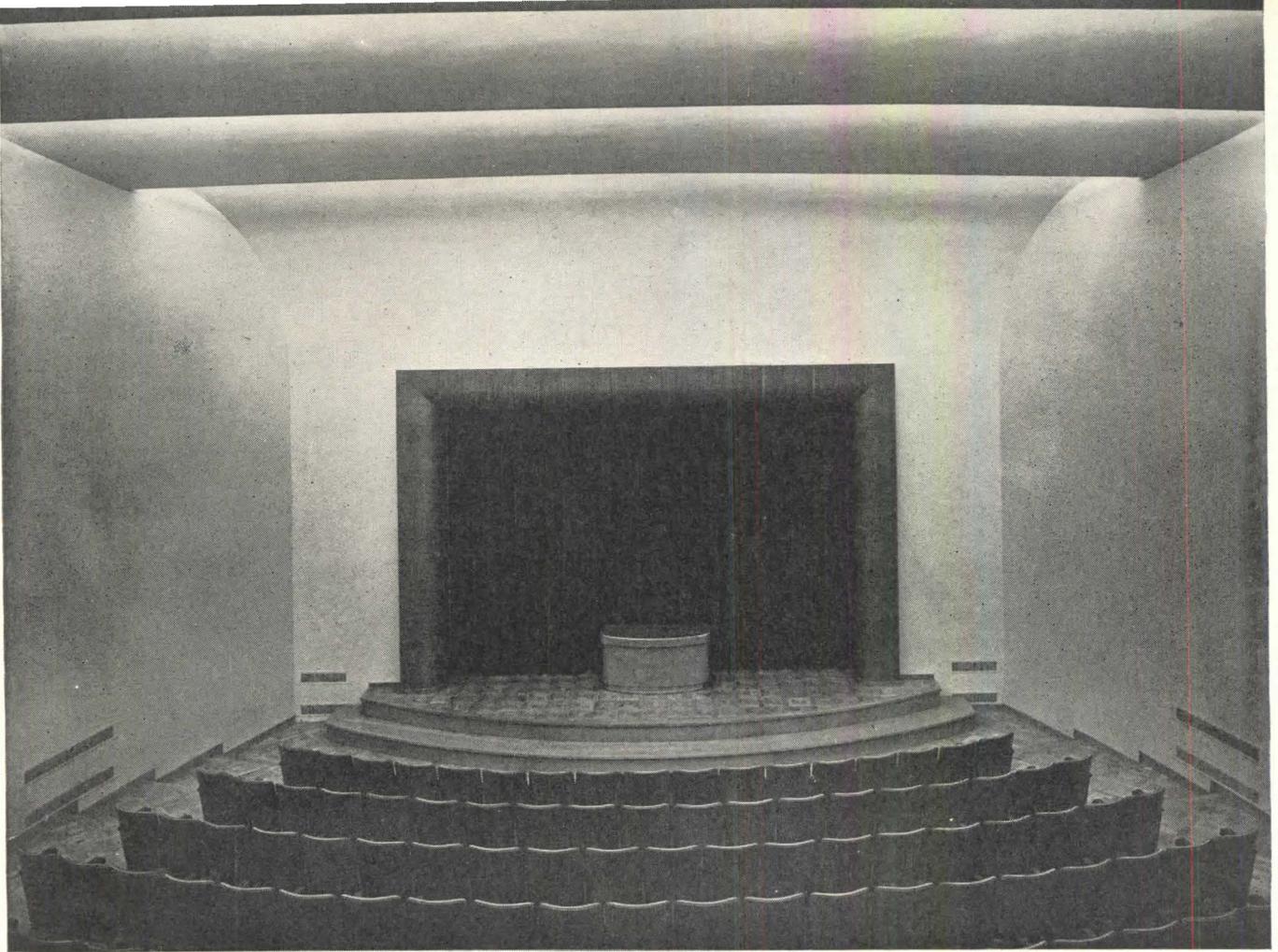
SECOND FLOOR

- 40. Hall
- 41. Library
- 42. Librarian
- 43. Office
- 44. Laboratories
- 45. Passageways



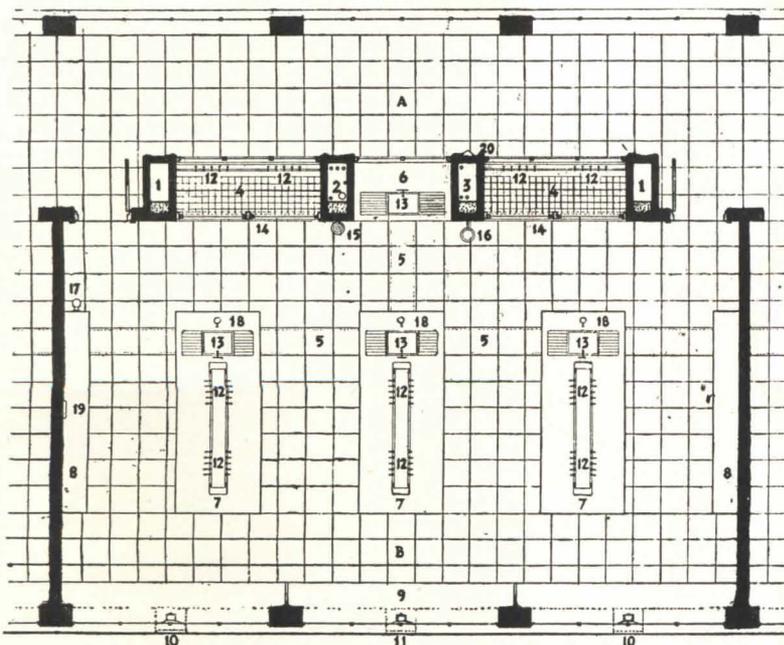
The museum serves also for leisurely access to the auditorium lobby beyond. Indirect lighting panels in the ceiling illumine the hall at night





The simple and dignified auditorium seats 185 persons comfortably. Lighting again is indirect and pleasant

Below: plan of a typical laboratory showing the two retorts or experiment-hoods with a table and sink between them on the corridor side of the room. The three work tables are of wood, painted, resting on glass insulator cups. The legend explains the disposition of the equipment

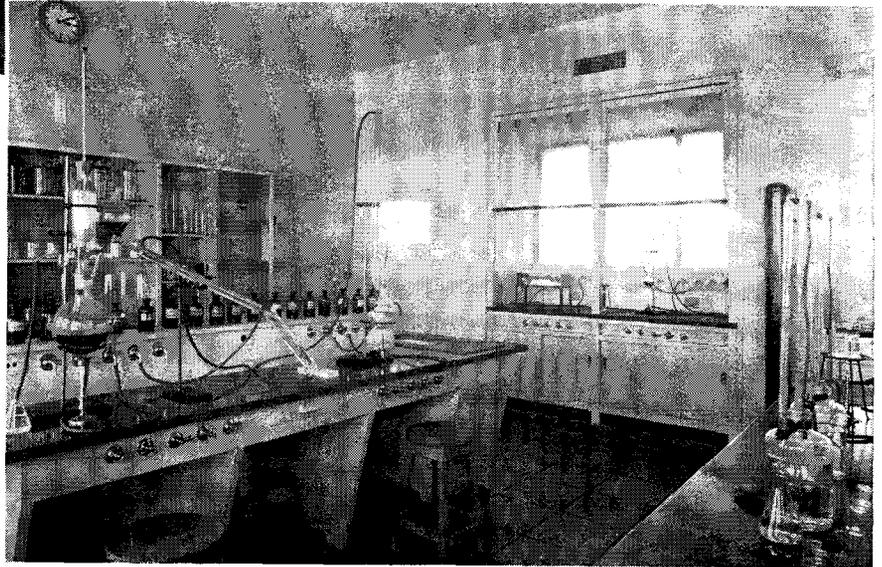


- A. Corridor
- B. Laboratory
- 1. Duct for extracting gas from retorts
- 2. Piping for cold liquids and electric cables
- 3. Piping for hot liquids
- 4. Retorts or experiment-hoods
- 5. Trench with removable cover, for piping
- 6. Washing table
- 7. Experimental tables
- 8. Storage cabinet
- 9. Desks
- 10. Exhausts for heavy gases
- 11. Exhaust for light gases
- 12. Cocks and faucets for liquids (compressed air, super-gas, cold water, hot water, steam)
- 13. Sinks
- 14. Slide doors of the retorts
- 15. Shield for assisting burnt workmen
- 16. Shower for those spattered with acids
- 17. Anhydric carbonic fire extinguisher
- 18. Carbon tetrachloride fire extinguisher
- 19. Clock
- 20. Person call system

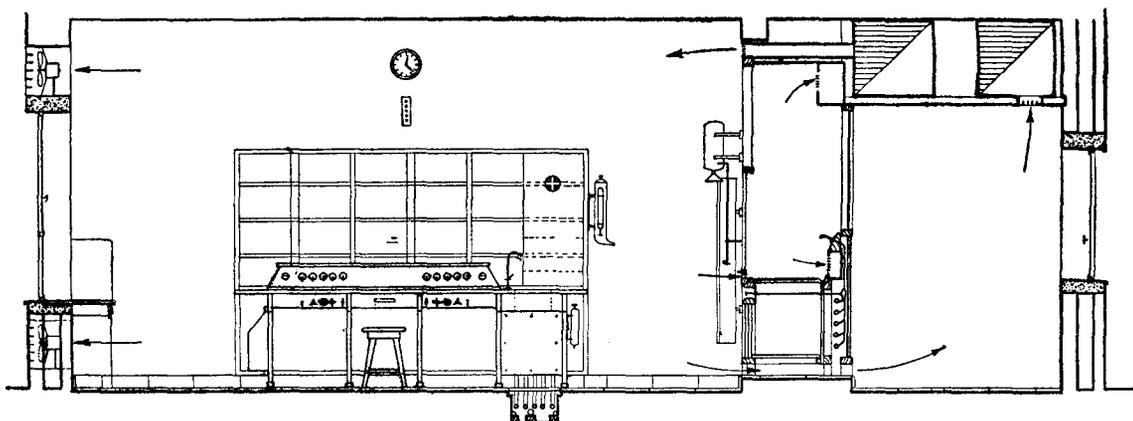


A typical laboratory showing the sink ends of the work tables, the wall cabinet and in the upper-right corner, the emergency shower. Each work space is provided with hot and cold water, compressed air, steam, gas and electric outlets (220-volt single-phase and 380-volt three-phase)

Typical work table and one retort or experiment-hood with its explosion-proof vertical-sliding doors. Counters under hoods are ceramic tile and each hood is equipped with feed-tube services similar to those of the tables, operated by handles outside the hood. Operating handles differ in shape so operator can identify each by touch



Left: a double-height laboratory with mezzanine. Below: section showing ventilating ducts, retort or experiment-hood construction, and underfloor pipe and conduit channel under sink-end of laboratory tables



COMBINING RESEARCH AND PRODUCTION

A new building in Rio de Janeiro combines facilities for the development and manufacture of pharmaceutical products for **Productos Roche, a subsidiary of Hoffmann-La Roche, Inc.**

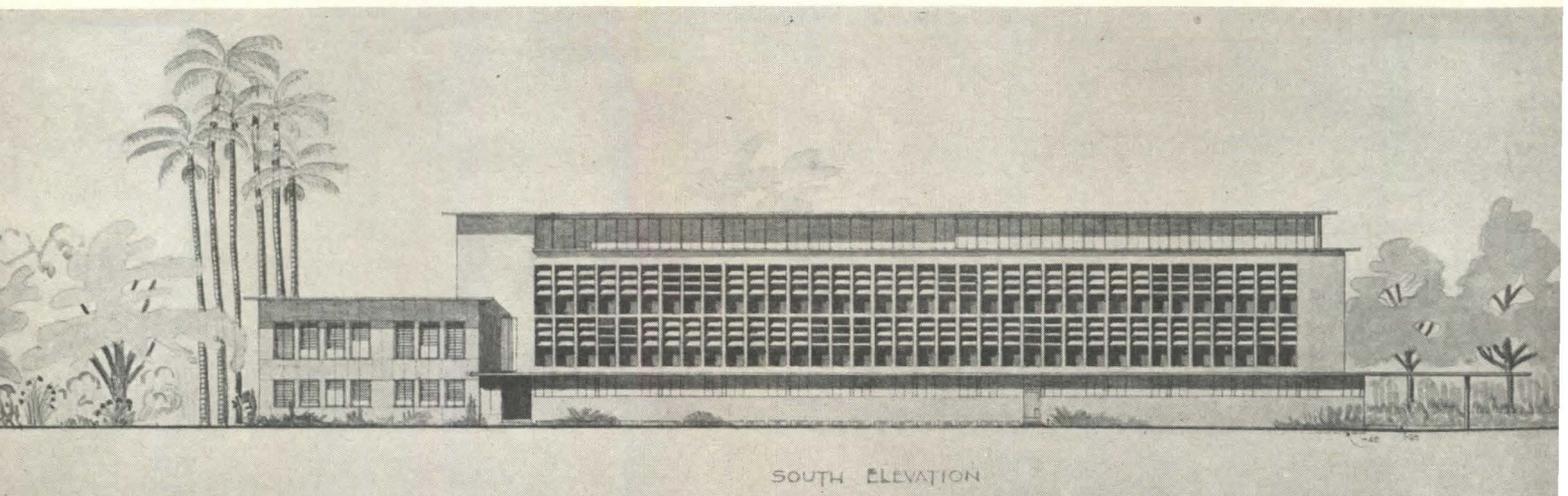
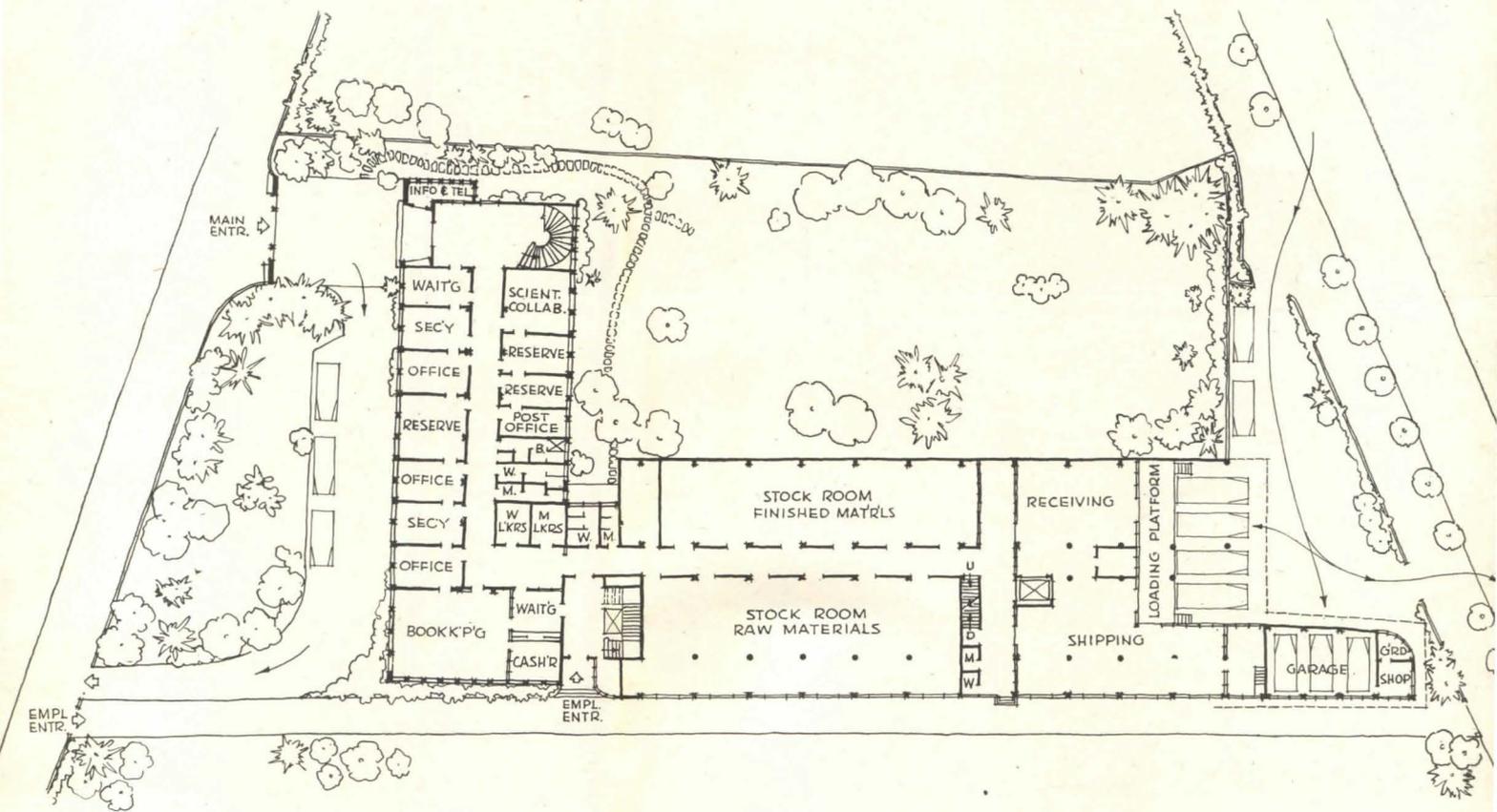
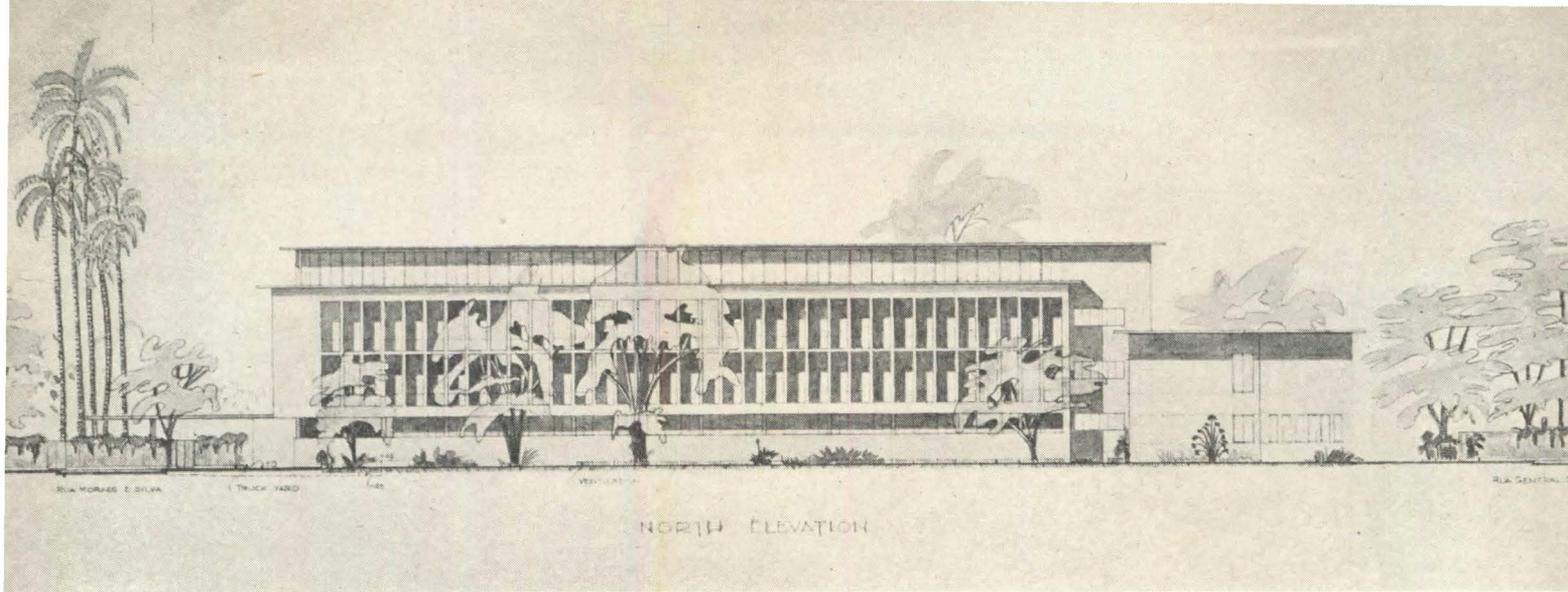
Louis Parnes, Architect



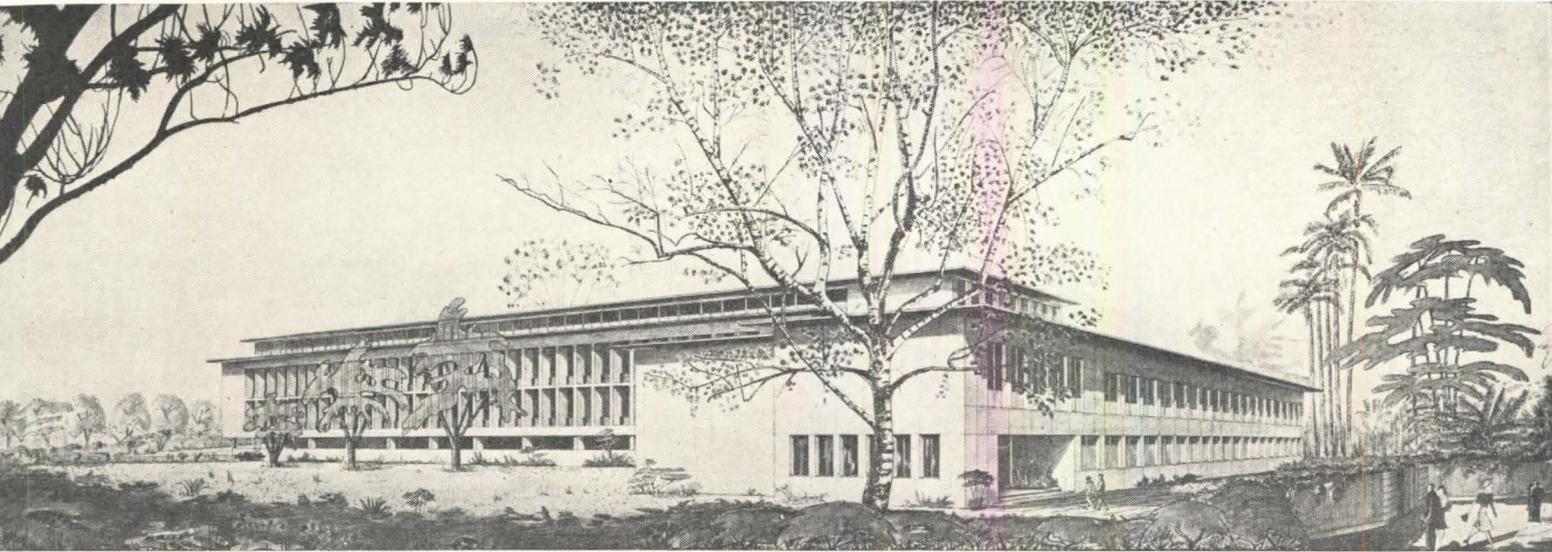
RESearch and production in the field of medicinal products such as vitamins, penicillin, tablets, syrups and drugs go naturally hand in hand. Logically then, they are housed in the same structure. Architect Parnes has provided therefore a plant embodying facilities for a "straight flow" process. Raw materials enter at the lower floor, flow up to the manufacturing areas and down again to delivery or storage departments. Above are the laboratories for development research, testing; and on the top floor are the employees' facilities such as locker rooms, showers, restaurant, social rooms, and roof gardens. The administrative offices are in separate wing

fronting on Rua General Janabarro. Employees' entrance is, via a separate path, at the juncture of the two parts of the building. Freight traffic is entirely separate via Rua Moreas e Silva at the rear, an ideal functional division of circulation.

The plant is of reinforced concrete, the research and manufacturing portion concrete-faced (no plaster or other finish); the administration portion faced with large marble plates or veneers one inch thick. An interesting structural and functional feature of the building is the self-supporting monolithic spiral slab stair, in the administration wing.



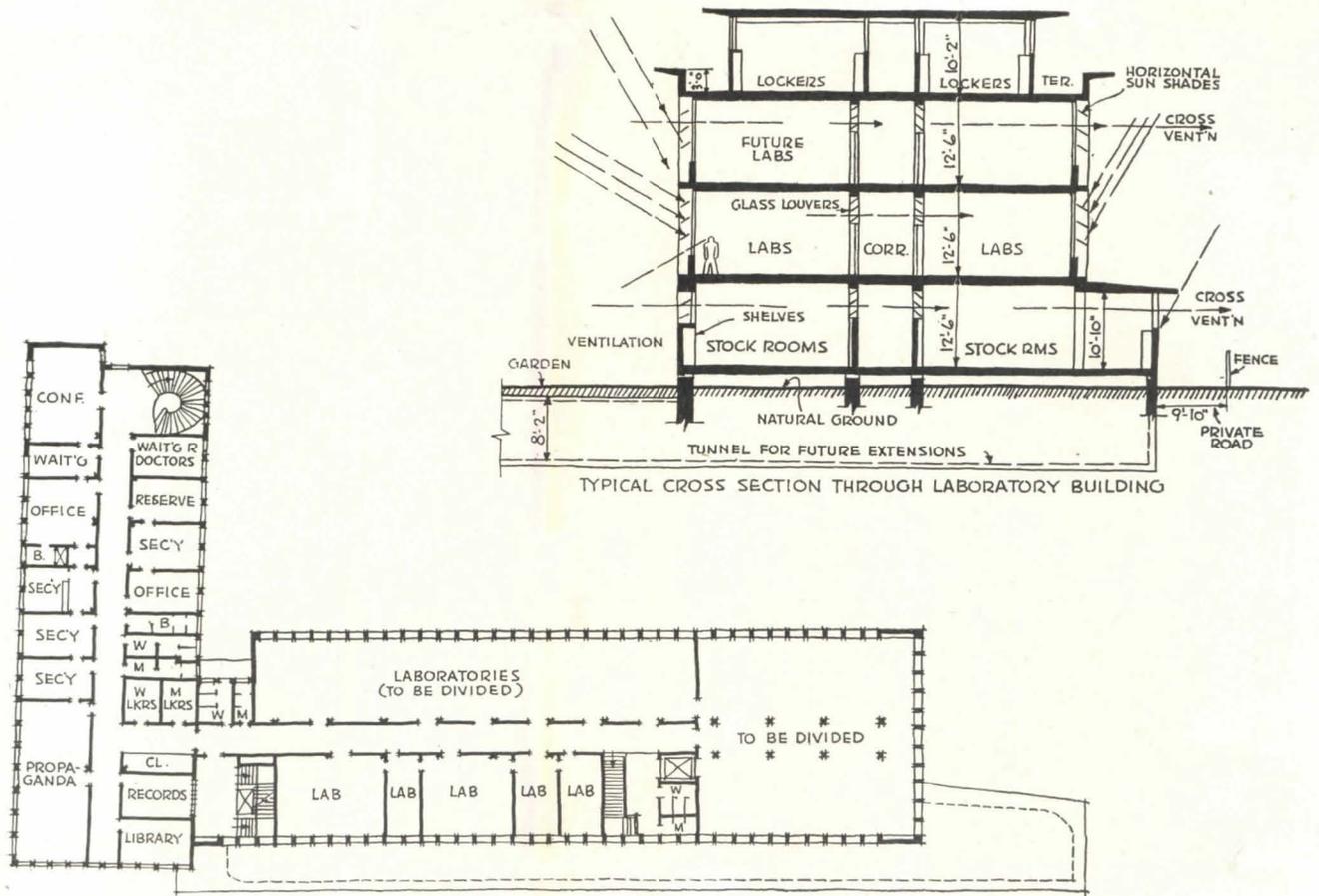
The building is unadorned and depends for its effect on the simplicity and richness of material and the natural pattern and proportioning of its functional elements. The main entrance to the building is at the northwest corner of the administration wing. The large spiral stair at the end of the entrance lobby leads to the conference room directly above the entrance and to second floor offices. The administration wing facades are faced with large slabs of marble veneer



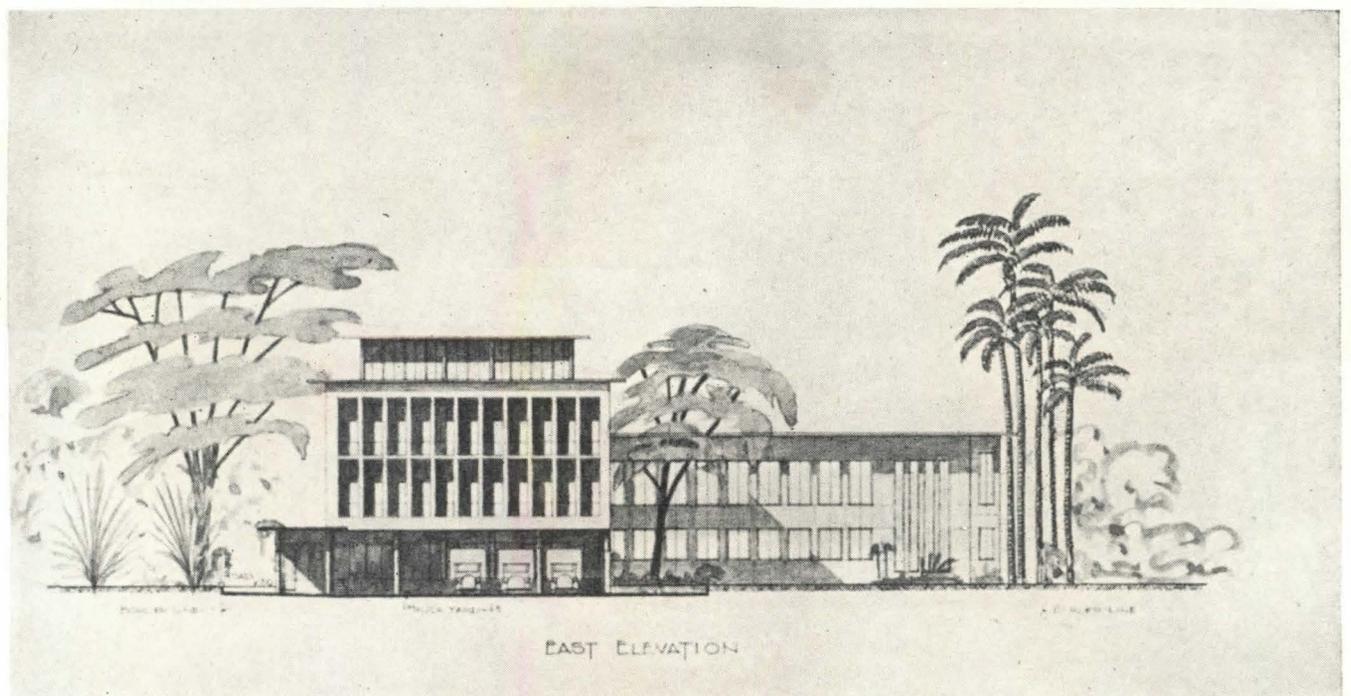
Protection from excessive sun radiation consists of thin but deep (13 feet) reinforced concrete vertical divisions equipped with horizontal movable asbestos-cement louvers. The flat roofs extend some five feet beyond the wall and provide additional protection from

the sun. These roof canopies are especially reinforced to resist heat-deformation and to avoid dilation joints. To further assure comfort and proper control of air and temperature all rooms of the building are completely air conditioned.





Second floor plan



DESIGN FOR DISPLAYING MERCHANDISE

FABRICS

RICHARD BENNETT, CHICAGO

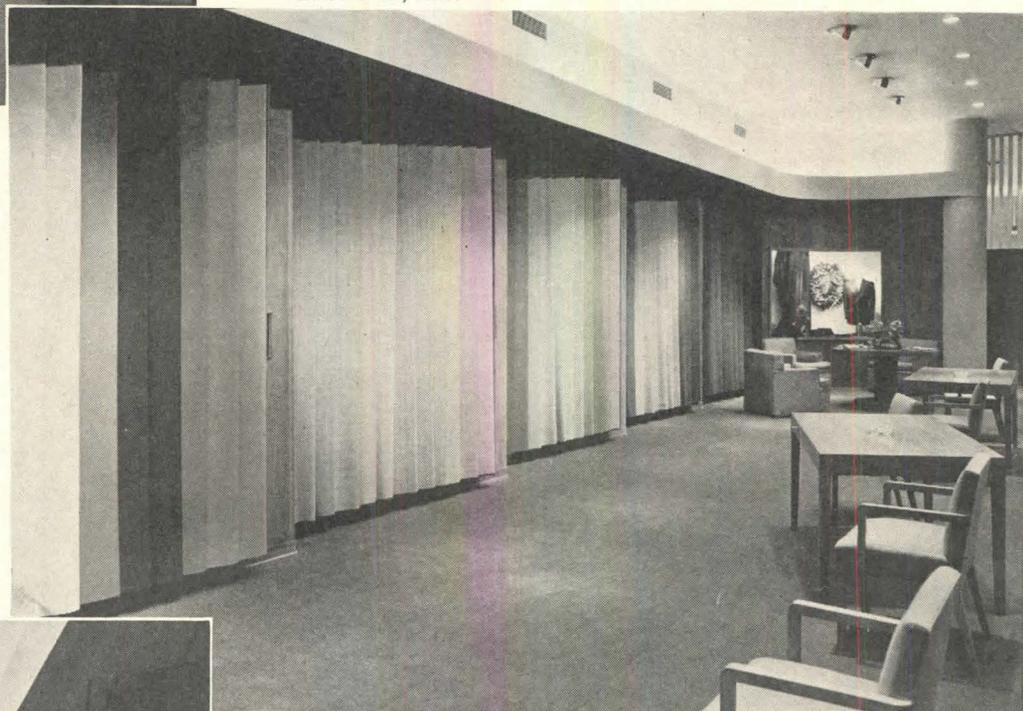
Eugene Back and Theodore Yonkler

Architects

Kaufmann & Fabry Photos



Above: The Chicago unit of this men's tailoring firm uses a fabrics display idea that has already proved effective in its New York stores. When the displays are not in use, the wall is a series of battened panels in wood, which are permanently fixed in place



Above: Men's suitings are displayed on tall sliding racks mounted on overhead trolley tracks such as are used for garage doors. The customer can see a great number of fabrics quickly, in full-length folds, all in plain view and with uniform lighting



Left: View of racks from rear of store, with some racks in closed position, some pulled out. There are two in each slot

In store architecture, all of the designer's spider-like enticements come to a focus on the display of the actual merchandise. Coupled with the imperative allure is the need for mechanical convenience, to obviate as far as possible the spoiling of a sale through awkward handling of goods. Here is a collection of ingenious display ideas from recent stores and showrooms

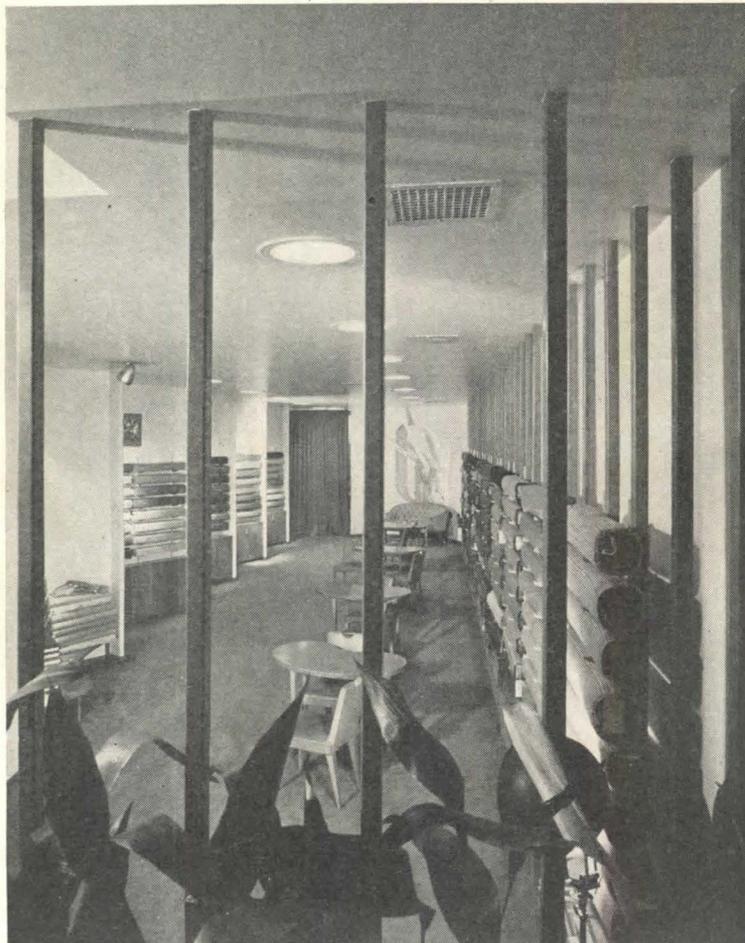
FABRICS

SAKS FIFTH AVENUE, NEW YORK

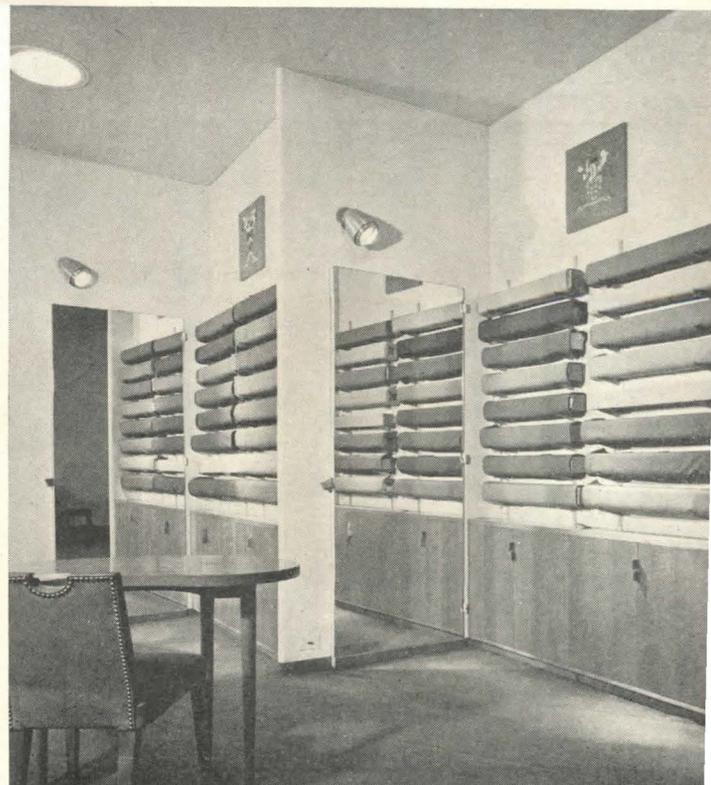
S. S. Silver & Co.

Designers

Joseph W. Molitor Photos



At Saks Fifth Avenue the racks of bolted materials on rollers along the walls make an intriguing array, and eliminate most of the awkwardness of handling bolts of cloth. Any fabric is easily unrolled for inspection by a patron, or the bolt is easily lifted off



Above and right: To gain space in a long narrow departmental unit, one wall becomes a series of displays, in angling passage-ways lined with wall-mounted bolt racks. The space below convenient wall height is developed for storage cabinets

COSMETICS

GOUBAUD BEAUTY BAR, NEW YORK

Hans Weiss and William Basser

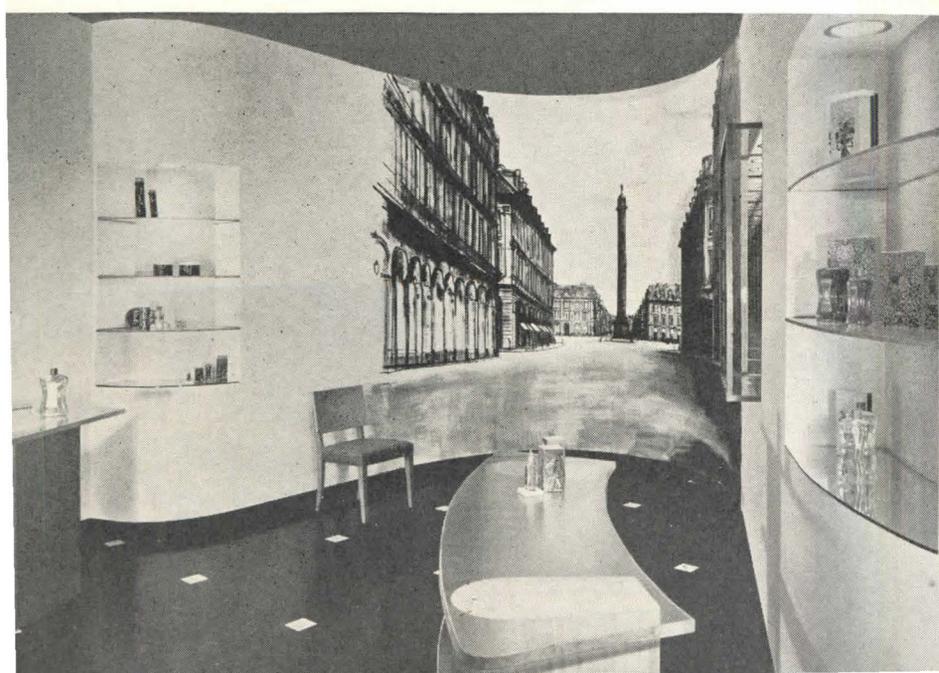
Designers



PERFUMES

PINAUD, INC., NEW YORK

Paul Bry
Designer

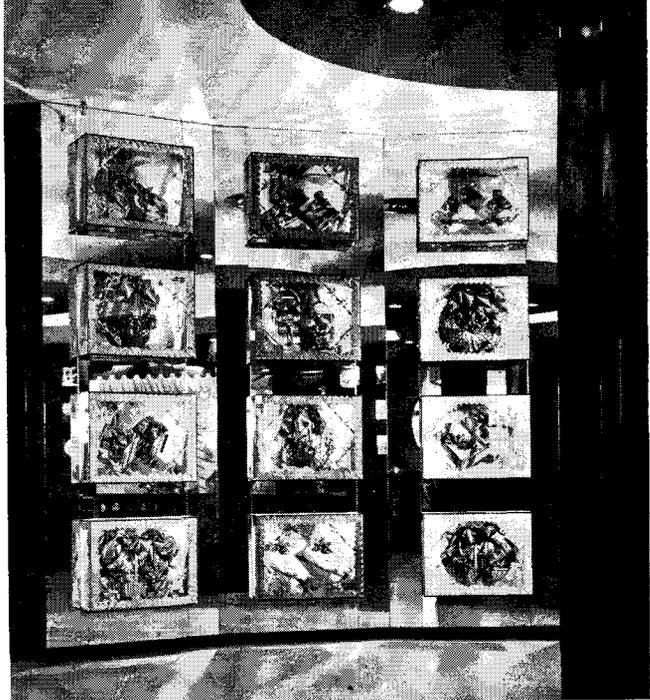


Two contrasting backgrounds for selling similar products, the one an ornate and feminine "bar" for beauty culture, the other a more neutral background for emphasis on a particular line of perfumes. The Parisian perspective painting is also emphasized, to proclaim the exotic origin

CANDY

BARTON'S BONBONNIERE, NEW YORK

Hans Weiss and William Basser
Designers

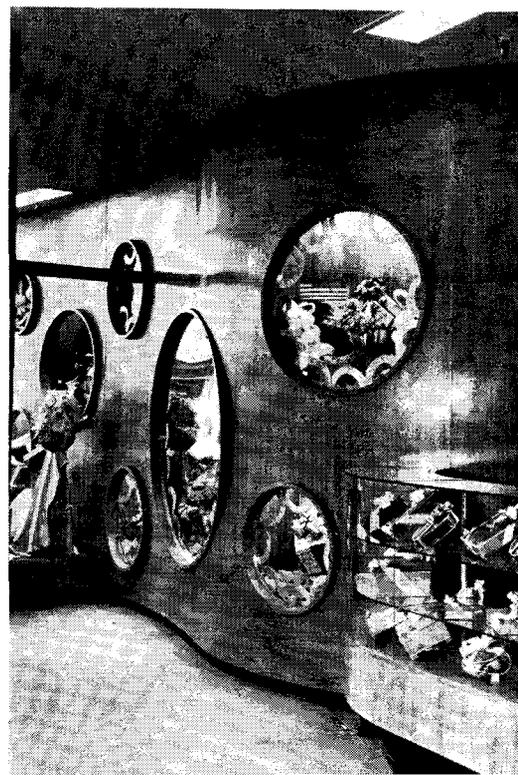


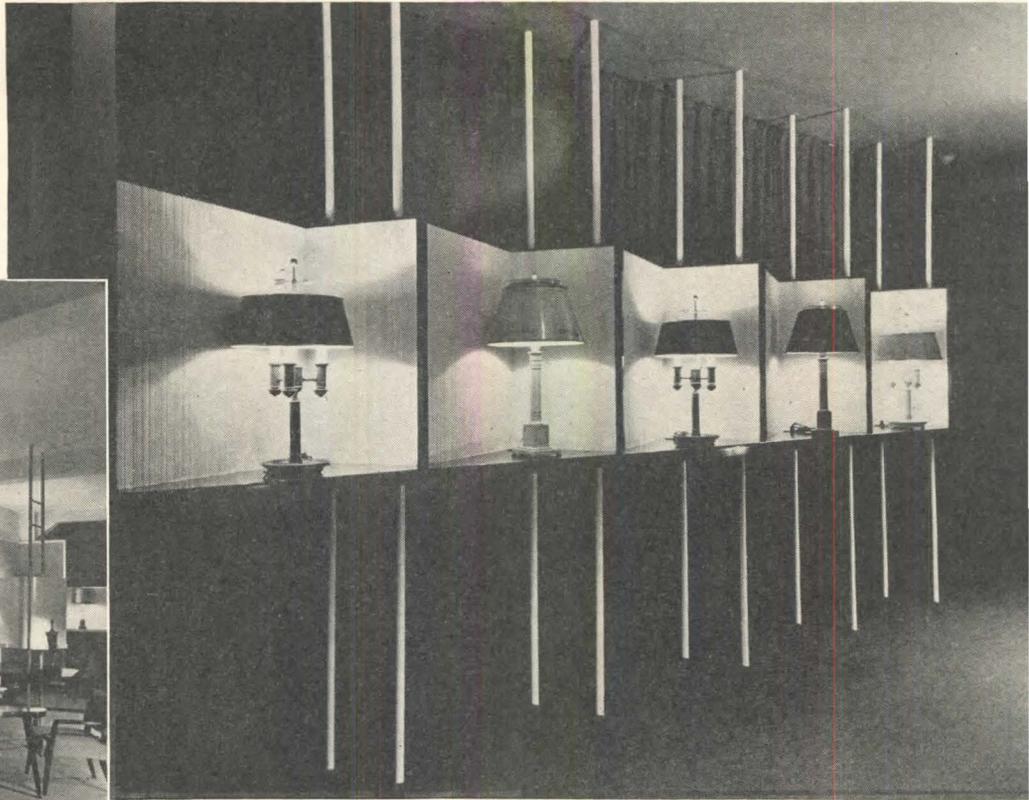
Here the basic shadow-box idea appears in several variations. Above, a pattern of lace-trimmed display boxes on mirrors



Above: Here the shadow-box displays are scaled larger to attract attention at greater distance; the candy-stripe adds to the attention value. They are hung on glass panels lighted from behind

Right: Again the shadow-box idea, this time in a pattern of round boxes on the curving wall to catch the eye of entering customers. Since this wall encloses a traffic area, the boxes are recessed





LAMPS

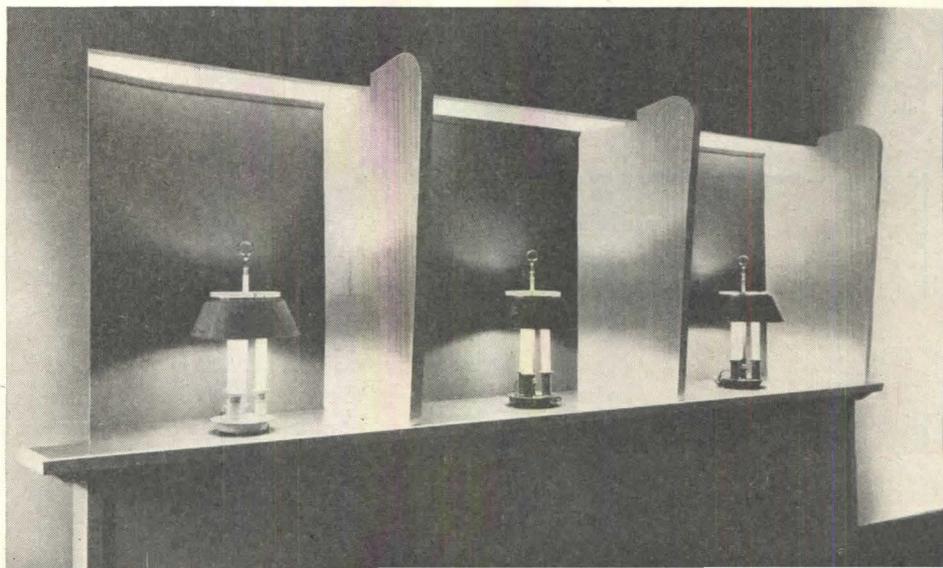
LIGHTOLIER SHOWROOM

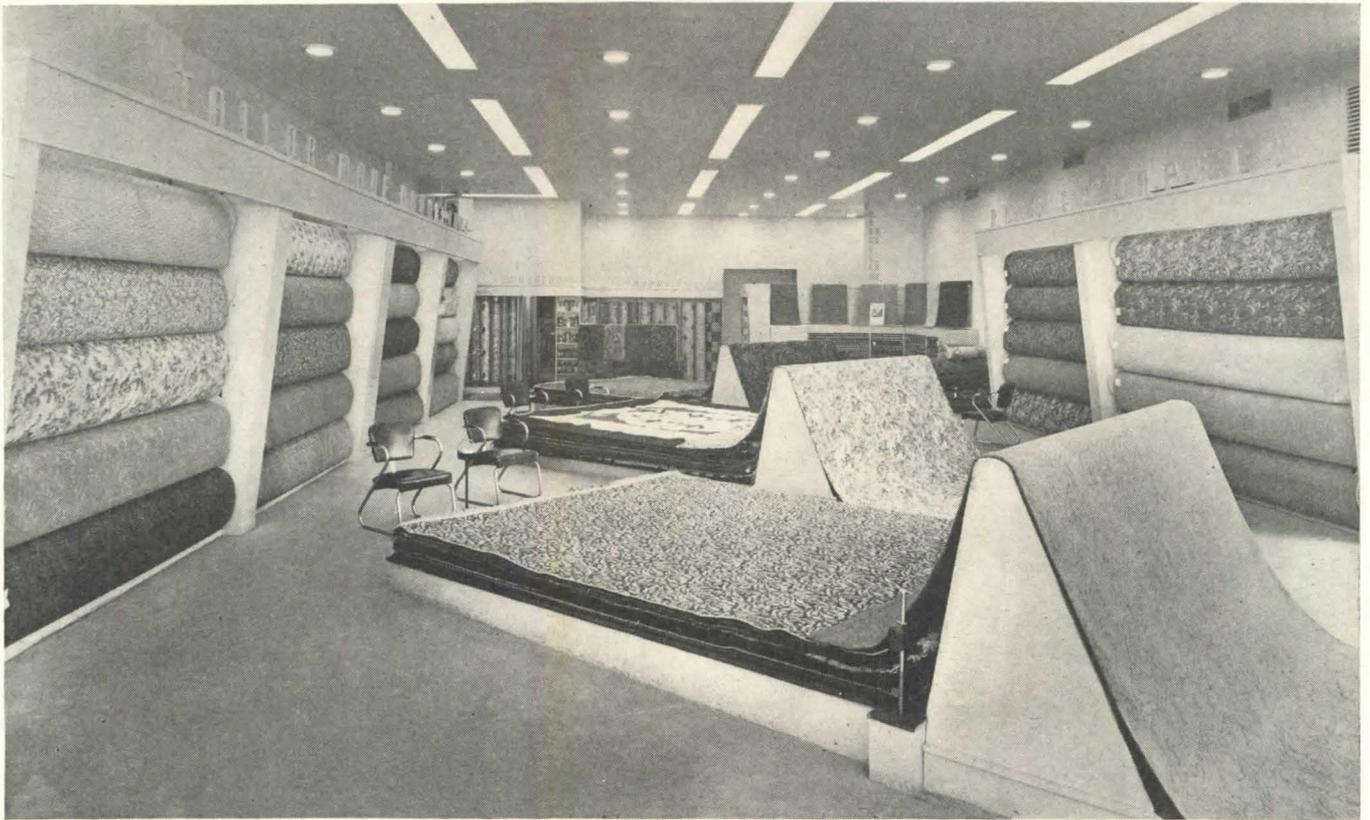
Robert Heller Associates

New York

Designers

In these displays, table lamps escape the usual cluttered confusion of the department store counters. They get a chance to assert some individuality under conditions closely approaching those of their use either near to or far from the wall





Harold R. Stott Photos

CARPETS

WILF BROTHERS

Solomon Kaplan

Philadelphia

Architect

ELECTRICAL APPLIANCES

The rug department uses a massive version of the fabrics wall-type display together with the familiar floor pile. In the electrical appliance section, the saw-tooth wall gives good display to large items, section-alized shelves for smaller ones





YARNS

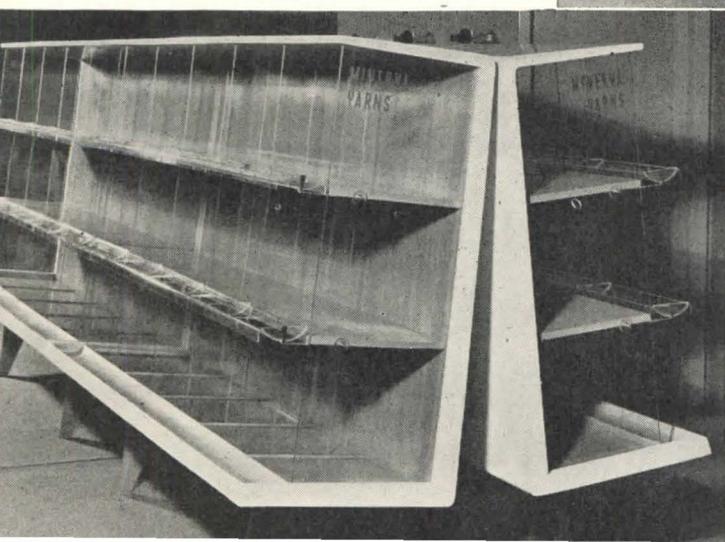
JAMES LEES & SONS

Raymond Loewy Associates

New York

Designers

Right: Balls of yarn are displayed in tiered plastic trays, sloped so that as one ball is removed the others roll down to the front. The fixture in the foreground displays knitting instruction books



Sectionalized wall cabinets for skein yarn. Glass walls provide maximum visibility, and each glass-enclosed bin holds a full box of unpacked yarn. A little plastic tray in the front of each bin holds one skein out for convenient inspection by the customer

APARTMENTS

ARCHITECTURAL RECORD'S

BUILDING TYPES STUDY NUMBER 123



Berla and Abel, Architects (See page 100)

THE BUILDING COST FIXATION

By Emerson Goble

AN architect remarked recently that four apartment projects were planned for each one that reached the construction stage. In other words, in three out of four cases the architect must roll up the sketches and tell his draftsmen to forget the whole thing. Why?

Is it building costs, restrictions, rent ceilings, material shortages, financing? Obviously it is not lack of demand. Obviously, too, it is not lack of enterprise, if four are trying for every one who succeeds.

If building costs come to mind as the first and final answer, the charts on succeeding pages may contain some surprises. Building costs *are* high, to be sure, but if we stop there we are quitting too soon. In the first place, we could be charged with pusillanimity. Costs of nearly everything are high. The problem is not how high they are in relation to the past, but how high in relation to the future. If we think building costs will stay high, we had better find a way to proceed now.

In the second place, history tells us that high building costs have not proved much of a deterrent in the past. Rightly or wrongly, most volume building was done in high-cost periods. Perhaps we should not jump to any conclusion from this fact, but we ought at least to take another look at costs.

Pursuing its studies of rental housing, the RECORD has asked two experienced apartment builders — both of them architects, by the way — for today's cost studies.

These have been analyzed and charted in comparison to published "representative" figures by the Federal Housing Administration. The FHA costs are taken as "par," and the others as practical attempts by professionals to do at least as well as bogey.

One of the pros did very well — he is busy with a number of projects right now. This is Emil A. Schmidlin, architect of East Orange, N. J. The other one played on an entirely different course; he packed up his clubs and gave up the game. The interesting thing is this:

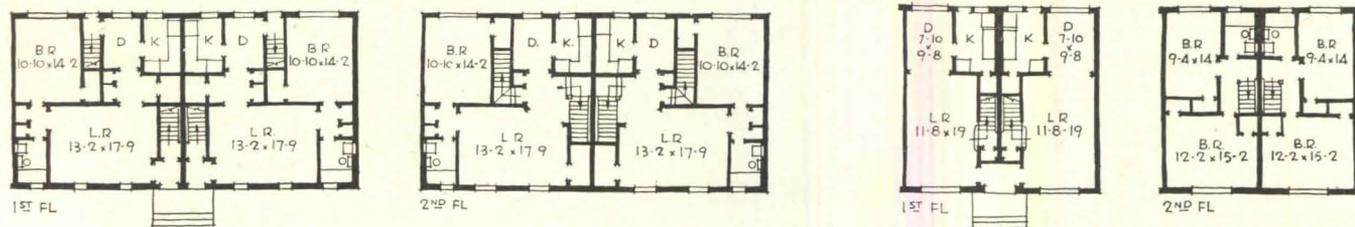
Both used exactly the same construction cost. Both builders calculated construction costs at 60¢ per cu. ft. This compares with a prewar average of 35¢.

Several interesting conclusions come out of the individual and comparative analysis of each cost tabulation. Perhaps the really significant one right at this moment (with many federal controls still holding) is that relief of the rental housing shortage is likely to be spotty — it is impossible to build in some localities; in others building will proceed.

Some other conclusions are:

1. Land cost assumes remarkable importance. In the Westchester example it was \$2.50 a sq. ft.; in New Jersey, just under 30¢. This item was the largest single factor determining success or failure.

2. Taxes run a close second. In terms of yearly cost taxes caused the widest divergence.



Typical of FHA-financed rental projects in New Jersey are these garden apartments now being built by Emil A. Schmidlin, architect

3. The FHA financing scheme, while leaving a thinner equity, does become quite a factor in fixing the percentage of annual "profit."

4. Assume 100 per cent occupancy and the margin of profit widens very rapidly, as compared with a long-term vacancy average. This would make a terrific difference in the early years of a project built at high costs in a period of heavy demand.

5. A small rent increase would widen the margins still more rapidly. The Westchester builder would lose money at 100 per cent occupancy at today's maximum rentals; but increase rentals by 25 per cent and his project does better than par. This point seems worth stressing; it does not require any staggering rent increase to change the entire picture of costs.

6. The income tax status of the owner would make a great difference. A corporate income tax would eat heavily into that little profit triangle at the top of the charts. (See "The Rental Housing Mystery," by Miles L. Colean, in the February ARCHITECTURAL RECORD.)

7. Assuming 100 per cent occupancy at adequate rentals, the owner would find it possible to amortize his investment more rapidly in the early years. Some figuring on this possibility might relieve some of his fears about undertaking to build at high costs. It might also prove the feasibility of some current proposals for permitting temporarily high depreciation in figuring income taxes, although, as Mr. Colean has pointed out, the owner must be prepared for higher taxable income in the later years.

There is another conclusion that is not quite so apparent in the charts: future cost trends are likely to be more important to the owner than any of the messages

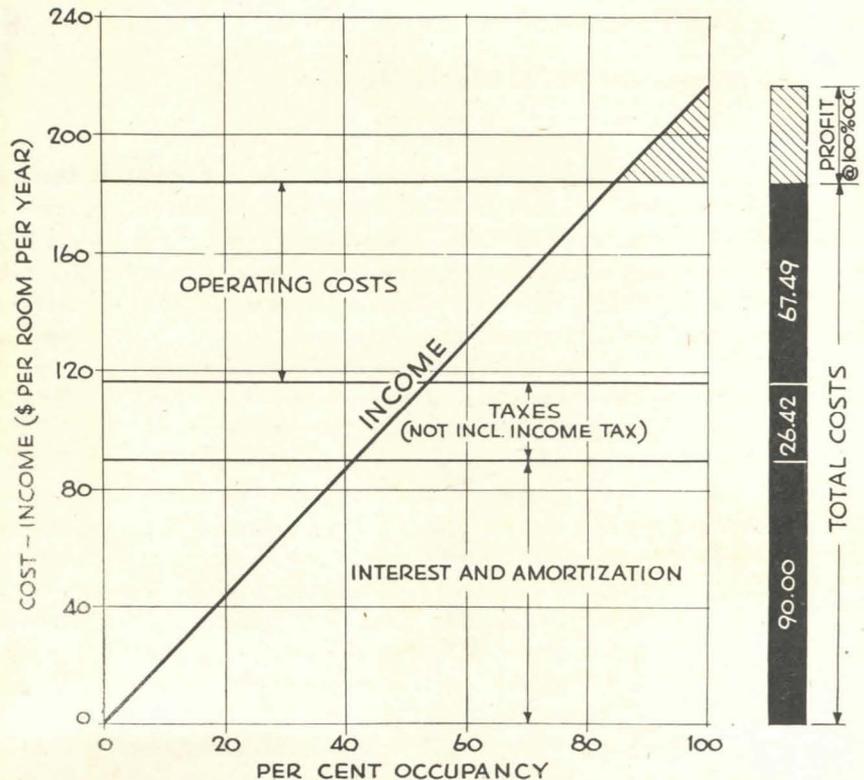
in current calculations. If the value of the dollar is to continue downward as it has in the past 50 years, the owner will do pretty well, even if costs of construction should decline a little before the inflation trend again sets in. If, on the other hand, today's costs should prove to be seriously high in relation to future ones, there would be a wave of bankruptcies. To see these effects graphically it would only be necessary to move upward or downward the angling line of "income," according to an assumed change in rental levels. The charts show rather clearly the stupendous effect of fixed costs in a rental project. Move the income line downward, just a little, and it soon gets under the level of fixed costs. But move it upward (assuming rental increases), and it rapidly widens the margin of profit. A history of the costs of the City and Suburban Homes Company (published in 1938 by FHA) shows that in the past 50 years their rentals for specific projects increased sometimes far over 100 per cent. In such a case the fixed costs of original construction become meaningless: the determinants then are later costs of modernization, replacement, operating, taxes and so on.

Thus if today's costs are but slightly higher than future averages, the charts would say there should be sufficient margin in a few profitable years to make the venture attractive right now. Or, that it would require very little rental increase to produce a boom in rental building.

In the "old days" the speculative builder used to say he would not undertake a project unless he could get his money out in five years. According to the charts, it would not be too difficult to do just that. All it would take is a few years of good rentals and full occupancy.

Cost and Income statement for "ABC Housing Corp.," Washington, D.C., two- and three-story walkup apartments of 60 units, 234 rooms.
Rents: \$70.70 per unit; \$18.13 per room.

COSTS (Totals)	
Land — 125,800 sq. ft. @ .238 per sq. ft.	\$ 30,000.00
Landscaping and utilities	17,552.00
Construction	292,390.00
Arch. and Bldr. fees, etc.	34,094.00
Financing, legal, insurance during construction	16,264.00
Total estimated requirements	\$309,300.00
INCOME (per room per year)	
Rental income (\$50,904 ÷ 234 rooms)	217.54
EXPENSES (per room per year)	
Interest and amortization (6%)	90.00
Real Estate taxes	26.42
Operating cost	67.49
Vacancies (7%)	15.23
Total expenses	\$ 199.14
Cash available for income taxes, corporate taxes, dividends, and surplus	18.40



FHA EXAMPLE SETS PAR FOR BUILDER'S PROFIT

THE normal way of figuring a project's costs to test its soundness is simply to make a tabulation of figures such as the one above to see how income matches cost after due allowance for vacancies. This would produce a simple bar chart such as the one at the right above. However, if all of the costs are charted against percentage of occupancy the cost picture becomes more graphic, particularly when, as now, high occupancy can be expected.

The chart is simply drawn: all annual costs are assumed to be fixed, thus the cost lines are parallel to the base (it might be said that operating costs will vary somewhat with percentage of occupancy, but as a practical matter the variation would surely be negligible — any operating savings with high vacancies would be eaten up by renting or decorating expense). The income does, of course, vary in direct relation to occupancy, and becomes a straight line from zero to maximum income.

Immediately it becomes apparent that the only profit in a rental building (with its high fixed costs) comes in the upper triangle. In this FHA "par" example, profit begins at about 85 per cent occupancy. It goes up rapidly approaching 100 per cent occupancy.

The author drew such a chart many years ago to show how quickly disaster comes when either rents or occupancy is reduced. Today, when occupancy is presumed to be 100 per cent, the chart also illustrates how rapidly the picture can change in the other direction.

FHA officials might be horrified to know, for example, that this standard set of costs shows a 20 per cent profit on the owner's equity, provided he achieves 100 per cent occupancy. A slight dash of cold water comes next — the FHA sample sheet calls it, not profit, but "cash available for income taxes, corporate taxes, dividends and surplus." In any case 20 per cent sounds like good business.

Move back on the chart to 93 per cent occupancy (the FHA figures 7 per cent for vacancies) and the "profit" has dropped to 10.9 per cent. This is of course based on the owner's equity of something over 10 per cent.

All the basic cost figures were taken from an FHA tabulation in its booklet "Rental Housing for Veterans" published last September. The only thing changed was the allowance for amortization, which has recently been cut from 2 to 1½ per cent.

In relation to the figures shown on the next two charts it is worth noting that land cost in this FHA example is about 24 cents a sq. ft., and the total cost per room runs about \$1668. This latter figure is just nicely within the maximum allowable figure of \$1800. The rentals average \$70.70 per family unit, or \$18.13 per room per month. In the next two calculations, showing actual projects, costs per room ran in one case \$2975, and in the other \$2214. Under the \$1800 ceiling, then, neither of the other two projects could be built, even though one of them shows that it would pay out nicely under the present maximum rentals.

IN NEW JERSEY COSTS PERMIT BUILDING NOW

Cost Figures from Emil A. Schmidlin, Architect

MR. SCHMIDLIN is currently quite enthusiastic about the possibilities of building apartment buildings under the present FHA Title VI financing scheme. As a matter of fact he is building a number of projects now and is acting as consultant for several more in the northern New Jersey area.

He has given here today's true cost figures for that area. To be strictly precise, these costs are not those of any given project. He took the 60¢ cube cost because it just happened to match exactly the figure given by the Westchester builder; cube costs for non-fireproof, walkup buildings actually vary from 58 to 61¢, and that is the way they are currently figured by FHA.

The principal difference between his costs and those from Westchester are in land costs: 30¢ against \$2.50 per sq. ft.; and in taxes: \$132 per four-room apartment per year against \$325. He has also changed the financing arrangements to use the Title VI method. There are other differences—he uses 1700 sq. ft. of land per apartment as against 900 in Westchester. The four-room apartment is slightly smaller in New Jersey—12,000 against 14,000.

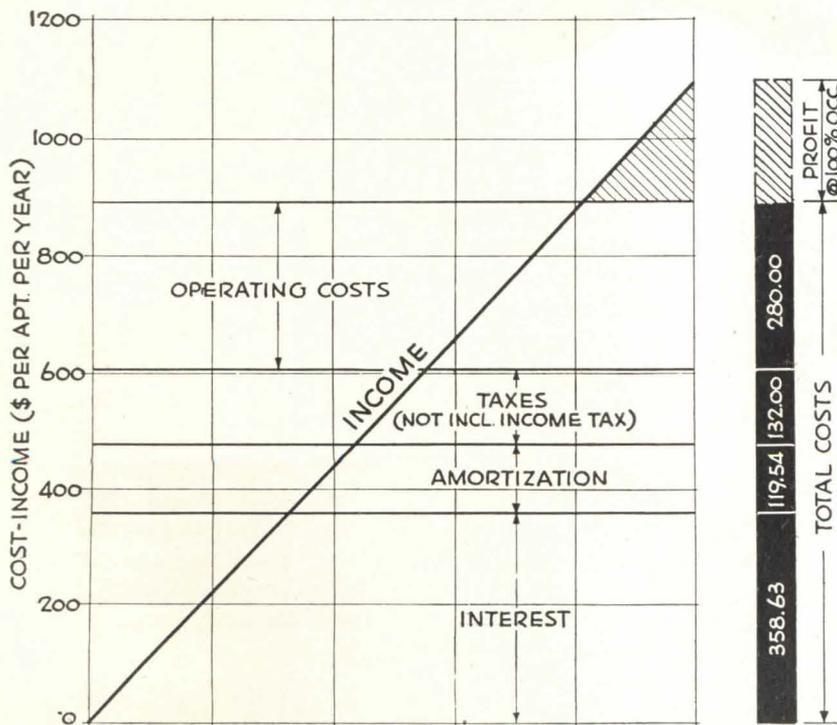
These differences when transferred to annual costs show that he would come out pretty well, even though in Westchester County the same costs of construction would show a loss.

How well is indicated by some analysis of the profit triangle in the chart. In this example income crosses

total costs at 81 per cent occupancy, and the overall profit is just slightly better than in the FHA example. At 100 per cent occupancy it amounts to 24 per cent, at 95 per cent occupancy it is 18 per cent. That is, of course, 18 and 24 per cent on an assumed 10 per cent equity. It should be remembered that there might be some theory in the assumption of \$92 per month rental for a four-room apartment. In an actual case the OPA-FHA rentals might be fixed at a somewhat lower level. As a practical matter, however, it is interesting to note that even under 60¢ building costs and maximum allowable rentals it is perfectly possible to work out a project that makes a good showing.

Mr. Schmidlin points out further that the annual amortization under the FHA set-up is figured as a cost item but is actually a saving, or at least a safety factor. It would seem to be only reasonable cost accounting to figure depreciation as a cost item in what is after all classified as a "wasting asset." On the other hand the FHA has announced its intention to use considerable discretion in helping builders through any difficult years that might be ahead. In other words in a depression period of minor severity it would be perfectly feasible to waive the amortization temporarily.

Even without such help from the mortgagee, however, he would have a margin of safety of his own. If in the early years of high occupancy he could set aside a surplus fund he would be prepared for trouble.



Cost and income statement for various two- and three-story apartments in New Jersey.

COSTS (per 4-room apartment)

Land—1700 sq. ft. per 4-room apt.	\$ 500.00
Bldg.—12,000 cu. ft. per apt. @ 60c per cu. ft. . . .	7,200.00
Financing, architect's and builder's fees, etc.—15%	1,155.00

Total cost of 4-room apartment \$ 8,855.00

INCOME (per 4-room apartment per year)

OPA rent allowed \$80 per month per apt.	\$ 960.00
Services allowed—\$3 per room per month	144.00

Total income allowed \$ 1,104.00

EXPENSES (per 4-room apartment per year)

Interest—4% + ½% on 90% mtg.	\$ 358.63
Amortization—1 ½% (first year)	119.54
Taxes—\$33 per room per year	132.00
Operating—\$70 per room per year	280.00
Vacancies—5%	55.00

Total costs \$ 945.17

PROFIT (before income taxes) \$ 158.83

NEW YORK BUILDER WOULD NEED HIGHER RENTALS

A BUILDER in the Westchester area of New York who has for years operated his own projects recently made these calculations for a building to adjoin an existing one. He quickly discovered that the arithmetic did not work out well, and offered these costs as proof positive that under present controls he must sit on the sidelines.

There is no argument there. With the land costs and taxes indicated, coupled with today's construction costs, he is through before he starts.

The chart is interesting, however, to show what might happen if the rent ceilings were abandoned. He has proved rather definitely that he is in a high-cost location and that rent ceilings here prevent any sound financial structure. It is natural to assume that in such an area rentals would be fairly high were it not for existing ceilings. It would not be difficult for a soap-box orator to convince his listeners that if there were no restrictions rents would quickly double. The chart indicates that this is by no means necessary. The added line for income represents an increase above existing ceilings of only 25 per cent. That would mean a rental of \$115 per month for a four-room apartment in a rather wealthy community.

The new line on the chart shows that a 25 per cent

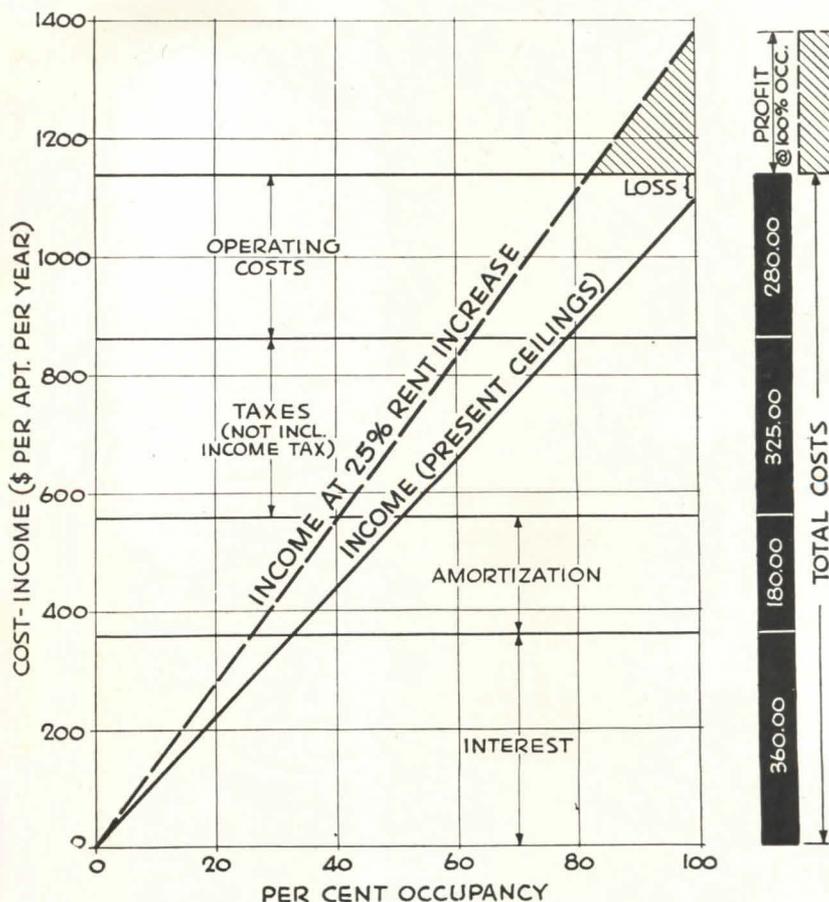
rent increase would make his project slightly better than the par set by the FHA. His income would match operating costs at 83 per cent occupancy, and the income line of the chart takes a sufficiently higher angle to just about match the other two examples.

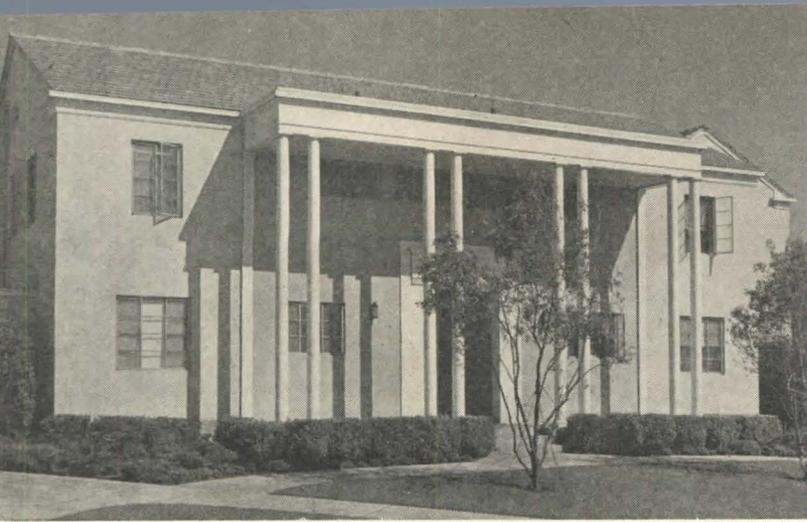
In calculating overall profits he apparently does not do quite as well as the appearance of the chart seems to indicate, for in this case his "profit" must be figured against a 25 per cent equity instead of the 10 per cent assumed in the other instances. Nevertheless, at 95 per cent occupancy he would show a rate of 5.6 per cent. At 100 per cent occupancy the figure is 8 per cent.

In the succeeding years his results are not so easy to follow. He does not have the fixed rate of interest and amortization. He shows an amortization of 2 per cent per year, which presumably is a flat annual rate of reduction of the mortgage. If he actually paid this each year, his interest would be declining gradually. He already starts with a more conservative original loan, with presumably a safer margin for trouble, even if it does not show up in the percentage of "profit." The reason it does not show so readily, of course, is that while the rate is lower, the actual amount is higher. It will be noted that these differences in financing will also result in different income tax impositions.

Cost and income statement for small apartments in Westchester Co., N. Y.

COSTS	
Land—900 sq. ft. per apt. @ 2.50	\$ 2,250.00
Bldg.—3500 cu. ft. per room, or 14,000 per apt.—@ 60c	8,400.00
Financing, architect's and builder's fees, carrying charges during construction, incorporation, etc.—15%	1,250.00
Total cost for an average 4-room apartment . . .	\$ 11,900.00
INCOME	
OPA rent allowed per apartment—\$80 a month . .	\$ 960.00
Services allowed—\$3.00 a room a month	144.00
Total income permitted	\$ 1,104.00
EXPENSES	
Interest (assumed 75% mtg.) \$9000 @ 4%	\$ 360.00
Amortization—2%	180.00
Taxes (assumed assessment at \$10,000) @ 3¼%	325.00
Operating—today's minimum \$70 a room a year	280.00
Vacancies—5%	50.00
Total expenses	\$ 1,195.00
BALANCE Loss	\$ 91.00

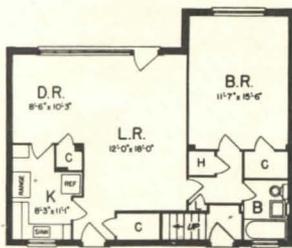




Some of Parkmerced's buildings are monolithic concrete. On most blocks, however, construction is concrete to the first floor with wood frame and stucco above. Coverage by buildings is less than one quarter of the total 200 acres

HIGH STANDARDS, LOW RENTS, PARKMERCED, SAN FRANCISCO

*Metropolitan Life Insurance Co., Builders
Leonard Schultze & Associates, Architects*

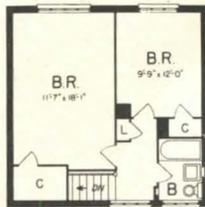


FIRST FLOOR

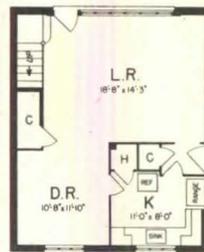
SIGHTING high on convenience, openness, sunlight and related amenities of environment for 2531 middle-income families, the builders managed to hold their aim steady, despite wartime preventions, to the extent of completing two thirds of this project by early 1945. Rentals continue to range from an average of \$54 monthly for a one-bedroom suite to \$82.50 for a three-bedroom duplex. Like Parklabrea at Los Angeles (see ARCHITECTURAL RECORD, May '46, pp. 88-90), also created through the substantial investment resources of the Metropolitan, Parkmerced raises a high standard, and hope and inspiration, too, for crucially needed housing developments to follow.



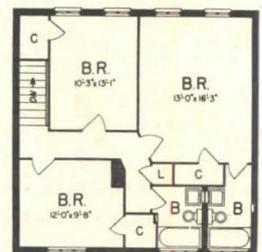
FIRST FLOOR



SECOND FLOOR

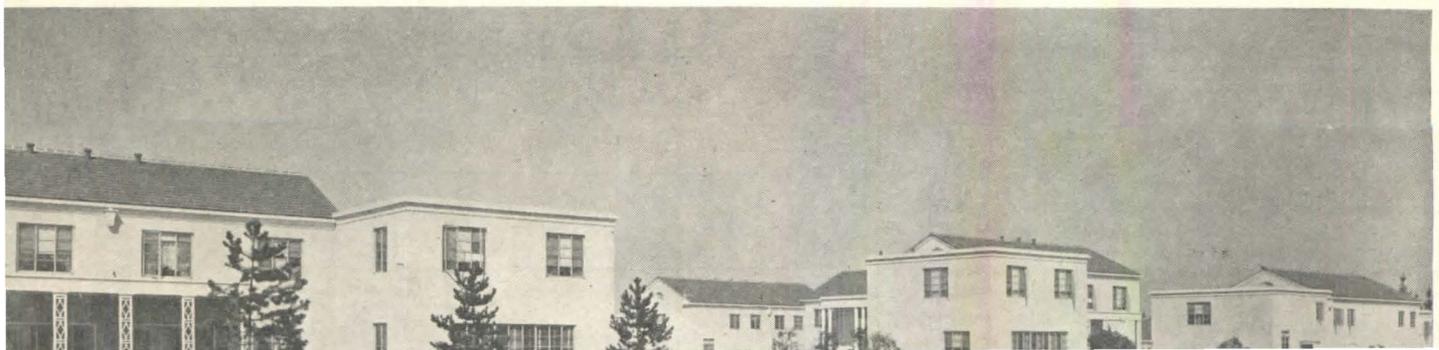


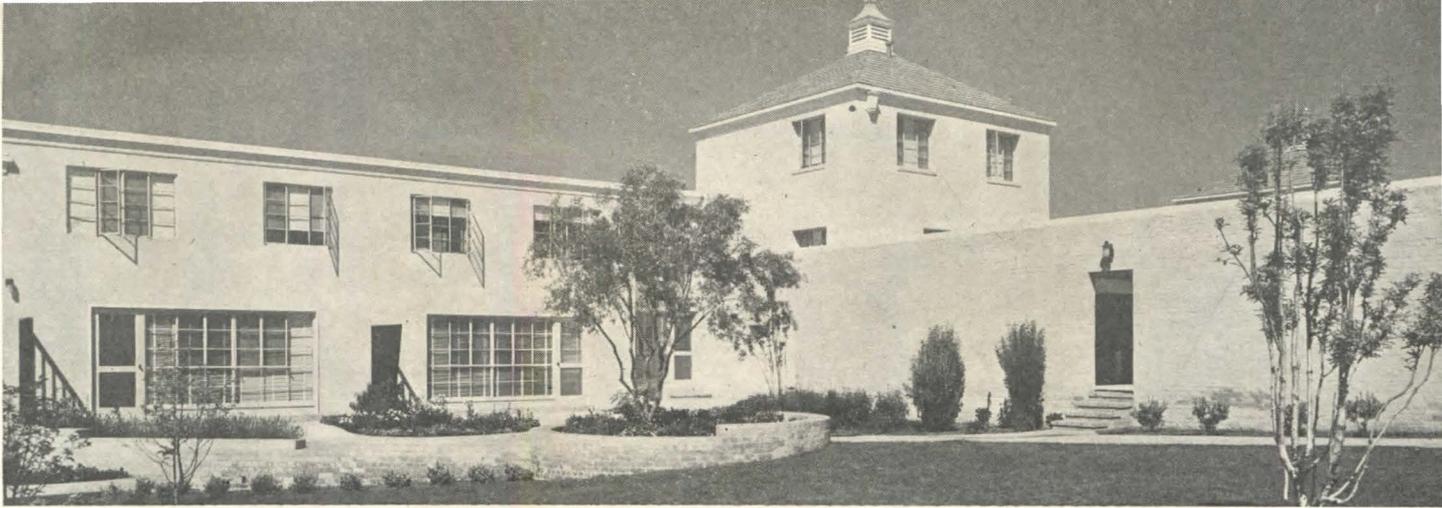
FIRST FLOOR



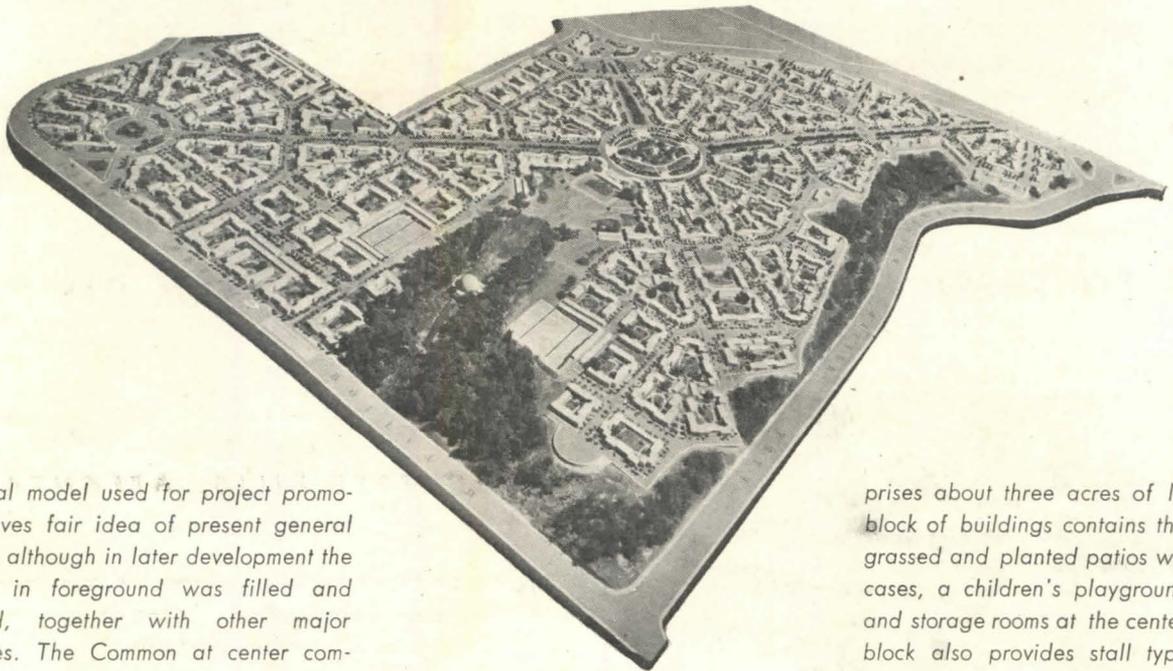
SECOND FLOOR

Top plan: One-bedroom suite on second floor is identical, except that closet is over access stairway. Two plans, right: Second floors extend over entrance passageway to interior of block. Kitchens face streets; all living rooms and most bedrooms overlook patio lawns





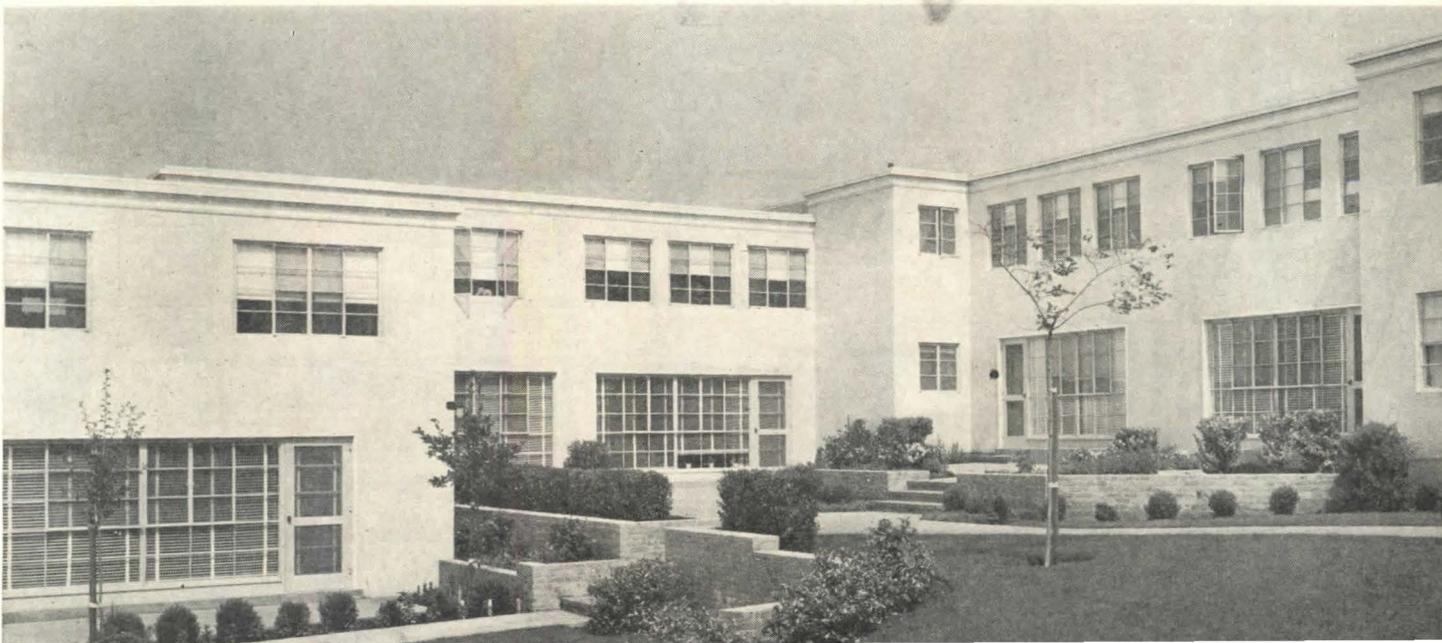
Gabriel Moulin Photos



Original model used for project promotion gives fair idea of present general layout, although in later development the ravine in foreground was filled and graded, together with other major changes. The Common at center com-

prises about three acres of lawn. Each block of buildings contains three or four grassed and planted patios with, in most cases, a children's playground, laundry and storage rooms at the center. Average block also provides stall type garages

Model: Worsinger Photo





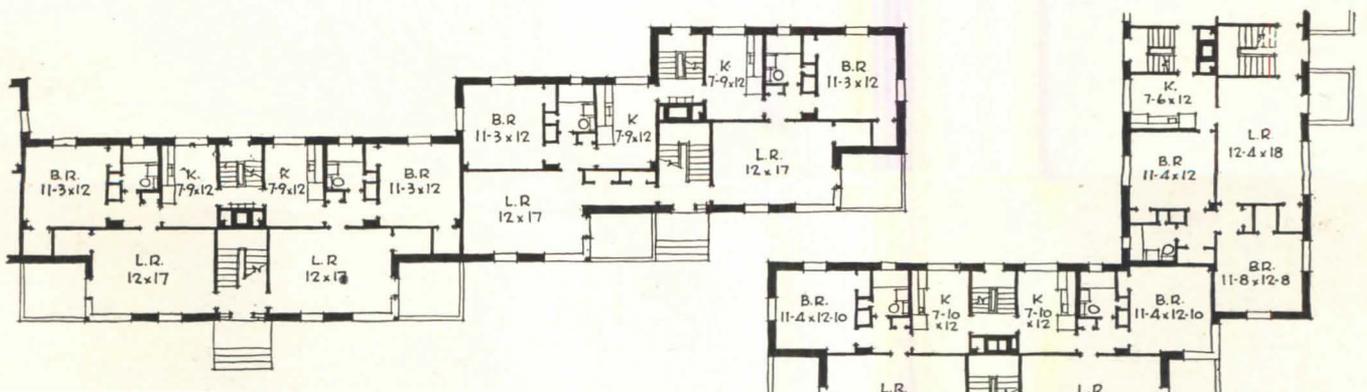
William Dunn Photos

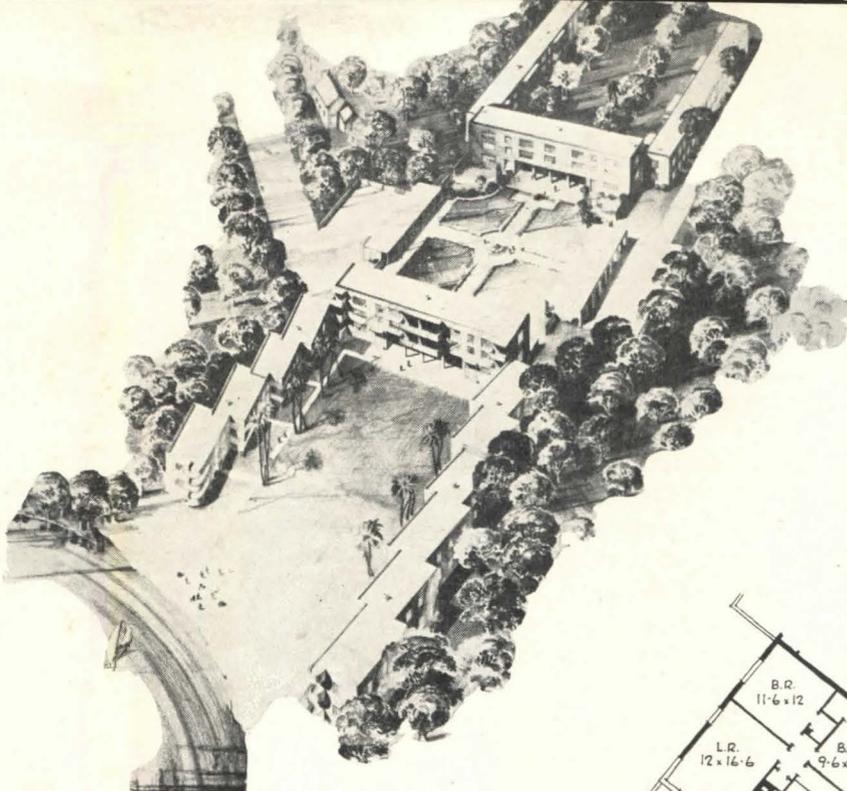
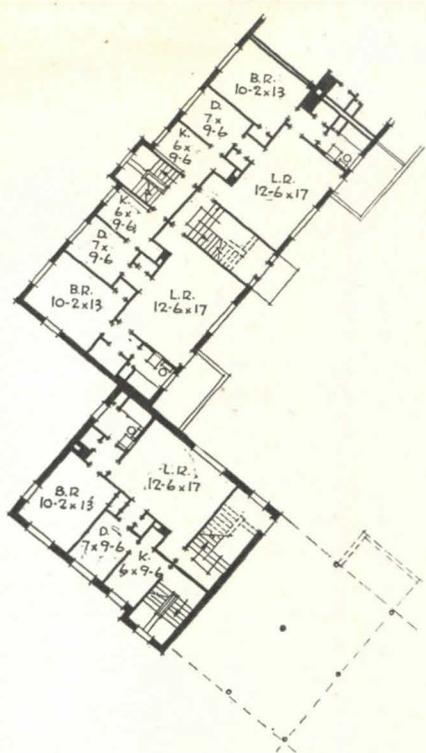
TWO SOUTHERN GROUPS PLANNED FOR LONG TERM DIVIDENDS



PEACHTREE HILLS, ATLANTA, GA.

BOTH at Peachtree Hills, shown on this page, and at Highland Lakes, across, "attempt was made," say the architects, "to provide permanent buildings for the lowest possible cost, since a limited but long term dividend was the object of the investor." At the same time, in both cases, heavily wooded rolling sites were capitalized to give tenants the pleasantest of possible natural surroundings. Buildings were fitted to topography to minimize grading and to retain trees, and oriented to provide maximum sunlight and open view for each unit.

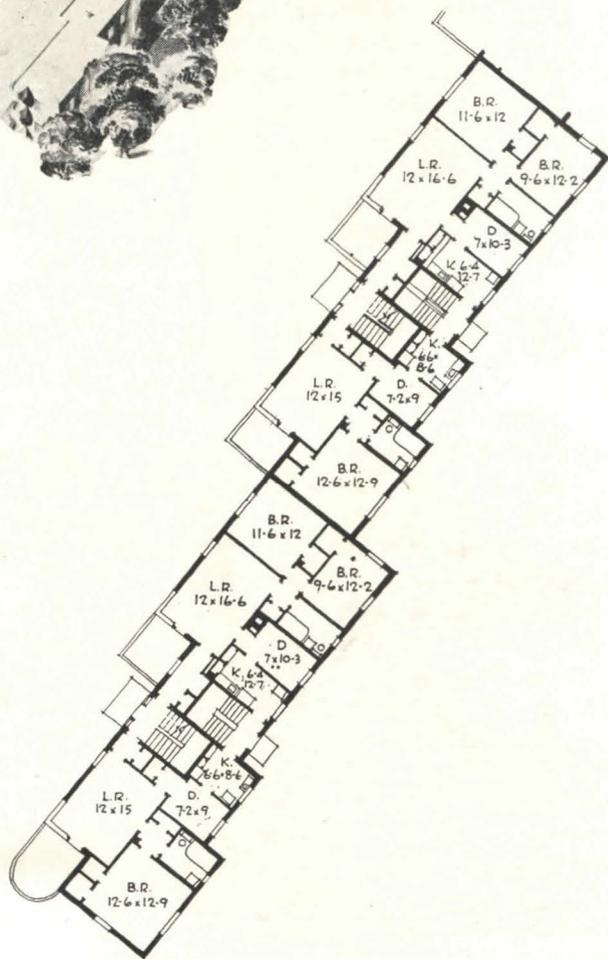




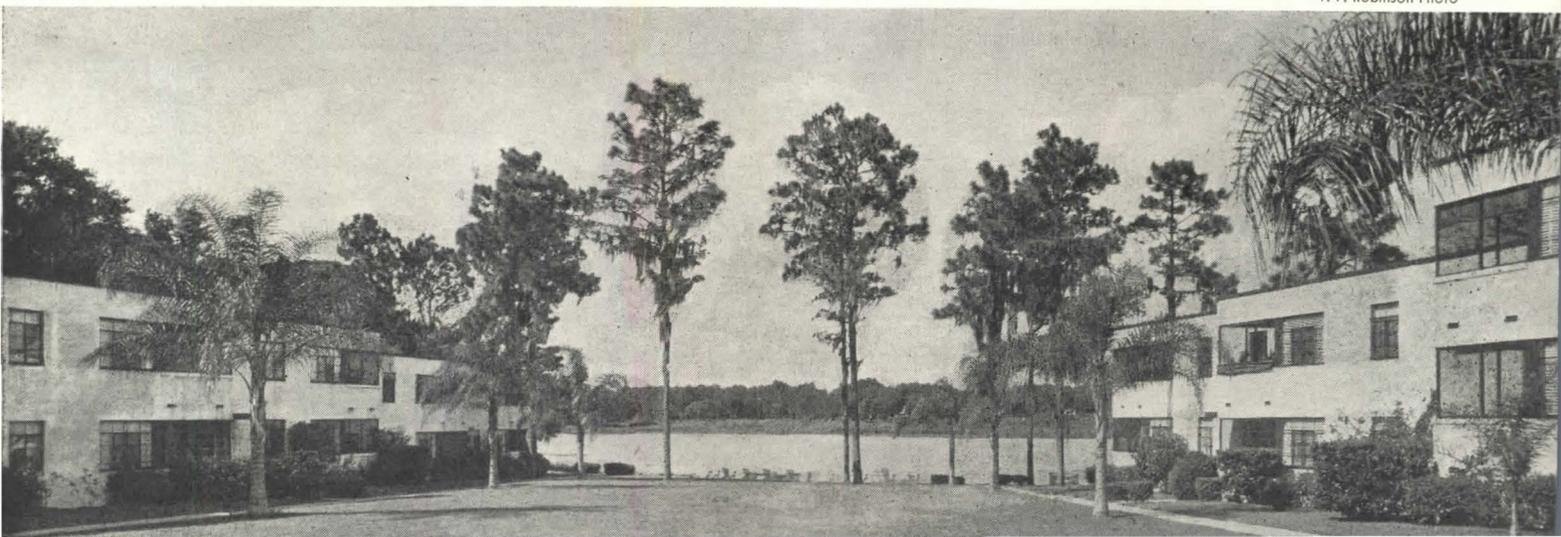
Burge & Stevens & Associates
Architects-Engineers

HIGHLAND LAKES, ORLANDO, FLA.

MATERIALS and equipment for both jobs are practically identical and were chosen with regard for a minimum of maintenance. Footings, framing, floors and roof structures are reinforced concrete; roofing is 20 year built-up. Exterior walls are hollow-clay tile, cement stuccoed. Interior partitions are hollow clay tile and gypsum plaster. All apartments have gas stoves and refrigerators; gas fired, forced warm-air heating units serve each six apartments. W. Kenneth Miller was the local associated architect, supervising construction.



T. P. Robinson Photo



WHAT KIND OF GROUP DESIGN?

POSSIBILITIES AND PREVENTIONS

By Arthur C. Holden, F.A.I.A.

WHAT kind of group design may, in the next few years, be possible as well as desirable? The question in this discussion hinges more on straight factors of planning and design than on finance economics. The answer, of course, involves consideration of what the public wants. Contact with the demands of public taste, in turn, reveals that the public on its part lacks sufficient information as to the range of possibilities, and the hindrances in the path of accomplishment.

It can be argued that the public in general looks with suspicion upon innovations; nevertheless, when homes are offered which combine economy, convenience and attractiveness, there is active public response, not much diminished by departures from the commonplace in group arrangement and design. Moreover, the public is asking more and more discerning questions about the respective advantages of buying and renting; and also whether housing, planned as a group, can be offered only on a rental basis.

The increasing demand for suburban rental apartments may in part be attributed to recent experience with planned war housing. In spite of shortcomings, many of these large scale housing projects have furnished a concrete demonstration of new horizons in residential communities. In a great many cases these projects have been accepted by the public as giving more convenience and attractiveness, in proportion to the money and risk involved, than houses and lots offered in undesigned rows, previously accepted as a minimum standard.

To some extent the impression prevails that such limited experience with the planned community as the public has enjoyed has been made possible through governmental subsidy. Accordingly, there is a great demand for more subsidies so that there can be more housing of these improved types, and more projects planned on the basis of the group. Moreover, it appears that legislatures and courts, in much part, are in agreement that governmental subsidies are justified both to aid our cities rid themselves of unfit obsolete habitations, and to aid in providing housing of a minimum standard of decency for families whose earnings are, through no essential fault of their own, below the level at which decent housing can be provided on a straight commercial basis. But present demands for subsidies go far beyond the limits originally intended. The question is asked "Why can't those who can afford to pay obtain homes that are planned on the group basis and which possess a reasonable degree of assurance to the amenities of community life?"

Granted that the progress made has given the general public a new hope for better living conditions, it is my belief that we have fallen far below what should have been possible under the limitations of depression

standing of the restraining factors, it is likely that, in the future, we may fail to make the gains that should be possible in group housing and community design.

The Architect: Specialist in Coordinating Specialists

Much of the credit for America's great industrial progress is due to specialization. There comes a point, however, where specialization begins to create new dangers of its own. The architect is especially aware of this, because a large part of his task as designer is to coordinate the work of specialists. He himself is a specialist at coordination. He has to have a broad knowledge, not only of how other specialists work, but of how far their provinces of practice will permit modification in the interest of objectives beyond each specialist's particular concern.

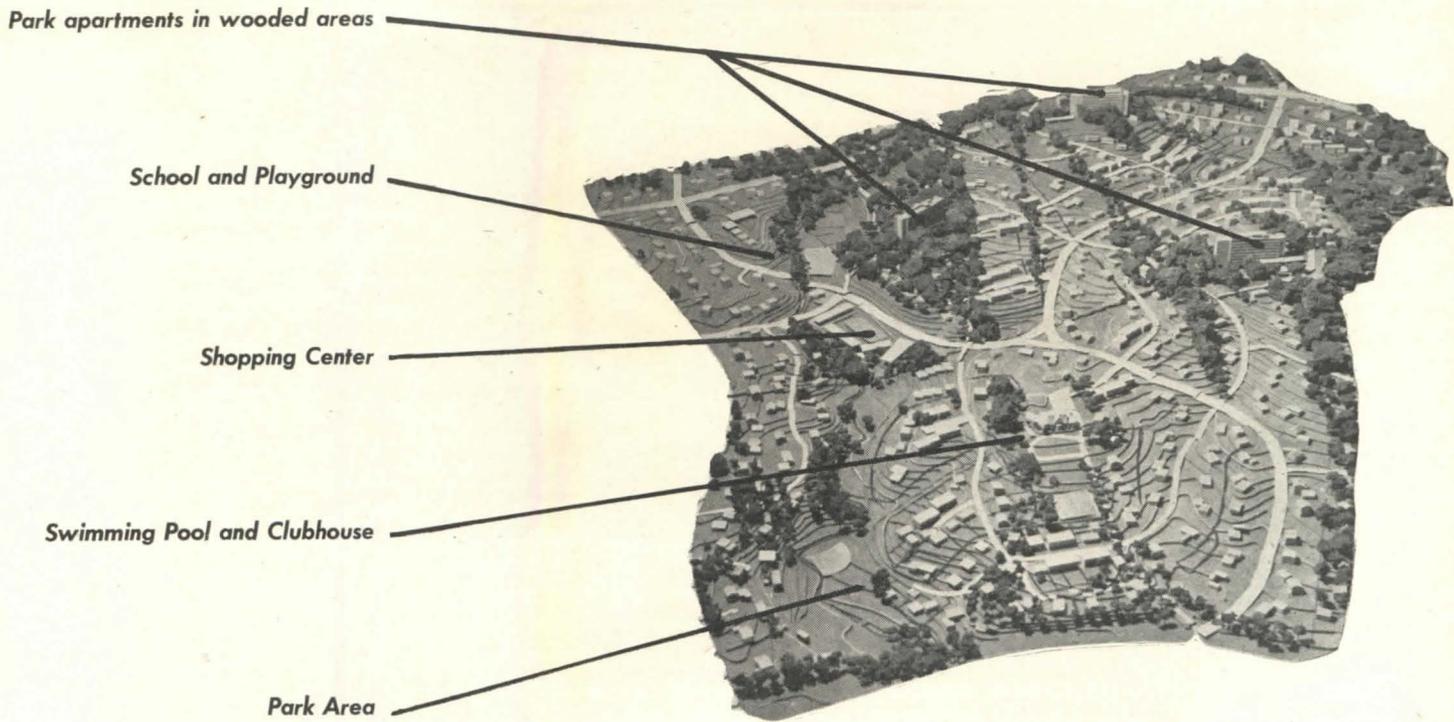
Let us make clear that in discussing "group housing" and deliberately avoiding the use of the term "apartment house," we assume that the state of public taste has advanced beyond acceptance of the tall city apartment, or even the standardized four-family house, both originally designed for a typical city lot and too frequently transplanted to a rural or suburban environment. Such buildings remain city apartments or flats even though specialists who create them dub them "Cottswold Manor," hoping thus to cash in on the publicity value of fake half-timbered gables cutting the roof line, or projecting from an otherwise inoffensive third or fourth story wall. Such incongruous city transplantations assume the transfer of an urban system of lot subdivision to country and suburbs, and the regularization of country roads into streets.

It is my contention that the character of the rural landscape can be maintained if houses are grouped appropriately, with a minimum semblance to arrangement in rows. This can be done by careful attention not only to the design of buildings but to the design and arrangement of the spaces between. We should consider the concentration of buildings in groups, and in no less degree strive for the concentration of open spaces. In the ideal we should aim at a skillful combination of dispersion and concentration.

How Did We Miss?

At this point it is pertinent, perhaps, to inquire why the design of our communities has fallen so far short of the ideal, in spite of the fact that the past 70 years have produced continuous improvements in the technique of building. Probably never before in history has such a great physical task been performed in such a short period of time as the astonishing amount of construction accomplished by the American people.

The rapid development of machine processes and ad



Model of Project for the Bannockburn Cooperators — Vernon DeMars, Architect. A most significant proposal for the development of a golf course site. The plan does not fit into zoning laws as written inasmuch as it calls for three widely separated tall apartments planned harmoniously with group-row and individual housing. The design attempts to make the most of natural features and to concentrate the buildings, leaving sufficient open area between to retain the natural assets of the landscape. Strangely enough, surrounding property owners have opposed the development, little realizing that a gridiron plat could be laid out and built up with banal individual family homes under present zoning laws, and that variation of types of buildings makes possible the preservation of open space

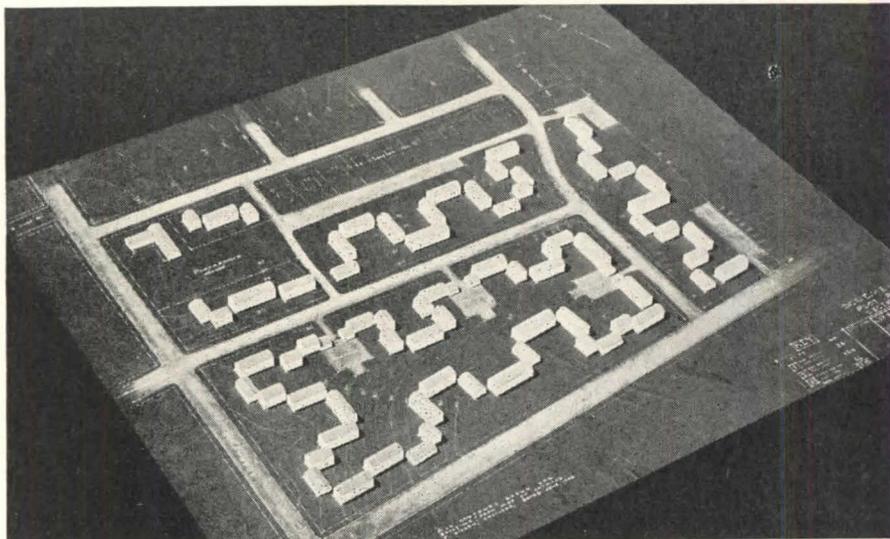
tinually available. But probably the greatest factor in increased productivity has been the specialization of labor and the subdivision of tasks. It is not necessary here to go into details of how the labor of creating materials has become increasingly separated from the labor of erection, or how separate sets of skilled craftsmen have developed to handle different types of materials. It is more important to stress the division of responsibility. The man who designs the building has been glad to have the contractor assume the responsibility for erection. The contractor who builds usually prefers to have someone else take over the responsibility for owning and maintaining. The major portion of the money required for construction is furnished by neither the builder nor the ultimate owner; it is loaned frequently through an agent to be gradually paid back in exchange for the use of shelter.

But in many respects this division of responsibility has had definitely nonprogressive effects, tending to create habits setting unfortunate limits upon design. For example, those who lend money want the limits of the owner's responsibility definitely fixed. The owner also wants boundaries established within which his authority will not be challenged. As a result of divided responsibilities, the limitations of a system of individual development have carried over into an era with a tremendous necessity and potential capacity for common planning.

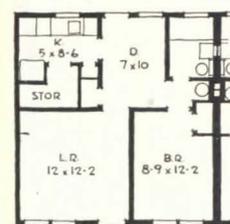
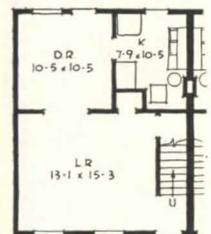
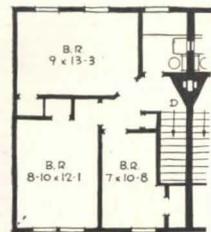
Furthermore, we have set up regulations and enacted

into law certain restrictive measures of original good intention, designed to protect the public against the abuses of special interests. Most of these restrictive measures presuppose an individual interest confined within certain specific boundaries, working against individual interests confined within adjacent plottages, as well as against the public interest. For example, many of our zoning laws are focussed upon restricting the building bulk on a single lot and, especially in suburban areas, upon maintaining certain minimum front, side, and rear yard dimensions. We appear to have been practically blind to the encouragement of procedure which is based upon the interdependability of property rights and advantages.

In 1946 it was my privilege to submit recommendations for zoning ordinance revisions to a city of over 40,000 population, where invasions by intensive type apartment houses were a cause for concern. The proposed code suggested a basic differentiation for individual lot developments from large scale plot developments which provided for the design of space between buildings. It appeared futile even to attempt to secure official backing for such a proposal. City officials didn't see how concert of action could be secured for the laying out of plot developments in the older parts of town where property was already cut up into lots, and they were quite frank in saying that they didn't want "apartment" groups to replace former large scale gentlemen's estates



Section 3, Jersey Victory Homes, Somerville, N. J.; Holden, McLaughlin & Associates, Architects. Model shows pairs of individual homes fitted together in groups of two and four, one story and two stories high. Rentals are expected to range from \$60 to \$80 per family. The entire project is composed of basic unit plans (at right) varied mainly in the number of bedrooms. Distinctiveness is obtained principally from variety in mass, placement of chimneys (each building having an individual heating unit) and location of entrance porches. Exteriors are white asbestos shingle with some brick veneer



in neighborhoods where individual lots were salable. It made no impression upon a planning board, composed of specialized department heads, to point out that, under the existing code, gentlemen's estates in the sparsely settled sections of the city could be cut up into individual lots, on each of which two family houses could be erected, ranged in rows with no more than the minimum required side yards between buildings.

In many cities the usual code requirements forbid the construction of more than one building on a single lot, and also forbid the construction of a building on a lot which does not abut a public street of a minimum width, generally set at 50 feet. These are outgrowths of such abuses as abounded in the city of Washington, when old stables or rear alleys were made over into Negro tenements without adequate sanitary provisions. Such legislation was also originally designed to protect the ignorant lot purchaser against being sold a lot to which no legal access was obtainable. Adequate access for fire apparatus has been another (and valid) reason given for regulations of this type, but there has been as yet little consideration for stultifying effects upon design.

— And Further Hindrances

Group planning has encountered other positive difficulties. Accepted methods of design have not found a way to provide adequately for common recreation space, and to preserve those natural features of the landscape which furnish values enjoyable in common with use of the surrounding properties.

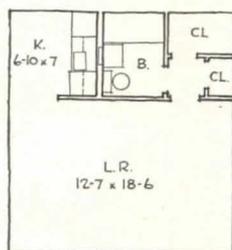
Let us take as an extreme example the "planning" of the interior of an average block laid out in lots for one-family homes. In the days of the buggy whip, it was ad-

visable to place the stable at the rear of the lot as far from the house as possible. Today, with the horse practically a reminiscence, it is still not unusual to place the garage at the back of the lot, sometimes reached by a rear alley, sometimes by a driveway at the side of the house. Many municipalities have regulations requiring the garage, except when attached to the house, to be placed at least 60 feet back from the street. This means 25 to 60 feet of paved rear alley or side road per house. It also means, in general, that the interior of the block is cluttered up with miscellaneous placed garages.

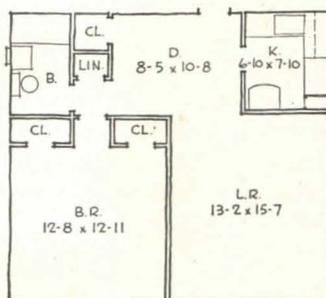
In laying out a new community even upon regularly spaced rectangular blocks, attractive central space, usable in common, could easily be provided were it possible to assure maintenance and protection of the common interest. Unfortunately, there are many hard and fast requirements for minimum lot sizes. Frequently these are backed up by the FHA. The "rules" do not recognize the desirability of a small size private yard, particularly when it abuts a large common open space. Furthermore lawyers usually advise against deed restrictions assigning the rear portion of a lot to common use as garden or recreation space to be enjoyed by all families of owners in the block. Certainly to assign space to a common interior garden is a practicable method for preserving the amenities of nature. It is a lag in our ideas of contract that prevents its use. Let us imagine an attractive little tree-bordered stream flowing through the center of a block. The value of such a feature is entirely dependent upon the success with which a plan for common enjoyment can be worked out. If design is to remain subject to the backwardness of the legal specialists, it is good policy to divert the stream into a culvert



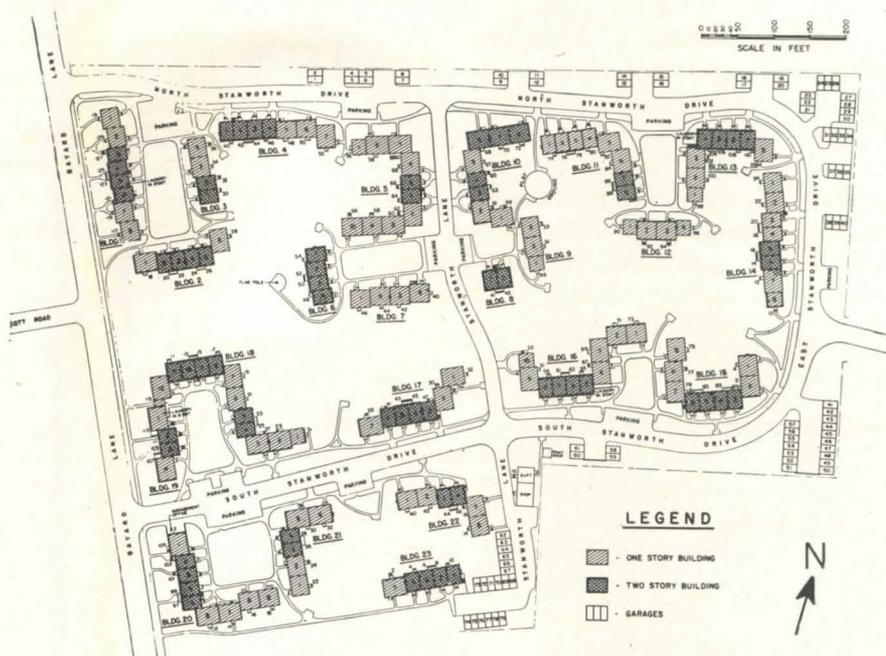
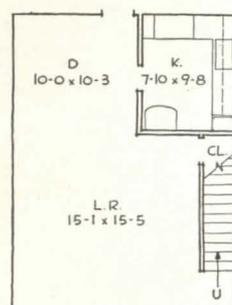
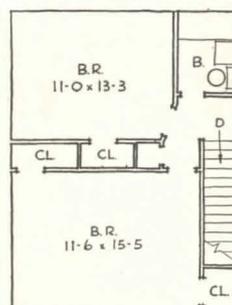
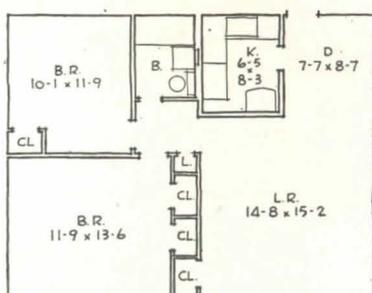
Stanworth Project, Princeton, N. J., for the New York Life Insurance Co.; Holden, McLaughlin & Associates, Architects. 152 individual family units on a terrain where large specimen trees and a variation in grade of 50 ft. were factors in planning. The great depth of the 15-acre tract suggested a private loop road for access. The apartments are entered from the rear, the fronts in all cases facing on the garden from which automobile traffic is excluded. Dwellings are developed from unit plans, with the variations in grade and grouping furnishing the main esthetic elements of the design. Rents range from \$60 to \$125 per family. Located on one of the most important residential streets in Princeton with potential attractiveness beyond what is usually possible, these houses are designed with large rooms as a long-range investment, to be desirable after high costs have been largely amortized. Progress photo taken in January



Above: no-bedroom unit



Above: one-bedroom unit. Below, left: two bedrooms, one story



Below, right: two bedrooms, two stories

and cover the irregularities of grade with fill, thus facilitating the eventual sale of independent parcels of real estate. All too frequently lots and houses are arranged principally with an eye to delivering a marketable property with a house that conforms to all requirements, unchallengeable through law or contract but starkly oblivious to the amenities of neighborly living.

In planning group housing the same type of habits and similar forms of specialized regulations militate against the improvement of design. Theoretically, the purpose of group housing is to secure the advantages of location and terrain for a larger number of families than could possibly enjoy such amenities in city, country or suburbs on the basis of single family homes.

But the belief is still widespread that all large scale group housing should be so designed that it may be split up and sold to small scale owners if the project proves unsuccessful. Many cities and towns require in their codes that every building shall be connected independently to a public sewer. This may be all very well for a city type apartment where families are piled up floor over floor, but where effort is being made to preserve a rural atmosphere and where the families and buildings are spread out horizontally, such a regulation usually adds unnecessarily to cost, and tends toward the destruction of natural charm because of the innumerable trenches intersecting tree roots.

There are other habits and requirements which make group planning difficult. Among these are certain mandatory preferences of the land planning division of the FHA. There has been insistence that facades should, wherever possible, be parallel to the street and that under no circumstances should rears be exposed to view from a public road. Even though a differentiation has been established between arterial streets and minor

residential streets, there has been insistence, in which most municipalities join, that all public rights of way should be 50 feet in minimum width, and that added to this, there should be a minimum setback of 25 feet.

Lists of requirements such as these have been built up to suit the concerns of various specialists. The designer cannot help but chafe under them for they limit his power to make original use of the conditions that are presented to him. Most highway and fire departments support the insistence upon wide surface pavements, pointing out the dangers of blocking snow plows in winter, and fire apparatus. Then there is the ever-present consideration of heavy fuel delivery trucks and garbage collections. There is also the problem of how to take adequate measures for the ubiquitous automobile and still preserve the charm of unbroken greensward, trees and shrubs. The arrangement of a group housing project must satisfy these practical considerations of access and needed services, but there is much margin for give-away in meeting the no less essential requirements of gracious and happy living.

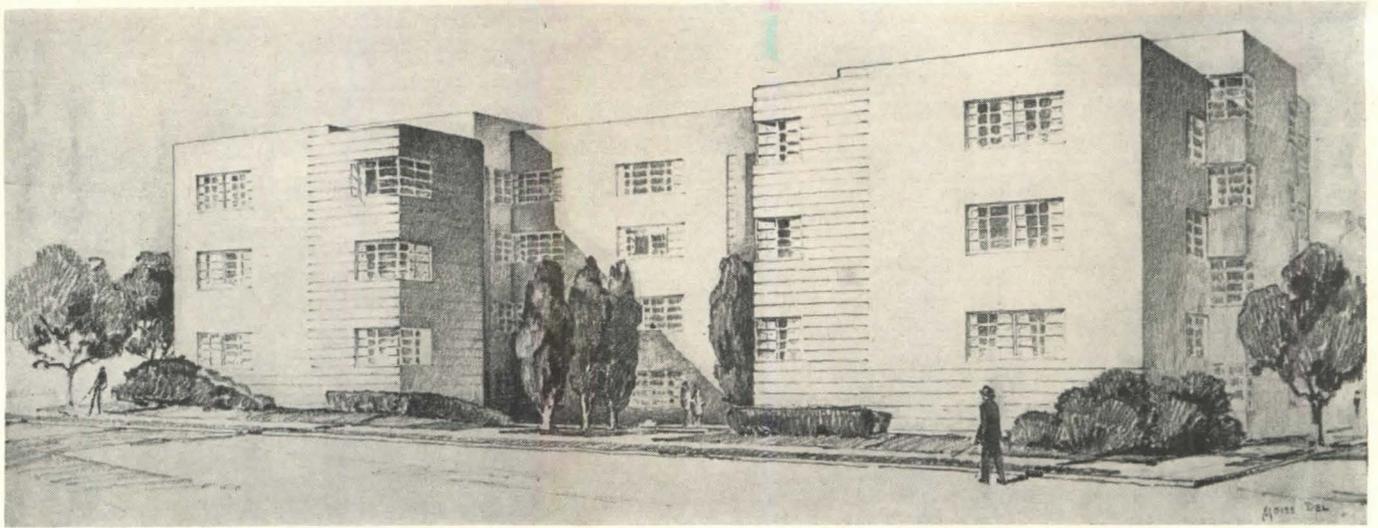


Generalization regarding higher standards of group planning is likely to sound discouraging. A good plan is still one which makes the *most* out of opportunities presented. Even if all of the handicaps imposed by restrictions and specialized habits cannot at once be overcome, good group design should stimulate man, in the broadest possible sense, to acknowledge that more can be realized through common and shared enjoyment than through the obdurate definition of legal boundary lines, within which each individual may exercise his narrow choice, whether it be to exploit, desecrate, ignore or even to cultivate nature.

"Wartimes, new horizons": Monroe St. Project, built as temporary emergency housing for National Capital Housing Authority; Holden, McLaughlin & Associates, Architects. An irregular, well-wooded site of gentle gradient planned around a system of courts



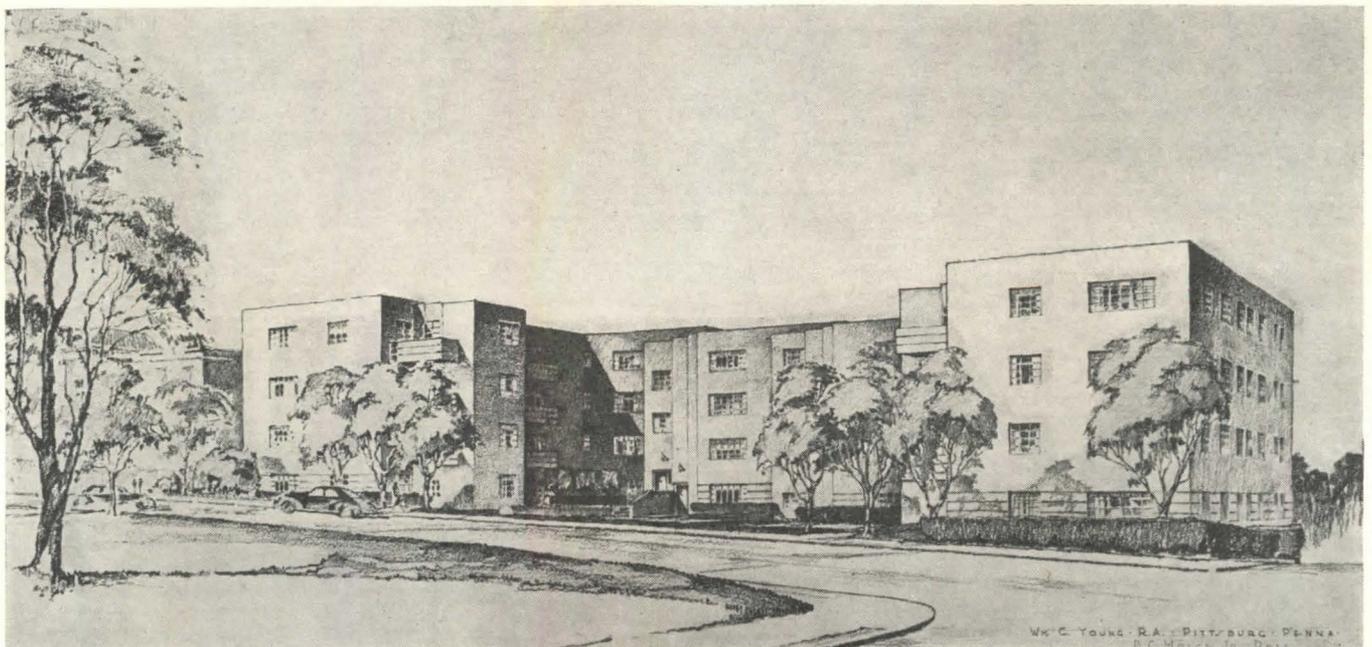
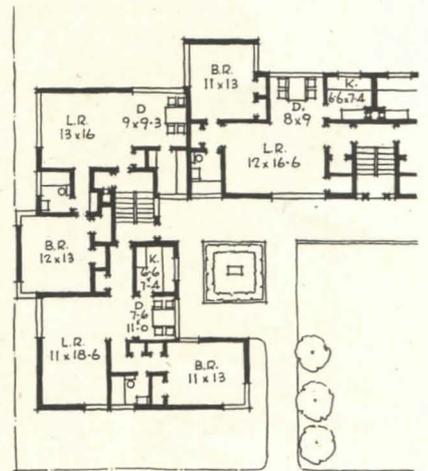
Rodney McCay Morgan Photo

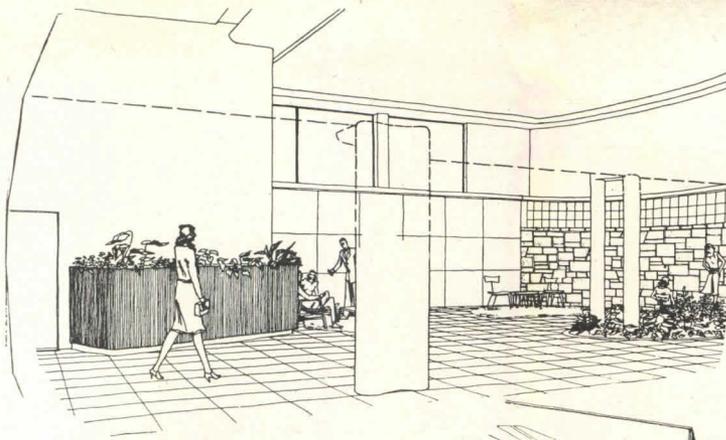


VARIED-LEVEL PLANS, PITTSBURGH

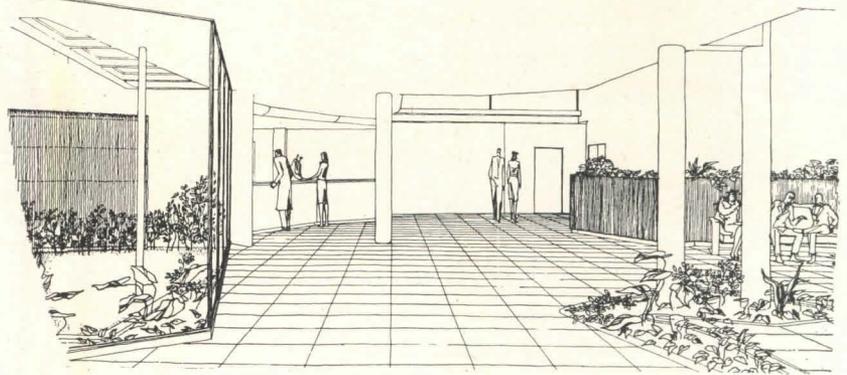
William C. Young, Architect

CONSTRUCTION on the building shown above, and in plan at right, is just about to start; the similar building shown below in rendering is just finished. Brief study of the plan will disclose varied levels between apartments — a distinctive feature of both projects, implementing garages in the basement since both are on reasonably level sites. Construction is steel joist and concrete floor; exteriors, brick with tile on cinder block back-up. Each building has an incinerator; concealed hot-water heating. \$80 rents include utilities.





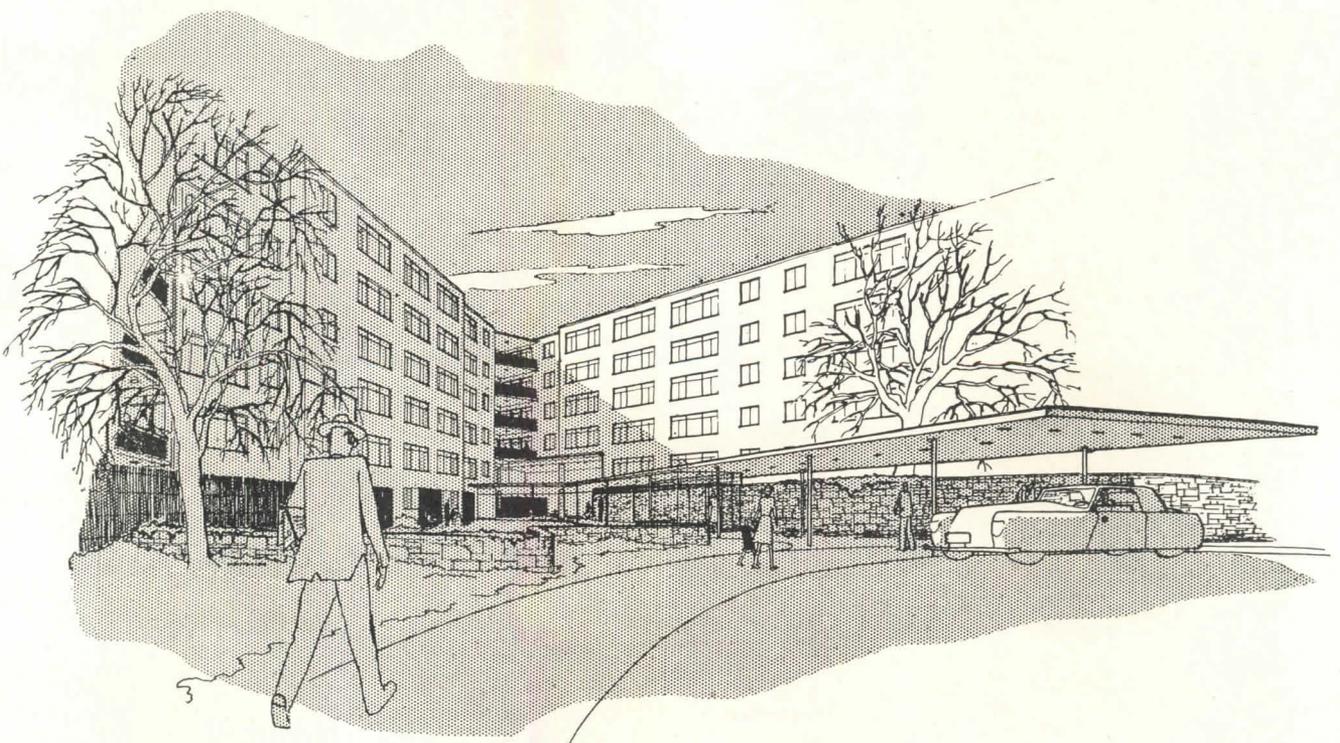
Materials in lobby will be: floor and base, terrazzo; walls of plaster, rubble stone and plywood. Large glass areas and copious planting are calculated to arouse feelings in key with the general theme of spaciousness and broad natural outlook



Berla & Abel

Architects

THE rendering across page, top, shows the building's southern exposure, overlooking Rock Creek Park valley. Designed to take advantage of maximum height permitted under zoning laws, the building's ground coverage, at typical floor level, is about 40 per cent of the plot. Construction is fire-resistant throughout, with reinforced concrete skeleton frame. Floor slabs are concrete with tile fillers. Exterior walls are to be buff face brick, with 8-in. cinder block back-up; interior, wood furring and plaster on gypsum lath. Heating system will be hot water radiant. Entire building will be mechanically ventilated, with air pumped into corridors, through vertical ducts (see top sketch), from basement fans. Air will enter apartments through door louvers.

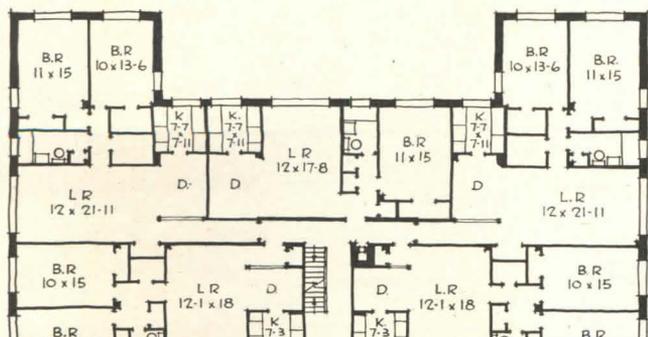
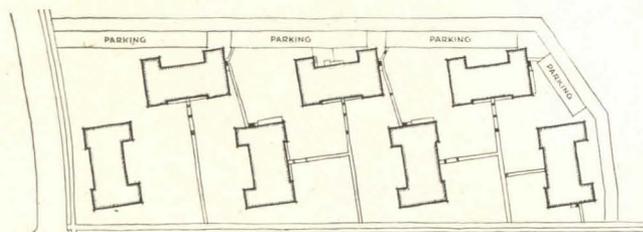




GARDEN TYPE GROUP IN CAPITOL CITY

VALLEY AVENUE, WASHINGTON, D. C.

Berla & Abel, Architects



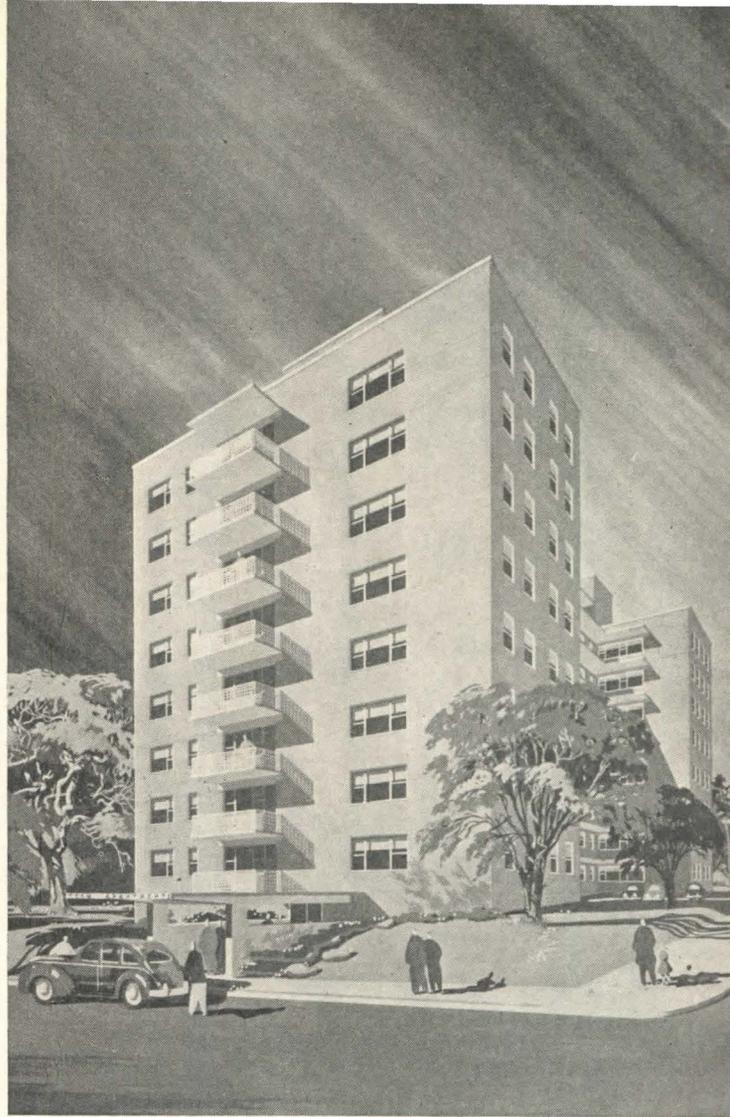
THE garden apartment type of building," the architects write, "and division of the project into seven small buildings resulted from financing considerations and a predilection on the part of the owner for this sort of arrangement. We personally believe that under the given circumstances, a single large multistory building on the site would have been about as economical to build and operate. Moreover, providing the same number of apartment units, it might very possibly have permitted better tenant outlook and landscaping. Under present local building conditions, construction costs of this garden type are about the same per unit as would be those of an eight-story building on the same site."

Local building codes required fire-resistive construction throughout; concrete frame was chosen as most economical for this region. Interior partitions are gypsum block, plastered. Door bucks and frames are steel. Windows are stock light-weight steel casements, with steel interior jambs and stools. Exterior walls are red brick with limestone trim.

STUDENT-FACULTY UNITS

GEORGIA SCHOOL OF TECHNOLOGY, ATLANTA

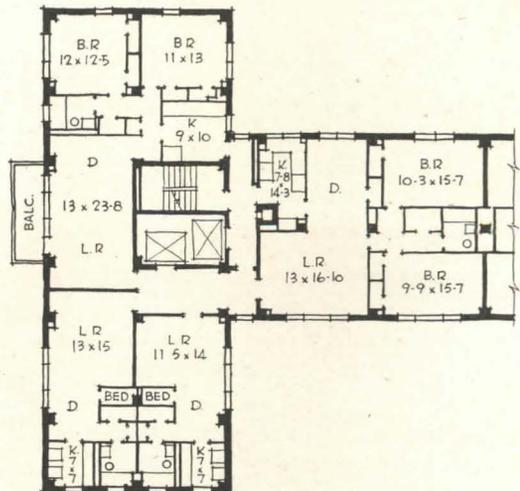
Burge & Stevens and Associates, Architects



REQUIREMENTS here were to design apartment units for the use of students and faculty members. They were needed in a hurry; at the same time, the school is in the midst of a long-term expansion program, requiring that the building be a durable permanent structure. Another factor: the present veteran's schooling program stipulates that rents be within reasonable range. (Financing of the building is being accomplished through a self-liquidating bond issue.) Basis of the design, therefore, was permanency and few luxuries, using materials capable of absorbing considerable abuse with a minimum of maintenance.

Footings, floor and roof framing are reinforced concrete. Exterior walls are common brick facing with hollow clay tile back-up. Walls and ceilings are finished with gypsum plaster. Floors are asphalt tile. Windows are aluminum; door frames, steel; doors, flush wood within apartments, fire-resistive in public corridors.

Half of the building is heated by conventional forced hot water; the other half by a floor panel radiant system. This was done purposefully for making comparative studies. Steam is provided from a central plant.





BALCONY UNITS

NEW YORK CITY

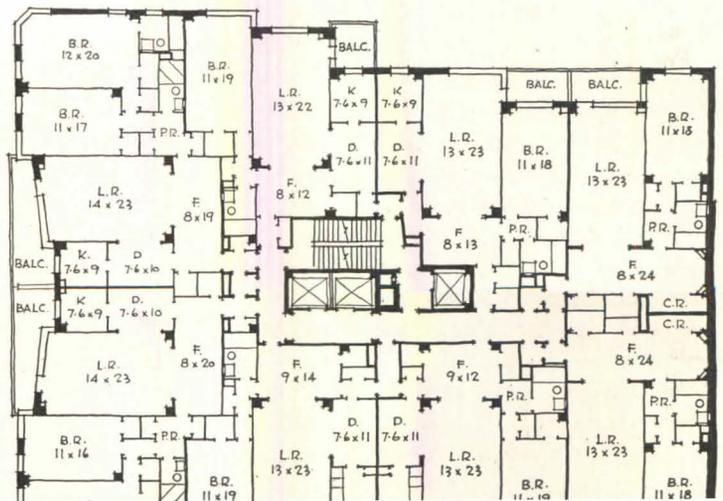
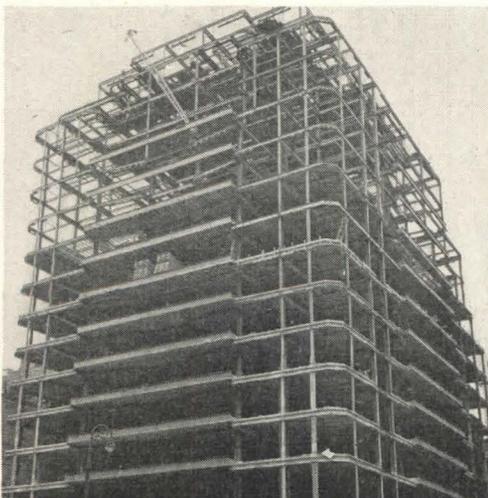
Sylvan Bien, Architect

74TH ST. AND MADISON AVE.

SUNLIGHT and air on all faces, practically guaranteed for the future, were the basis of this all-out balcony endeavor. Streets are the margin of guarantee on the northern and eastern exposures. Immediately to the west is a low, permanent private residence; and a low building to the south is owned by the apartment proprietor.

The architect points out other considerations directed toward the type of tenant "who appreciates the finest in apartment living": three high speed elevators instead of two, as in comparable buildings; radio outlets in each unit, with "music by Musak"; conduits for television; interceptor telephone service for each apartment; a restaurant; maid and houseman service. Individual deep freeze lockers will be provided; kitchens and bathrooms without windows will be mechanically ventilated. All balconies can be enclosed and heated during winter.

Construction is steel columns and beams, reinforced-concrete cinder arches.



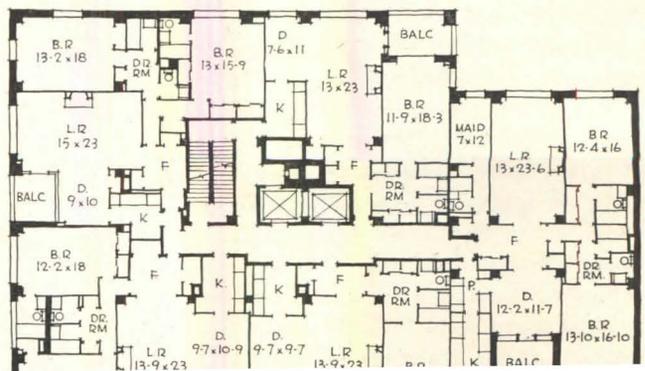


TERRACE APARTMENT IN UPTOWN NEW YORK

Leonard Schultze & Associates, Architects

THIS building, well-along in construction at 87th St. and Madison Avenue, advances the balcony motif to a point where closest definition might be: a *hanging garden* apartment. Each unit on the upper floors, with a few exceptions, has a private porch or terrace upon which extensive planting will be encouraged. The first floor will contain stores, in addition to the superintendent's quarters and a large entrance hall in marble.

Construction is steel frame, with concrete floor slabs encasing hot-water radiant coils. Basement, in addition to containing heating plant, will provide tenants'



ARCHITECTURAL ENGINEERING

TECHNICAL NEWS AND RESEARCH

COMPARATIVE COSTS IN APARTMENT HEATING

WHEN New York City Housing Authority was looking for the most economical heating system for its Brownsville Houses, an unusually detailed study of various heating schemes and arrangements for a typical multi-story apartment was made by Meyer, Strong, and Jones, Inc., Consulting Engineers.

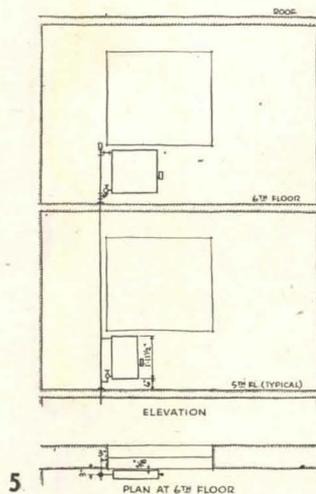
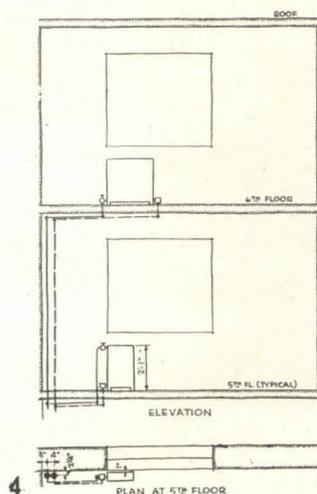
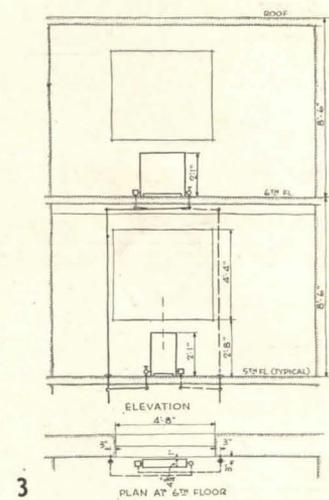
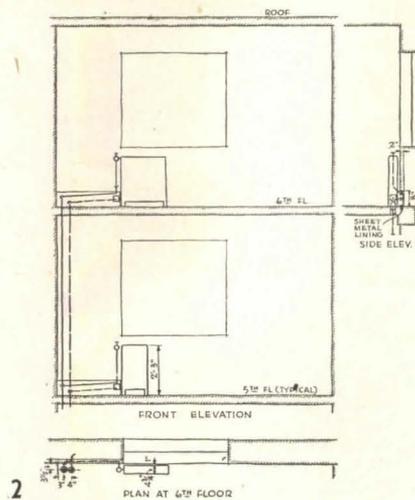
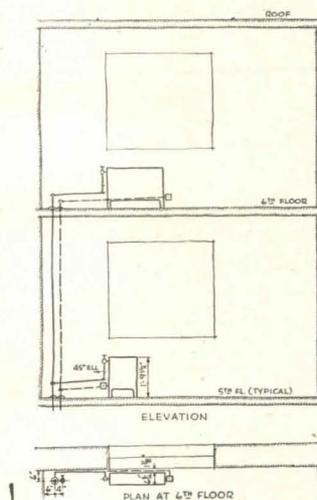
While this study was made in 1943, relative aspects of the cost comparison

(see table on page 109) should still apply. To keep costs comparative, prices have been translated into an index with 100 as a base figure for the typical New York City Housing installation (No. 1, below).

The study was made purely on the basis of installation costs (disregarding everything common to all schemes, such as boiler rooms and underground distribution systems), and not upon other

considerations of convenience, performance, or operating costs.

Included in this analysis are various riser and connection arrangements for the conventional 2-pipe vacuum system, 1-pipe steam system, and the "Metro" downfeed riser system. To make the study as complete as possible, comparative costs were also figured for unit-heater and panel-heating systems for the same apartment.



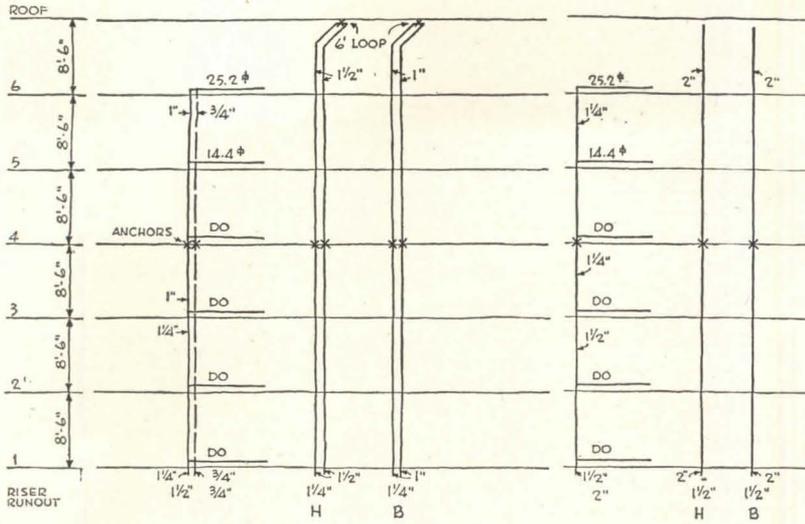
1 (Typical New York City Housing) 2-pipe vacuum. Risers in room corners. Radiator connections at floor

2 2-pipe vacuum. Risers in room corners. Radiator connections chased at floor

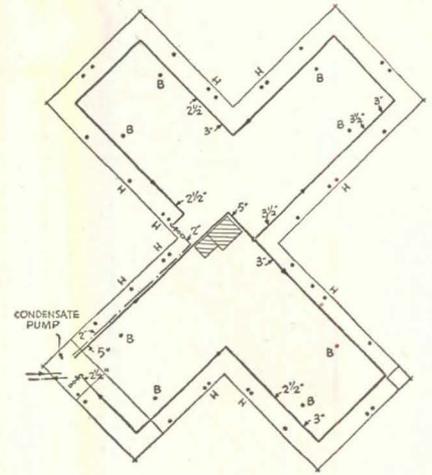
3 2-pipe vacuum. Risers at windows. Radiator connections at ceiling

4 2-pipe vacuum. Risers in room corners. Radiator connections at ceiling

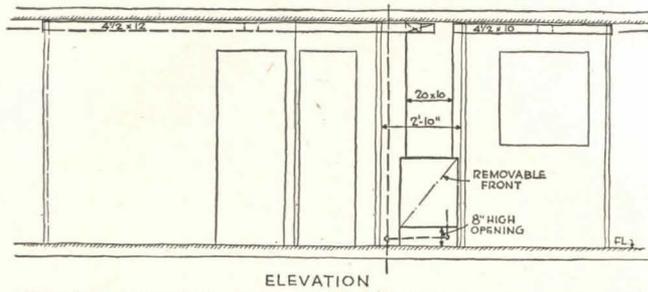
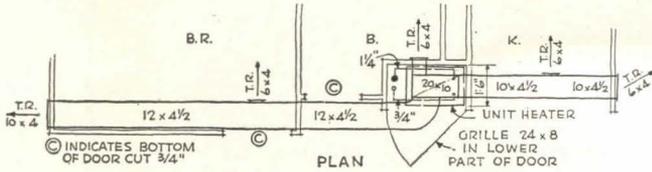
5 1-pipe steam. Risers at windows. Radiator connections at floor



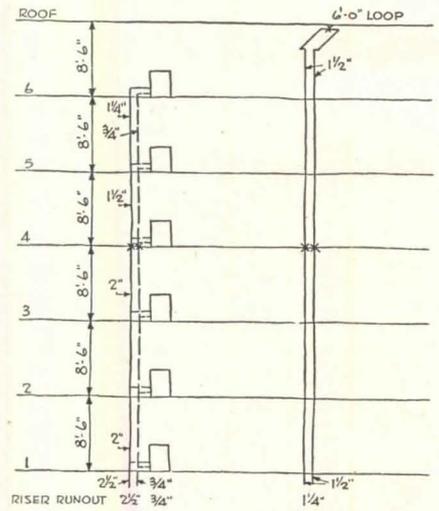
Left: Riser diagram for 1 (2-pipe vacuum). Risers for 2, 3, and 4 are similar. Right: Riser diagram for 5 (1-pipe steam)



Basement plan of entire building, showing piping for 5 (1-pipe steam). H = risers for hall or kitchen, B = bathroom risers



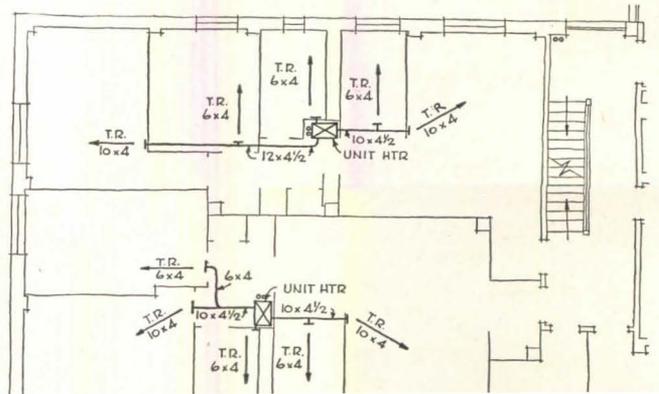
NOTE: COVER SUPPLY RISERS TO UNIT HEATERS WITH STANDARD THICKNESS MAGNESIA. PROVIDE AQUASTAT AT EACH UNIT HEATER TO STOP FAN WHEN COIL COOLS

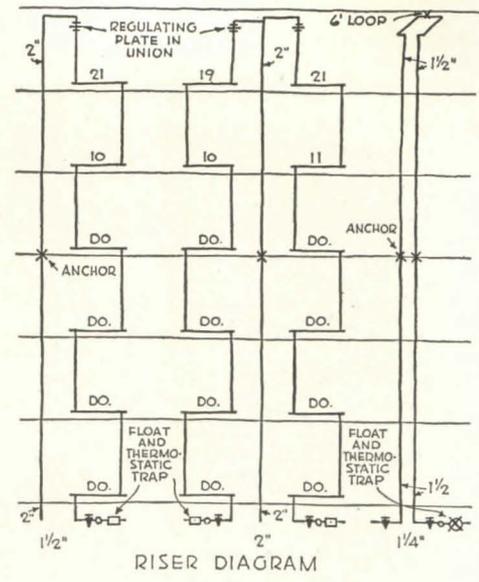
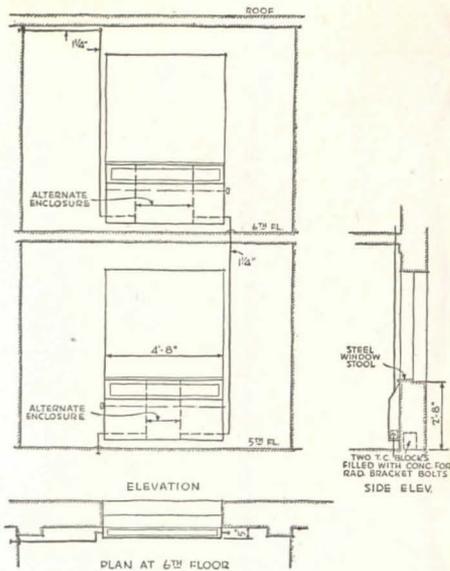


6 Above: Unit heater. Heated air from steam-to-air heat exchanger is forced through ducts to rooms in the apartment

Above, right: Riser diagram for unit heaters

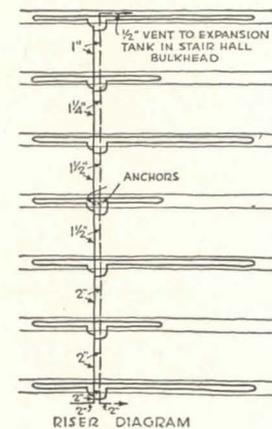
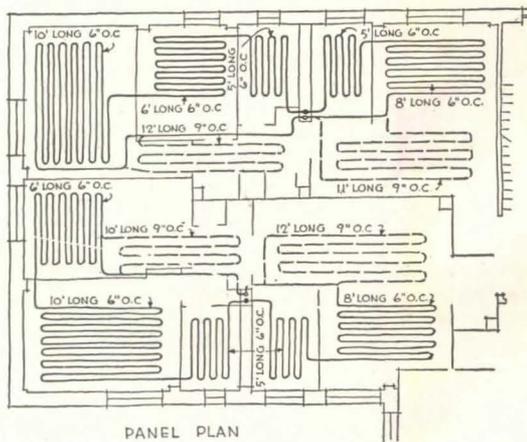
Right: Unit heater arrangement for typical apartment wing





7 Downfeed through convectors. This is the so-called "Metro"* system wherein sub-atmospheric steam is fed downward and through the convectors, as shown in the riser diagram. This eliminates cross connections in rooms, also individual collector traps since the riser is trapped in the basement. The convector consists of a finned and enclosed section of the downfeed riser, and cannot be shut off, though in the original system a damper was included in the convector enclosure to regulate the volume of air circulating through it

* The original "Metro" system was developed for Parkchester Apartments, Bronx, N. Y., and patented by Edward E. Ashley, Consulting Engineer.



8 Panel heating plan. Coils shown by solid lines occur in slabs of floors 1 through 6 and the roof; those shown by broken lines, in floors 1, 3, and 5 and the roof. All coils and branches are 3/4 in.; welded and buried in concrete. Right: Riser diagram for panel heating

COMPARATIVE HEATING COSTS FOR A TYPICAL 1/2-ROOM APARTMENT

Prices, based on 1943 material and labor costs, are comparative only and include nothing common to all schemes, such as boiler room, and underground distribution. Control systems included are similar except for panel heating.

Cost Index	Scheme No.	Type
100.0	1	(Typical New York City Housing) 2-pipe vacuum. Risers in room corners. Radiator connections at floor
104.9	2	2-pipe vacuum. Risers in room corners. Radiator connections chased at floor
105.7	3	2-pipe vacuum. Risers at windows. Radiator connections at ceiling
106.6	4	2-pipe vacuum. Risers in room corners. Radiator connections at ceiling
91.4	5	1-pipe steam. Risers at windows. Radiator connections at floor
242.4	6	Unit heater
101.4	7	Downfeed through convectors
272.6*	8	Panel heating

* Panel heating licensee's estimate: 216.5

PRECAST FLOOR SYSTEM FOR APARTMENTS

A FLOOR system of precast concrete slabs has been adapted to one of America's largest garden-type apartment developments, Parkway Village*, in Queens, N. Y., with a promise of considerable savings in construction costs. This is a 110-building project which will house United Nations' personnel in 2- and 3-story units, providing 675 garden-type apartments.

The original plan was to use wood floor members since the buildings do not exceed three stories in height and are of residential character. Three factors changed this plan: (1) the present shortage of wood; (2) a desire for fire-resistant construction; and (3) the speed with which precast floor systems had been used in large Navy installations during the war.

Preliminary studies were then redesigned to conform to convenient floor slab modules. Due to the extent of the project, there are 12 basic sizes of slabs, divided into types required by the location of sleeves for mechanical trades or the location of bearing wall at right or left. The accompanying apartment plan shows how a typical floor is subdivided into slab areas.

Each floor of a typical building unit is made up of 24 precast slabs, varying in size from 7 by 10 ft. to 16 by 16 ft., averaging one slab for each room or half of a room. Their thickness is 11½ in. with tapered ribs, 6 in. deep and 2½ in. wide at the bottom. Reinforcement is provided by welded wire mesh in the slab and one rod in each rib; 6,800 slabs

*Being erected by Savings Banks Trust Co.; Leonard Schultze Associates, Architects; Capt. E. H. Praeger, Madigan-Hyland, Consulting Engineers; George A. Fuller Co., General Contractors; Vacuum Concrete, Inc., consultants on the vacuum concrete features.



Basement view of precast floor slabs. The slabs on upper floors are also left as exposed ceilings, after painting. Joints are pointed and marginal ribs set flush with walls

in all will be required for the project.

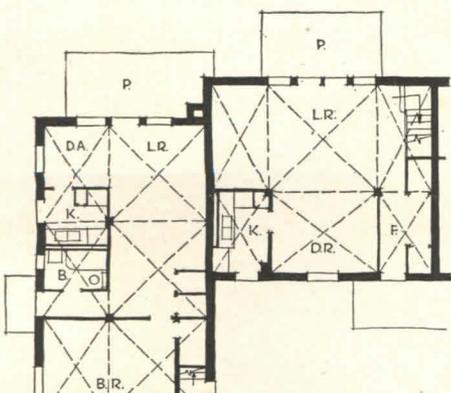
The slabs rest on cinder block walls and interior Lally columns, and are secured to them by anchor bolts. Careful precasting makes it possible to use the underside of the slabs as an exposed ceiling, after cement finishing where needed and painting. Floors are of hardwood set in mastic, without sleepers or subflooring.

Advantages of this precast system over poured-in-place floors are: (1) economy; (2) standardized procedure, which employs 115 concrete molds in place of thousands of temporary wood ones; (3) faster construction, since floors can be set in place quickly without obstruct-

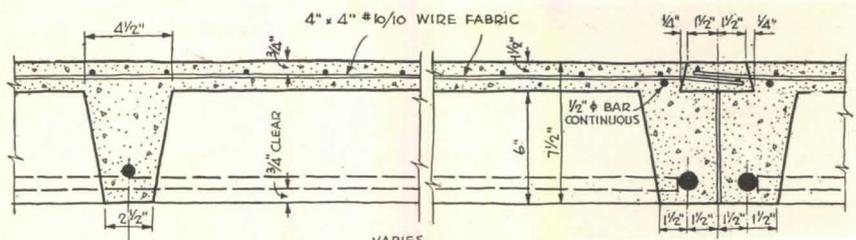
ing the floor below with shoring for wood forms; (4) lighter floors as compared with the usual poured-in-place slab; and (5) savings in plastering and finishing due to high-quality surface appearance of the precast slab.

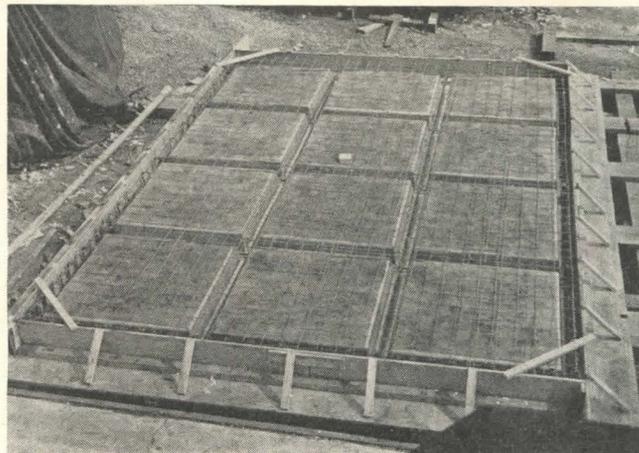
COST CONSIDERATIONS

An actual cost analysis of the precast system is difficult to make. On this project, the precast system has only recently moved from the pioneering stage into standardized procedure. Once the system becomes routine, however, the following approximate cost is estimated: 60¢ per sq. ft. of precast floor, which, according to preliminary cost estimates,

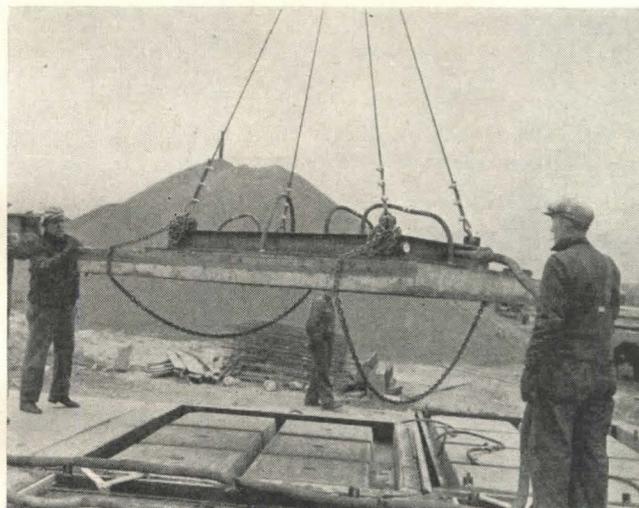
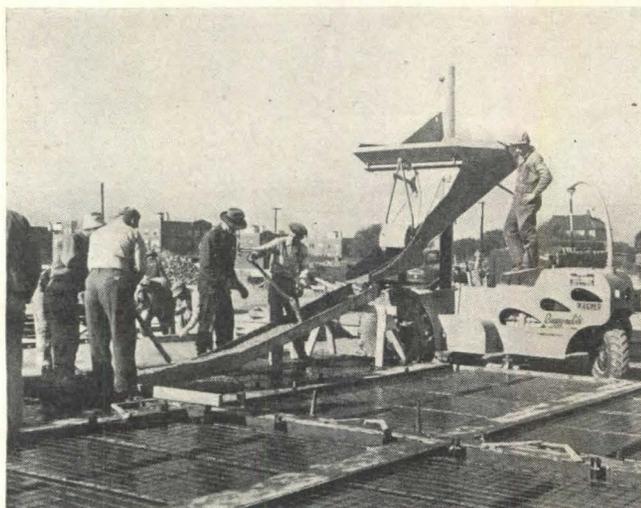


Left: Apartment plans show how their floor areas are subdivided by precast slabs, which rest on cinder block walls and interior Lally columns. Hardwood floors are set in mastic, without sleepers or subflooring. Below: cross-section of one of the slab types





Steps in casting the concrete mold. Left: Precast hollow squares are placed within metal edge forms and blocked above the ground. Abutting flanges of the squares will form the mold for the ribs of the slab. Compressed-air risers are set in the center of each square, and concrete poured flush with their cover plates. Right: Completed mold after surface has been finished and reinforcement set in place



Photos Courtesy of Engineering News Record

Steps in casting the slab. Left: High-early-strength concrete from the central mix plant is poured in the prepared molds. Right: After the slab has been cured it is pulled by a vacuum lift. Initial separation is started by a blast of compressed air from the risers

is about 50 per cent below that of poured-in-place floors.

The 60¢ per sq. ft. estimate for pre-cast floors is comprised of the following:

- \$0.02 for molds.
- 0.38 for concrete, labor, materials, and equipment.
- 0.12 for erection.
- 0.08 for vacuumatic curing.

MOLD PREPARATION AND SLAB CASTING

The heart of the system is the casting yard covering 12,000 sq. ft. near the site, and employing 115 molds. The first step in making the mold face is to cast, in metal forms, a number of concrete hollow squares, averaging 3 ft. in outside dimensions, with outer edges tapered and flanged. Groups of these squares, after stripping, are laid within steel

edge forms of the finished slab dimension, in such a way that their flanges butt together and form the mold for the ribs.

Compressed air pipes are built into the form with vertical risers, topped by loose plug plates, at the center of each square. Their purpose is to provide a blast of compressed air that will help separate the slab from the mold. Metal cores are also placed at this time if required for openings in the finished slab, for piping or other services.

Concrete is poured into the centers of the squares which have been blocked a few inches above the ground so that the concrete will spread beneath and form a heavy base, and leveled so that its face is flush with the plug plate covering the compressed air risers.

After the mold so formed has been cured and given a smooth surface finish, it is painted with lacquer as a seal and

brushed with a mixture of form oil and castor oil. A prefabricated mat of welded wire and rod reinforcement for the floor slab is laid in place, and concrete from the central mix plant poured. The concrete is brought to the mold in motor-driven "buggy-mobiles" that have a capacity of 1 cu. yd.

High-early-strength concrete and the application of vacuum pads for approximately 10 minutes permit the slab to be drawn on the day after pouring. It is raised from the mold by means of a vacuum lift after compressed air starts the initial separation.

The strength of the slab was indicated by a load test which required 255 lb. per sq. ft. to cause 0.311 in. deflection (1/360th of the span): 345 lb. per sq. ft., which is more than four times the expected total load, produced 0.71 in. deflection, but not actual failure.

ANYONE who follows the standards and codes covering arc welding electrodes and techniques cannot help but wonder at the severe tests and restrictions they impose. Here is a process that has been used in countless cases for over a generation, the record of which has been almost perfect; yet it is criticized and limited more than any comparable process in all mechanical history. This criticism is not because of structural failure. It is entirely in the region of theory covering conditions which do not occur in commercial application.

There is one controlling factor concerning welded structures which appears to be disregarded. In the case of mild steel, which embraces more than 95 per cent of all welding, the welded joint is very much stronger and has a very much higher elastic limit than the plates joined.

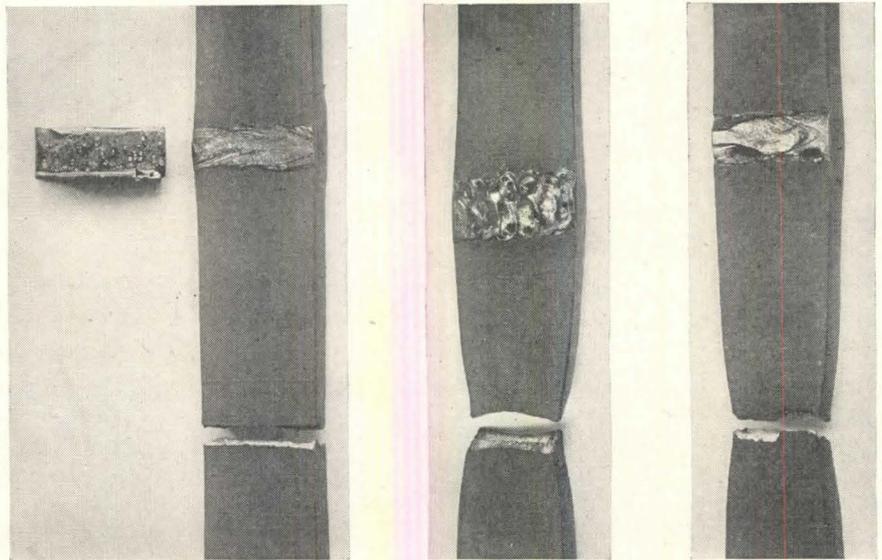
Since that is true, the weld will not be used in actual service at anywhere near its point of failure. As a matter of fact, if in actual application the welded structure were loaded to a point that even approached the elastic limit of the welded joint or the metal immediately adjacent to the weld, the structure itself would be useless.

Perhaps we can illustrate the matter this way. Suppose there were a chain of 100 links, each link being made of 1-in. round, 99 of these links being made of mild steel and one link made of high-strength alloy steel, corresponding to the weld metal. Then suppose the chain were tested. Would anyone worry about the chain breaking in the one alloy link? He would not, because every one of the other 99 links would break long before the alloy steel link was even partially loaded.

The same is true of a welded structure. The weld itself and the metal immediately adjacent to it have an elastic limit 50 per cent above that of the parent metal and an ultimate tensile strength at least 20 per cent greater. If the strength of the rest of the structure is sufficient, certainly the weld must be. As a matter of fact, structures are designed with a factor of safety so that their maximum load is less than one half the elastic limit of the parent metal. Obviously, it would not be stressed to more than one-third of the elastic limit of the weld metal and the plate immediately

WHY HANDICAP WELDING?

By James F. Lincoln*



Tensile test specimens show that even highly imperfect welds are stronger than the base metal. Left: Welded joint with abnormally large amount of internal porosity, as shown by nick break view. Point of failure was in the plate, not the weld, at 62,500 lb. per sq. in. Center: welded joint with abundant surface porosity. Plate failed at 59,100 lb. per sq. in. Right: weld with abnormal amount of undercutting. Plate failed at 59,400 lb. per sq. in.

Because of this program of criticism, great and unnecessary expense is put upon the manufacturer using welding. This, of course, is paid by the buyer in higher prices, with no possible return accruing to him. There are countless illustrative cases that could be cited. The following are examples: If there is surface porosity, even so much as a little hole on the surface, the weld is rejected. If that same porosity were below the weld surface where it could not be seen, the manufacturer must cut it out carefully and re-weld the joint, at great expense, after finding it with expensive x-ray. Again, if there occurs slight undercutting at the edge of the weld, the weld must be rewelded and the slight undercut eliminated.

The accompanying photographs are shown as proof of the efficiency of welded seams, even with so-called defects. Here is porosity carried to an extreme, yet the joint is stronger than the plate. Here is great undercut and even laps in the weld. Still the plate breaks first in tension. Not only would such joints be re-

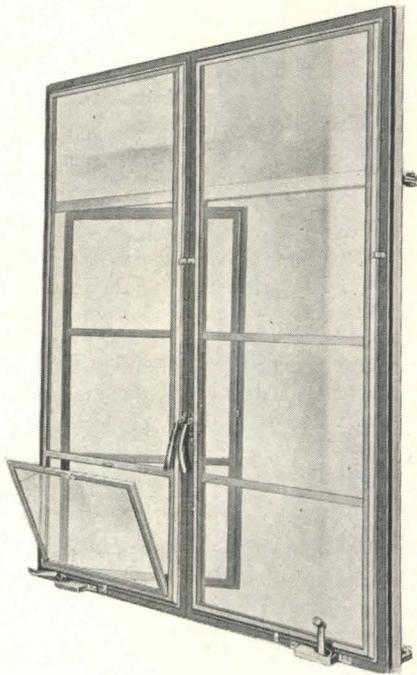
would be rejected. The question naturally is asked, "Why?"

It would appear obvious that there could not possibly be a riveted joint which could join any of these pieces of steel together in any way which would not ultimately break in tension, yet there is no testing of the rivets, no x-ray of the voids in their joint, no elimination of the undercut, while we know in every riveted joint that all of these defects are present not only occasionally, but in every case. Again we ask the obvious question, "Why accept such defects in a riveted joint and reject them in arc welding with its greater strength, ductility and soundness?"

There is no doubt that if the restrictions that add nothing whatsoever to the efficiency of any welded joint were removed, the cost of welding could be reduced by as much as 90 per cent in many cases, with no decrease in safety.

It is my belief that architects and engineers should do everything in their power to see that codes are changed to

PRODUCTS for Better Building



Storm window for metal casement windows

ALUMINUM STORM WINDOWS

For metal casement windows, the *Ceco* aluminum-frame storm window provides complete inside coverage. These storm windows allow full operation of the casement ventilators, and, if desired, a controlled ventilator may be included in the storm panel. A rubber weathering seal around the perimeter of the storm sash frame is furnished. Panels are light and easily stored for the summer in space used for winter storage of metal frame screens. *Ceco Steel Products Corp.*, 5701 West 26th St., Chicago 50, Ill.

HEATING CONTROL

The *Compensated Limit Control* for domestic heating plants is designed to provide control over the approximate amount of heat input in the house by anticipating changes in heat demand and permitting more precise control from the room thermostat. It can be used with oil, gas, or stoker fired warm air heating systems. Designated by Type No. T 418, the control consists primarily of a mercury switch instrument case and two capillary tubes with bulbs; one, 20 ft. long, for mounting outside the house and the other, 10 ft. long, to be installed in the bonnet or warm air supply of the furnace. In use, the control goes into operation as outside temperatures fall

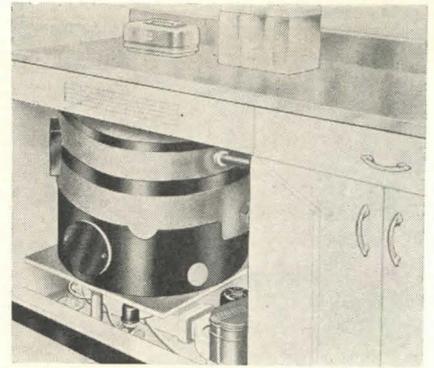
below 65° F. At this point the temperature in the furnace is raised according to a predetermined schedule. While designed for use in conjunction with the *Moduflow* system of automatic temperature control, it can be used also in some types of panel heating and with the conventional "on-off" thermostat method. In the *Moduflow* method, the thermostat itself controls volume dampers which deliver the amount of heated air to the living space. *Minneapolis-Honeywell Regulator Co.*, 2707 Fourth Ave., South, Minneapolis 8, Minn.

ELECTRIC PANEL HEATING

Electric heating cable, developed by *L. N. Roberson Co.*, is being used in panel systems to heat a large number of houses entirely by electricity in the Seattle area, where utility rates are comparatively low. This unique form of radiant heating employs special *Heatsum* cable, embedded in wall or ceiling plaster, and connected through junction boxes to an electrical source. Cost of heating cable and thermostats reportedly averages 3.25¢ per cu. ft. of house; and for the completed job installed, 7.5¢ per cu. ft. Operating costs for the Seattle area, where electricity rates average 1¢ per KWH, are quoted as on par with No. 1 oil at 7¢ a gal. Electricity bills for 13 panel-heated houses showed average power consumption of 2.36 KW per cu. ft. for a year. These were total bills, including lights, range, and water heater as well as panel heating. No difficulties are reported in obtaining insurance; *Underwriters Laboratories* is said to have termed residences so heated insurable. *L. N. Roberson Co.*, Dept. AR, 1539 E. 103 St., Seattle 55, Wash.

WATERPROOFING

Celadri waterproofing compound comes in colors for decorating as well as sealing brick, stone, stucco and all porous masonry surfaces. The manufacturer claims that *Celadri* gives water tightness and hardens to a rock-like consistency that will last the life of any surface except floors. It is recommended for application either inside or outside, and above or below ground. Drying time is 6 to 24 hr. Colors are white, buff, light gray, dark gray, blue, green and terra cotta. Pastel shades are obtained by mixing colors with white. *Celadri Corp.*, 644 Willis Ave., Williston Park, N. Y.

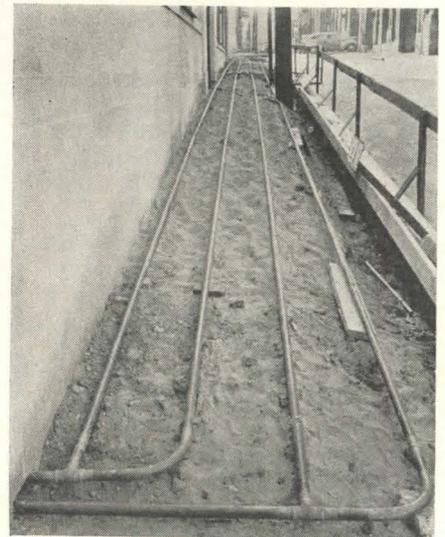


A small house can be heated by this cabinet-size boiler-burner hot-water unit

BOILER-BURNER UNIT

An unusually compact boiler-burner unit has been developed to furnish hot-water radiation for the small house as well as a year-'round supply of domestic hot water. It is small enough to fit into a standard kitchen cabinet, with hot-water storage tank above, or comes equipped with a steel jacket for installation in utility room. A vaporizing burner is used, which reportedly burns 30 to 40 per cent less oil than the average burner — a maximum of only $\frac{3}{10}$ gal. per hour at high fire. The small size and high heating efficiency of this unit are made possible by the *Miller Heat Spiralator* principle, which builds up pressure instead of a draft in the firing zone, re-

(Continued on page 136)



To eliminate the chore of clearing snow and ice from sidewalks, steam piping is embedded in 100 ft. of concrete paving before the new office building of *Heekin Can Co.*, Cincinnati. The wrought iron pipe connects with steam system used to heat water for panel-heating floor coils within the building. Photo courtesy of *A. M. Byers Co.*, Pittsburgh, Penn.

ARCHITECTURAL ENGINEERING

TECHNICAL NEWS AND RESEARCH

MANUFACTURERS' LITERATURE

AIR CLEANERS

(1) **Hydro-Whirl Dust Collectors** and (2) **Hydro-Whirl Spray Booths (Bulletins 101 and 201)**. Technical bulletins giving complete information and specifications on a line of wet dust collectors and wet-type spray booths. Information in (1) includes operation and installation details, typical applications, planning methods, table of suggested air volumes. Second booklet describes batch type, down-draft and conveyerized spray booths, points out the chief features of the Hydro-Whirl line, discusses selection of size and type, arrangement and maintenance. 16 pp. ea., illus. Peters-Dalton, Inc., 17900 Ryan Rd., Detroit 12, Mich.

ALUMINUM BUILDING WIRE

Hazard Aluminum Building Wire. The story of aluminum insulated wire and cables; carrying capacity, durability, voltage drop, sizes, corrosion resistance; dimensional data table and table of comparison with copper conductors. Price lists separate. 6 pp. Hazard Insulated Wire Works, Division of the Okonite Co., Wilkes-Barre, Penn.

BOILERS

Double-Pass Firebox Boilers (Bulletin RM-1, 6th ed.). Illustrates and describes a line of riveted or welded double-pass steel firebox boilers built especially for stoker, oil or gas firing. Includes ratings and dimensions tables for each of the three series in the line. 8 pp., illus. The Brownell Co., 430 N. Findlay St., Dayton 1, Ohio.

DATA BOOK

Horn Construction Data and Handbook. New edition. First section gives compact technical data on all Horn products such as flooring materials, exterior and interior coatings, roofing materials and waterproofings. Second section contains many useful tables, conversion factors, weights and strengths of building materials, etc. 96 pp., illus. A. C. Horn Co., Inc., 43-36 Tenth St., Long Island City 1, N. Y.*

ENAMEL ON STEEL

Porcelain Enamel on Steel in Architecture. An outline of many uses of porcelain enamel on steel in the architectural field; includes sketches and details of both exterior and interior applications; points out advantages claimed (color, texture, durability, etc.); tabu-

lates uses in various types of buildings. 32 pp., illus. U. S. Steel Corp. Subsidiaries, 429 Fourth Ave., Pittsburgh 19, Penn.,* or any office of the following U. S. Steel subsidiary companies: Carnegie-Illinois Steel Corp.; Columbia Steel Co.; Tennessee Coal, Iron and Railroad Co.; and U. S. Steel Export Co.

GASOLINE APPLIANCES

Design for Better Living. Booklet describing and illustrating the uses of gasoline lamps, lanterns, irons, burners and portable cooking units. Includes full information on a new line of oil-fired heaters. 26 pp., illus. The Coleman Co., Inc., Wichita 1, Kansas.

HEATING

Automatic Control of Radiant Panel Heating. A comprehensive and useful manual on the control of panel heating, covering the theory of control and the applications of controls. First section compares the control requirements of panel and convection heating and their inherent controllability, discusses in detail the theory of panel heating control. Second section includes a set of three design graphs (ceiling, wall and floor panel) and a series of generalized control-system diagrams for various typical installations, each with a brief description. 40 pp., illus. Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.* \$1.00.

Warm Air Radiant Panel Heating. Installation of the Panelaire System in a ranch-type house. Description of the special construction required. Floorplan with overlay showing location of heating unit and the baffles which determine the path that the warmed air will follow. 16 pp., illus. Surface Combustion Corp., Toledo 1, Ohio.*

HOME ELECTRICITY

(1) **Home?** and (2) **The G-E Electric Sink Does the Hard Work in My Kitchen.** The first of these two new booklets covers every detail of house wiring, shows what electricity can do in making rooms more livable and useful, includes full definitions of commonly used electrical terms and symbols, and offers a special section for architects and contractors giving information on the size of wire recommended, the number of outlets required in various rooms, the spacing of the outlets, etc. The second booklet gives a full description of the G-E automatic dishwasher and Dis-

Appliance and Merchandise Dept., General Electric Co., 1285 Boston Ave., Bridgeport 2, Conn.* (1) 10 cents; (2) 5 cents.

KITCHENS

American Kitchens Styled in Steel. Kitchen planning with welded-steel units. Fundamentals of planning, typical layouts for kitchens of various types: U-shaped, corridor-type, L-type, panel-type. Specifications of the units in the American line. 34 pp., illus. American Central Mfg. Corp., Connersville, Ind.*

LIGHTING

Lighting to a T. Detailed brochure on cold cathode lighting and how to plan it. Includes engineering and design data, information on color control, efficiency, cost, installation, applications. Formula for determining tubing footage and its arrangement. Table of recommended levels of illumination. 20 pp., illus. Cutler Light Mfg. Co., 2026 N. 22nd St., Philadelphia 21, Penn.

PLUMBING

Norman Boosey Mfg. Co. Catalog. Description, installation details, price listing of a full line of plumbing products. Indexed and classified for handy reference. 234 pp., illus. Norman Boosey Mfg. Co., Division of American Skein and Foundry Co., 420 N. LaSalle St., Chicago 10, Ill.*

Presenting the 1947 Crane Plumbing and Heating Line. Description of all items now being manufactured by Crane, together with a number of items not yet in production. Features the "Dial-Ese" faucet and color photos of suggested bathrooms, powder rooms and kitchens. Includes specifications of all units. 24 pp., illus. Crane Co., 836 S. Michigan Ave., Chicago 5, Ill.

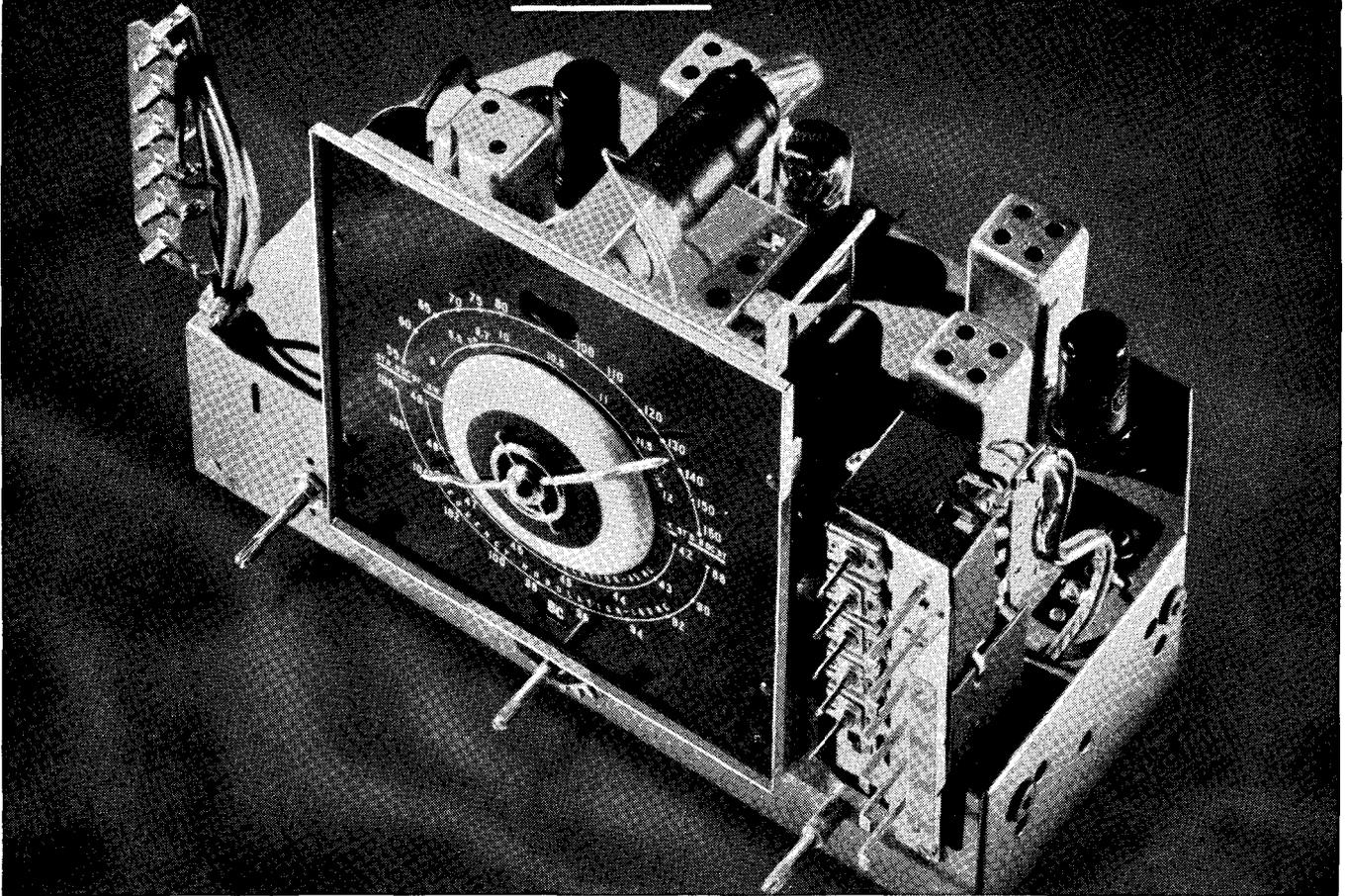
PROJECTION SCREENS

Radiant Projection Screens (Bulletin No. 6002). Folder showing full line of screens in tripod, box, wall and easel types, with accessories. Includes specifications, table of sizes and prices, and a screen selector giving complete screen sizes for various lenses and projector-to-screen distances. Illus. Radiant Mfg. Corp., 2607 W. Roosevelt Rd., Chicago 8, Ill.

ROOFING AND SIDING

(1) **Reynolds Lifetime Aluminum Corrugated Roofing and Siding;** (2) **Aluminum "Snap-Seal" Roofing;** (3) **Aluminum Shingles;** (4) **Aluminum Clapboard Siding.** Set of descriptive folders giving specifications, installation details, main features, advantages claimed. 4 pp., ea., illus. Reynolds Metals Co., Building Products

It's what's *Inside* that Counts!



WITH A RADIO, the cabinet counts as furniture. But it's what's *inside* the cabinet that makes the difference in tone, in power, in clarity and trouble-free performance.

With building products, too, it's what's *inside* that counts. Your eye seldom sees the values that make the important difference.

That's why building-wise people insist on Celotex Building and Insulating Products. They know the raw materials which go into Celotex products are the finest that nature can grow and man can refine.

They know, too, that rigid production controls all along the line *guarantee* the uniformly high quality of every product bearing the Celotex name.

Tireless laboratory research perfects materials and methods still *more* . . . helps to maintain Celotex leadership year after year.

These, plus more than a quarter of a century of

building materials "know-how," are the invaluable ingredients in every Celotex product.

They make a big difference in performance . . . in long life and low cost maintenance. A difference that has proved its value on hundreds of thousands of building jobs of every kind.

* * *

There aren't enough of these famous Celotex products to go around *now* — but our plants throughout the country are working day and night to increase production. Everything possible is being done to speed the time when we can supply you with all the Celotex products you need.

Building Board	Celo-Rok Sheathing and Wallboard	
Interior Finish Boards	Celo-Siding	Cemesto
Flexcell	Rock Wool Insulation	Triple Sealed Shingles
	*	*

CELOTEX
REG. U.S. PAT. OFF.
BUILDING PRODUCTS

THE CELOTEX CORPORATION • CHICAGO 3, ILLINOIS



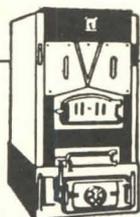
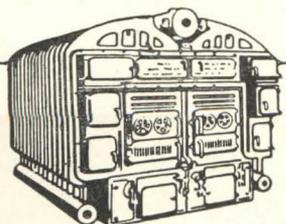
"This boiler can wait 'til the roof is on"

When your client's heating plant is to be H. B. Smith, you can go right ahead and finish your building *before* you install the boiler. This means that when material and labor shortages slow down or stop the job, your new boilers don't have to stand in a half-erected building exposed to the elements.

H. B. Smith boilers can be placed in *any* building, through ordinary doorways, because they are assembled from multiple cast-iron sections. These *sections* are shipped directly to the point of installation, where they are assembled quickly and easily. H. B. Smith

header-type construction cuts erection time and costs too.

Once an H. B. Smith *Cast-Iron* Boiler is installed, the owner usually agrees that there is no finer looking, finer performing boiler in service. So when your building schedule calls for a boiler that can be installed "after the roof is on" . . . or whenever there is need for uninterrupted, efficient low-cost heating . . . recommend H. B. Smith Boilers, for new installations or replacement. For the complete story of H. B. Smith dependability, write for your free catalog.



H.B. *Smith*

CAST-IRON BOILERS

PLAYGROUND EQUIPMENT

NEW YORK City Housing Authority places great stress upon the importance of popular playgrounds for the children of tenants in its housing developments. Considerable thought and ingenuity have gone into its studies of individual units of playground equipment. An understanding of child psychology and experience with existing playgrounds lead its designers to believe that many popular, safe, and inexpensive items of equipment can be made from simple building materials: concrete, sewer pipe, wood beams, cinder block.

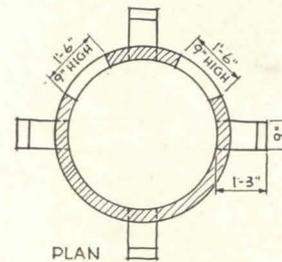
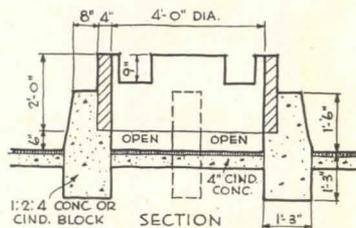
Children like to play about building walls under construction; hence, the dodger with its maze of foundation walls. They like to balance on logs and rails, crawl through large pipe, duck into "foxholes." For more im-

aginative play, there are the concrete boat, airplane, and stage.*

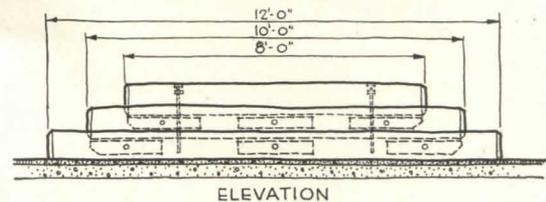
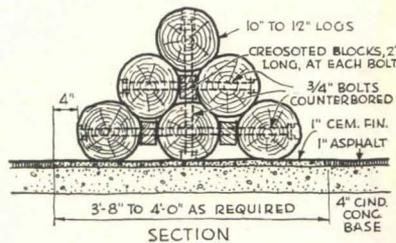
Few playgrounds are large enough to require all of these items of permanent equipment, but selected ones might add to the fun of children in housing developments, schools and camps. The designs are patented, but New York City Housing Authority welcomes their use in such projects. The dimensions shown are mere suggestions, and can readily be adapted to available materials and layouts.

(Continued on page 119)

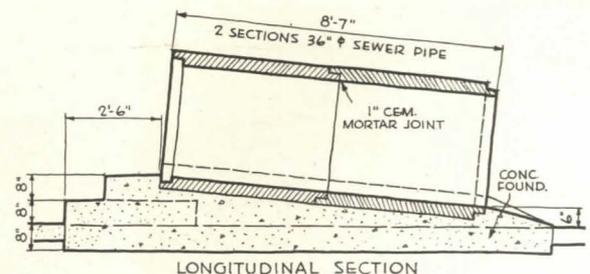
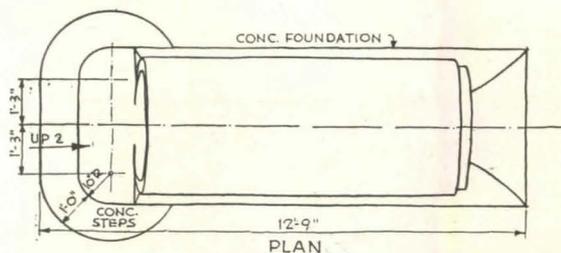
*The dodger and tunnel slide, prototypes of all such equipment, were originated by Alexander J. Moffat and Jacob John Spoon of New York City Housing Authority. (W. C. Vladek, Chief of Project Planning).



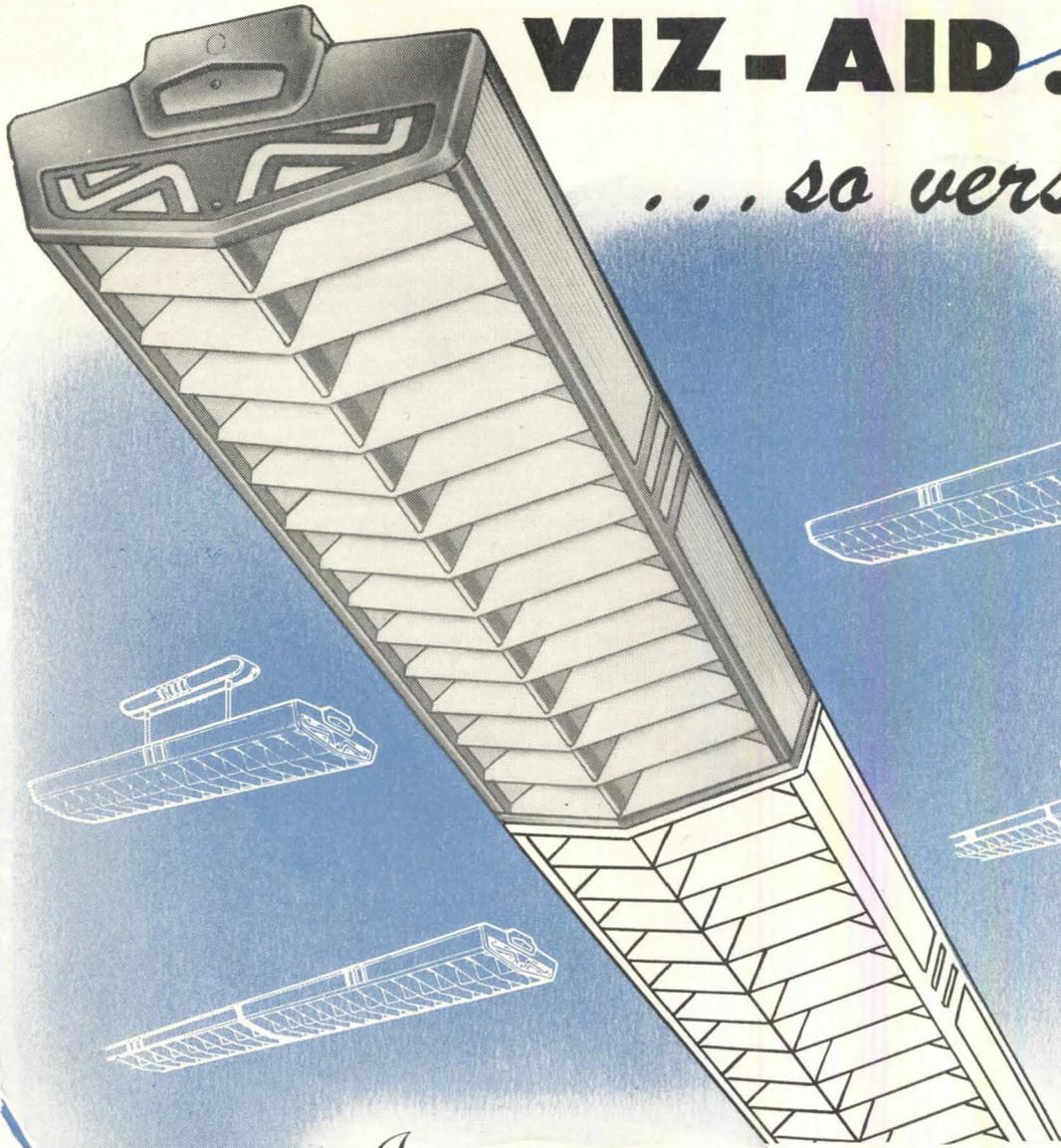
FOX HOLE



LOG PILE

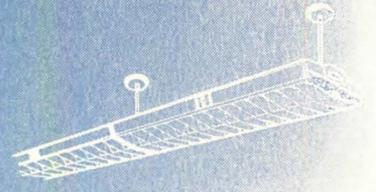
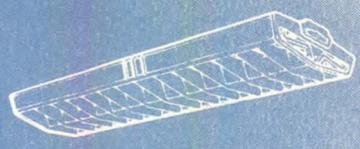
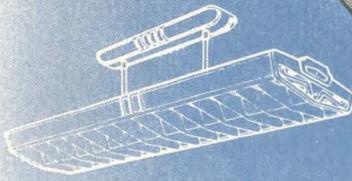


TUNNEL SLIDE



VIZ-AID...

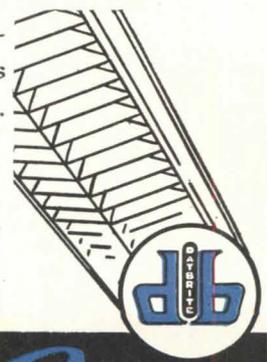
... so versatile!



*I*ts chassis is equipped with a wide variety of installation aids: holes, slots, knockouts . . . so you can mount it anywhere and anyway.

Viz-Aid commercial fixtures... for two 40- or two 100-watt lamps. U. S. Patent Nos. D-138990, D-143641, others pending. Request Bulletin 10-B-1 for complete details.

Day-Brite Lighting, Inc., 5465 Bulwer Avenue, St. Louis 7, Mo.
Nationally distributed through leading electrical supply houses.
In Canada: address all inquiries to Amalgamated Electric Corp., Ltd., Toronto 6, Ontario.



IT'S EASY TO SEE WHEN IT'S

DAY-BRITE

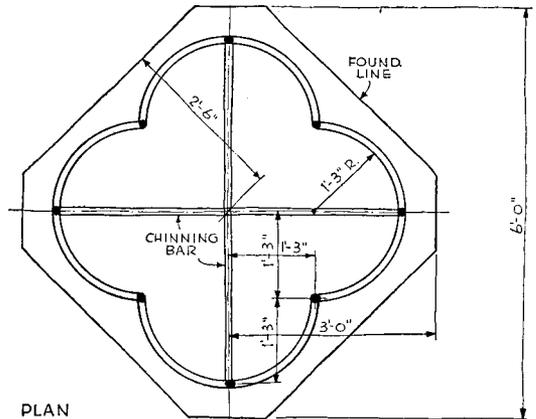
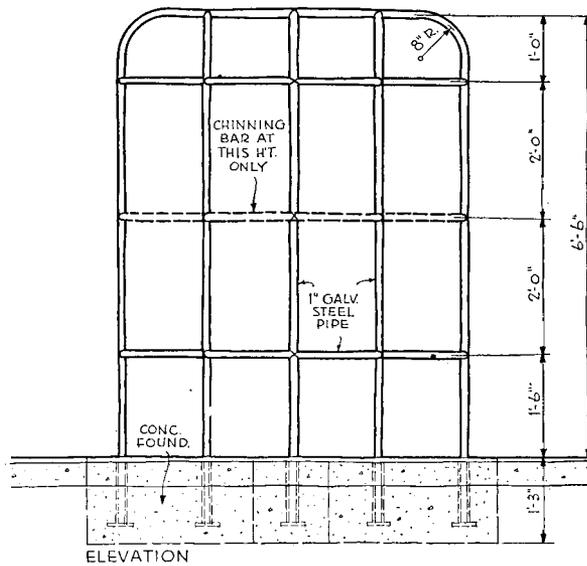


TIME-SAVER STANDARDS

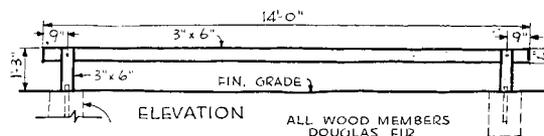
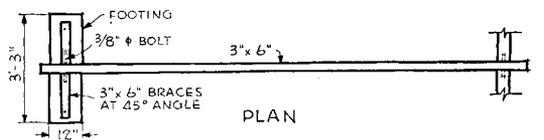
MARCH 1947

ARCHITECTURAL RECORD

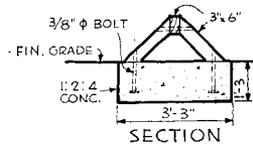
PLAYGROUND EQUIPMENT (Continued from page 117)



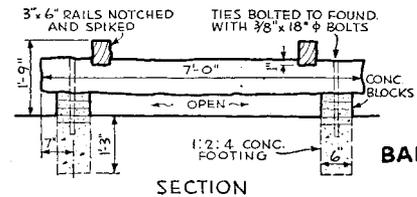
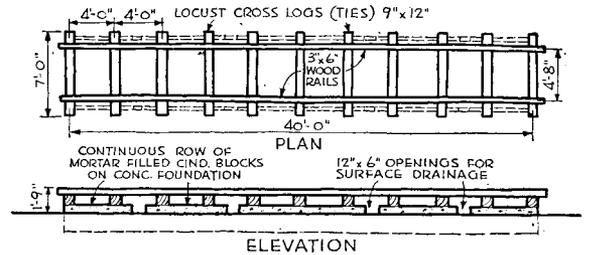
CIRCULAR PLAY UNIT



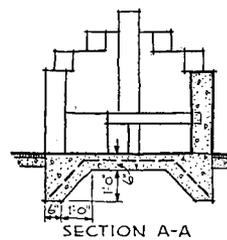
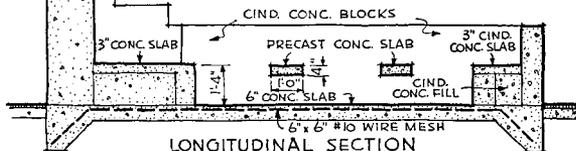
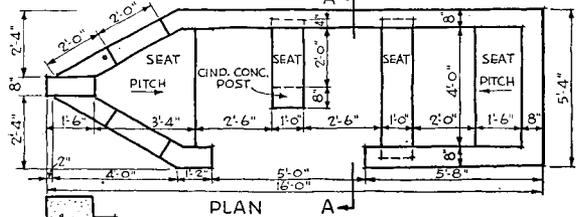
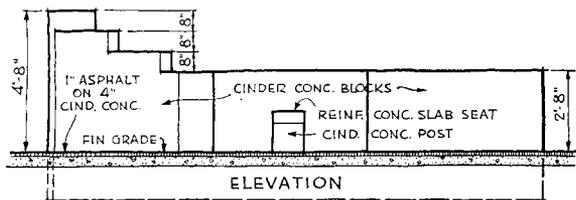
ALL WOOD MEMBERS
DOUGLAS FIR



BALANCING BEAM



BALANCING TRACK



PLAY BOAT

(Continued on page 121)

A S B E S T O S I N A C T I O N



3 BIG reasons why
you should build with

K&M
"Century"
APAC

● APAC, used as exterior siding on this huge administration building, combines up-to-the-minute design with maximum durability. Design and Construction by The Austin Company.

Whether your plans include remodeling or new construction, here are 3 compelling reasons why K&M "Century" APAC sheet material is the *right* material to use.

1. APAC IS VERSATILE

Furnished in 4' x 8' sheets $\frac{3}{16}$ ", $\frac{1}{4}$ ", $\frac{3}{8}$ " thick, APAC is easily adaptable to outside sheathing, office panelling, partitions, elevator shaft casings, stock rooms and storage bins . . . in fact APAC has as many uses as a building has surfaces.

2. APAC IS PRACTICAL

Compounded of asbestos and portland cement, APAC is completely fire-resistant, rot-proof, vermin-proof and termite-proof. It makes a neat-looking job and will never deteriorate. Time only toughens it.

3. APAC IS ECONOMICAL

First cost is low, and APAC is so easy to cut, handle and apply that it lowers the cost of construction. Once it's on, APAC lasts indefinitely, without maintenance or protective painting.

• • •

If there's anything else you want to know about this remarkable building board, we'll be glad to give full details. Just call or send us a card.

*Nature made Asbestos . . .
Keasbey & Mattison has been making
it serve mankind since 1873.*

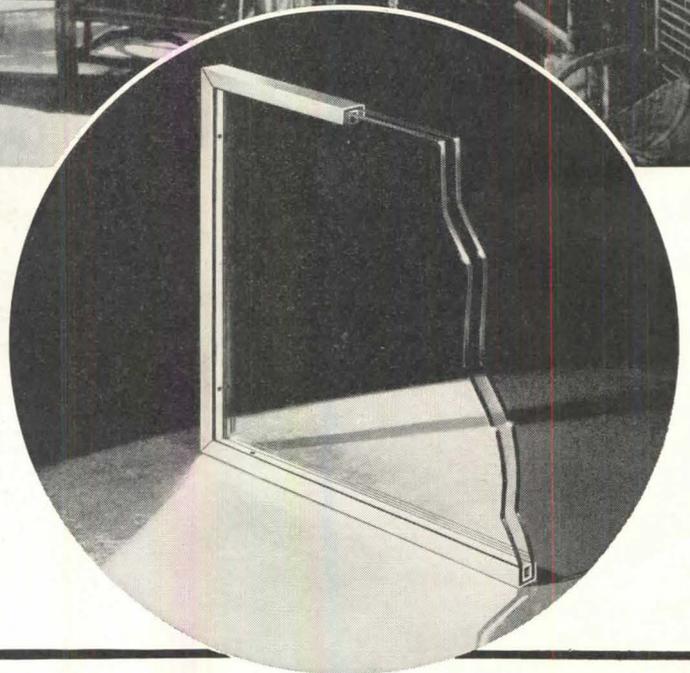


KEASBEY & MATTISON

Practical applications of Glass

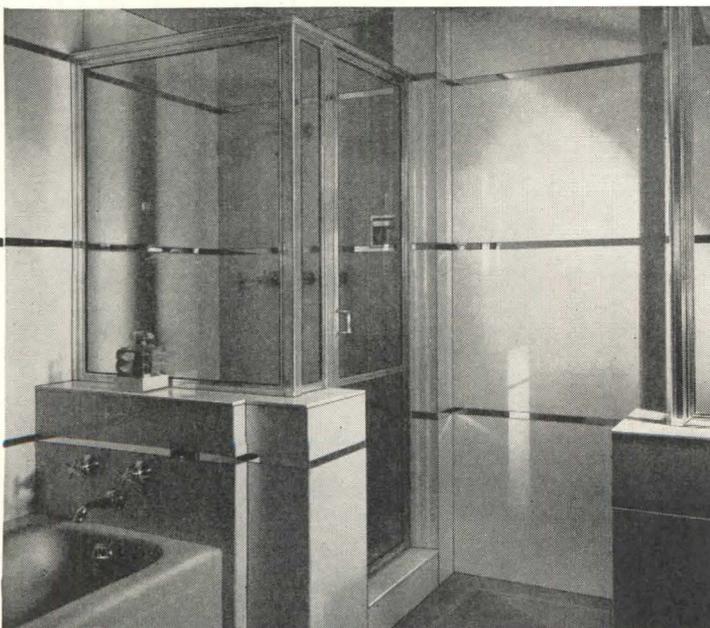


ATTRACTIVE SURROUNDINGS are an invitation to the architect to take advantage of them in designing a home. For this reason large window areas, glass panels, even glass walls have grown in favor during recent years. Pittsburgh Polished Plate Glass has been consistently selected by many architects to glaze such areas. Now, Twindow, Pittsburgh's new window with built-in insulation, makes such applications more practical than ever before. For Twindow affords not only clear vision, beauty, and generous light transmission, but the comfort and economy of efficient insulation as well. Architect: Anthony Thormin.



TWINDOW, Pittsburgh's new window with built-in insulation is made up of 2 or more panes of Pittsburgh Glass with a sealed-in air space between them. When Twindow is composed of 2 sheets of glass, it provides almost double the insulating effectiveness of single-glazed windows—and even better insulation when 3 or more panes of glass make up the Twindow unit. Twindow cuts heating costs, minimizes downdrafts, virtually prevents steamed windows.

◀ **WIDE LATITUDE IN BATHROOM AND KITCHEN DESIGN** is made possible when Carrara Structural Glass is selected for walls, wainscots, ceilings. This glass comes in 10 beautiful shades. It won't craze, check, stain or absorb odors. It is readily decorated in various ways. It is easy to clean. (Note the Heavy Plate Glass shower enclosure in this room, the decorative, horizontal mirror strips in the Carrara walls.)



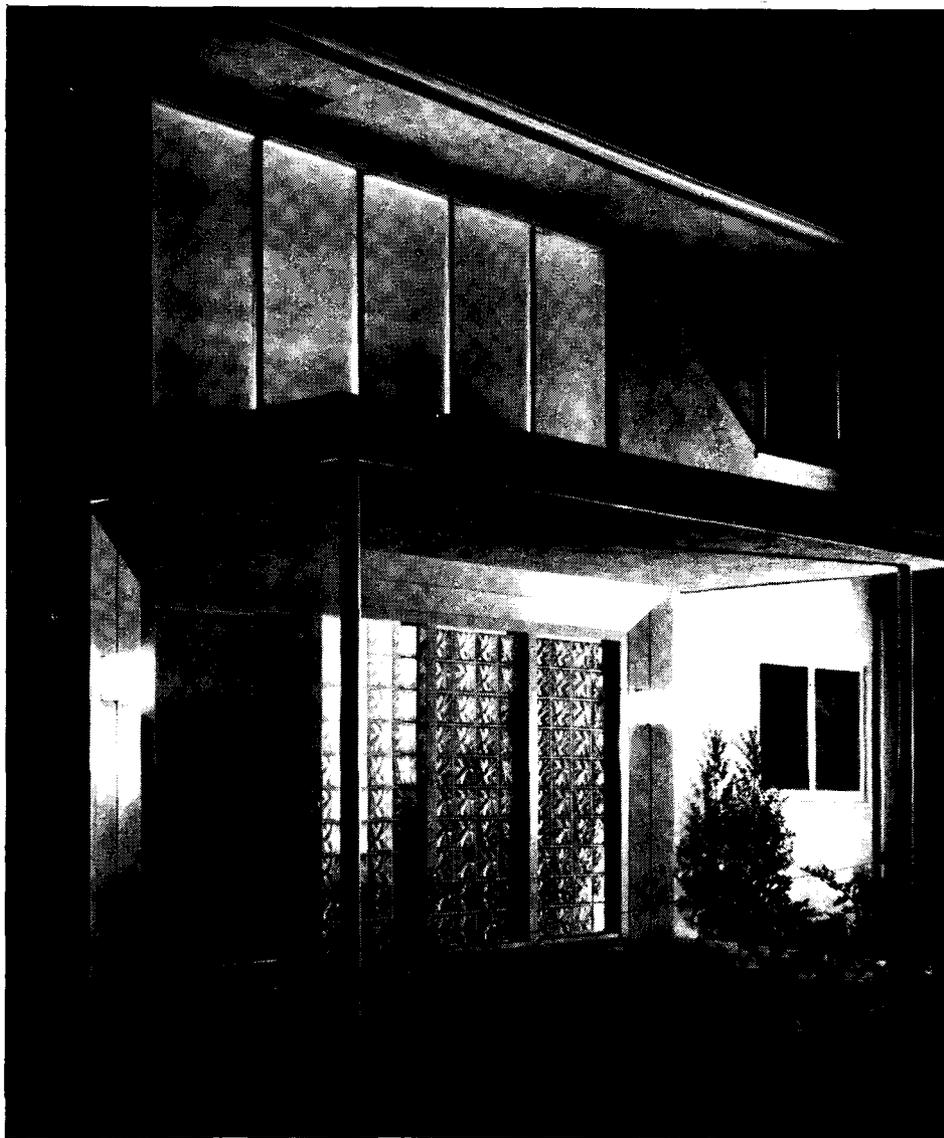
P I T T S B U R G H P L A T E G L A S S C O M P A N Y

in residential buildings



DECORATIVE POSSIBILITIES of Pittsburgh mirrors are illustrated by this example of a map, sandblasted on the mirror to 5 different depths, and then the whole mirror panel edge-lighted. Edge-lighting through the various levels of sandblasting, gives the map varying tonal values. Combined with mirror-backed shelves and glass desk, the effect of this "mirror mural" is striking.

THE APPEALING GOOD LOOKS and practical virtues of PC Glass Blocks have made them a favorite among the newer building materials. They transmit daylight generously, and yet preserve privacy. They have noteworthy insulation properties. They are available in various attractive patterns and sizes. Designed by Paul Laszlo.



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

★ Design it better with

Pittsburgh Glass



"PITTSBURGH" stands for Quality Glass and Paint

Pittsburgh Plate Glass Company
2028-7 Grant Building, Pittsburgh 19, Pa.

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

Name.....

Address.....

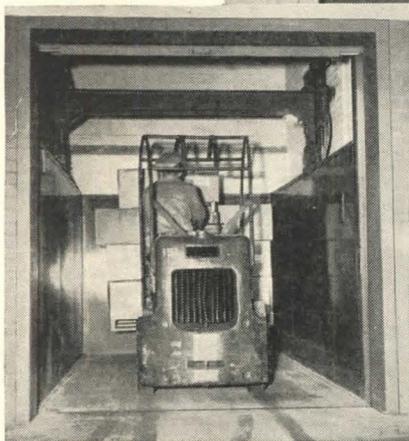
City..... State.....

PITTSBURGH PLATE GLASS COMPANY

MONTGOMERY

**HYDRAULIC
ELEVATORS**

FOR ECONOMY



**QUICK
DELIVERY!**

Montgomery Elevator Company has been able to increase production facilities to a point where quick delivery can be made on Standard Model Hydraulic Elevators.

FEATURES

INITIAL LOW COST — Montgomery Hydraulic Elevators . . . both freight and passenger . . . eliminate building cost of penthouse. Load bearing walls are unnecessary. Designed and built to meet service requirements where travel is limited to 36 feet.

OPERATIONAL ECONOMY — Hydraulic principle reduces operation expenses. All down travel by gravity.

STANDARDIZATION — Montgomery takes the lead in standardizing complete installations. From years of experience and thousands of jobs, several standard selections were chosen. This assures better delivery, lower cost.

SERVICE — Montgomery direct factory agents and branch offices in all principal localities offer the highest in efficient and prompt service.

Get complete details. Write for new Montgomery Hydraulic Elevator folder.



MONTGOMERY ELEVATOR COMPANY

HYDRAULIC DIVISION — MOLINE, ILLINOIS

THE RECORD REPORTS

(Continued from page 16)

Show, sponsored by Home Builders Council of New York, New Jersey and Connecticut; Grand Central Palace, New York City.

May 6-8: The President's Conference on Fire Prevention, Federal Works Bldg., Washington 25, D.C.

May 6-10: 2nd National Plastics Exposition and Annual Convention, The Society of the Plastics Industry, Coliseum, Chicago.

June 12-22: 2nd annual Construction Industries Exposition and Home Show, Pan-Pacific Auditorium, Los Angeles.

June 16-19: Semi-annual Meeting, American Society of Mechanical Engineers, Stevens Hotel, Chicago.

July 7-13: 1st Annual Store Modernization Show, Grand Central Palace, New York City.

Sept. 1-4: Fall Meeting, American Society of Mechanical Engineers, Hotel Utah, Salt Lake City, Utah.

Nov. 3-7: 2nd International Lighting Exposition and Conference, Stevens Hotel, Chicago.

Dec. 2-5: Annual Meeting, American Society of Mechanical Engineers, New York or Atlantic City.

COMPETITIONS OPEN

Memorial Scholarship

The Managing Committee of the John Stewardson Memorial Scholarship in Architecture has announced a competition for a scholarship of the value of \$1000, the holder of which is to pursue the study of architecture in the United States or foreign countries as determined by the Committee and under its direction.

Citizens of the United States who shall have studied or practiced architecture in the State of Pennsylvania for the period of at least one year immediately preceding the scholarship award are eligible to compete for the scholarship. Candidates must be not less than 22 nor more than 32 years of age on March 13, 1947, the final day for the receipt of applications. For further information and registration blanks, address the Secretary, Morton Keast, 1108 Commonwealth Bldg., 1201 Chestnut St., Philadelphia 7, Penn.

Masonry Home

A "Plasticrete Home" competition to select an architect for a firesafe, masonry home to be erected in Hamden, Conn., has been announced by The Dextone Co. of New Haven, The Wm. M. Hotchkiss Co. of New Haven and Bridgeport, and Plasticrete Corp. of Hamden, Conn., joint sponsors.

The purpose of the competition is "to

Facing tile for Rental Housing

fire-safe...cuts maintenance costs...assures earlier use

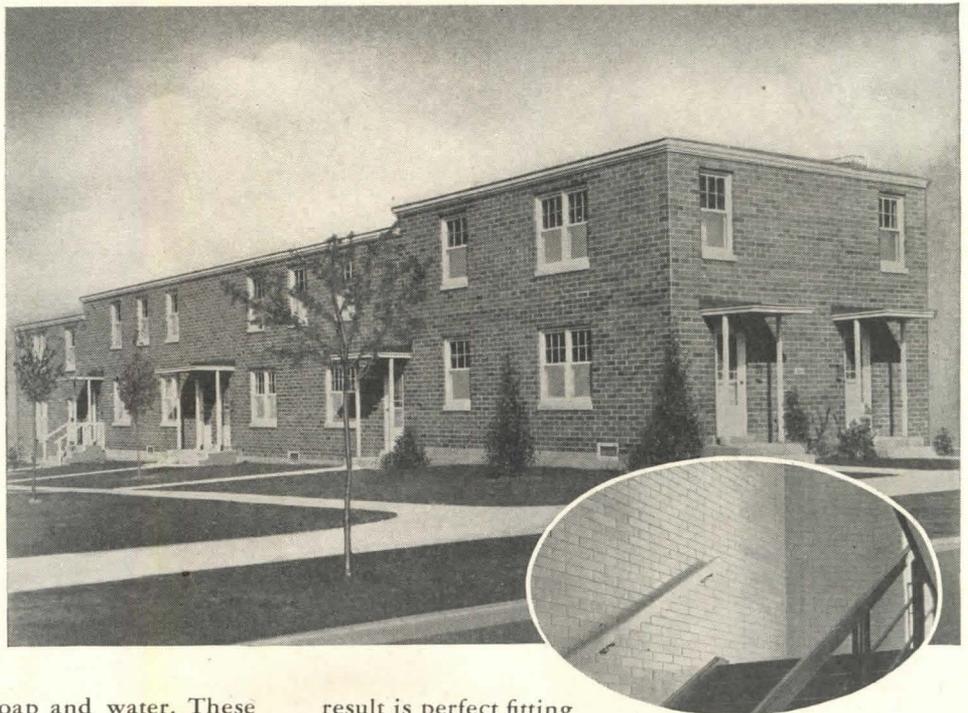
All these very important considerations for the low-cost Rental Housing you design are made possible by Structural Clay Facing Tile.

Unglazed Facing Tile lends itself very well to exteriors. For interiors, either glazed or unglazed is used. Both are *fire-safe*. Both go up fast and help assure *earlier use* of the structure.

Because Facing Tile is strong and durable and stands rough usage, it has become common practice to use it in stairwells and corridors. It does not scratch, crack, mar or decay. Structural Clay Facing Tile is colorful... easily cleaned with soap and water. These advantages help cut maintenance costs.

With a permanent finish and a wall of great strength in one material, Facing Tile means less time and money spent for construction... earlier returns on investment... less financing.

Many of these advantages are made more certain by the present production of Facing Tile in modular sizes. The

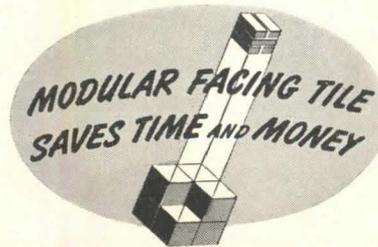


result is perfect fitting with other modular materials... greater flexibility in design... less time for drafting and site supervision... less material waste... better workmanship with reduced labor... earlier occupancy.

Any Institute Member will gladly furnish more information, or write direct to Desk AR-3 of the Institute. See Sweet's 1947 Architectural Catalog for additional data.

INSTITUTE MEMBERS

- Belden Brick Company
Canton, Ohio
- Continental Clay Products Co.
Kittanning, Pennsylvania
- Charleston Clay Products Co.
Charleston 22, West Virginia
- Hanley Company
New York 17, N. Y.
- Hydraulic Press Brick Co.
Indianapolis, Indiana



Mapleton Clay Products Co.
Canton, Ohio

INSTITUTE MEMBERS

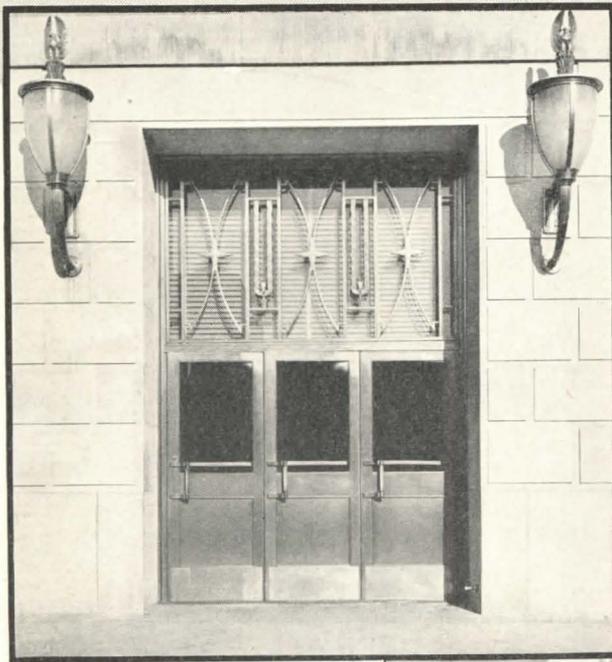
- Metropolitan Paving Brick Co.
Canton, Ohio
- National Fireproofing Corp.
Pittsburgh 12, Pennsylvania
- Stark Brick Company
Canton, Ohio
- Stone Creek Brick Company
Stone Creek, Ohio
- West Virginia Brick Company
Charleston, West Virginia

FACING TILE INSTITUTE

1756 K STREET, N. W.

WASHINGTON 6, D. C.

Don't Overlook MICHAELS PRODUCTS in Your Building Plans



The manufacture of ferrous and nonferrous metal building products has always been a major part of our business. And now that restrictions are lifted, and materials obtainable, we offer to architects and builders a variety of bronze, aluminum and non-ferrous metal products. For specific requirements Michaels craftsmen will faithfully reproduce in metal the most intricate architectural designs. If your plans include metal products, write us.

MICHAELS PRODUCTS

Fixtures for Banks and Offices
Welded Bronze Doors
Elevator Doors
Elevator Enclosures
Check Desks (standing and wall)
Lamp Standards
Marquise
Tablets and Signs
Name Plates
Railings (cast and wrought)
Building Directories
Bulletin Boards

Stamped and Cast Radiator Grilles
Grilles and Wickets
Kick and Push Plates
Push Bars
Wrought Iron and Bronze Lighting Fixtures
Wire Work
Cast Thresholds
Extruded Thresholds
Extruded Casements and Store Front Sash
Bronze and Iron Store Fronts
Bronze Double Hung Windows
Bronze Casement Windows

THE RECORD REPORTS

(Continued from page 124)

home design with Plasticrete Bloc walls and Lith-I-Bar floor construction . . . and to demonstrate the design characteristics, economy and other desirable qualities of contemporary concrete masonry construction." First prize will be \$1000, second will be \$350, and third, \$250. All architects and designers living or practicing in Connecticut are eligible to compete.

For further information and copies of the program, address the professional adviser, Harold D. Hauf, A.I.A., c/o Department of Architecture, Weir Hall, Yale University, New Haven 7, Conn.

Church Design

An open competition for students in architecture in American schools and colleges is being conducted by the Interdenominational Bureau of Architecture, the Church Architectural Guild of America, and Christian Herald.

Prizes are offered as follows: first, \$250; second, \$75; third, \$50; fourth, \$35; and 6 honorable mentions of \$15 each.

The registration fee of \$1.00 must be sent in by October 10, and material submitted by December 24, 1947. The program and full information may be obtained from Elbert M. Conover, Director, Interdenominational Bureau of Architecture, 297 Fourth Ave., New York 10, N. Y.

AT THE COLLEGES

Fellowships Announced

The University of Pennsylvania, School of Fine Arts, has announced the following graduate fellowships and scholarships in architecture for 1947-48: two \$1000 Theophilus Parsons Chandler Fellowships in Architecture, for advanced study; the Albert Kahn Scholarship in Architecture, providing a maximum of \$1100 toward tuition and other expenses; two University Graduate Scholarships providing tuition; and the Albert Kahn Scholarship in Industrial Architecture (\$250). For further information address the Dean of the School of Fine Arts. All applications must be made by May 17, 1947.

The Graduate School of Design of Harvard University will offer two or three fellowships for advanced study in city or regional planning for the academic year 1947-48. The stipends will not exceed \$1500 each. Applications should be made prior to April 1, 1947, to the Chairman of the Department of Regional Planning, Hunt Hall, Harvard University, Cambridge 38, Mass.

The School of Engineering of The

Now your clients will ask you about REYNOLDS *Lifetime* ALUMINUM SHINGLES AND CLAPBOARD SIDING

Look...

ALUMINUM SHINGLES

ALUMINUM CLAPBOARD

Made by the Reynolds Metals Company
... in mass production and available now!



There is all the traditional beauty of colonial architecture, plus such tremendous new advantages as no hand-builder can afford to ignore. Think of having siding and roofing that are absolutely fire-proof... that are vermin-proof... that give your woodland cottages in the country, keep your house much cooler in summer, much warmer in winter!

to apply! Each clapboard fits snugly into the one below, straight as a die without any leveling. And the shingles cover a roof with amazing speed and precision...locking at the sides, fitting tightly at top and bottom, weathertight and self-venting.

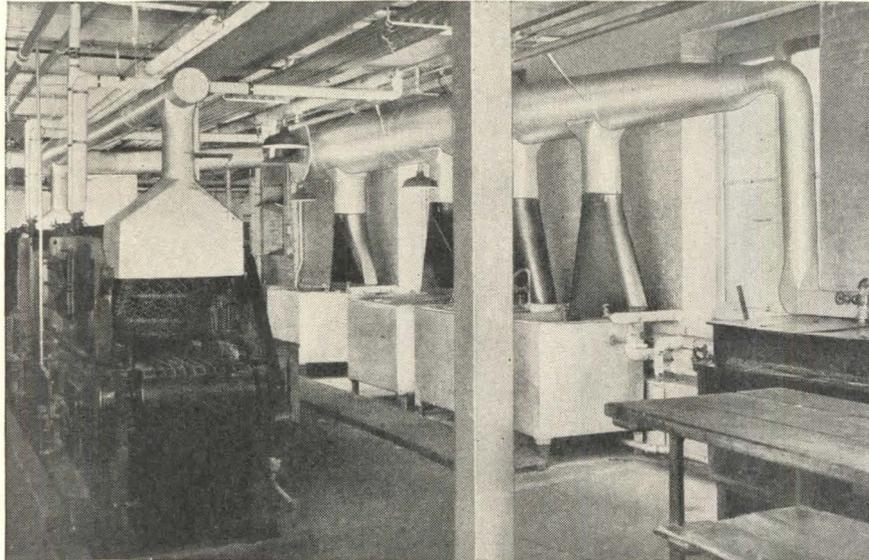
Your architect will be delighted, too. He knows your architect will be delighted, too. He knows a great new source of aluminum...and of aluminum engineering. He knows that the lightness, strength and natural beauty of aluminum will give scope and modern design. Tell him you are modern and let him specify Reynolds Lifetime Aluminum Shingles!

Reynolds Lifetime Aluminum Building Products
HUNDREDS OF MILLIONS OF SQUARE FEET ALREADY PRODUCED AND DELIVERED

CLAPBOARD SIDING—12-foot lengths, finished aluminum, 2 1/2" x 10", 2 1/2" x 12", 3" x 10", 3" x 12", 4" x 10", 4" x 12", 5" x 10", 5" x 12", 6" x 10", 6" x 12", 8" x 10", 8" x 12", 10" x 10", 10" x 12", 12" x 10", 12" x 12", 12" x 14", 12" x 16", 12" x 18", 12" x 20", 12" x 24", 12" x 30", 12" x 36", 12" x 42", 12" x 48", 12" x 54", 12" x 60", 12" x 66", 12" x 72", 12" x 78", 12" x 84", 12" x 90", 12" x 96", 12" x 102", 12" x 108", 12" x 114", 12" x 120", 12" x 126", 12" x 132", 12" x 138", 12" x 144", 12" x 150", 12" x 156", 12" x 162", 12" x 168", 12" x 174", 12" x 180", 12" x 186", 12" x 192", 12" x 198", 12" x 204", 12" x 210", 12" x 216", 12" x 222", 12" x 228", 12" x 234", 12" x 240, 12" x 246, 12" x 252, 12" x 258, 12" x 264, 12" x 270, 12" x 276, 12" x 282, 12" x 288, 12" x 294, 12" x 300, 12" x 306, 12" x 312, 12" x 318, 12" x 324, 12" x 330, 12" x 336, 12" x 342, 12" x 348, 12" x 354, 12" x 360, 12" x 366, 12" x 372, 12" x 378, 12" x 384, 12" x 390, 12" x 396, 12" x 402, 12" x 408, 12" x 414, 12" x 420, 12" x 426, 12" x 432, 12" x 438, 12" x 444, 12" x 450, 12" x 456, 12" x 462, 12" x 468, 12" x 474, 12" x 480, 12" x 486, 12" x 492, 12" x 498, 12" x 504, 12" x 510, 12" x 516, 12" x 522, 12" x 528, 12" x 534, 12" x 540, 12" x 546, 12" x 552, 12" x 558, 12" x 564, 12" x 570, 12" x 576, 12" x 582, 12" x 588, 12" x 594, 12" x 600, 12" x 606, 12" x 612, 12" x 618, 12" x 624, 12" x 630, 12" x 636, 12" x 642, 12" x 648, 12" x 654, 12" x 660, 12" x 666, 12" x 672, 12" x 678, 12" x 684, 12" x 690, 12" x 696, 12" x 702, 12" x 708, 12" x 714, 12" x 720, 12" x 726, 12" x 732, 12" x 738, 12" x 744, 12" x 750, 12" x 756, 12" x 762, 12" x 768, 12" x 774, 12" x 780, 12" x 786, 12" x 792, 12" x 798, 12" x 804, 12" x 810, 12" x 816, 12" x 822, 12" x 828, 12" x 834, 12" x 840, 12" x 846, 12" x 852, 12" x 858, 12" x 864, 12" x 870, 12" x 876, 12" x 882, 12" x 888, 12" x 894, 12" x 900, 12" x 906, 12" x 912, 12" x 918, 12" x 924, 12" x 930, 12" x 936, 12" x 942, 12" x 948, 12" x 954, 12" x 960, 12" x 966, 12" x 972, 12" x 978, 12" x 984, 12" x 990, 12" x 996, 12" x 1002, 12" x 1008, 12" x 1014, 12" x 1020, 12" x 1026, 12" x 1032, 12" x 1038, 12" x 1044, 12" x 1050, 12" x 1056, 12" x 1062, 12" x 1068, 12" x 1074, 12" x 1080, 12" x 1086, 12" x 1092, 12" x 1098, 12" x 1104, 12" x 1110, 12" x 1116, 12" x 1122, 12" x 1128, 12" x 1134, 12" x 1140, 12" x 1146, 12" x 1152, 12" x 1158, 12" x 1164, 12" x 1170, 12" x 1176, 12" x 1182, 12" x 1188, 12" x 1194, 12" x 1200, 12" x 1206, 12" x 1212, 12" x 1218, 12" x 1224, 12" x 1230, 12" x 1236, 12" x 1242, 12" x 1248, 12" x 1254, 12" x 1260, 12" x 1266, 12" x 1272, 12" x 1278, 12" x 1284, 12" x 1290, 12" x 1296, 12" x 1302, 12" x 1308, 12" x 1314, 12" x 1320, 12" x 1326, 12" x 1332, 12" x 1338, 12" x 1344, 12" x 1350, 12" x 1356, 12" x 1362, 12" x 1368, 12" x 1374, 12" x 1380, 12" x 1386, 12" x 1392, 12" x 1398, 12" x 1404, 12" x 1410, 12" x 1416, 12" x 1422, 12" x 1428, 12" x 1434, 12" x 1440, 12" x 1446, 12" x 1452, 12" x 1458, 12" x 1464, 12" x 1470, 12" x 1476, 12" x 1482, 12" x 1488, 12" x 1494, 12" x 1500, 12" x 1506, 12" x 1512, 12" x 1518, 12" x 1524, 12" x 1530, 12" x 1536, 12" x 1542, 12" x 1548, 12" x 1554, 12" x 1560, 12" x 1566, 12" x 1572, 12" x 1578, 12" x 1584, 12" x 1590, 12" x 1596, 12" x 1602, 12" x 1608, 12" x 1614, 12" x 1620, 12" x 1626, 12" x 1632, 12" x 1638, 12" x 1644, 12" x 1650, 12" x 1656, 12" x 1662, 12" x 1668, 12" x 1674, 12" x 1680, 12" x 1686, 12" x 1692, 12" x 1698, 12" x 1704, 12" x 1710, 12" x 1716, 12" x 1722, 12" x 1728, 12" x 1734, 12" x 1740, 12" x 1746, 12" x 1752, 12" x 1758, 12" x 1764, 12" x 1770, 12" x 1776, 12" x 1782, 12" x 1788, 12" x 1794, 12" x 1800, 12" x 1806, 12" x 1812, 12" x 1818, 12" x 1824, 12" x 1830, 12" x 1836, 12" x 1842, 12" x 1848, 12" x 1854, 12" x 1860, 12" x 1866, 12" x 1872, 12" x 1878, 12" x 1884, 12" x 1890, 12" x 1896, 12" x 1902, 12" x 1908, 12" x 1914, 12" x 1920, 12" x 1926, 12" x 1932, 12" x 1938, 12" x 1944, 12" x 1950, 12" x 1956, 12" x 1962, 12" x 1968, 12" x 1974, 12" x 1980, 12" x 1986, 12" x 1992, 12" x 1998, 12" x 2004, 12" x 2010, 12" x 2016, 12" x 2022, 12" x 2028, 12" x 2034, 12" x 2040, 12" x 2046, 12" x 2052, 12" x 2058, 12" x 2064, 12" x 2070, 12" x 2076, 12" x 2082, 12" x 2088, 12" x 2094, 12" x 2100, 12" x 2106, 12" x 2112, 12" x 2118, 12" x 2124, 12" x 2130, 12" x 2136, 12" x 2142, 12" x 2148, 12" x 2154, 12" x 2160, 12" x 2166, 12" x 2172, 12" x 2178, 12" x 2184, 12" x 2190, 12" x 2196, 12" x 2202, 12" x 2208, 12" x 2214, 12" x 2220, 12" x 2226, 12" x 2232, 12" x 2238, 12" x 2244, 12" x 2250, 12" x 2256, 12" x 2262, 12" x 2268, 12" x 2274, 12" x 2280, 12" x 2286, 12" x 2292, 12" x 2298, 12" x 2304, 12" x 2310, 12" x 2316, 12" x 2322, 12" x 2328, 12" x 2334, 12" x 2340, 12" x 2346, 12" x 2352, 12" x 2358, 12" x 2364, 12" x 2370, 12" x 2376, 12" x 2382, 12" x 2388, 12" x 2394, 12" x 2400, 12" x 2406, 12" x 2412, 12" x 2418, 12" x 2424, 12" x 2430, 12" x 2436, 12" x 2442, 12" x 2448, 12" x 2454, 12" x 2460, 12" x 2466, 12" x 2472, 12" x 2478, 12" x 2484, 12" x 2490, 12" x 2496, 12" x 2502, 12" x 2508, 12" x 2514, 12" x 2520, 12" x 2526, 12" x 2532, 12" x 2538, 12" x 2544, 12" x 2550, 12" x 2556, 12" x 2562, 12" x 2568, 12" x 2574, 12" x 2580, 12" x 2586, 12" x 2592, 12" x 2598, 12" x 2604, 12" x 2610, 12" x 2616, 12" x 2622, 12" x 2628, 12" x 2634, 12" x 2640, 12" x 2646, 12" x 2652, 12" x 2658, 12" x 2664, 12" x 2670, 12" x 2676, 12" x 2682, 12" x 2688, 12" x 2694, 12" x 2700, 12" x 2706, 12" x 2712, 12" x 2718, 12" x 2724, 12" x 2730, 12" x 2736, 12" x 2742, 12" x 2748, 12" x 2754, 12" x 2760, 12" x 2766, 12" x 2772, 12" x 2778, 12" x 2784, 12" x 2790, 12" x 2796, 12" x 2802, 12" x 2808, 12" x 2814, 12" x 2820, 12" x 2826, 12" x 2832, 12" x 2838, 12" x 2844, 12" x 2850, 12" x 2856, 12" x 2862, 12" x 2868, 12" x 2874, 12" x 2880, 12" x 2886, 12" x 2892, 12" x 2898, 12" x 2904, 12" x 2910, 12" x 2916, 12" x 2922, 12" x 2928, 12" x 2934, 12" x 2940, 12" x 2946, 12" x 2952, 12" x 2958, 12" x 2964, 12" x 2970, 12" x 2976, 12" x 2982, 12" x 2988, 12" x 2994, 12" x 3000, 12" x 3006, 12" x 3012, 12" x 3018, 12" x 3024, 12" x 3030, 12" x 3036, 12" x 3042, 12" x 3048, 12" x 3054, 12" x 3060, 12" x 3066, 12" x 3072, 12" x 3078, 12" x 3084, 12" x 3090, 12" x 3096, 12" x 3102, 12" x 3108, 12" x 3114, 12" x 3120, 12" x 3126, 12" x 3132, 12" x 3138, 12" x 3144, 12" x 3150, 12" x 3156, 12" x 3162, 12" x 3168, 12" x 3174, 12" x 3180, 12" x 3186, 12" x 3192, 12" x 3198, 12" x 3204, 12" x 3210, 12" x 3216, 12" x 3222, 12" x 3228, 12" x 3234, 12" x 3240, 12" x 3246, 12" x 3252, 12" x 3258, 12" x 3264, 12" x 3270, 12" x 3276, 12" x 3282, 12" x 3288, 12" x 3294, 12" x 3300, 12" x 3306, 12" x 3312, 12" x 3318, 12" x 3324, 12" x 3330, 12" x 3336, 12" x 3342, 12" x 3348, 12" x 3354, 12" x 3360, 12" x 3366, 12" x 3372, 12" x 3378, 12" x 3384, 12" x 3390, 12" x 3396, 12" x 3402, 12" x 3408, 12" x 3414, 12" x 3420, 12" x 3426, 12" x 3432, 12" x 3438, 12" x 3444, 12" x 3450, 12" x 3456, 12" x 3462, 12" x 3468, 12" x 3474, 12" x 3480, 12" x 3486, 12" x 3492, 12" x 3498, 12" x 3504, 12" x 3510, 12" x 3516, 12" x 3522, 12" x 3528, 12" x 3534, 12" x 3540, 12" x 3546, 12" x 3552, 12" x 3558, 12" x 3564, 12" x 3570, 12" x 3576, 12" x 3582, 12" x 3588, 12" x 3594, 12" x 3600, 12" x 3606, 12" x 3612, 12" x 3618, 12" x 3624, 12" x 3630, 12" x 3636, 12" x 3642, 12" x 3648, 12" x 3654, 12" x 3660, 12" x 3666, 12" x 3672, 12" x 3678, 12" x 3684, 12" x 3690, 12" x 3696, 12" x 3702, 12" x 3708, 12" x 3714, 12" x 3720, 12" x 3726, 12" x 3732, 12" x 3738, 12" x 3744, 12" x 3750, 12" x 3756, 12" x 3762, 12" x 3768, 12" x 3774, 12" x 3780, 12" x 3786, 12" x 3792, 12" x 3798, 12" x 3804, 12" x 3810, 12" x 3816, 12" x 3822, 12" x 3828, 12" x 3834, 12" x 3840, 12" x 3846, 12" x 3852, 12" x 3858, 12" x 3864, 12" x 3870, 12" x 3876, 12" x 3882, 12" x 3888, 12" x 3894, 12" x 3900, 12" x 3906, 12" x 3912, 12" x 3918, 12" x 3924, 12" x 3930, 12" x 3936, 12" x 3942, 12" x 3948, 12" x 3954, 12" x 3960, 12" x 3966, 12" x 3972, 12" x 3978, 12" x 3984, 12" x 3990, 12" x 3996, 12" x 4002, 12" x 4008, 12" x 4014, 12" x 4020, 12" x 4026, 12" x 4032, 12" x 4038, 12" x 4044, 12" x 4050, 12" x 4056, 12" x 4062, 12" x 4068, 12" x 4074, 12" x 4080, 12" x 4086, 12" x 4092, 12" x 4098, 12" x 4104, 12" x 4110, 12" x 4116, 12" x 4122, 12" x 4128, 12" x 4134, 12" x 4140, 12" x 4146, 12" x 4152, 12" x 4158, 12" x 4164, 12" x 4170, 12" x 4176, 12" x 4182, 12" x 4188, 12" x 4194, 12" x 4200, 12" x 4206, 12" x 4212, 12" x 4218, 12" x 4224, 12" x 4230, 12" x 4236, 12" x 4242, 12" x 4248, 12" x 4254, 12" x 4260, 12" x 4266, 12" x 4272, 12" x 4278, 12" x 4284, 12" x 4290, 12" x 4296, 12" x 4302, 12" x 4308, 12" x 4314, 12" x 4320, 12" x 4326, 12" x 4332, 12" x 4338, 12" x 4344, 12" x 4350, 12" x 4356, 12" x 4362, 12" x 4368, 12" x 4374, 12" x 4380, 12" x 4386, 12" x 4392, 12" x 4398, 12" x 4404, 12" x 4410, 12" x 4416, 12" x 4422, 12" x 4428, 12" x 4434, 12" x 4440, 12" x 4446, 12" x 4452, 12" x 4458, 12" x 4464, 12" x 4470, 12" x 4476, 12" x 4482, 12" x 4488, 12" x 4494, 12" x 4500, 12" x 4506, 12" x 4512, 12" x 4518, 12" x 4524, 12" x 4530, 12" x 4536, 12" x 4542, 12" x 4548, 12" x 4554, 12" x 4560, 12" x 4566, 12" x 4572, 12" x 4578, 12" x 4584, 12" x 4590, 12" x 4596, 12" x 4602, 12" x 4608, 12" x 4614, 12" x 4620, 12" x 4626, 12" x 4632, 12" x 4638, 12" x 4644, 12" x 4650, 12" x 4656, 12" x 4662, 12" x 4668, 12" x 4674, 12" x 4680, 12" x 4686, 12" x 4692, 12" x 4698, 12" x 4704, 12" x 4710, 12" x 4716, 12" x 4722, 12" x 4728, 12" x 4734, 12" x 4740, 12" x 4746, 12" x 4752, 12" x 4758, 12" x 4764, 12" x 4770, 12" x 4776, 12" x 4782, 12" x 4788, 12" x 4794, 12" x 4800, 12" x 4806, 12" x 4812, 12" x 4818, 12" x 4824, 12" x 4830, 12" x 4836, 12" x 4842, 12" x 4848, 12" x 4854, 12" x 4860, 12" x 4866, 12" x 4872, 12" x 4878, 12" x 4884, 12" x 4890, 12" x 4896, 12" x 4902, 12" x 4908, 12" x 4914, 12" x 4920, 12" x 4926, 12" x 4932, 12" x 4938, 12" x 4944, 12" x 4950, 12" x 4956, 12" x 4962, 12" x 4968, 12" x 4974, 12" x 4980, 12" x 4986, 12" x 4992, 12" x 4998, 12" x 5004, 12" x 5010, 12" x 5016, 12" x 5022, 12" x 5028, 12" x 5034, 12" x 5040, 12" x 5046, 12" x 5052, 12" x 5058, 12" x 5064, 12" x 5070, 12" x 5076, 12" x 5082, 12" x 5088, 12" x 5094, 12" x 5100, 12" x 5106, 12" x 5112, 12" x 5118, 12" x 5124, 12" x 5130, 12" x 5136, 12" x 5142, 12" x 5148, 12" x 5154, 12" x 5160, 12" x 5166, 12" x 5172, 12" x 5178, 12" x 5184, 12" x 5190, 12" x 5196, 12" x 5202, 12" x 5208, 12" x 5214, 12" x 5220, 12" x 5226, 12" x 5232, 12" x 5238, 12" x 5244, 12" x 5250, 12" x 5256, 12" x 5262, 12" x 5268, 12" x 5274, 12" x 5280, 12" x 5286, 12" x 5292, 12" x 5298, 12" x 5304, 12" x 5310, 12" x 5316, 12" x 5322, 12" x 5328, 12" x 5334, 12" x 5340, 12" x 5346, 12" x 5352, 12" x 5358, 12" x 5364, 12" x 5370, 12" x 5376, 12" x 5382, 12" x 5388, 12" x 5394, 12" x 5400, 12" x 5406, 12" x 5412, 12" x 5418, 12" x 5424, 12" x 5430, 12" x 5436, 12" x 5442, 12" x 5448, 12" x 5454, 12" x 5460, 12" x 5466, 12" x 5472, 12" x 5478, 12" x 5484, 12" x 5490, 12" x 5496, 12" x 5502, 12" x 5508, 12" x 5514, 12" x 5520, 12" x 5526, 12" x 5532, 12" x 5538, 12" x 5544, 12" x 5550, 12" x 5556, 12" x 5562, 12" x 5568, 12" x 5574, 12" x 5580, 12" x 5586, 12" x 5592, 12" x 5598, 12" x 5604, 12" x 5610, 12" x 5616, 12" x 5622, 12" x 5628, 12" x 5634, 12" x 5640, 12" x 5646, 12" x 5652, 12" x 5658, 12" x 5664, 12" x 5670, 12" x 5676, 12" x 5682, 12" x 5688, 12" x 5694, 12" x 5700, 12" x 5706, 12" x 5712, 12" x 5718, 12" x 5724, 12" x 5730, 12" x 5736, 12" x 5742, 12" x 5748, 12" x 5754, 12" x 5760, 12" x 5766, 12" x 5772, 12" x 5778, 12" x 5784, 12" x 5790, 12" x 5796, 12" x 5802, 12" x 5808, 12" x 5814, 12" x 5820, 12" x 5826, 12" x 5832, 12" x 5838, 12" x 5844, 12" x 5850, 12" x 5856, 12" x 5862, 12" x 5868, 12" x 5874, 12" x 5880, 12" x 5886, 12" x 5892, 12" x 5898, 12" x 5904, 12" x 5910, 12" x 5916, 12" x 5922, 12" x 5928, 12" x 5934, 12" x 5940, 12" x 5946, 12" x 5952, 12" x 5958, 12" x 5964, 12" x 5970, 12" x 5976, 12" x 5982, 12" x 5988, 12" x 5994, 12" x 6000, 12" x 6006, 12" x 6012, 12" x 6018, 12" x 6024, 12" x 6030, 12" x 6036, 12" x 6042, 12" x 6048, 12" x 6054, 12" x 6060, 12" x 6066, 12" x 6072, 12" x 6078, 12" x 6084, 12" x 6090, 12" x 6096, 12" x 6102, 12" x 6108, 12" x 6114, 12" x 6120, 12" x 6126, 12" x 6132, 12" x 6138, 12" x 6144, 12" x 6150, 12" x 6156, 12" x 6162, 12" x 6168, 12" x 6174, 12" x 6180, 12" x 6186, 12" x 6192, 12" x 6198, 12" x 6204, 12" x 6210, 12" x 6216, 12" x 6222, 12" x 6228, 12" x 6234, 12" x 6240, 12" x 6246, 12" x 6252, 12" x 6258, 12" x 6264, 12" x 6270, 12" x 6276, 12" x 6282, 12" x 6288, 12" x 6294, 12" x 6300, 12" x 6306, 12" x 6312, 12" x 6318, 12" x 6324, 12" x 6330, 12" x 6336, 12" x 6342, 12" x 6348, 12" x 6354, 12" x 6360, 12" x 6366, 12" x 6372, 12" x 6378,

PUT FIRST THINGS FIRST

In Industrial Ventilation



Clients Want AIR MOVEMENT

Fundamental? Yes. The *first* thing good industrial ventilation must do is to move air. But that doesn't necessarily mean big, bulky, costly installations. *Functional design* is the No. 1 "must" for high efficiency, simplified layouts, and space and money savings. That's why Propellair double-action fans offer you and your clients *many* advantages.

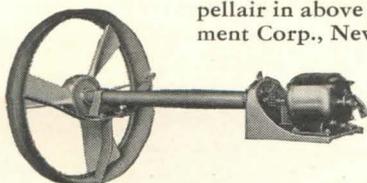
HIGH VELOCITY, HIGH VOLUME

Like modern aircraft wings, *both surfaces* of Propellair airfoil blades produce air movement—the back even *more* than the front. Scientific design makes entire blade length work—*not* just the tip—for uniform air flow over whole fan area. Entrance ring is airfoil-principle—prevents "tip recirculation"—makes blade efficiency *pay off* in high velocity, high volume.

Capable, compact Propellairs are the answer to *every* industrial ventilating need. Types and sizes for every service and location. Qualified sales engineers in principal cities. Write for *all* the facts.

7000 c.f.m. from 1½ h.p. Motor

Fumes and vapors from the process cleaning of small brass fittings are collected and exhausted by a 24" Propellair in above installation at Weston Electrical Instrument Corp., Newark, N. J. Right foreground, degreasing tank. Left, conveyor-type gas-fired oven. Along wall, tanks for acid dip and water rinse. These are vented by slot-type hoods to pull fumes away from operator. Fan is located in duct beyond tanks.



PROPELLAIR, Inc.

THE RECORD REPORTS

(Continued from page 126)

nounced that 10 sponsored graduate fellowships with stipends ranging from \$750 to \$1800 per year are available for 1947-48. The School is also offering 10 departmental graduate assistantships at \$1000 per year and a number of full-time research assistantships. For further information address H. P. Hammond, Dean, School of Engineering, The Pennsylvania State College, State College, Penn.

New Buildings

At Western Reserve University, Cleveland, immediate construction is planned for a \$205,000 addition to the School of Law and a \$95,000 Karl E. Davis Memorial Building.

The Law School building will be an extension of the present annex back of the main building of the School. It will provide classrooms for the greatly expanded student enrollment.

The Memorial Building, to be used for a veterans' dormitory, will provide additional locker and shower space for the gymnasium. It is so planned that when the need for housing becomes less acute the second floor can be converted into areas for boxing, wrestling and classrooms. It is expected to be ready for occupancy by the beginning of the spring session next month.

Hospital Planning Conference

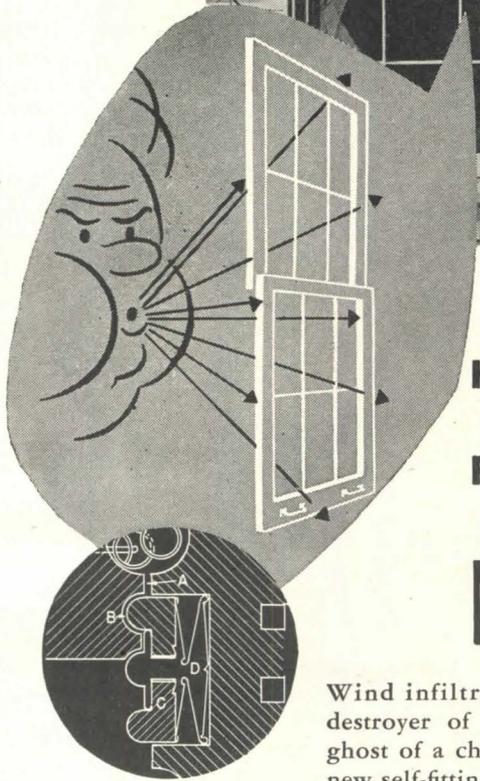
A Conference on Hospital Planning will be held April 4-6 at the College of Architecture and Design, University of Michigan, Ann Arbor, under the sponsorship of The Ann Arbor Conference, an informal group of practicing architects and educators.

Prominent hospital architects, hospital consultants, representatives of the U. S. Public Health Service and the American Hospital Association will participate in the three-day meetings. Chairman is Kenneth Black, of Lansing, Mich.; Amedeo Leone of Detroit, Alden Dow of Midland, Mich., and Walter Rolfe, of Houston, Texas, form the program committee.

Architects concerned with hospital work are invited to the extent of room accommodations. For reservations address Wells I. Bennett, Dean, College of Architecture and Design, 207 Architecture Bldg., Ann Arbor, Mich.

New Courses

An interesting new course in Mechanical Equipment of Buildings was inaugurated on January 23rd at the University of California Extension Division. To last 18 weeks, the course will cover



HARDLY A GHOST OF A CHANCE

FOR *Wind* TO GET THROUGH

NEW SELF-FITTING SILENTITE

Wind infiltration—that fuel-eating destroyer of comfort—has hardly a ghost of a chance to get through the new self-fitting Silentite window.

Thanks to scientific engineering, the new Silentite has “floating” weather-stripping. The wood sliding bars, which are seated on full-length bronze weather-strips, press tightly against moving parts of window and keep each in firm contact with the sash, regardless of its position.

At the head, a spring leaf is compressed by the top rail when the sash is closed, providing a weather-tight fit. At the meeting rails, interlocking weather-strip members solve an age-old problem. At the sills, another spring leaf weather-strip foils infiltration.

No wonder this new Curtis self-fitting Silentite is 20% *more weather-tight* even than the original Silentite—which was America’s first “insulated” window!

Here are some additional reasons why you'll want to specify CURTIS SILENTITE!

- * Silentite is a Wood Window—and wood is a natural non-conductor of heat and cold. It is toxic-treated to give it longer life.
- * Amazingly easy operation—famous Silentite spring suspension. No weights, cords or pulleys to get out of order.

- * New locking safety—new self-fitting Silentite locks in two positions. Window can be left open 6 inches for ventilation and yet be securely locked.
- * Easy installation—sash put in with minimum effort. Windows accurately pre-fitted at factory—no fitting required on job.
- * Streamlined beauty—sturdy, one-piece narrow mullion, more glass area for given openings.



MAIL THE COUPON FOR COMPLETE FACTS ABOUT THIS AMAZING WINDOW IMPROVEMENT

CURTIS COMPANIES SERVICE BUREAU
AR-3S Curtis Building
Clinton, Iowa

Gentlemen: Please send me your new book on the new Silentite Window line.

Name-----
Address-----
City----- State-----

THE RECORD REPORTS (Continued from page 128)

conditioning, plumbing, fire protection, electricity, acoustics, lighting, law, etc.

The Division of Social Philosophy of The Cooper Union, New York, has announced a meeting on April 11 on "How New is Modern Architecture?" Speaker will be Henry-Russell Hitchcock, professor of Fine Arts, Wesleyan University.

The New School, New York City, is currently holding a special series of lectures entitled "Planning for Our Com-

munities." Covering such subjects as the elements of city planning, traffic and transportation, official media of planning, housing, and urban land economics, the 15-week course is under the direction of Charles Abrams and Henry S. Churchill.

Special Veteran Course

Fourteen G.I.'s, all employed in architects' offices in the greater Pittsburgh area, form the special evening class in

architecture now being held at Carnegie Institute of Technology. Believed to be the first G.I. apprentice training group to be organized in the professional field, the class is sponsored by the Pittsburgh Chapter, A.I.A.

The group meets twice a week, will complete 120 hours of training under the apprentice training program of the government. Class instructor is Rody Patterson, himself a veteran of both World Wars, and member of Palmgreen, Patterson & Fleming, Pittsburgh architectural firm.

HONORS CONFERRED

Tribute to Greenley

At a testimonial dinner and special program in his honor on the 25th anniversary of his presidency of the Architectural League of New York, Howard Greenley was awarded the League's President's Medal.

The 20th president of the League, Mr. Greenley is architect of the Prince George Hotel and the interiors of the Lord Duveen mansion in New York City; of the house of Alanson B. Houghton, ex-ambassador to Germany and England, in Corning, N. Y.; of residences for Edson Bardley at Newport, R. I., and Charles A. Coffin in Locust Valley, L. I.; and of picture galleries for the late Joseph E. Widener at Elkins Park, Philadelphia.

Mr. Greenley started his architectural career in the offices of Carrere and Hastings, architects of the New York Public Library. Following his graduation from the Ecole des Beaux Arts in Paris in 1901, Mr. Greenley was associated with Arnold Brunner. From 1903 to 1932 he headed up his own architectural firm.

Participating in the tribute to Mr. Greenley were all living presidents of the League, 10 honorary members, and 120 men who have been members for more than 25 years. Also participating were The Metropolitan Museum of Art, National Academy of Design, American Academy in Rome, New York Chapter of the A.I.A., Faculty of Fine Arts of Columbia University, American Academy of Arts and Letters, National Institute of Arts and Letters, Society of Beaux Arts Architects, and others.

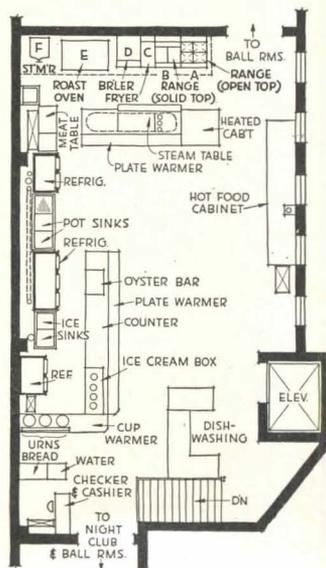
Engineers Honored

Conferring of honorary membership upon four of its distinguished members featured the 94th annual meeting of the American Society of Civil Engineers in January. The men honored were: A. W. K. Billings, retired president of the Brazilian Traction, Light & Power Co.; Charles B. Burdick, Chicago consulting engineer; Albert P. Greensfelder, St. Louis contractor and civic leader; and LeRoy K. Sherman, Chicago con-

KITCHEN PLAN NO. 41: Forty-first of a series of successful mass-feeding plans.

This extremely flexible kitchen at the Hotel Granada, Brooklyn, New York, serves one ballroom seating 600, three seating 150 each and a popular night club seating 350 — with high-grade banquet and à la carte meals.

KEEP FOR
HANDY
REFERENCE!



COOKING EQUIPMENT USED:

- (a) 1 Open Top Gas-fired Range
- (b) 1 Solid Top Gas-fired Range
- (c) 1 Deep Fat Fryer, Gas-fired
- (d) 1 Gas-fired Ceramic Broiler
- (e) 1 No. 953 BLODGETT GAS-FIRED ROAST OVEN
- (f) 1 Vegetable Steamer
- 1 No. 982 BLODGETT GAS-FIRED BAKE OVEN
(not shown on plan)



Designed and installed by: H. Friedman & Sons, New York, New York

Facile, flexible, speedy gas-fired 'Specialized Cooking Tools' enable the management of the Granada to turn out large food volume at low cost and in short time. The heart of this installation is a No. 953 Blodgett Roast Oven, with three individually controlled chambers, each 42" x 32" x 12" with load capacity of 750 lbs. Granada baking is done in a No. 982 Blodgett, 8 pan gas-fired oven, in a bake-shop on another level.

The G. S. BLODGETT CO., Inc.

50 Lakeside Avenue

Burlington, Vermont

Send for your copy of the new, deluxe edition of Case Histories of Successful

Here's a suggestion for a low-cost house with a wide awake, down-to-earth look about it! This ad appears in full color in the Saturday Evening Post and is another in the Gold Bond series, now in its second year. Stresses the use of Gold Bond Building Materials, sure, but it also plays up the Pride of Home Ownership angle and really does a job for the whole building industry. Thousands of folks will write us for plans of this home and the answer will be, "See your local architect!" National Gypsum Co., Buffalo 2, N. Y.

You'll build or remodel better with
Gold Bond



You can start building sooner if you start planning now. See your local Gold Bond Dealer!

Wonder how many Post readers feel the way I do?

"Someday we're going to have our house, Bill and I. With grass around it, and the blue bowl of the sky over it, and a tree of our own to carve a couple of hearts on if we want to. We're saving, and planning, and each day brings us closer to moving in!"

The house you will build will be a "wonder house" too. For, since Dad built, modern science has taken a hand in new construction materials and methods. Outer walls, for example, now add greater strength and fireproofing when Gold Bond storm sealed gypsum sheathing supplies the base for outside finish. Inside walls and ceilings will give years of trouble-free service when they're made

of Gold Bond fireproof gypsum lath and plaster.

Heating costs are reduced as much as 40% in new and old homes with fireproof high-efficiency Gold Bond Rock Wool insulation. And summer comfort is doubled.

You can plan on these scientific building improvements and many more to give you a house that is better in every respect than any that has ever been built before. A house that will serve for many long and happy years with the least amount of repair and upkeep expense.

There are over 150 research produced Gold Bond products that cost no more to specify and use than

ordinary building materials. Each of them is engineered to do a specific job better. If you want Gold Bond results, be sure to speak to your architect and builder about using Gold Bond products!

Today our entire production can't keep up with demand. But just the same our more than 10,000 Gold Bond lumber and building material dealers are doing their best, helping veterans to get housed, helping their customers in every way they can. See your Gold Bond dealer first whether you plan to build or remodel. He can help you get what you want, and get it better. Not always right away but tomorrow sure! National Gypsum Co., Buffalo 2, N. Y.

Over 150 tested Gold Bond Building Products for new construction or remodeling add greater permanency, beauty and fire protection. These include wallboard, lath, plaster, lime, sheathing, wall paint, insulation, metal and sound control products.

DEMAND THESE SIX GOLD BOND FEATURES IN YOUR NEW HOUSE

GOLD BOND FIREPROOF GYPSUM SHEATHING



Big, weatherproofed panels of Gold Bond Storm Sealed Gypsum Sheathing add structural strength and built-in fire protection. Costs less than old-style sheathing.

GOLD BOND FIREPROOF GYPSUM LATH



Gold Bond Gypsum Lath is the perfect plaster base. Can't warp, expand or contract. Adds fire protection and structural strength for better wall and ceiling construction.

GOLD BOND FIREPROOF GYPSUM PLASTER



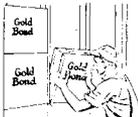
Gold Bond Gypsum Plaster is especially processed to bond perfectly with gypsum lath. Builds fire-safe, rock-like walls and ceilings with greater durability and beauty.

GOLD BOND FIREPROOF FINISH LIME



Over the plaster, goes a coat of Gold Bond Finish Lime. This is the smooth white finish that you see in a new house before the wallpaper or paint is applied.

GOLD BOND FIREPROOF ROCK WOOL INSULATION



Builds a fireproof blanket of insulation around the house for greater year 'round comfort, family health, and fuel savings up to 40%. Available for new or old homes.

GOLD BOND SUNLEX 1-HOUR WALL PAINTS



Dries in one hour with no objectional painty, after-odor. Easier to apply. This modern decoration is now available at your dealer's in a full range of colorful tones.

THE RECORD REPORTS (Continued from page 130)

ELECTIONS

Morgan L. Fitch of Chicago formally took office as president of the National Association of Real Estate Boards at an installation banquet in Washington, D. C., on January 30th.

The Board of Trustees of The American Designers' Institute has announced the following elections: *president*, Alexander J. Kostellow, New York; *vice presidents*, Ruth Gerth of San Francisco, and Stewart Pike of Philadel-

phia; *treasurer*, Lionel C. Algoren, Chicago; *secretary*, Ann Franke, New York.

At its 25th annual meeting on January 24th, the Architects Club of Chicago elected R. Harold Zook president, to succeed Benjamin Klekamp. Also elected were: *first vice president*, Murdo Ross; *second vice president*, Walter Buchroeder; *secretary*, Friza Wagner, Jr.; *treasurer*, Edward Baesman; *directors*, Elmer Fox, Frances Dittrich, George Brown, William Jacobson, Earl

IMPLEMENT OF ARCHITECTURE



Schlage locks offer security, privacy, utility and convenience. The standardized Schlage cylindrical chassis allows locks to be interchanged as door usage conditions change. The cylindrical design affords a variety of lock functions to provide the perfect operation for every door. For further information see your builders' hardware man, or write direct to Schlage Lock Company, P. O. Box 3324, San Francisco.

SCHLAGE

LOCK COMPANY

SAN FRANCISCO • NEW YORK

Boyle, and Edward Hedrich.

Robert R. Clegg, district sales manager of the American Lumber and Treating Co., has been elected president of the Chicago chapter of the Producers' Council.

OFFICE NOTES

Offices Opened, Reopened

Alexander Girard, A.I.A., has opened a new office at 379 Fisher Rd., Grosse Pointe 30, Mich., offering complete design facilities for home, office and industrial fields.

Albert W. Kirschenbaum, Architect-Engineer, has opened offices at 53 W. Jackson Blvd., Chicago 4, Ill.

Samuel M. Kurtz, A.I.A., has resigned his position as associate member of the firm of York & Sawyer, and has opened an office for the general practice of architecture at 101 Park Ave., New York 17.

Onnie Mankki, A.I.A., has opened an office for the practice of industrial design and architecture at 7113 Euclid Ave., Cleveland 3, Ohio. Mr. Mankki was formerly vice president and director of industrial design for Designers for Industry, Inc.

W. Thomas Schardt, A.I.A., has announced the opening of his office at The Meadowbrook Bldg., Sunrise Highway, Bellmore, N. Y.

New Addresses

The following new addresses have been announced:

Wm. S. Ahern Construction Co., General Contractors, 159 E. Chicago Ave., Chicago 11, Ill.

Leon N. Fagnani, A.I.A., Pennsylvania Railroad Bldg., Wilmington, Del.

H. Russell Kenyon, 107 Union Ave., Mt. Vernon, N. Y.

William J. Potter, Architect, 9 Rockefeller Plaza, New York 20, N. Y.

Firm Changes

D. C. Andrews has been appointed a general superintendent of construction of the Turner Construction Co.

The Clay Sewer Pipe Assn., Inc., has announced the addition to its technical staff of L. O. Keener, for a number of years associated with the Pennsylvania Dept. of Highways.

Frank P. Gates, A.I.A., and Raymond Birchett, A.I.A., have announced the formation of a partnership under the firm name of Gates & Birchett, Archi-

(Continued on page 134)

CORRECTION

We regret that the Chicago architectural firm mentioned on page 79 of ARCHITECTURAL RECORD for January was erroneously given as Perkins, Will & Barry. The firm name is Perkins & Will.

QUICK RELIEF for the BUILDING WIRE SHORTAGE



approved by
N. E. C.

..here are some of the facts:

- Worldwide shortage of copper shows strong evidence of continuing through '47, maybe longer, thus prolonging present difficulties on deliveries of the heavier sizes of conductors.
- Because of its high conductivity and excellent record for durability, aluminum is the natural substitute.
- Current carrying capacity of aluminum Performite Building Wire, Type RH, equals that of copper Hazacode, Type R. The 16% difference in conductivity between copper and aluminum is compensated for by the temperature rating spread between the two types of insulation.
- Therefore no increase in conductor or conduit size is required except where runs are so long as to involve excessive voltage drop, or where substituting Type RH aluminum for Type RH copper.
- Aluminum Type RH Wire costs no more than copper Type R because the higher cost of the better grade Performite Type RH rubber is offset by the lower cost per 1000 feet of aluminum.
- The lighter weight of aluminum insulated conductors provides handling, transportation and installation advantages.
- Quick relief for the building wire shortage is now provided on sizes No. 6 Awg and larger Hazard Aluminum Performite Building Wire Type RH, where approved by local inspection authorities.

TO GET ALL THE FACTS, write for technical Bulletin H-407, illustrated above, which gives tables of capacities; comparative weights, data on characteristics; information for quick determination of voltage drop, conductor sizes, circuit length and currents for both aluminum and copper. Hazard Insulated Wire Works, Division of The Okonite Company, Wilkes-Barre, Pa.

HAZARD

insulated wires and cables for every electrical use

THE RECORD REPORTS (Continued from page 132)

itects and Engineers, with offices at Jackson and Vicksburg, Miss.

Election has been announced of Harold A. Hallstein to the newly created post of executive vice president of The Austin Co., Engineers and Builders, Cleveland, Ohio.

William T. Herzog and John L. Henderson have announced the establishment of their new firm, Herzog & Henderson Associates, Inc., for the practice of architecture, building and industrial

design. Address, 715 Ontario St., Oak Park, Ill.

John Sherwood Kelly, Architect, formerly at 4216 Prospect Ave., Cleveland, Ohio, is now associated with George W. Stickle and Robert W. Stickle in the practice of architecture under the firm name of Stickle, Kelly and Stickle. Address, 2422 Prospect Ave., Cleveland 15, Ohio.

Richard E. Lawrence and Eugene W. Dykes have announced the formation

of the firm of Lawrence & Dykes, Architects, with offices at 4542 7th St., S.W., Canton 4, Ohio.

Alfred M. Rinaudot, Architect, has announced the association of C. Wayne Mead, Architect, with his firm and the change of the firm name to Rinaudot and Mead, Registered Architects. Address, Housing Guild Bldg., 7240 Wisconsin Ave., Bethesda 14, Md.

Jas. Gamble Rogers, F.A.I.A., has announced that upon completion of his current work, his practice of architecture and organization will be carried on by the firm of Rogers and Butler (Francis Day Rogers, A.I.A., and Jonathan Fairchild Butler, A.I.A.) at the present offices, 70 E. 45th St., New York 17. Mr. Rogers himself is maintaining offices at the same address as Consulting Architect.

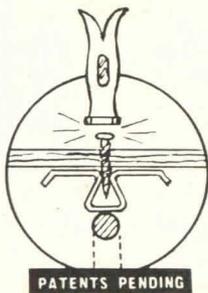
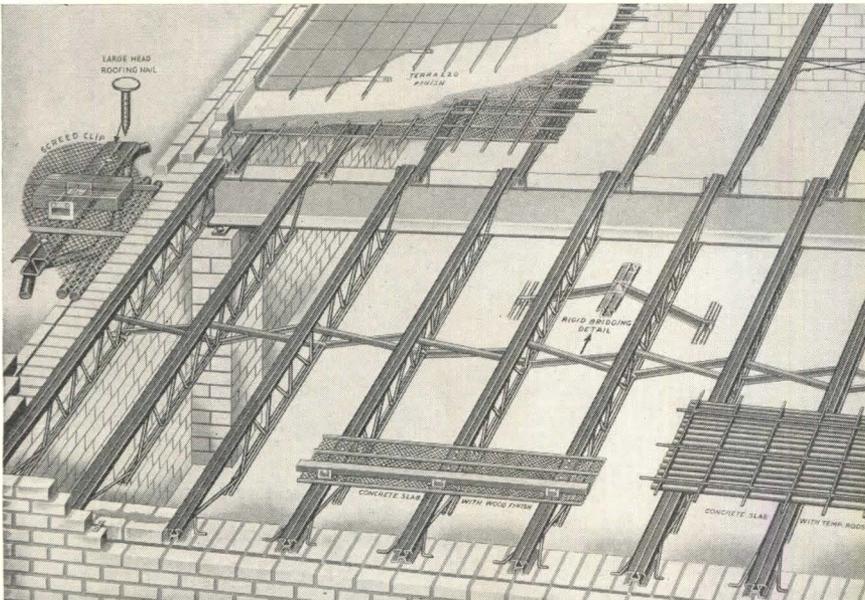
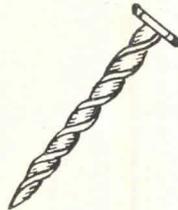
Arthur F. Schwarz, Jr., has rejoined the firm of Mauran, Russell, Crowell & Mullgardt, Architects, and is now a member of the firm. Address, 1620 Chemical Bldg., St. Louis 1, Mo.

Elwyn E. Seelye, Albert L. Stevenson and Burnside R. Value have announced the formation of a partnership to continue the engineering practice of Elwyn E. Seelye & Co., Consulting Engineers, under the firm name of Seelye, Stevenson & Value, Consulting Engineers, with offices at 101 Park Ave., New York 17. Mr. Stevenson has been associated with Mr. Seelye for 30 years in charge of structural design and the design of industrial buildings. Mr. Value has been associated with Mr. Seelye for the past five years, in charge of heavy engineering work such as airports, foundations, hydro-electric plants, dams and tunnels.

S. Raymond White and Wm. A. Endebrook have announced the formation of a partnership to be known as Endebrook-White Co., General Building Contractors, with offices at 4511 Virginia Ave., Newport News, Va.

Kenneth E. Wischmeyer and Charles W. Lorenz have announced the formation of a partnership for the practice of architecture under the firm name of Wischmeyer & Lorenz, Architects, with offices at 911 Locust St., St. Louis, Mo.

MACOMBER V TYPE BAR JOISTS



Here's the original Macomber Bar Joist with the improved top chord that provides secure nailing for flooring materials. The structural convenience of the open web is maintained. The improved top chord holds nails in a vise-like grip. Result: Universal Application. Sizes are determined from standard Steel Joist Institute Load Tables. Catalog upon request.

STEEL JOISTS ROOF TRUSSES ROOF DECKING
ROOF PURLINS LONGSPANS STEEL SIDING

MACOMBER

CANTON • OHIO



JOHN BAY SLEE

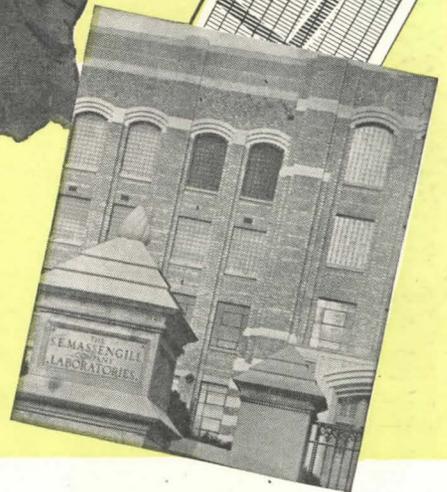
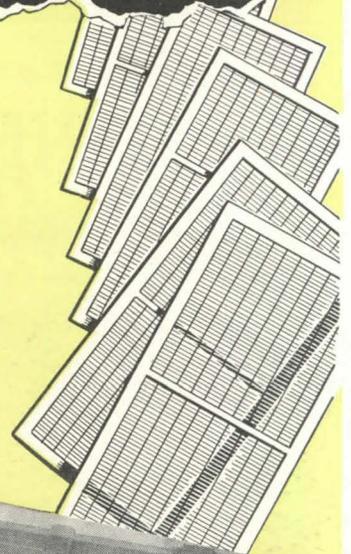
The death of John Bay Slee, F.A.I.A., early in January deprived Brooklyn, N. Y., of one of its outstanding leaders in the work of slum clearance.

Member of the firm of Slee & Bryson, Mr. Slee was keenly interested in Brooklyn's civic improvement, and the architect of many of the city's best-known buildings, including the courthouse of the Appellate Division of the State Supreme Court and the borough's proposed Civic Center. He was a past president of the Brooklyn chapter of the A.I.A.

Order KOOLSHADE SUN SCREEN *Now*
TO ASSURE INSTALLATION THIS SPRING!



This actual photo shows the complete visibility through KOOLSHADE



For Cooler Comfort All Summer Long, No Shading Device Known Matches KoolShade's Efficiency

KoolShade Sun Screen makes sun-exposed rooms as much as 15° cooler . . . even on the hottest days! Here's how it works: KoolShade blocks and radiates up to 90% of sun heat rays *outside the window!* Yet vision from inside is clear, and every elusive breeze drifts through.

Where air conditioning systems are used, KoolShade reduces operating costs. On new installations an excellent cooling job can be accomplished with less refrigeration equipment when KoolShade is used on all sun-exposed windows.

KoolShade installs like ordinary insect screen . . . requires no maintenance . . . will never rot, rust or rattle . . . insect proof, too! Order now to assure installation before hot weather sets in!

NOTE THESE VALUABLE FEATURES

- *Permanently set at 17° angle for greatest shading efficiency.*
- *Prevents the fading of valuable drapes and furnishings.*
- *Easy and inexpensive to install—will not rot, rust or rattle.*
- *Fits neatly and smoothly into modern architectural design.*
- *Durable bronze KoolShade also effective as insect screen.*

MAIL THIS COUPON TODAY FOR COOLER COMFORT ALL SUMMER! →

Partial Installations Can Be Completed If You Act NOW!

Our many customers for whom we made test installations prior to the war, and those who accomplished only a partial installation, can now secure KoolShade for their remaining sun-exposed windows. But we urge you to *act now*—for the supply is limited.

Ingersoll Steel Division
 Borg-Warner Corp., Dept. M3
 310 South Michigan Ave., Chicago 4, Ill.

Please send free sample and literature, also the name of my nearest KoolShade distributor.

Name

Company

Address

City State



PRODUCT OF
BORG-WARNER

Ingersoll
KOOLSHADE SUN SCREEN

* Trade Mark Property of **INGERSOLL STEEL DIVISION • BORG-WARNER CORPORATION**

ARCHITECTURAL ENGINEERING

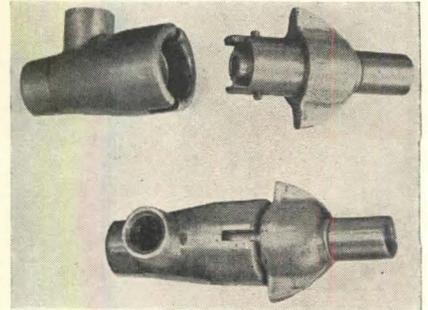
TECHNICAL NEWS AND RESEARCH

(Continued from page 113)

sulting in a high heat transmission per sq. ft. of boiler surface. The boiler is of a fire-tube type, having 9 vertical tubes. Into each tube is placed a Spiralator which gives the products of combustion a spinning motion. The unit carries all needed controls: constant level valve, draft regulator, high limit control, aquastat, circulator control, and room thermostat. It bears the approval of the A.S.M.E. Heating Products Div., The Miller Co., Meriden, Conn.

PLUG-IN GAS CONNECTOR

Primarily conceived for use with smaller pieces of commercial equipment, a plug-in gas connector may some day be used in the domestic field for connecting space heaters, refrigerators, and even ranges at outlets conveniently located about the house. Flexible or semi-flexible metallic tubing would replace solid iron pipe now used for conveying the gas, and so facilitate the moving of appliances for cleaning, painting or servicing. American



Convenient plug-in connector for gas units

Gas Association Testing Laboratories have conducted fundamental research and set up a tentative list of specifications for a plug-in connector, to serve as basis for prospective manufacturers. Complete data is available from American Gas Assn., 420 Lexington Ave., New York 17, N. Y.

FIRE PROTECTION

The manufacturers of *Sentry Flame-Gard* products for wood and textiles announce a plastic roof paint for shingles and a compound which, according to laboratory tests, makes ordinary paint effective for fire resistance. The plastic roof paint, available in several colors, can be used with *Sentry Flame-Gard* for Wood, which also serves as a sealer. This combination reportedly provides exceptional protection from fire, termites, and weather. *Sentry Products Corp.*, Dept. AR, 436 W. Arbor Vitae, Inglewood, Calif.

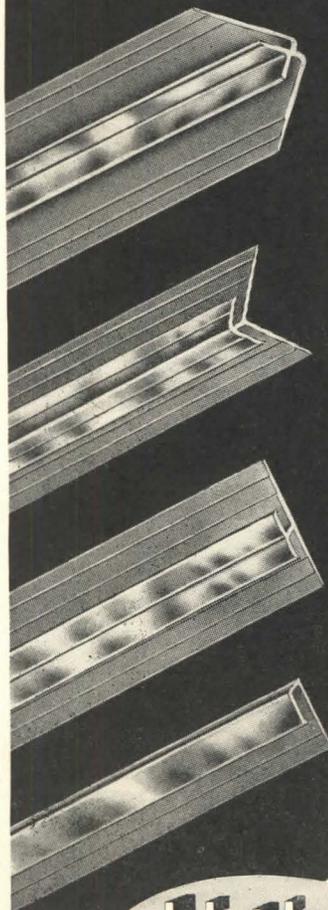
AIR CLEANER

Utilizing the simple electrical principle that objects with like charges repel each other and those with unlike charges exert attraction, *Precipitron* electrostatic air cleaner is said to remove 85 to 90 per cent of all dust in circulating air streams within the house. Air to be cleaned first passes through an electrostatic field created by a "gate" of 7 highly charged hair-thin tungsten wires and 8 grounded aluminum tubes, spaced alternately. The air then enters the "dust collecting" cell which consists of 69 aluminum plates, alternately charged negative and positive, and set edgewise to the air stream. The charged dust particles are attracted to oppositely charged plates and clean air leaves the unit. High voltage direct current for the unit is produced from standard house current by an energizer consisting of electronic tubes, transformer, and capacitor. Cleaning the dust-collecting plates is accomplished by turning a handle which releases a water spray. This flushing, which takes approximately 3 minutes, is said to be required about as often as a refrigerator requires defrosting. Standing 52 in. high, 27 in.

Win Praise and Higher Appraisal SPECIFY KINTRIM FOR MORE

Visible Value

ESSENTIAL INTERIOR MOULDINGS
RESIDENTIAL • COMMERCIAL



The graceful and lustrous beauty of KINTRIM catches your client's eye—accents features of interior design that, otherwise, might go unappreciated. And KINTRIM affords you greater freedom along modern, sweeping lines . . . For these metal mouldings also have the structural precision you need and want for more attractive, practical use of: (1) Wallboards, and (2) Linoleums for walls, counters, and floors.

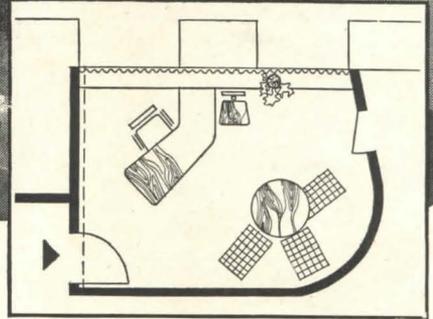
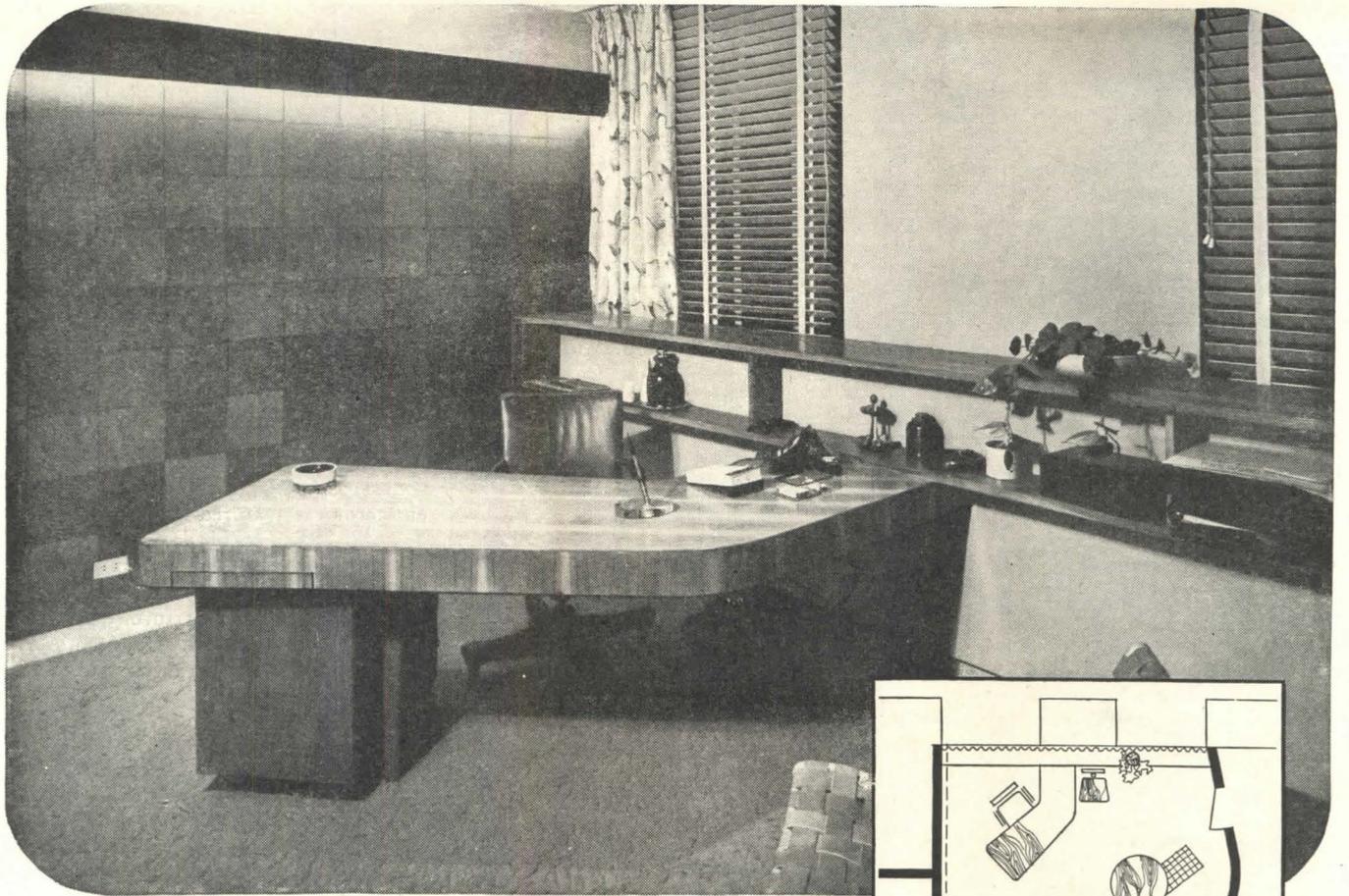
For "visible value"—to fit covering materials snugly—KINTRIM is precision-made in a complete range of gauges. And every section of KINTRIM Stainless Steel embodies Kinkead's refinement—the *Rolled Edge*—to protect hands and clothes from snagging.

KINTRIM beauty and utility can add to the recognition you already enjoy. Specify it—as the finishing touch for more "visible value!"

Detailed data on KINTRIM
Stainless and Aluminum designs
may be had promptly.
Write our "Architects' Dept."

Kintrim
Reg. U. S. Pat. Off.

KINKEAD  INDUSTRIES



This is the designer's sketch drawn by Donald Deskey Associates for this modern office of Mr. E. P. Shuneman, manager of the Bigelow showroom and sales office, Merchandise Mart, Chicago.

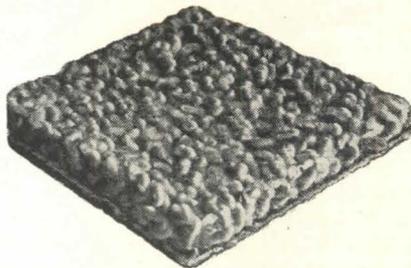
Let's get to the bottom

OF OFFICE PLANNING

**... WITH
BIGELOW
RUGS**

Here's a manager's office that shows what good planning can accomplish. In a relatively small area, modern design has created ample working, conference and display space, a feeling of dignity and roominess. When you get right down to it, there's one thing that gives this office . . . or any office . . . beautiful, yet quiet simplicity. That's the floor covering of Bigelow Contempora.

Bigelow Contempora is a luxuriously sculptured carpet that adds richness and color to office design. It's Lokweave too . . . made by the special Bigelow weaving process that means no installation waste. Lokweave carpeting stands up longer, is durable and thus truly economical. Bigelow's Carpet Counsel will help you choose from a complete line of better-than-ever floor coverings.



BIGELOW CURLWEAVE
A new Lokweave development

BIGELOW-SANFORD CARPET CO., INC.

140 MADISON AVE., NEW YORK 16, N.Y.

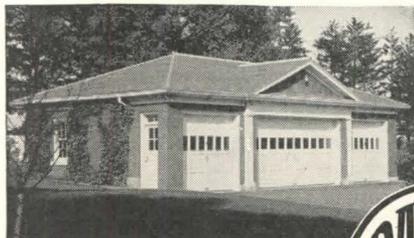
(Continued from page 136)

can be used either in conjunction with a warm air heating system or with an independent air-circulating or air-conditioning system. Westinghouse Electric Corp., 306 Fourth Ave., Box 1017, Pittsburgh 30, Penn.

FLOOR OUTLETS

Two new service fittings have been announced as component parts of the *Nepcoduct* underfloor wiring distribution system. Their housings are stamped

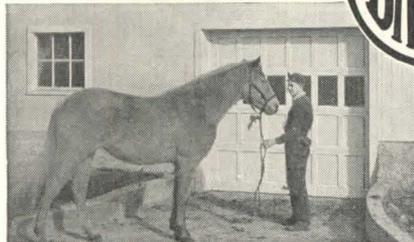
from heavy brass with simplified contours and a brushed finish. Fitting No. 7903 is for high-potential light and power wiring; No. 7904, for telephone, buzzer, and low-potential wiring in plant offices and office buildings. Either model is quickly wired and assembled with a single screw through the housing top. The one-piece housing double-locks in the flange base, eliminating the possibility of shearing off wires. National Electric Products Corp., Chamber of Commerce Bldg., Pittsburgh, Penn.



A beautiful residence garage using two sizes of standard Barcol OVERdoors.



A standard Barcol OVERdoor in an ice-manufacturing plant storeroom.



This modernized horse barn employs standard Barcol OVERdoors for space and heat saving.



Small manufacturing plants, service garages, and the like have standard Barcol OVERdoors.



Standard Barcol OVERdoors

SOLVE LOTS OF PROBLEMS
—IN LOTS OF PLACES...

Only the **Barcol
OVERdoor**
HAS ALL OF THESE FEATURES

1. ROLLER-CRANK CLOSING ACTION.
2. SELF-LATCHING BOLTS.
3. TWIN-TORSION TAILORED SPRINGS.
4. CONTINUOUS VERTICAL TRACK BRACKETS.

Sturdy construction, readily adaptable design, and ease of operation make the standard Barcol OVERdoor useful for many other applications in addition to its regular use on residence garages. A few of these are suggested in the pictures above. Remember — consider a standard Barcol OVERdoor whenever you have an unusual or difficult door problem that needs solving. Consult your Barcol representative.

FACTORY-TRAINED SALES and SERVICE REPRESENTATIVES IN PRINCIPAL CITIES

BARBER-COLMAN COMPANY
102 MILL ST. • ROCKFORD, ILL.

STEEL INSULATION

Ferro-Therm insulation of light-gauge steel is once again becoming available on the market. Crimped every 4 in. for added stiffness, this insulation is stapled in place and weighs only 0.25 lb. per sq. ft. Because of its thinness, five sheets can be cut at a time and a carpenter reportedly can install an average of 800 sq. ft. or more in a day. This insulation is said to act as an effective fire arrester, and as a barrier to rats and termites. It is coated with a tin alloy for corrosion resistance. American Flange and Mfg. Co., 30 Rockefeller Plaza, New York, N. Y.

AWNING WINDOWS

Window panels consisting of horizontal sashes hinged at the top to swing outwards are featured in the *Gate City Type "O" Window*. Made of wood, these "awning" windows can be constructed by any millwork shop, following blueprints and instructions furnished with the hardware by the manufacturer. Where desired, fixed lights may be used in combination with the window, either above, below, at the side, or within the individual tier. Advantages are said to be: (1) elimination of need for draft shields; (2) protection for screens and storm sash, which are installed inside the building; and (3) good ventilation in rainy weather, when windows may be left open. Gate City Sash and Door Co., Fort Lauderdale, Fla.

ALUMINUM WINDOWS

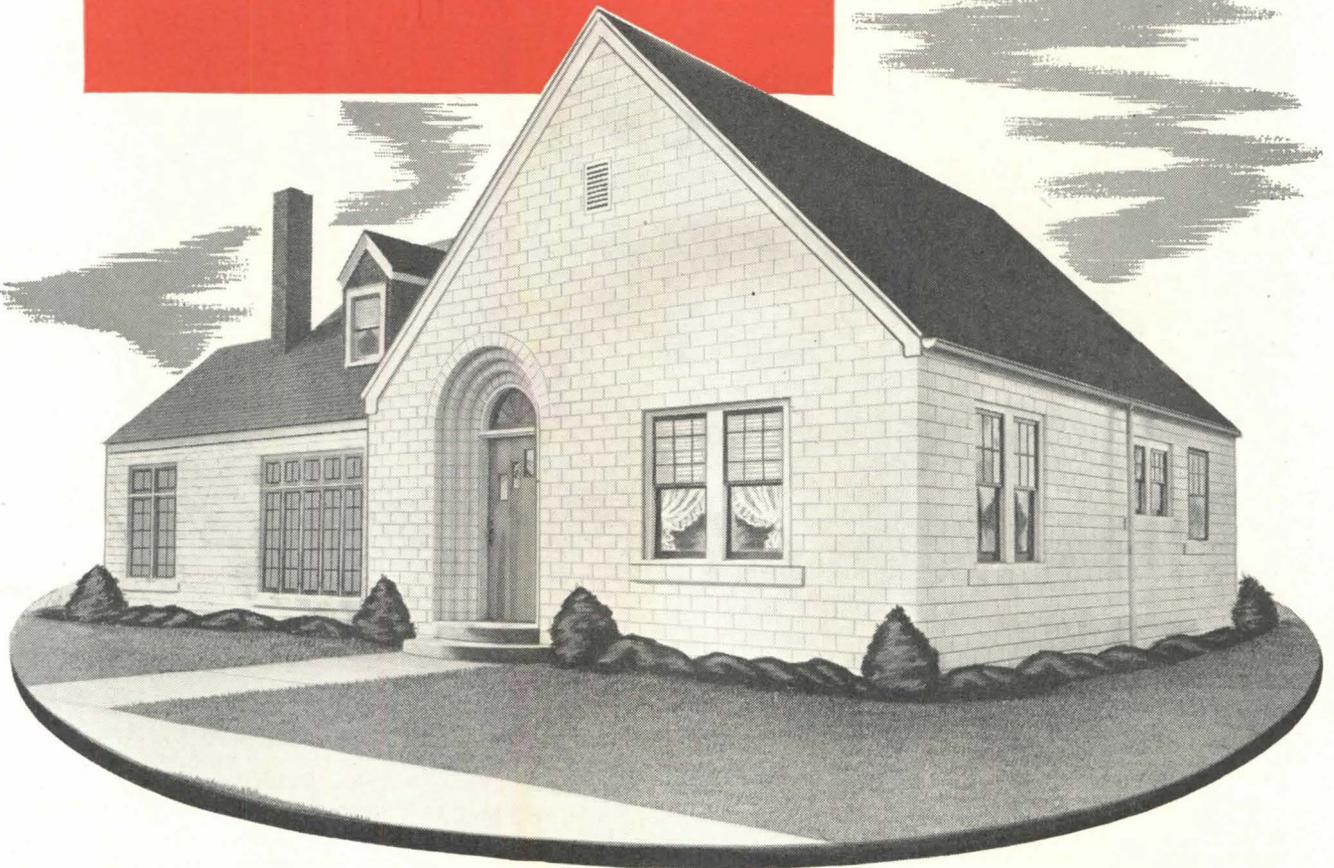
Manufactured in 25 standard sizes, a new double-hung aluminum window with either 2 or 4 lights is now on the market for residential construction. It is equipped with spring type sash balances, and designed for installation by an experienced operator in only 15 minutes. Double-strength glass is set with Everseal, requiring no puttying. Window is said to cost no more than wood or steel windows of similar design, and to be adaptable to all types of house construction — frame, brick, brick veneer, and poured concrete. Windows are shipped to jobbers in knock-down form, 5,000 sashes or frames to a carload. Jobbers do the assembling and glazing. Premier Metal Products Corp., Phoenix, Ariz.

ROOF COATING

A new reflective roof coating, *Richlume*, is said to have unusual insulating, waterproofing, and fire-resistive qualities when applied by brush or spray to tar-and-gravel tar paper, built-up asphalt, or composition shingle roofs. Richlume is not an aluminum paint but a coating developed for use on bituminous material only. A new plastic vehicle for the aluminum pigment produces a close bond with roofing

(Continued on page 140)

"First with the Finest"
ARKETEX



FOR COMFORTABLE LIVING

Modern construction methods for today's modern comfortable living demand modern material — Arketex Ceramic Glazed Structural Tile combining three-fold requirements of beauty, permanency, and economy.

Arketex is beautiful! Available in a range of bright colors from delicate tints through bold, full-bodied tones.

Arketex is permanent! The lustrous, non-fading colors keep their original freshness forever . . . will not craze, crack, scar, or mar.

Arketex is economical! Unlike ordinary building materials, it is a permanent wall and finish all in one — the first cost is the only cost. No periodic painting or refinishing necessary.

Practical architects and builders know their clients will recognize and appreciate good judgment in construction materials. That's why it pays to — Always specify Arketex — *first with the finest!*



ARKETEX CERAMIC CORPORATION • BRAZIL, INDIANA

(Continued from page 138)

materials without penetrating beneath the surface. In addition, it is claimed that the vehicle remains flexible and allows the coating to expand and contract with the roof under all weather conditions. Insulating qualities result from its reflective surface. Up to 80 per cent of sun's rays are reflected, according to laboratory reports, resulting in as much as 15 per cent cooler temperatures within buildings. Richcraft Co., Chicago, Ill.

DECORATOR WALLS

New combinations of materials for the decorative treatment of walls have recently been exhibited by U. S. Plywood Corp. Added to its line of *Flexwood* and *Flexmetl*, a paper-thin wood veneer bonded to fabric or flexible metal, are *Checkwood*, jewel-cut squares of plywood on fabric backing; *Flexglass*, rectangles of mirrored and patterned glass on fabric backing; and *Leatherwall*, colored lengths of leather designed for walls and ceilings in quilted, corded, or floral patterns. Another innovation is *Leatherfloor*, which employs cowhide in 4-, 6-, and 8-in. squares as a floor covering. The leather is preserved and hardened with an invisible plastic coating. United States Plywood Corp., 55 W. 44th St., New York 18, N. Y.

LADDER LEVELER

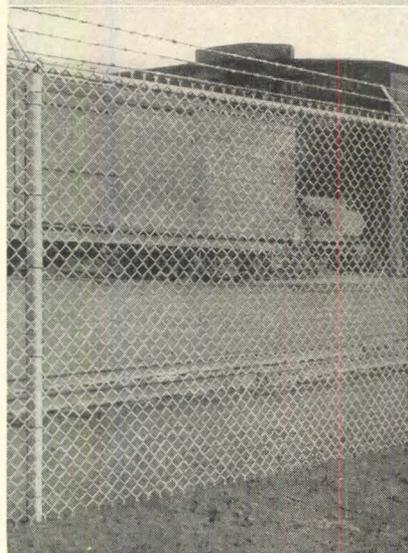
For use on sloping terrain, *Shur-Foot Leveler and Locking Base* automatically levels the ladder laterally on a half-circle of steel pipe and provides abrasive shoes, on ball and socket joints to assure a firm grip. Weight of the ladder locks it in place after it has been leveled. When the ladder is lifted in moving to a new position, the *Shur-Foot* unlocks automatically. This base is furnished in 4 sizes, to accommodate ladder widths from 16 in. to 24 in. Akron Steel and Sales, Inc., Akron, Ohio.

GAS HEATER

The Rheem *Series 70* storage water heater is a completely automatic unit built to operate on any of the better grades of domestic fuel oil. If an oil-fired central heating unit is already installed, this heater in most cases can utilize the same oil supply. All parts are protectively housed in a steel jacket finished in baked white enamel. A 2 in. thick inner jacket of Fiberglas holds maximum heat within the storage tank. The patented pot-type burner is said to operate on a flame so small that it permits a new low in oil consumption. Oil input to both main burner and pilot fire is monitored at all times. Installation requires only a hot and cold water

(Continued on page 142)

*How to
SOLVE YOUR
CLIENTS' FENCE
PROBLEMS!*



There are a lot of points to be checked in specifying fence—and Anchor Chain Link Fence's *four exclusive features* hold the answer to all of them. Here's why an Anchor Fence will insure your clients' maximum protection for long years of service:

1. *Deep-Driven Anchors* hold the fence permanently erect and in line, in any soil or weather, yet permit easy relocation where necessary.
2. *Square Frame Gates* are amazingly free from warping and sagging.
3. *U-Bar Line Posts* are self-draining, rust-free and rigid.
4. *Square Terminal Posts* improve strength, durability and appearance.

SEND FOR YOUR FREE COPY OF OUR BOOK, "Anchor Protective Fences," for your A.I.A. File 14-K. It's both a catalog and specification manual. Shows many types and uses of Anchor Chain Link Fence . . . pictures installations for many prominent companies and institutions . . . contains structural diagrams and specification tables. Just ask for Book No. 110. Address: ANCHOR POST FENCE DIV., Anchor Post Products, Inc., 6600 Eastern Ave., Baltimore 24, Maryland.

Anchor Fence
Nation-wide Sales and Erecting Service

**VAPOR
CONDENSATION
YOU CAN SEE
May Be Funny . . .**

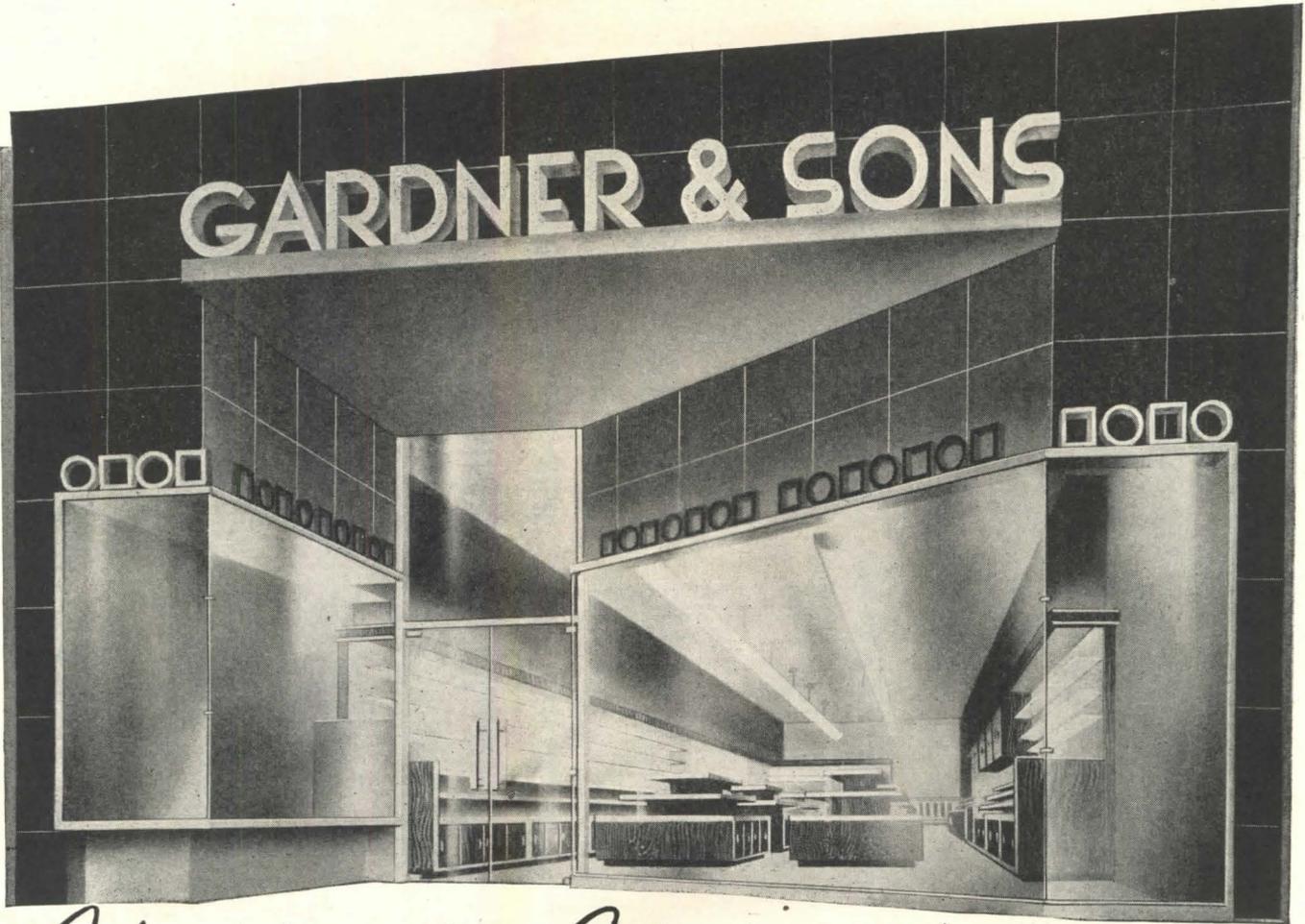


but
**"In-Wall"
Condensation
IS NO LAUGHING MATTER**

The same vapor that "steams up" windows can make insulation soggy and impair its efficiency if it condenses within walls. Condensation is the deadly foe of insulation. Uncontrolled condensation can cause wall stains, paint peeling, hasten structure rot. A sure way to lick "in-wall" condensation and give life-long protection to insulation is with a *separate* vapor barrier. Standard with architects the country over is Bird Neponset Black Vapor Barrier. Applied on the warm side of insulation, Bird Neponset Black safely repels vapor, keeps insulation at peak efficiency. Costs only about \$20. for a \$10,000 building. Consult Sweet's Architectural file, 9b-2, or write Bird & Son, inc., 156 Wash. St., E. Walpole, Mass., for sample.



BIRD & SON, inc.
EAST WALPOLE, MASS.
CHICAGO
NEW YORK
SHREVEPORT



Visibility Unlimited --

IT'S human nature to *look* when there's something to see and a modern, open-view front makes it easy for shoppers to look right into the store. Immediately, the attractive, well-lighted interior is revealed with its friendly atmosphere and tempting array of things to buy.

There's *selling power* in modern design and the store architect is keenly aware of it. He artfully combines beauty with utility and makes it pay off in increased patronage. We are privileged to work with the country's outstanding designers and to execute their ideas in complete Brasco Construction.

The Brasco line of unified members, in stainless steel or aluminum, blends harmoniously with either new or standard building materials and beautifies the entire front. Engineered for complete safety and expertly fabricated, Brasco meets every demand for modern, trouble-proof store front construction, easily installed.



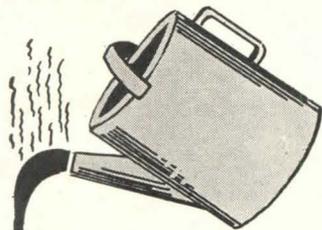
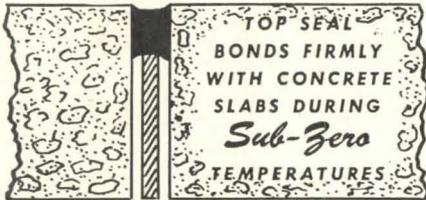
BRASCO MANUFACTURING CO.
 HARVEY • (Chicago Suburb) • ILLINOIS

National Distribution Assures Effective Installation

**KEEP THOSE
CONCRETE
EXPANSION
JOINTS
SEALED
ALL YEAR 'ROUND!**

SPECIFY

THE ORIGINAL
Para-Plastic
REG. U. S. PAT. OFF.
HOT-POURED RUBBERIZED SEAL



PARA-PLASTIC is the ORIGINAL hot-poured rubber seal for concrete expansion joints.

PARA-PLASTIC remains flexible all year 'round. Its elasticity is permanent in any temperature without breaking its bond with concrete.

PARA-PLASTIC is the positive and permanent top seal for concrete expansion joints all year 'round against the infiltration of water.

Write for further technical information

**"STICK" WITH THE
ORIGINAL
ALL YEAR 'ROUND**

See Our Catalog in Sweet's



SERVICED QUALITY PRODUCTS CORP.

ARCHITECTURAL ENGINEERING

TECHNICAL NEWS AND RESEARCH

(Continued from page 140)

connection, a flue connection, and an oil supply. Once the heater has been lighted and adjusted, the automatic thermostat control takes over. Appliance Div., Rheem Manufacturing Co., 570 Lexington Ave., New York 22, N. Y.

SELLING AIDS

Sliding trays of transparent plastic are now being offered for better visual presentation of store merchandise in stock. These storage trays may be recessed in wall fixtures, used in groups as special built-in showcase units, or supported by brackets on counter tops. Trays, which are of one-piece construction with sliding covers, vary in size from 9 by 12 by 2½ in. to 11½ by 15 by 4 in. Advantages claimed are compact storage, eye-appeal, and more rapid selection of merchandise. Merchandise Presentation, Inc., 42 East 51st St., New York 22, N. Y.

MOVIE PROJECTOR

The new *Victor Model 60* sound projector for 16 mm. films comes in a luggage-type aluminum carrying case. The machine is a multi-purpose unit for either sound or silent film and may be used with a record player or as a public address system. It includes reverse operation and has the advantage of still picture projection. Among new features are a lever device for quick centering of the picture on the screen, and separate controls for both bass and treble, giving better sound control. Victor Animatograph Corp., Davenport, Iowa.

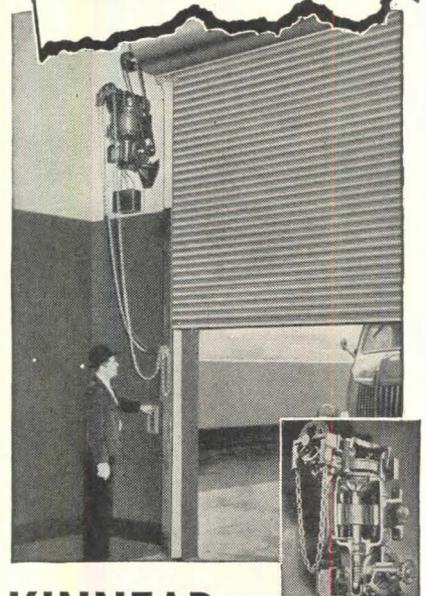
FLUORESCENTS

A packaged line of commercial fluorescent lighting equipment has recently been announced under the name of *Light-in-Line*. Bases and enclosures for 16 fixture combinations are packaged individually to cover a full range of lighting intensities. All can be mounted by the four standard mounting methods. Among models are the 2-light 40-watt, 2-light 100-watt, 4-light 40 watt, and 4-light 100-watt combinations. Moe-Bridges Corp., Sheboygan, Wis.

STANDARDS

A list of 864 standards approved for the national use of industry has recently been released by American Standards Association. In each case they represent general agreement on the part of maker, seller, and user groups as to the best current industrial practice. For an index of these standards, write American Standards Association, 70 E. 45th St.

**Pinning
it down to
ESSENTIALS**



MOTOR OPERATOR

KINNEAR ROLLING DOORS

Advantages of Kinnear Rolling Doors are quickly apparent: by rising vertically into a compact coil above the lintel, they save floor, wall and ceiling space . . . open out of reach of damage by wind or vehicles . . . require no "clearance" area for operation . . . clear the entire doorway when opened. And Kinnear's famous interlocking-steel slat construction (proved by 50 years of satisfactory performance) assures *extra* protection against fire, intrusion, accidental damage, and the elements. Any size, for old or new construction. *Write!*

THE KINNEAR MANUFACTURING CO.
Factories: 1860-80 Fields Ave., Columbus 16, O.
1742 Yosemite Ave., San Francisco 24, Cal.

Offices and Agents
in All Principal Cities

Saving ways
in Doorways

KINNEAR

A. W. FABER'S **CASTELL** LOCKTITE

the professional man's
refill drawing pencil which
embraces 7 exclusive features

for drawing
sketching
retouching

CLEAN—No need to touch the lead and get graphite particles or dust on your fingers or smudges on your drawing. Hold point to paper, press button, lead can be adjusted by upward or downward movement of hand.

NON-BREAKAGE—An unusually fine precisioned collet supports the graded lead all the way around and prevents it from breaking or snapping off under greater than normal pressure during the pointing or sanding process or when in actual use.

NON-SLIPPAGE—The same precision collet holds the lead in a bulldog grip. Lead positively cannot slide back into the holder.

QUICK—Just press your thumb on the button release. Eliminates two-hand screwing or turning operation.

STURDY—Finest quality plastic and metal used in every part, exposed metal parts gold plated, all expertly assembled.

BALANCED—Every part is well proportioned giving you a drawing instrument which is perfectly balanced in your hand.

GUARANTEED—If your Castell Locktite does not perform perfectly, return it to your dealer or to us for exchange immediately.

Holds all standard makes of refill graded drawing and retouching leads. We recommend WINNER Techno-TONE 1930.

only \$1 at your Art Supply House, Drawing Material Dealer, Blue Printer, Stationer or Photographic Supply Shop.



(Continued from page 114)

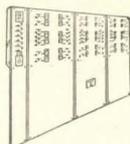
47 Years of Heating System Management at Notre Dame

A great university is, among other things, big business, receiving and disbursing large sums, maintaining and operating a large physical and mechanical plant. Consistent, competent management of the physical plant, such as is revealed by the record of heating system management at Notre Dame, is essential to success.

The first proposal for a Webster Vacuum System of Steam Heating at the University of Notre Dame was dated June 27, 1899—the installation, containing 16,913 sq. ft. of radiation, was completed in 1900. This great heating system now totals 320,000 sq. ft. of radiation—twenty times the original size.

Currently, a Webster Moderator Control System is being installed, designed to (a) balance distribution so that all radiators may be partially heated in mild weather, (b) apply automatic control-by-the-weather to the entire installation, (c) centralize all manual control to 38 zones at a single operating station.

How well these results are accomplished must be the subject of a later report. In the meantime, our experience is available to help you in your heating system management problems.



Special 38-zone Central Control Panel for Notre Dame Moderator System Installation.

WARREN WEBSTER & CO., Camden, N. J.
Representatives in principal U. S. Cities : : Est. 1888
In Canada, Darling Brothers, Limited, Montreal

Webster

HEATING SYSTEMS

VALVES

Pressure Reducing Valves (Bulletin 461). Engineering, operating and maintenance data on pressure reducing valves, differential valves and overflow valves for steam, air or gas services. Gives large cross-sectional and external views of each class of regulator, together with construction details, features such as stellite seat rings, and complete tables of pressure ranges, sizes and capacities. Selection table. 20 pp., illus. Leslie Co., 57 Delafield Ave., Lyndhurst, N. J.

WINDOWS

Aluminum Windows of Alcoa Aluminum. Catalog of double hung and picture windows, screens and storm sash. Full-size details, standard window types, installation details, specifications, distinctive features. 8 pp., illus. Cupples Products Corp., 2650 S. Hanley Rd., Maplewood, St. Louis 17, Mo.

LITERATURE REQUESTED

The following individuals and firms request manufacturers' literature:

Morton J. Berman, Design Engineer, 718 S. 58th St., Philadelphia 43, Penn.

Marvin E. DeFee, Architect, 411 E. Houston Ave., Marshall, Texas.

John B. Dodd, Architect, 17 Alhambra Arcade, St. Petersburg, Fla.

Dr. Frank L. Ehasz, Consulting Engineer, 7 West 44th St., New York 18.

Jesse M. Elliott, 1410 N. Main St., Danville, Va.

Paul D. Gilbert, Planning Division, Drake Construction Corp., 45 Crosby St., New York 12, N. Y.

Fred W. Gould, Civil and Structural Engineer, 1271 Bender Ave., Cleveland 12, Ohio.

Sidney Kalin, Residential and Commercial Designer and Draftsman, 2505 W. Cold Spring Lane, Baltimore 15, Md.

H. Russell Kenyon, Architect, 107 Union Ave., Mt. Vernon, N. Y.

Alfred W. Kirschenbaum, Architect-Engineer, 53 W. Jackson Blvd., Chicago 4, Ill.

Edward J. Mutrux, Instructor in Design, School of Architecture, Washington University, St. Louis 5, Mo.

Gordon D. Rust, Draftsman, 107 W. Nelson Ave., Alexandria, Va.

Samuel B. Settle, Consulting Engineer, Union Trust Bldg., Parkersburg, W. Va.

Charles Vail, Office Engineer, Creole Petroleum Corp., Apartado 889, Caracas, Venezuela.

Heinrich H. Waechter, Architect, 10 Lothian Rd., Brighton 35, Mass.

The RESTORATION of COLONIAL WILLIAMSBURG

*A Reprint
of the December, 1935
Issue of*

ARCHITECTURAL RECORD

*104 pages, bound in cloth
\$2.00 per copy*

The Colonial Williamsburg Number of ARCHITECTURAL RECORD — issue of December 1935 — was sold out soon after publication but the entire editorial contents have been reprinted and bound in permanent book form with blue cloth covers.

Many thousands of these Williamsburg reprints have been sold but the demand continues unabated.

ARCHITECTURAL RECORD
119 W. 40th Street, New York, N. Y.

Enclosed is \$..... for which send.....
copies of your reprint, *The Restoration of
Colonial Williamsburg*, bound in cloth, at
\$2.00 per copy.

Name.....

Address.....

City and State.....A.R. 3-47



The Patter of Little Feet...
 is **TOUGH** on School Floors!

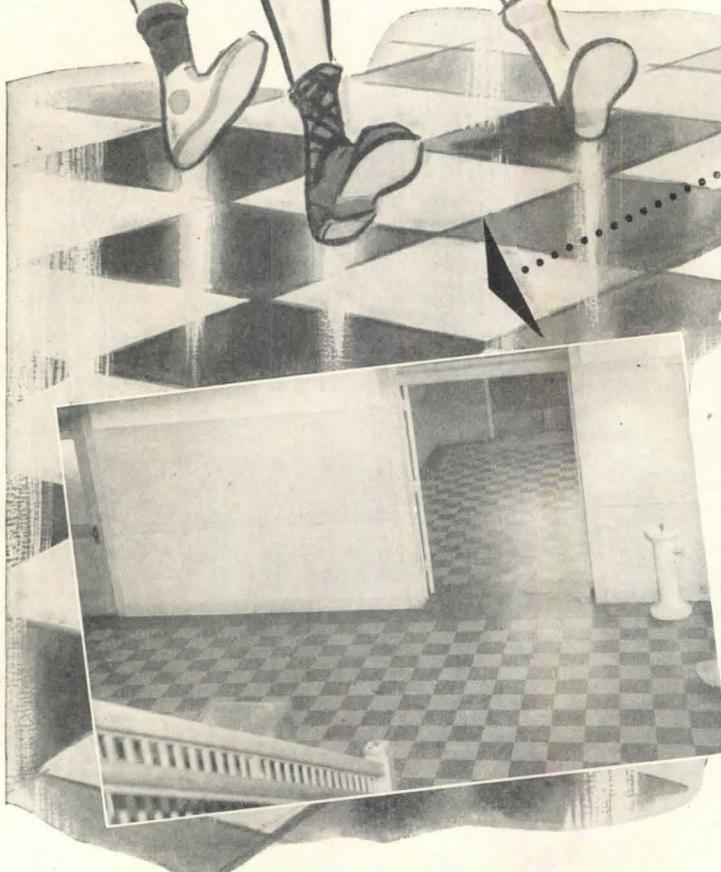
Active youngsters! Whole armies of them—sliding, running, scuffling and marching over school floors the country over. What an unflinching test this is of any floor's ability to withstand a consistently heavy flood of traffic over the years—without showing visible signs of wear!

Tile-Tex is a tough, durable asphalt tile that's especially suited to the heavy punishment given a floor by normal school traffic. It has been floor-tested in hundreds of schools everywhere . . . for as many as twenty years . . . without visible signs of wear. No wonder so many architects specify Tile-Tex for today's schools.

Furthermore, Tile-Tex is available in bright, clean, permanent colors, (both plain and marbleized), plus a wide range of accessories, including feature strips and custom-made inserts—assuring architects complete freedom of floor design in classrooms or corridors, cafeteria, auditorium or any special room.

Tile-Tex is easy to clean and resistant to stains and scars. Its resilient slip-safe surface reduces floor noise and provides firm footing. And it stays down when installed over concrete floors at or below grade.

Ask us to have an experienced Tile-Tex field man call on you with the approved Tile-Tex Contractor in your city. They will be glad to help you with any of your floor problems. The Tile-Tex Company, Inc., Chicago Heights, Illinois.



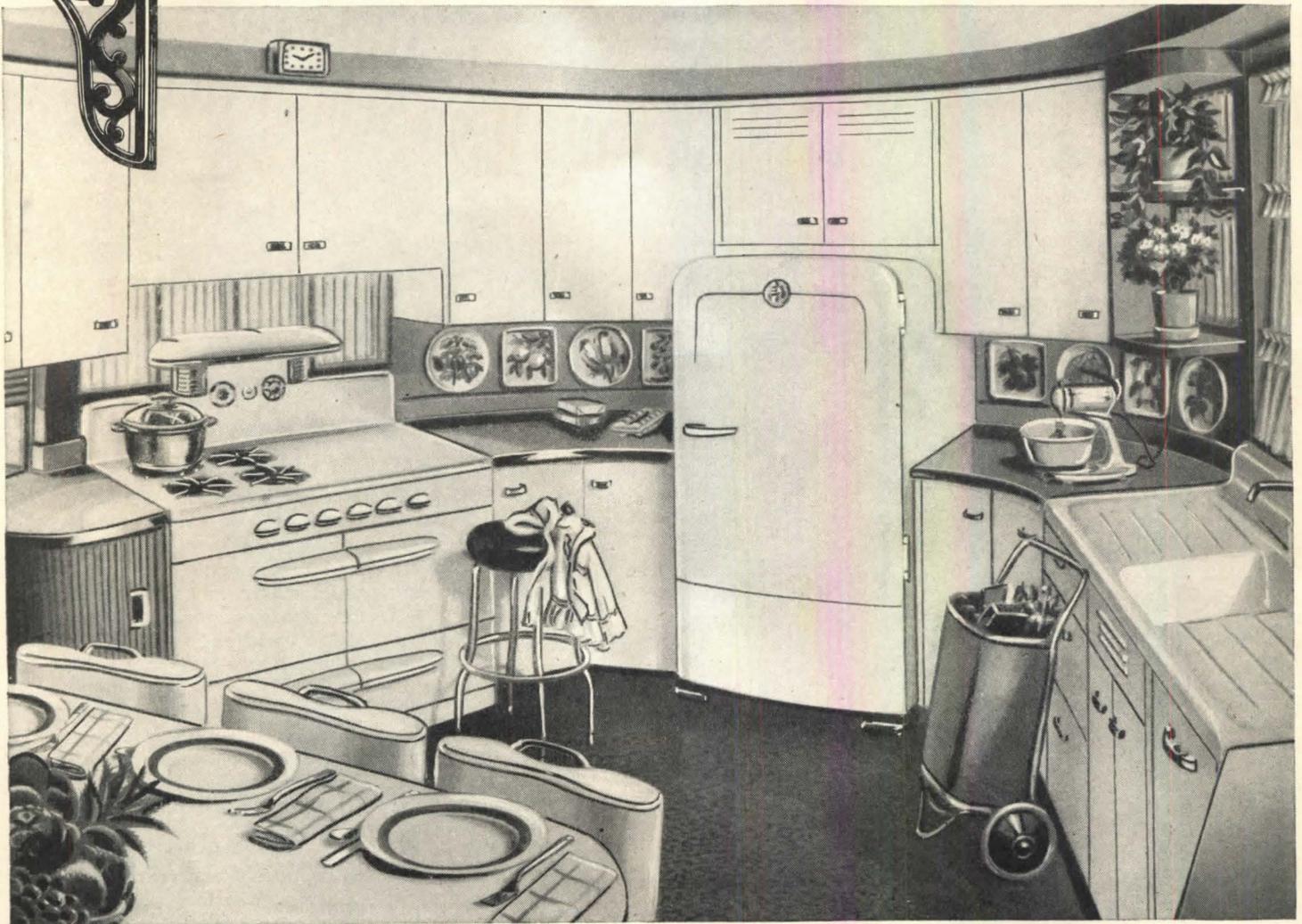
A typical Tile-Tex Asphalt Tile installation in a school corridor.



TILE • TEX ASPHALT TILE

Look at the facts! There's no speculation, no wishful thinking when you specify Gas. It is the preferred fuel in 21 million out of 24 million urban homes and the odds are still growing. Naturally there must be a valid reason why people continue to want Gas . . . particularly in this period of change and progress. The answer is conclusive. Gas is progressive! It is modern from every angle, in every way. *Gas as a fuel* is clean, fast, easy to regulate. *Gas service* is economical—and even more important—always available. *Gas appliances* combine the most in satisfaction with the least in work. And that goes for water-heating, refrigeration, house heating and air-conditioning as well as for cooking. Remember, more clients will want *your services tomorrow*—if you give them what *they* want with Gas, today!

BUILD FOR TOMORROW....



**The kitchen that's 10 years
ahead of the times**

Even the *shape* of this latest "New Freedom Gas Kitchen" is news!

It introduces the modified semi-circular plan—for greater efficiency in a smaller space. Notice how near the refrigerator is to the range . . . and how few steps need be taken to put the food on the table and then clear the dirty dishes to the sink. Yet for all of its work-saving compactness, this kitchen has so much light and air, it would never make a woman feel "hammed in."



Better from your point of view, too!

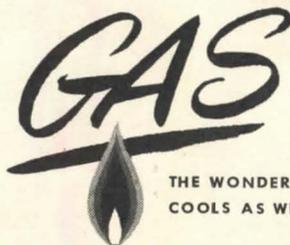
Feature for feature, modern Gas ranges cost less than any other type. They look smarter, last longer without expensive overhauls, are simpler to install, require no costly utility connections. In fact, you couldn't find a cooking appliance that guarantees more overall satisfaction both from your own *and* your customers' point of view! See your local Gas Company for complete technical details on new Gas ranges and all other Gas appliances.

WITH WHAT THEY WANT TODAY!

The range that's 10 ways better for cooking

One look at this list and it's easy to see why the new automatic Gas range is more wanted than ever—by more women than ever!

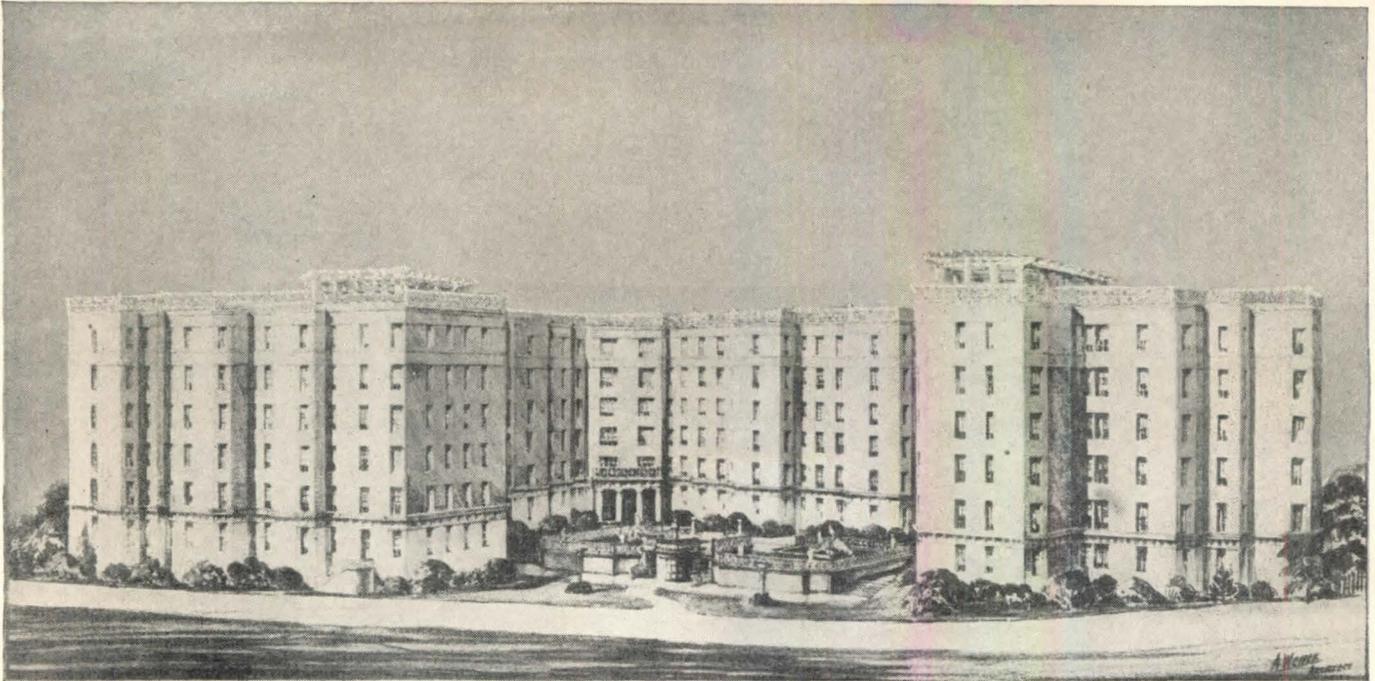
1. **It's clock-controlled** . . . Gas comes on . . . cooks complete oven meal . . . turns itself off (even when nobody's home).
2. **It's faster** . . . burners light instantly to high-boil.
3. **It's flexible** . . . flame not limited to 3, 5 or 7 heats—but can be turned to precisely perfect heat for every cooking job.
4. **It's cleaner** . . . burners set to prevent clogging from spill-overs.
5. **It's cooler** . . . no lingering heat long after top-burners are off.
6. **It's economical** . . . "click simmer" on every burner saves fuel and food.
7. **It bakes better** . . . oven is ventilated so that heat circulates evenly on every level.
8. **It really broils** . . . meats look and taste better when quick-seared and flavor-sealed by real flame.
9. **It's "custom-built" for every family** . . . only Gas ranges come in such a wide selection of styles (4, 6 or 8 burners—high or low broiler—with or without griddle—and many other "choice" features).
10. **It's tagged "CP"** . . . the buying guide that assures every woman of a Gas range built to industry-wide standards of safety, modernity and cooking excellence.



AMERICAN GAS ASSOCIATION

THE WONDER FLAME THAT
COOLS AS WELL AS HEATS

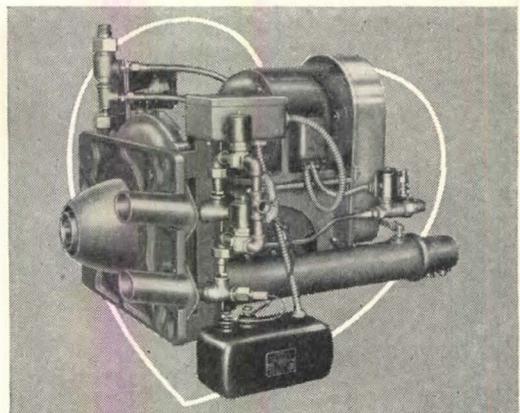
AT THE COLONNADES • ENTERPRISE OIL BURNERS



FOR REAL HEATING COMFORT

THE COLONNADES... Overlooking New York Harbor and the Atlantic Ocean from its beautiful location in the Borough of Brooklyn, has long been noted for its attractive charm... for gracious and comfortable living.

The answer to constant and uniform heating for these spacious apartments was found more than ten years ago when two ENTERPRISE Oil Burners were installed. Poret & Posner, owners and operators of The Colonnades, have this to say about these ENTERPRISE BURNERS: "... have been operating all these years very efficiently and to our entire satisfaction, in this building as well as in others we own and operate."



The Heart of real heating comfort at The Colonnades—ENTERPRISE Oil Burner Model G-2-P, Fully-Automatic. Installed by Enterprise Engineering Co., Inc. of Brooklyn, N. Y.

ENTERPRISE *Oil Burners*
COMBUSTION EQUIPMENT DIVISION OF
ENTERPRISE ENGINE & FOUNDRY CO.
SAN FRANCISCO 10, CALIF.

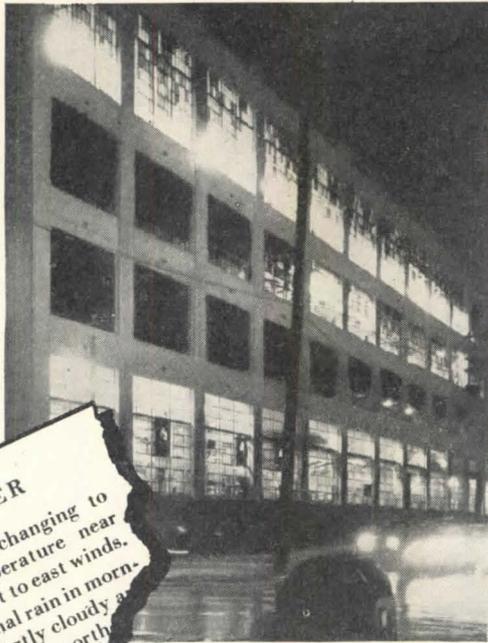
DISTRIBUTORS IN PRINCIPAL CITIES

This is but one of thousands of installations which continue to support the evidence of exceptional ENTERPRISE burner service and performance. Whether your requirements call for economical heating of apartment houses, hotels, commercial buildings, theaters, hospitals—or for production processes in industrial plants—plan now to investigate ENTERPRISE Oil Burners. Furnished in Manual, Semi-Automatic and Fully-Automatic Models in combinations to meet your specific requirements.

Write today for Catalog No. 47

DIESEL ENGINES • PROCESS MACHINERY • OIL BURNERS • HEAVY MACHINERY

NORTHEASTER!



THE WEATHER

Today: Freezing rain changing to rain, highest temperature near 35; strong northeast to east winds.
Tomorrow: Occasional rain in morning followed by partly cloudy and colder, winds shifting north.
Temperatures yes!

HAS YOUR BUILDING THIS RAINCOAT?

One bad storm may result in costly damage to an unprotected building and contents. To protect a building and beautify it is now a simple process with Waterfoil. Unlike any other protective coating, Waterfoil is made of irreversible inorganic gels which bond both chemically and physically to masonry surfaces. By helping to impede water penetration into concrete, brick or stucco walls,

Waterfoil also prevents reinforcing bar rust, spalling or disintegration. Don't wait for the gale. Write for the literature today — it's important to all building maintenance.

Horn Products and Methods Protect Millions of Square Feet of Surface Throughout the Nation



A. C. HORN COMPANY, Inc.

Established 1897 — 50th Anniversary

Manufacturers of Materials for Building Maintenance and Construction

43-36 Tenth Street, Long Island City 1, N. Y.

Houston, Texas SUBSIDIARY San Francisco, Calif.

Chicago, Illinois



CHEMICAL CORPORATION

Toronto, Canada

WATERFOIL

THE UNIQUE TREATMENT FOR EXTERIOR MASONRY SURFACES

**"ME, A LANDLORD,
GETTING FAN MAIL?"**



“ It all started when I installed an automatic Otis Elevator.

“Yes sir, this new Otis Elevator is the smartest investment I ever made.

“My tenants are getting the most reliable elevator service obtainable — elevators they can run when the attendant is off duty . . . cars that stop level with the landing . . . doors that open and close automatically.

“I know this is going to keep my tenants from wanting to move into newer apartments.”

*Whether you plan to build or to modernize,
be sure your building is ready for tomorrow's
competitive renting. For the finest in vertical*



8

reasons why you should specify

WIRE AND CABLE INSULATION MADE FROM

GEON *plastics*

for industrial, domestic, manufacturing and utilities wiring

Resistance to ozone, wear, sunlight, water, chemicals, and most other normally destructive factors

14 colors including NEMA standards

More conductors in a given space

Excellent electrical properties

Thin coating of insulation

Ease of handling

Easy stripping

Light weight

Be sure to specify wire or cable insulated with GEON in order to get *all* these advantages. Or, for information regarding special applications please write Department N-3, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio. In Canada: Kitchener, Ont.



B. F. Goodrich Chemical Company

A DIVISION OF
THE B. F. GOODRICH COMPANY

GEON polyvinyl materials • HYCAR American rubber • KRISTON thermosetting resins • GOOD-RITE brand chemicals

HOW TO GIVE RESIDENTIAL FLOORS

*more beauty
longer life
unlimited design*



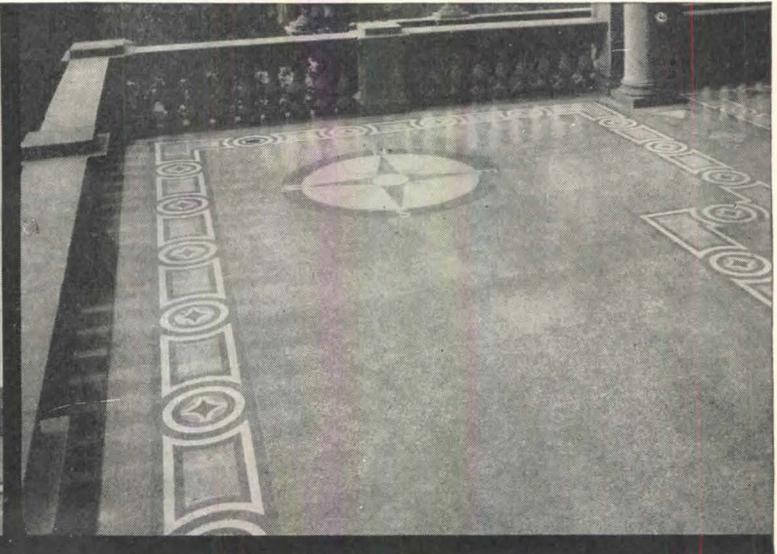
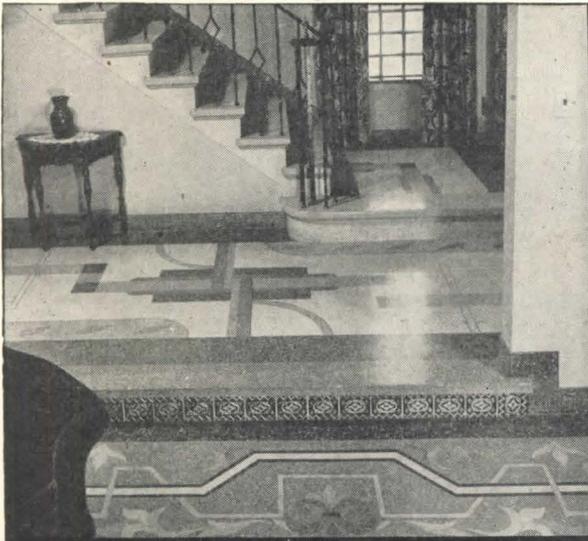
Why limit yourself to ordinary types of flooring? Shown here are a few examples of residential Medusa White Terrazzo—the flooring that sets a new decorative note in the modern home. Here is the material that gives you the advantage of custom design with unlimited possibilities of patterns and a wide variety of colors.

IDEAL FOR RADIANT HEATING

Due to its marble chip content, terrazzo is ideal for floor type radiant heating. The installation of terrazzo over heating pipes—buried in the concrete directly below—not only assures warm floors but makes practical ones too. Terrazzo provides sanitary, vermin proof, enduring surfaces that require no costly maintenance—that clean easily with soap and water.

MEDUSA WHITE ASSURES EXACT REPRODUCTIONS

When you specify terrazzo, be certain your exact desires of patterns and colors can be carried out



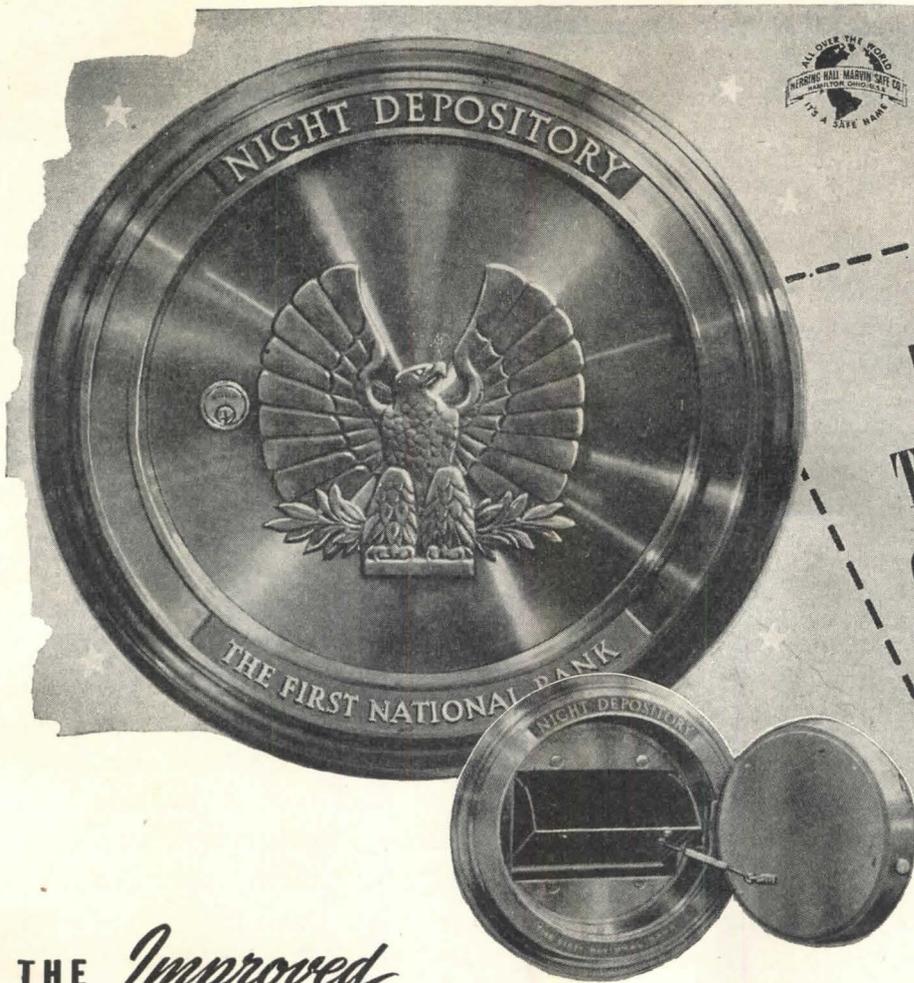
easily. Specify Medusa White Portland Cement—the cement with the successful 40 year service record for outstanding terrazzo. Pure non-staining Medusa White as a matrix, sets forth the colored marble chips in such a manner to give maximum color values in the finished floor. And, by adding color pigments to Medusa White, delicate shades for blending or contrasting backgrounds can be obtained.

Plan now for residential terrazzo—in recreation rooms, hallways, vestibules, porches, bathrooms, and wherever rich beauty and long service qualities are desired. Specify Medusa White—the original white portland cement for better terrazzo—rich in beauty—long in wear.

M E D U S A
PORTLAND CEMENT COMPANY

1015 Midland Building • Department "H" • Cleveland 15, Ohio

Also made by Medusa Products Co. of Canada, Ltd., Paris, Ontario



THE BANK
THAT NEVER
CLOSES ITS
DOORS

THE *Improved*
HERRING-HALL-MARVIN
CIRCULAR *Night Depository*

Even on banking days, your bank is closed 75% of the time. And, now, the 5-day banking week—with your customers lacking banking facilities Saturdays, Sundays and Holidays all through the year.

No wonder the big chains favor banks with night depositories. They need—all your customers need—round-the-clock deposit service. It frees them of worry over loss by fire, burglary, holdup. It ties them more closely to your bank, and it is one of the best new business builders a soundly managed bank may employ. It is today's "must"—if your bank is to be truly modern.

The Herring-Hall-Marvin Circular Night Depository is the most imposing installation in its class. Cast in bronze or aluminum. Over twenty inches wide. Simple and speedy operation. Drill-and-torch-resisting entrance. Drill-resisting lock. Heavy chute fully welded. Steel baffles and baffle door. Heavy steel night safe with 3½-inch door and certified relocking device. Write for descriptive folder.

**Bank 5-Day Week
Not Before Mar. 8**

It will be at least March 8 before Massachusetts banks go on the five-day week authorized by a law signed yesterday by Gov. Bradford.

A spokesman for the Massachusetts Bankers Ass'n said today a subcommittee of the Boston Clearing House Ass'n had recommended the law be put into effect on that date but that the matter would come before the Clearing House executive committee at a meeting Monday.

The law contains an emergency preamble making it effective immediately, but banking officials said the complexities of the change-over, involving notifying depositors, would make it impossible to cut the Saturday work-day at once.

HERRING-HALL-MARVIN SAFE CO.

Manufacturers of Bank Vault Equipment - Bank Counters - Tellers' Buses and Lockers - Safe Deposit Boxes - Night Depositories - Bank and Office Safes

BUILDERS OF THE UNITED STATES SILVER STORAGE VAULTS AT WEST POINT

General Offices
HAMILTON, OHIO
BRANCH OFFICES

In New York, Chicago, Boston, Washington, St. Louis, Atlanta, Houston, Philadelphia, San Francisco, Los Angeles, Detroit, Pittsburgh
OTHER AGENCIES ALL OVER THE WORLD

Famous Silent Refrigerator now offers

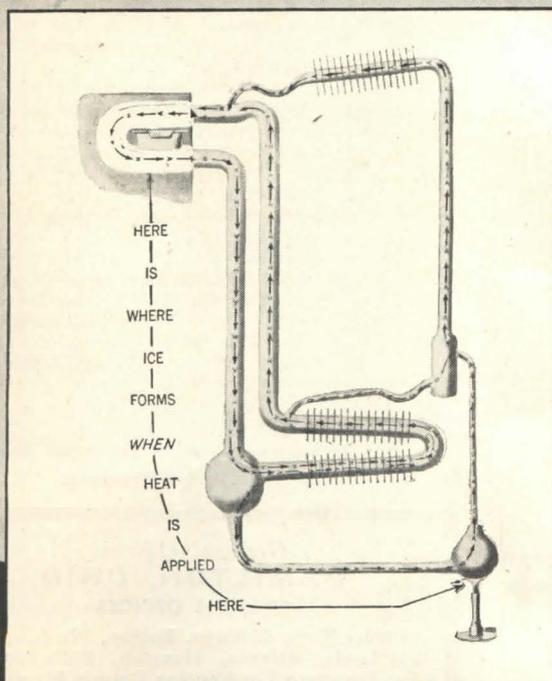
1947 Servel Gas Refrigerator brings tenants and owners great new features, plus silence and dependability

Yes, the great new 1947 Servel Gas Refrigerator is even finer than the Servels that have already won the praises of more than 2,000,000 families. The 1947 Servel contains a big Frozen Food Locker that stores up to 60 packages of frozen foods. This famous refrigerator offers moist cold and dry cold for garden vegetables and meats. A specially designed flexible interior provides extra roominess. Plastic Coated shelves are rust- and scratch-resistant. All these new conveniences—plus Servel's permanent silence—are the reasons tenants will say, "There's nothing to match the 1947 Servel!"

Owners, too, will appreciate the lasting dependability and economy of the 1947 Servel. They know from experience that the Gas Refrigerator not only stays on the

job year in and year out, but its low operating cost remains low for the life of the refrigerator. That's because the freezing system of the 1947 Servel, like that of every previous Gas Refrigerator, has no moving parts to wear or break down.

These exclusive advantages—new, convenient features, plus famous silence and dependability—explain why you're sure to please tenants and owners when you specify the 1947 Servel for the new apartment buildings and homes you design, build or manage. Plan now to provide outlets for Gas Refrigeration in your current designs and construction work. For specification data on the great 1947 Servel Gas Refrigerator, consult Sweet's Catalog. Or write today to Servel, Inc., Evansville 20, Indiana.



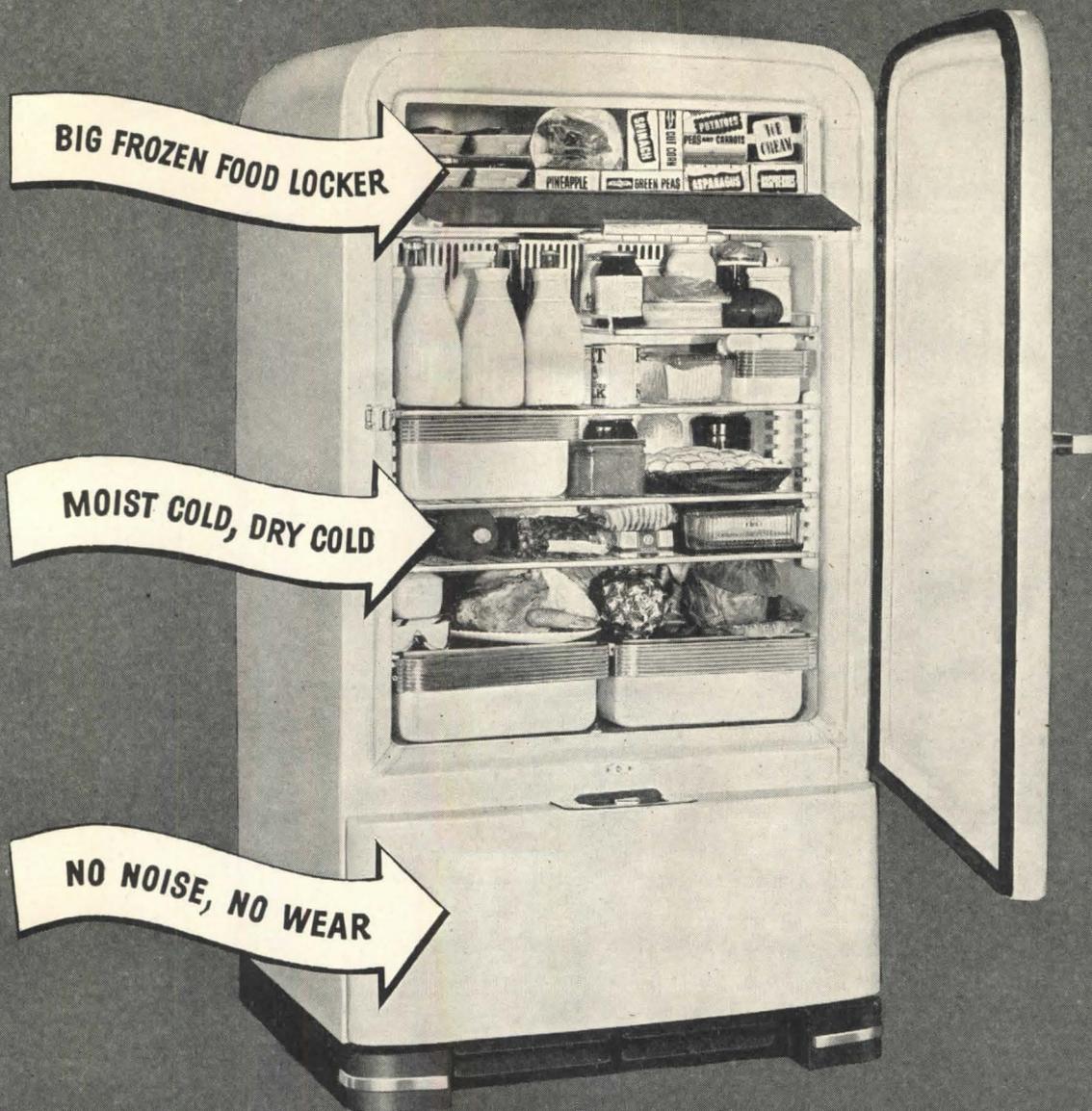
WHY SERVEL STAYS SILENT, LASTS LONGER

Different from all others, the Servel Gas Refrigerator has no moving parts in its freezing system. It operates on the continuous absorption principle of refrigeration. In a Servel, the refrigerant is hermetically sealed in a set of vessels connected by pipes. A tiny gas flame is applied to the lowest vessel. As a result of the evaporation properties of the refrigerant and the law of gravity, ice forms in an upper vessel. No machinery—motor, valves, pumps and compressors—is needed. That's why Servel has no moving parts to get noisy, none to wear . . . why it stays silent, lasts longer.

STAYS SILENT
LASTS LONGER

Servel

more convenience . . . more value



BIG FROZEN FOOD LOCKER

MOIST COLD, DRY COLD

NO NOISE, NO WEAR

BIG FROZEN FOOD LOCKER

Up to 60 packages of frozen meats, poultry, vegetables, fruits, biscuits can be stored in Servel's big convenient Frozen Food Locker. It helps housewives save hours of shopping time, plan new and delightful menus in every season.

MOIST COLD, DRY COLD

Servel's big dew-action fresheners are ideal for keeping garden vegetables and fruits. Salad greens actually crisp up, perishables stay safe and appetizing. And fresh meats keep tender for days in the Servel meat keeper.

FLEXIBLE INTERIOR

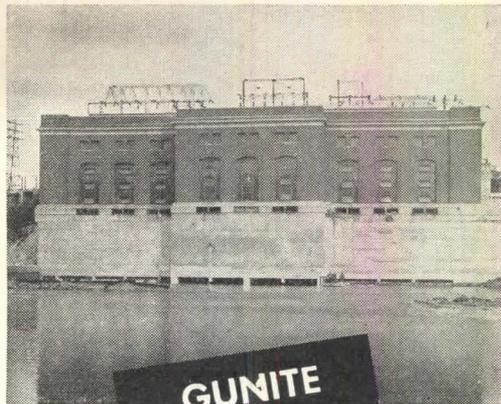
The 1947 Servel offers an amazingly practical flexible interior. For extra roominess, shelves are adjustable to eleven positions. And they're Plastic Coated for the utmost in rust- and scratch-resistance.

The GAS Refrigerator

ADAPTABILITY TO CONCRETE CONSTRUCTION



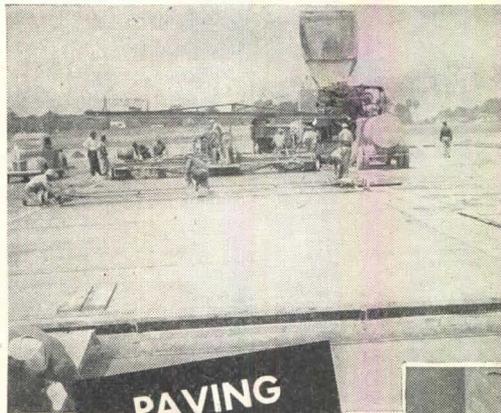
BUILDING



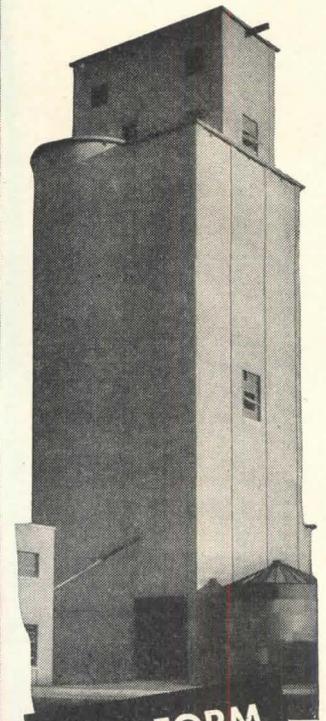
GUNITE



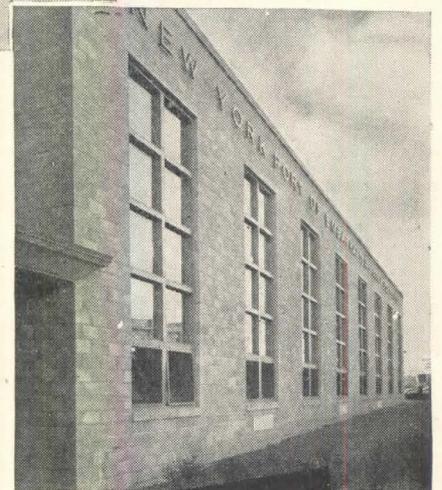
STUCCO



PAVING



SLIP-FORM



BLOCK

Since its introduction eight years ago, Atlas Duraplastic air-entraining portland cement has proved its versatility—its adaptability to almost every type of concrete work. The pictures show a few of its varied uses.

Duraplastic cement makes the concrete more plastic, more uniform and more durable. Its use requires no unusual changes in

methods—just the same good workmanship and careful supervision regularly employed. It complies with ASTM and Federal specifications and sells at the same price as regular cement.

Send for further information.
Write to Universal Atlas Cement Company (United States Steel Corporation Subsidiary), Chrysler Building, New York 17, N. Y.

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

AR-D-46

ATLAS DURAPLASTIC

AIR-ENTRAINING PORTLAND CEMENT

MAKES BETTER CONCRETE AT NO EXTRA COST

TRADE MARK REG.
U. A. C. CO.



"THE THEATRE GUILD ON THE AIR" — Sponsored by U. S. Steel—Sunday Evenings—ABC Network

No fuss –
 No feathers –
 No fiction –

Just facts for architects!

Lending libraries aren't stocked with American Blower Bulletins and we don't expect any of them to make the "Best Seller" list.

But you will find American Blower Bulletins packed with authoritative data on air handling, air conditioning, heating, cooling, ventilating and allied subjects. These Bulletins have been compiled by American Blower engineers after extensive research. We believe they will save you both time and trouble.

Drop us a card today. Your selection of the five Bulletins shown, or any of our many other Bulletins will be sent promptly without charge or obligation.



Bulletin No. B 813

Axial Fans

Vaneaxial and Tubeaxial Fans for heating, ventilating, process work and other air handling needs. This bulletin gives complete details on construction, component parts and installation of both fans together with all necessary tables and data. Also friction and duct sizing charts.



Bulletin No. 3623

Humidifiers, Dehumidifiers and Air Washers

A complete line of equipment for public buildings, schools, theaters, hotels, apartments, and industry, wherever humidifying, dehumidifying, and air washing are required. Bulletin No. 3623 contains the necessary data, tables and charts to accurately figure and specify this equipment.



Bulletin No. 2214

Attic Fans

This method of comfort cooling by means of nature-conditioned air has been widely accepted by architects and homeowners as an ideal means for attaining low-cost hot-weather comfort. This 4-page bulletin contains complete data on the equipment necessary to do a highly satisfactory job in any home.



Bulletin No. 1810

Type V Fans (with Cast Iron Housings)

These units can be used to advantage in air handling work, wherever corrosion and erosion resisting qualities are desired. All housing parts coming in contact with air or gases are cast iron. A variety of arrangements to meet all types of jobs. Capacities from 136 to 8,000 CFM.



Bulletin No. 5917

Industrial Heaters

For factories, garages, hangars, warehouses, machine shops, and other difficult heating jobs. Seven sizes—79,000 to 1,630,000 BTU per hour. Four arrangements—for wall, horizontal, inverted, and floor installation. Bulletin contains all the data necessary to figure even the most difficult heating problems.

AMERICAN BLOWER

AMERICAN BLOWER CORPORATION

DETROIT 32, MICHIGAN

In Canada: CANADIAN SIROCCO CO., LTD.,
 Windsor, Ont.

Division of AMERICAN RADIATOR & Standard Sanitary Corporation



THERE'S A REASON WHY

SOME AIR CONDITIONING
INSTALLATIONS ARE
"JUST RIGHT"

The reason lies in the amount of engineering knowledge and experience reflected in the design of the units which provide air distribution at the vital point of delivery. Take our new Aerofuse Multi-Louvre Damper, for example. This is not a very complex piece of equipment as such things go. "Anybody can make one" you may say. Yet we have spent more time and effort getting this unit "just right" than many of our much more intricate products. As a result, when you specify Aerofuse ceiling diffusers with multi-louvre dampers you can be *sure* that this much of your system will do **PERFECTLY** the job it is intended to do . . . deliver the proper amount of air as you want it and where you want it, evenly distributed and without drafts.

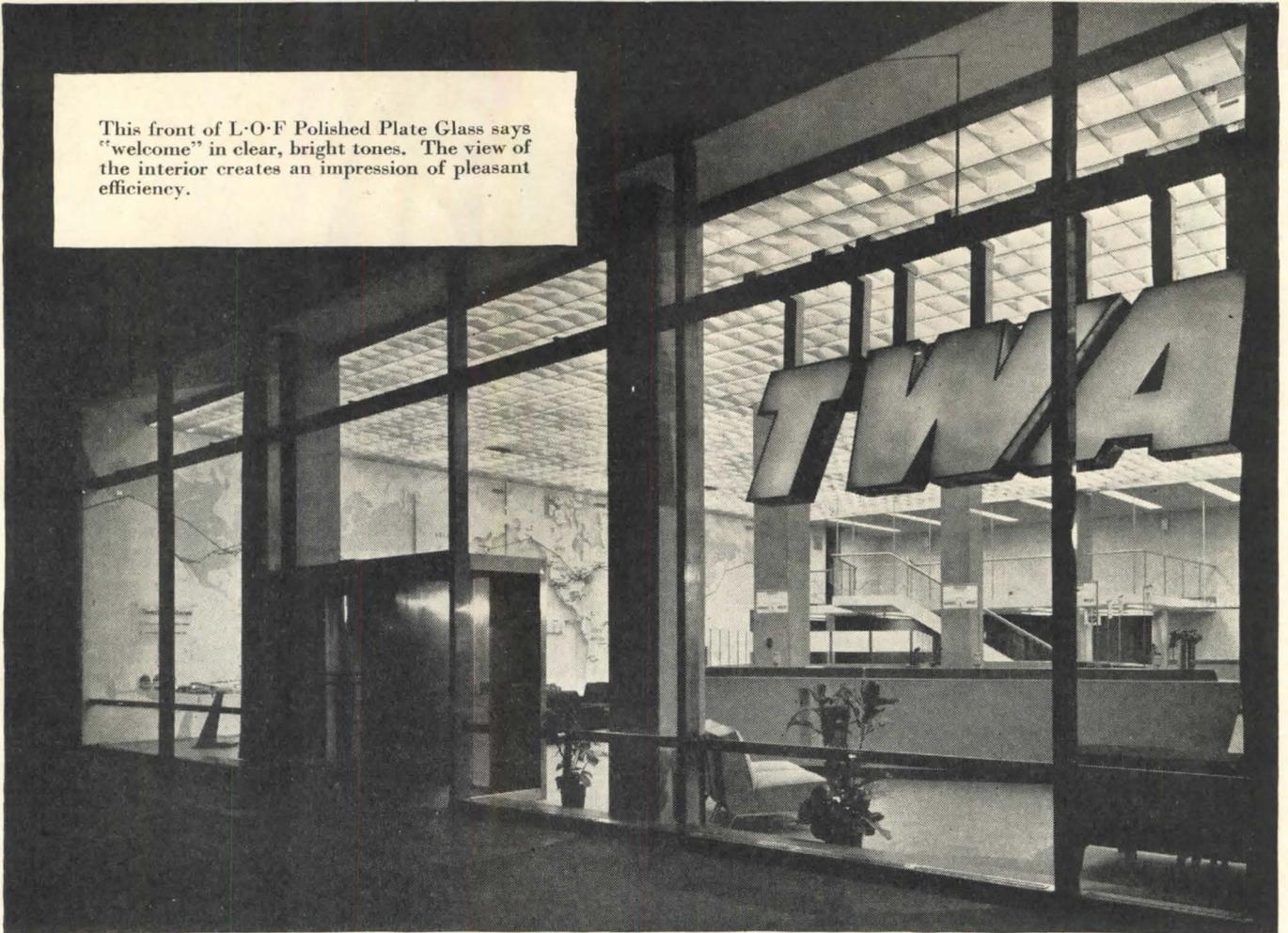
THE NEW AEROFUSE DAMPER PROVIDES POSITIVE CONTROL — ANY POSITION FROM COMPLETE CLOSURE TO FULL OPEN — CAN BE LOCKED IN POSITION OR LEFT EASILY ADJUSTABLE. DISTRIBUTES AIR UNIFORMLY OVER ENTIRE DIFFUSER.

TUTTLE & BAILEY



NEW BRITAIN, CONNECTICUT

This front of L·O·F Polished Plate Glass says "welcome" in clear, bright tones. The view of the interior creates an impression of pleasant efficiency.



TWA

**URNS AN OPEN FACE
TO ITS PUBLIC**

Count on this modern business to use up-to-date architectural treatment in its new Chicago ticket office.

Designed by Architects Skidmore, Owings & Merrill of Chicago for Trans World Airline, this beautiful "store" uses glass to let people see in—to invite them in. Its pleasant atmosphere owes much to intelligent use of glass. It is another example of a Visual Front—the "open" type front that puts more appeal, more zest and more selling power into business places. Libbey-Owens-Ford Glass Co., 6537 Nicholas Bldg., Toledo 3, Ohio.



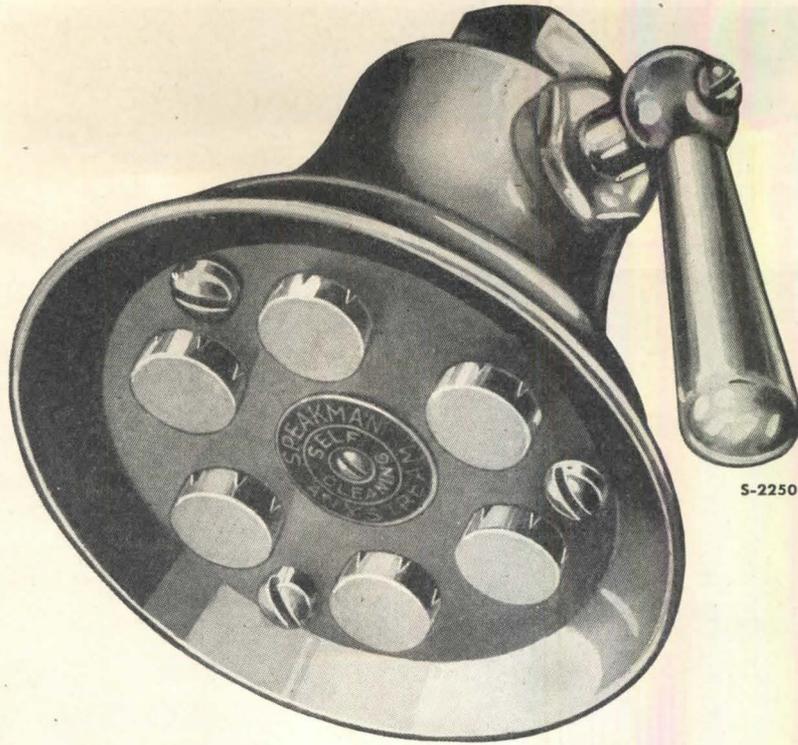
A This stairway is smart in more than appearance. The transparent panels of glass are L·O·F Tuf-flex*—plate glass that is tempered for greater resistance to impact.

B Light from the "egg crate" ceiling streams through diffusing panels of Flutex Patterned Glass. Note how the fixtures extend through the front to provide a lighted marquee.

*Reg. U.S. Pat. Off.



LIBBEY · OWENS · FORD
VISUAL FRONT *a Great Name in* **GLASS**



ONLY THE SPEAKMAN ANYSTREAM

is three different showers in one. A turn of the lever and it delivers



REGULAR SPRAY for *relaxation* . . .



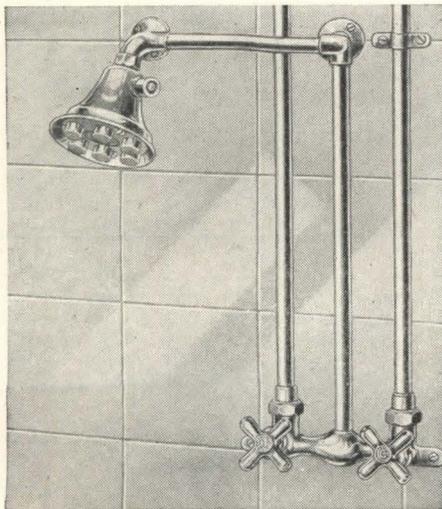
NEEDLEPOINT SPRAY for

stimulation . . .



or **FLOOD SPRAY** for a *no-splash rinse*. No wonder it's

the choice of architects for installations calling for the latest refinements.



Speakman makes a wide variety of showers and shower heads to meet different requirements. Shown here is the Speakman Commander Exposed Two-Valve Shower (S-1160). The Anystream Shower Head shown is the school and institution type, equipped with the lock-shield control, operated with a special key. A lock-screw prevents malicious removal.

Like all Speakman plumbing fixtures, the Anystream Shower Head is rugged in construction. In the FLOOD position, the Anystream is self-cleaning thus eliminating a major source of trouble and maintenance expense. With all Speakman Showers and Fixtures, repairs may be made quickly and inexpensively, when—after long service—normal wear takes place.

Speakman Showers and Fixtures are distributed nationally through plumbing supply dealers and plumbing contractors.

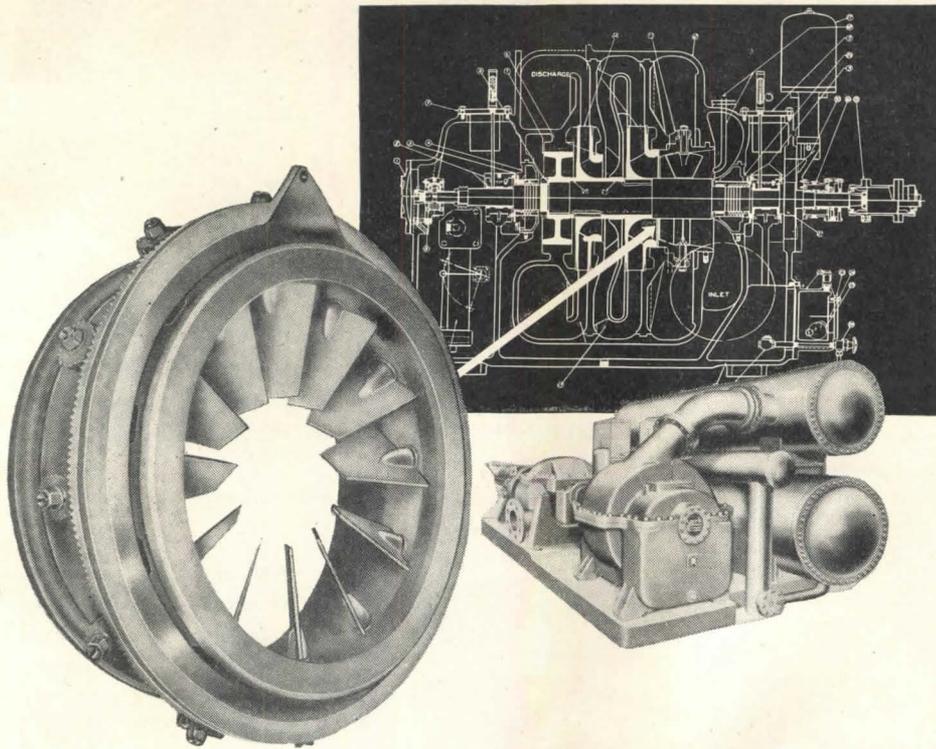
SPEAKMAN

SHOWERS AND FIXTURES

"The best in brass since 1869"

SPEAKMAN COMPANY, WILMINGTON 99, DELAWARE

This is important to the man about to select refrigeration or air conditioning equipment:



**90 percent Flexibility
with Pre-Rotation Vane Control
...exclusive with
York Allis-Chalmers Turbo Compressor**

The Pre-Rotation Vanes illustrated are an exclusive design feature, and provide extreme operating flexibility to meet varying load demands down to as little as 10 percent of full load. Adjustment of the vanes varies the angle at which the refrigerant gas enters the impeller wheel, and imparts a "pre-rotation" to the gas, thus changing the performance char-

acteristics of the compressor resulting in stabilized performance over this extreme capacity range. In effect, each position of the vanes puts a different compressor "on the line."

This is but one of the many features of the complete York line of refrigeration and air conditioning products.

York Corporation, York, Penna.

This TOO is important to the man about to select refrigeration or air conditioning equipment

York experience and York engineering assistance are available where you are, to complement York mechanical design advancements and the complete range of York equipment.

In the New York Area, for example, District Manager Christensen has a corps of seventeen sales engineers assigned to service York customers in this district. Their practical and technical assistance is available to you, whether you are planning, purchasing, installing or operating refrigeration and air conditioning installations.



A. CHRISTENSEN
District Manager

Assisted by:

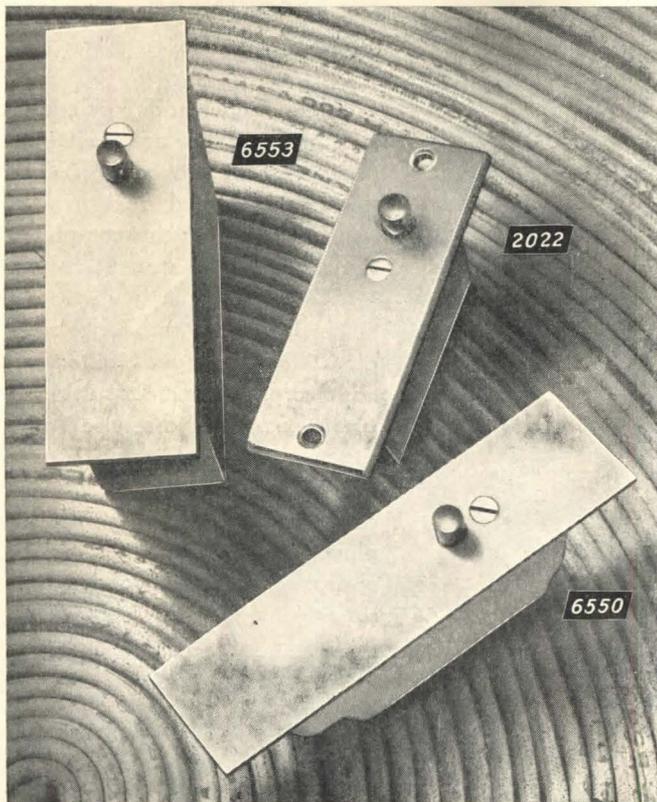
- R. K. Serfass, Sales Manager
- W. Allen
- A. N. Barnes
- H. W. Coon
- A. J. Cordrey
- J. G. Doebrich
- C. Egbert
- J. E. Fitzsimmons
- J. W. Floreth
- C. P. Foley
- R. F. Fox
- W. S. Galazzi
- L. J. Jacobson
- J. Krsnak
- E. Lilygren
- E. Spencer
- C. Weigand

YORK *Refrigeration and
Air Conditioning*



HEADQUARTERS FOR MECHANICAL COOLING SINCE 1885

H&H AUTO-MATIC DOOR SWITCHES



Automatically control the lights by opening and closing of doors as in closets, storage and refrigeration chambers, vaults etc. Numbers illustrated here are designed to switch on lights when door is opened; others available for lighting when door is closed. No. 6553 comes complete in an approved box with 23/32" and 1/2" knockouts and clamp for flexible metallic conduit. No. 2022 is mounted in a steel box, porcelain lined. No. 6550 is mounted in a porcelain base; fits all standard door switch boxes. Ratings: 6 Amps., 125 V.; 3 Amps., 250 V. Striker plates furnished with each switch.

Write for specification data on the complete line.

HART & HEGEMAN DIVISION

ARROW-HART & HEGEMAN ELECTRIC COMPANY, HARTFORD, CONN., U.S.A.



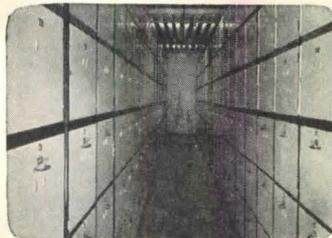
Where Does the Architect Come In?

When this set of photographs recently appeared in the ARCHITECTURAL RECORD, a history was given of the plant as a COMMUNITY REFRIGERATION CENTER. An exciting story it made, too.

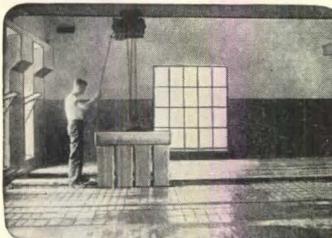
However, some readers may be wondering just where the Architect comes into the picture.

Well, the City Ice Company plans to extend its main plant until it covers the entire city block. This block faces the Civic Center in Gainesville, Ga. Other buildings around the Center—the Post Office, the City Hall and the Federal Building—are all of marble. The new entrance to the ice plant will also be of marble. The enlargement will include new offices, refrigerator and fixture sales and display rooms, a lobby, entrance to the locker rooms, and a new food processing room.

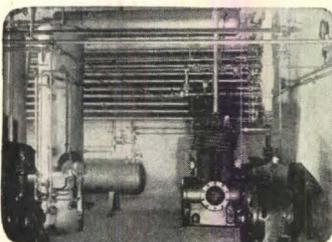
This Ice Company has nine plants, and operates 22 Frick refrigerating machines. Another example of the fact that "the users of Frick machines make money". Where economy and dependability both count, there you'll find Frick Refrigeration. It's preferred for air conditioning, ice making, and all other commercial cooling work.



Typical Aisle in Locker Room, which has 1675 Compartments



Labor-Saving Equipment Harvests Four Ice Cans at Once.



One of 7 Frick Machines holding proper temps. for various services.

DEPENDABLE REFRIGERATION SINCE 1882
Frick Co.



MUCH DEPENDS ON THESE DEVICES—

Of prime importance in a school, theater, auditorium, church, or industrial building is the safety of the occupants. Without it, beauty and comfort and convenience become valueless.

A vital part of a building's safety is safe exit—the positive assurance that the occupants can get out quickly and easily, no matter what the emergency.

That is a problem which can be settled easily, simply, and at surprisingly low cost. It is merely a matter of insisting that every exit door be equipped with the world's top quality fire and panic exit devices . . . the fast, sure, safe devices of drop-forged bronze which carry the name

Von Duprin

TRADE MARK

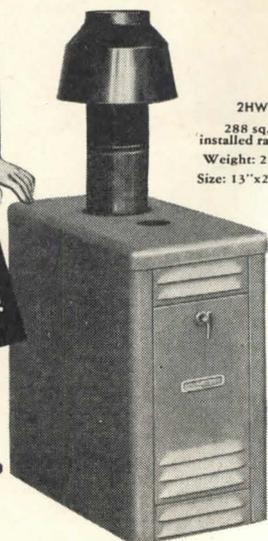
VON DUPRIN DIVISION, VONNEGUT HARDWARE CO., INDIANAPOLIS, IND.

HEATING EFFICIENCY AT ITS BEST!

HYDROTHERM

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

**AUTOMATIC
GAS-FIRED BOILERS
FOR HOT WATER
HEATED HOMES**



2HW3
288 sq. ft.
installed radiation
Weight: 234 lbs.
Size: 13"x26"x26"

Engineers rate it the most efficient gas-fired boiler with the **HIGHEST BTU output for its size and weight!** It has a higher capacity in ratio to size and weight than ever before attained. **HYDROTHERM'S** fully patented unique construction induces a rapid and positive circulation of water through the heating system, usually without the aid of pumps. It can be economically installed by one man. Compact and smartly jacketed for room or basement. **HYDROTHERM** is available in standard ratings to cover heating requirements of small homes, multiple family and apartment houses.

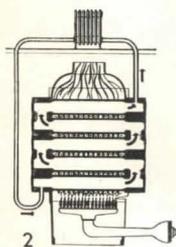
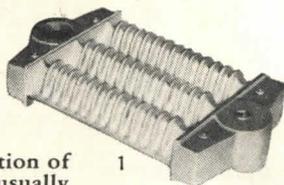
**SCIENTIFICALLY DESIGNED
HEAT TRANSFER UNITS AND
IMPROVED WATER CIRCUIT**

1. **TUBES** - scientifically overlapped ribbed tubes and uniquely staggered section arrangement means more heat transfer surface is surrounded by the radiant flame.

2. **WATER CIRCUIT** - zig-zag flow of water thru horizontal sections prevents undesirable internal circulation within absorption unit. Generates positive pressure which assures rapid and continuous circulation of hot water thru entire heating system.

3. **HEAT TRANSFER** - deep ribbed, staggered, horizontal sections of patented design provide a tremendous heat absorbing surface in a minimum of space. Assures highest fuel economy.

WRITE FOR NEW ENGINEERING BOOKLET AR3



**The easy, practical way to
cover insulated surfaces**



Sewing the canvas—or applying metal strapping—these time-consuming operations are no longer necessary. The canvas, asbestos, fibreglas or other non-conductor can be securely bonded with Arabol Lagging Adhesive.

This adhesive dries in 4 to 6 hours; leaves a sized finish on the lagging material . . . the job is completed. No paint need be used on this sized finish, unless you prefer to add one coat for appearance. Maintenance is simplified—grease, oil, soot and dirt wash off easily. And the adhesive is vermin-proof . . . fire-retardant, too.

Arabol Lagging Adhesive has successfully passed rigorous tests by independent laboratories. The results show that it retains its adhesive powers despite exposure to extreme temperatures, to immersion in water and to live steam.

Write us today for detailed facts and figures. Don't place open specifications on lagging work—ask for Arabol Lagging Adhesive. You can depend on it to fill your most exacting requirements for both utility and appearance. Also, ask about our cork cement for adhering cork to cork on refrigerator lines.

THE ARABOL MANUFACTURING CO.

Executive Offices: 110 East 42nd St., New York 17, N. Y.

CHICAGO—54th Ave. & 18th St. SAN FRANCISCO—30 Sterling St.

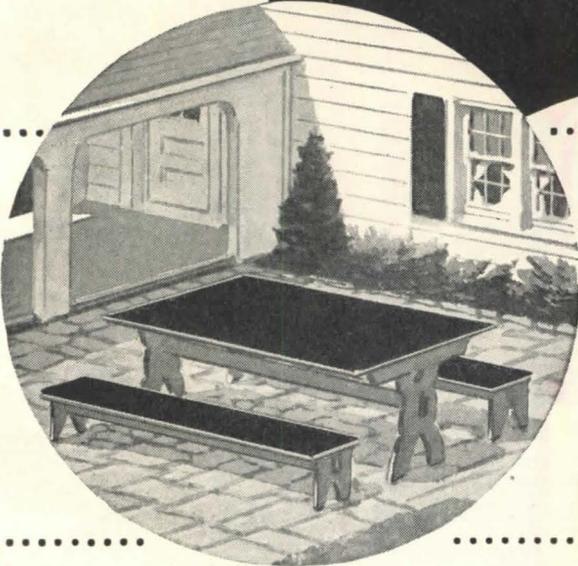
Branches in Principal Cities. Factories in Brooklyn, Cicero, San Francisco



Adhesives? . . . ARABOL!

HOOK & ACKERMAN, Inc.

The new plastic armor for plywood... **Kimpreg***

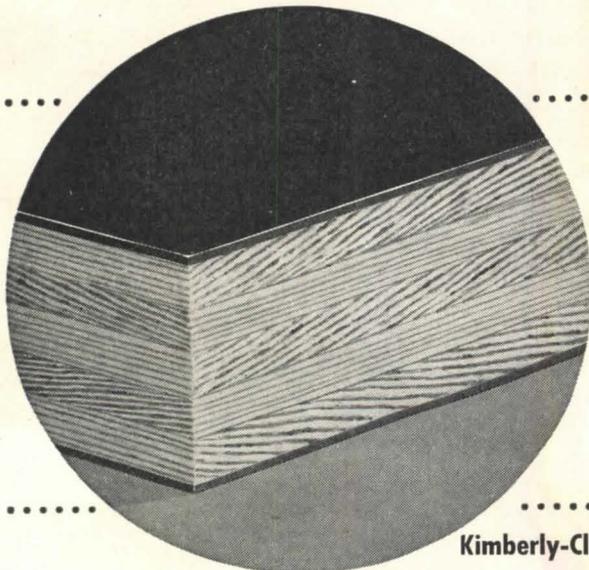


ATTRACTIVE, PERMANENT. Kimpreg fused with Plywood gives America this remarkable material. It's smooth and flint-like—weather-proof, long-wearing, and washable. There is greater strength, greater water resistance in plywood surfaced with Kimpreg!

STRONG, STAINPROOF. Kimpreg is a thermo-setting phenolic resin sheet to be fused with plywood in manufacturing. Abrasion-resistant, scuff-proof, mar-resistant, impervious to alcohol, it's a material with amazing possibilities.



ADAPTABLE, ECONOMICAL. Kimpreg + Plywood is ideal for bars, kitchen counters, concrete forms—or wherever a durable surface is required. Combines the multiple advantages of plastic with the basic economy and workability of plywood. For complete information, mail the coupon today.



Kimberly-Clark Corp., Neenah, Wis. Please send me the free Kimpreg book and the names of manufacturers making plywood surfaced with Kimpreg.

AR-347

Kimpreg
REG. U.S. PAT. OFF.
PLASTIC SURFACING

TRADEMARK



Name _____
Firm _____
Type of Business _____
Address _____
City, Zone, State _____



(Above) 11 years of service without re-scraping — and still in excellent condition. This is the record of Minwax Flat Finish in Hillside Homes, Bronx, N. Y. Only ordinary maintenance has been required.
(Right) Residence, Essex Fells, N. J. Minwax Wood Finish on all floors.



**For Beauty and
Low
Maintenance**

MINWAX WOOD FINISHES

— the original penetrative stainwax finish

WHETHER used in large developments where the problems of maintenance cost and tenant satisfaction are pre-eminent, or in the individual home, Minwax Wood Finishes satisfactorily answer all requirements.

Their special gums, oils and waxes penetrate the surface of the wood—toughening it and increasing its ability to withstand daily use. This resistance to wear is dramatically revealed by the record of service in Hillside Homes (above) where the floors have been in use without re-scraping since 1935. Worn spots can readily be restored — without visible laps — by a simple application of more of the original material. With ordinary maintenance, the finish actually improves with age—in beauty as well as service-ability.

For further information, see Sweet's — or write Minwax Company, Inc., Dept. A3, 11 West 42nd Street, New York 18, N. Y.

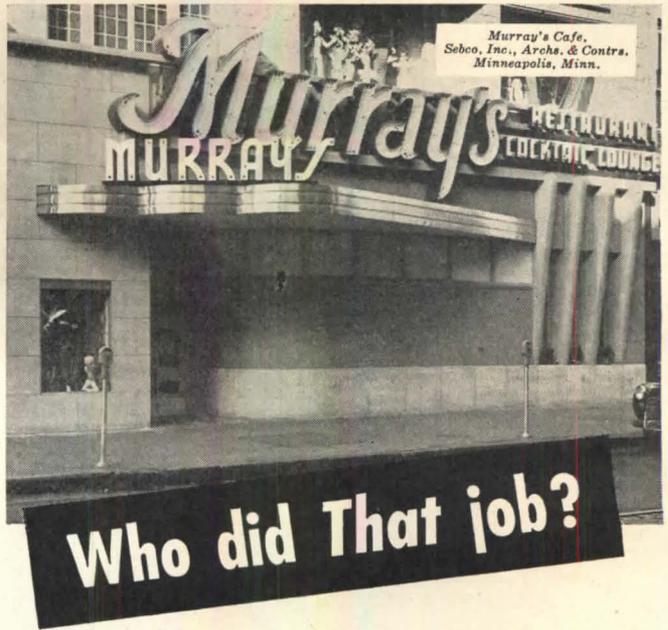
TRADE **MINWAX** MARK

WOOD FINISHES

Floors • Paneling • Trim

OTHER MINWAX PRODUCTS

Waterproofings • Dampproofings • Caulkings • Protective Coatings



SEAPORCEL-the-beautifier is also Seaporcel-the-sales-maker. Not only for your clientele, but for you.

What more natural prospect-question than "Who did that job?" And what more natural self-promise than "That's for me, too!"?

See how Seaporcel* becomes the background of perfection for letters of distinction in the front portrayed here. See how Seaporcel, in turquoise terra cotta, blends daringly, dramatically, adroitly, with white metal, Kasota stone—yes, even wood, utilized in the upright fins as shown in the above photo.

With unlimited color range, from delicate pastels to jet black . . . with numerous finishes, including gloss, semi-matte, terra cotta, granite and limestone . . . Seaporcel offers you a material at once versatile, economical, and enduring. For Seaporcel is porcelain enamel de luxe—not painted, but fused to steel for lasting newness.

**Get The Facts—And You'll Get
SEAPORCEL**

WRITE TODAY for bulletins, showing applications and current jobs.

Inquiries from interested agents invited; there are a few areas in which Seaporcel Porcelain Metals, Inc., desires representation.

SEAPORCEL PORCELAIN METALS, INC.

Formerly Porcelain Metals, Inc.

28-02 Borden Ave., Long Island City 1, N. Y.

*Seaporcel (Reg. U.S. Pat. Off.) is a ceramic fused into its metal base at 1550 degrees F.



Seaporcel

Member: Porcelain Enamel Institute, Inc.

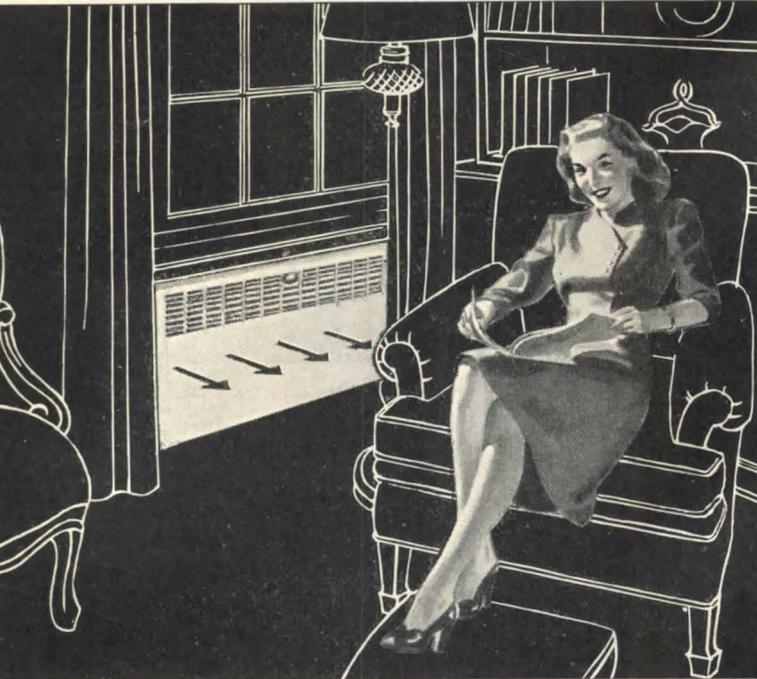
My first choice
is radiant heat!



My first choice
is convection heat!



Modine Convector Radiation gives you these two heating principles blended into one!



1

RADIANT HEATING

Mild, radiant heat in just enough quantity to offset heat loss from window areas — that's what those arrows represent, coming from the Modine Convector Panel below the window. To this we add . . .

2

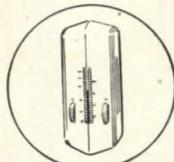
CONVECTION HEATING

Warmed air circulated by Convection Heating. Hot water or steam passes through copper heating unit which draws cooler, floor-line air into bottom of convector where it's warmed, rises and then passes out through grille.

Result: Dependable new heating comfort for moderate cost homes and apartments . . . distinctive room charm and cleanliness without unsightly radiators! Yes, Modine Convector Radiation provides a modern, blended heating system for modern living — a heating system that makes possible individual room control — that responds almost instantly to sensitive automatic controls — that gives you gentle air circulation without the use of moving parts that wear out. If you're planning to build a new home or apartment, specify Modine Convector Radiation . . . look for Modine's representative in the "Where-to-Buy-it" section of your phone book . . . write for complete information and free descriptive literature! MODINE MANUFACTURING CO., 1773 Racine Street, Racine, Wisconsin.



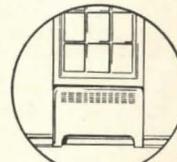
MODERN
BEAUTY



CLOSE TEMP-
ERATURE CONTROL



EASY TO
INSTALL



ADDS TO
LIVING SPACE

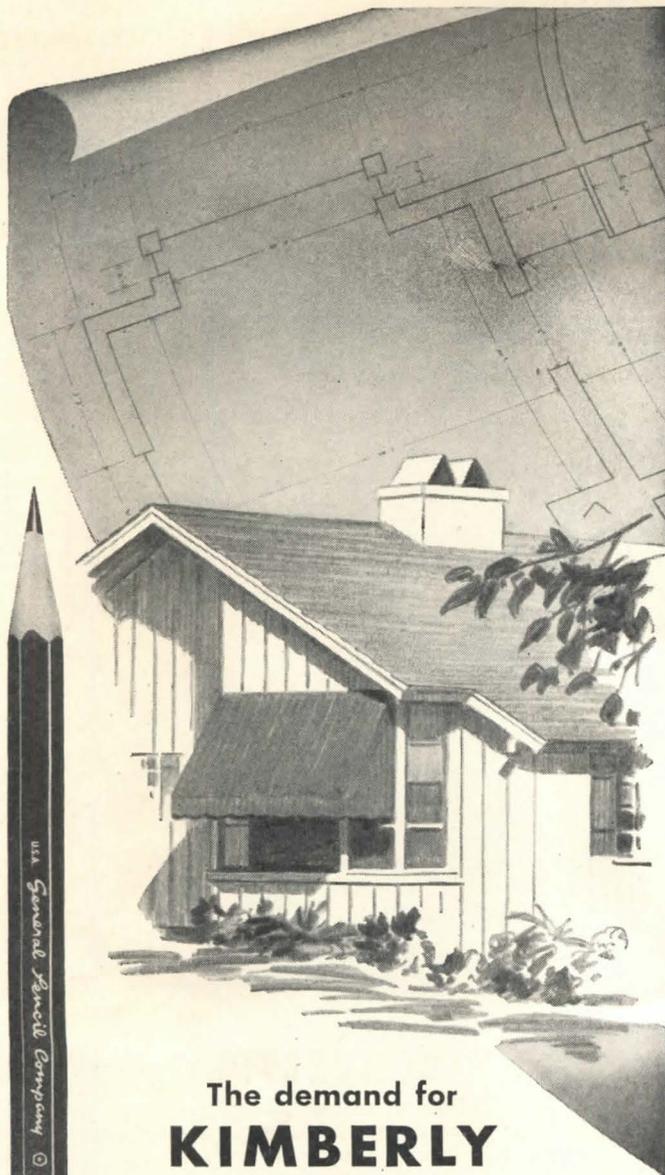


PRICED
FOR TODAY'S
HOMES AND
APARTMENTS

Modine

CONVECTOR RADIATION

The Modern "proved by use" heating method



The demand for
KIMBERLY
 Carbo-Weld
DRAWING PENCILS

is proof of Kimberly "Built-in-Quality"—the quality incorporated in their strong, smooth leads, uniform grading and the Carbo-Weld process of binding wood and lead so securely that point breakage is cut to a minimum on the drawing board.

Regardless of the work, planning, rendering, tracing, etc., Kimberlys will do the job better—and for exceedingly fine blueprint reproduction, use the Tracing Degrees.

THE 22 ACCURATE DEGREES ARE 6B to 9H
 TRACING 1-2-3-4 and EXTRA B for layout.

Write Department R for a free trial pencil, ask for your favorite degree. Buy them from your dealer.

Makers of Fine Pencils since 1889
General Pencil Company

67-73 FLEET STREET



JERSEY CITY 6, N. J.



up to 8' x 14'

Insures low maintenance costs

Weather plays a very important part in the maintenance costs of homes—but not when you use Homasote Insulating and Building Board. This wood fibre board is *weatherproof* . . . a fact attested by letters from hundreds of home owners.



Homasote offers a combination of great structural strength with high insulating value *in one material*. Because Homasote comes in big

sheets (up to 8' x 14')—you have less handling, fewer nailings, fewer wall joints, less waste.

Homasote is *practical*—use it for interior walls; see the fine crackproof base it provides . . . perfect for paint or wallpaper. Add roof and sidewall sheathing of Homasote to get top *insulating value*. And for *strength* as well as insulation—use Homasote for subflooring, ceiling and exterior walls.

Homasote has proved itself by 30 years of successful application on residences, garages and structures of many different types.

We invite architects and builders to send for a copy of our new booklet, describing some of the many uses for *weatherproof* Homasote. The book gives physical characteristics, performance charts, specification data and application instructions. Write for your copy today.



HOMASOTE COMPANY, Trenton 3, N. J.



The new Dacotah Hotel, Grand Forks, N. D.
 Architect: Theodore B. Wells, Grand Forks;
 Contractor: E. A. Moline, Jamestown, N. D.

New Hotel in North Dakota has **OPEN-WEB JOISTS**

It's the 160-room Dacotah Hotel—recently built at Grand Forks, N. D. This six-story building has a structural-steel framework. The first floor is of reinforced-concrete construction with Bethlehem Open-Web Steel Joists installed in the other floors. A total of 110 tons of these joists were used.

Because they eliminate shrinking, sagging, and squeaky floors, as well as cracks between floors and baseboards, Bethlehem Open-Web Joists are ideal for every type of light-occupancy structure. When used with concrete floor-slab and plaster ceiling, they provide a

floor construction that is effective for at least two hours in preventing the spread of fire.

Bethlehem Open-Web Joists mean fast construction, too, because they arrive at the job completely fabricated, and can thus be installed without false-work. Two men can handle the standard-type joist, merely a light gin pole being needed to raise the Longspan type of joists into place. Bethlehem Open-Web Joist also speed the work of other trades, for they facilitate the placing of pipes, conduits, and ducts.

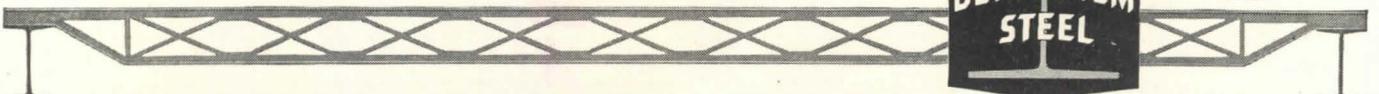
We've a compact folder on Beth-

lehem Open-Web Joists (Folder 522) which you'll find both interesting and helpful. It contains design tables and detail drawings, plus specifications for open-web joist construction. Ask the nearest Bethlehem district office to send you a copy. Or, if you prefer, drop a line to us at Bethlehem, Pa.

BETHLEHEM STEEL COMPANY
BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by
 Bethlehem Pacific Coast Steel Corporation

BETHLEHEM OPEN-WEB JOISTS





Sheehan and Krech, Designers and Builders
Air Conditioning by Schwerin Air Conditioning Corporation

Simply designed air diffuser blends with interior

Provides complete air conditioning comfort by eliminating drafts, noise, hot or cold spots.

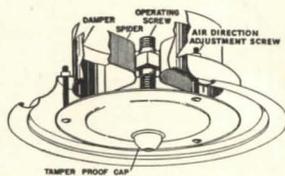
In addition to their unobtrusive appearance, Kno-Draft Adjustable Air Diffusers are specified for installations like the one pictured here in the offices of Schwarzenbach-Huber Co. because they combine all the advantages of scientific air diffusion plus adjustable features which assure positive air pattern control.

Kno-Draft adjustability increases efficiency and economy.

Diffusers improve occupant comfort by delivering conditioned air gently and thoroughly. Drafts and noise so often experienced with grilles, registers and other louvered devices are eliminated. Economy is increased. Diffusers handle greater air velocities and greater temperature differentials. This means less air volume, smaller, simpler ducts and fewer outlets.

To those advantages, Kno-Draft adds adjustment features that increase both the efficiency and economy of the air diffusion principle and a simplicity of design that blends with any decor.

Kno-Draft Direction Adjustment assures positive air pattern control by affording any angle of air discharge from vertical to horizontal that is needed to accommodate ceiling heights, individual or seasonal requirements. Volume adjustment is made with a patented damper that regulates the amount of air without affecting the velocity or diffusion pattern.



Pat. & Pat. Pending

Send for FREE handbook that simplifies the selection and installation of diffusers. Write Dept. S-12 on your letterhead.

W. B. CONNOR ENGINEERING CORP.

AIR DIFFUSION AIR PURIFICATION AIR RECOVERY

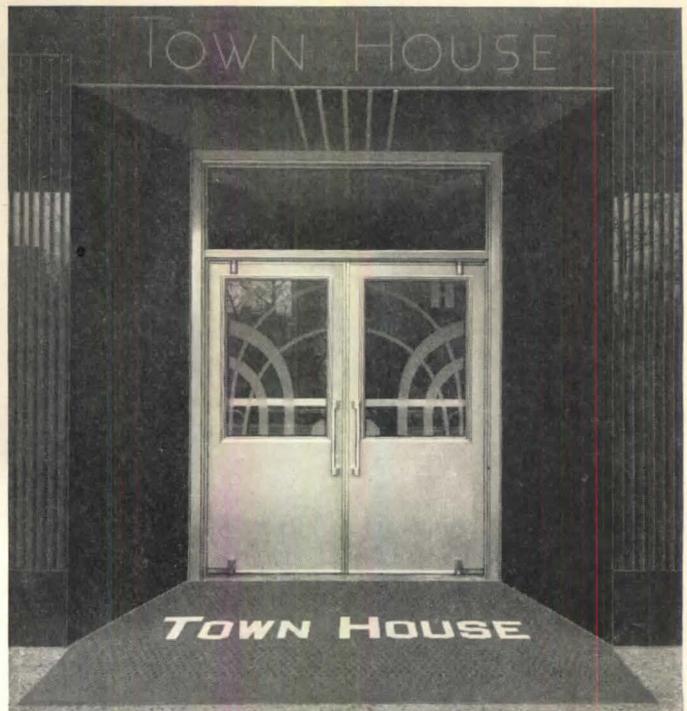
112 East 32nd Street



New York 16, New York

IN CANADA: Douglas Engineering Co., Ltd., 1405 Bishop St., Montreal 25, P.Q.

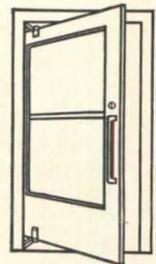
This BALANCE is in your favor



Breuninger Apartments
601 19th Street N. W., Washington, D. C.

THE selection of Ellison Balanced Doors not only enhances the appearance of any entrance—but they are so pivoted top and bottom that wind pressures are equalized as the door is opened, permitting them to move easily and quickly to one side of the door opening. Counter-balanced they require only a slight spring action to close.

This effortless action facilitates traffic flow. Since the doors swing on a shorter radius, their projection is reduced 40 to 45%. Made in bronze, aluminum and stainless steel as complete prefabricated units, ready to install, including door, frames, Mullions, trim, saddles and necessary hardware. Available in a wide range of standard sizes and types or built to your specifications.



Write for our new 12-page booklet giving additional specifications and illustrating types, or see our section in SWEET'S

ELLISON BRONZE CO., INC.
JAMESTOWN, NEW YORK

Ellison

Representatives
In All Principal Cities

BALANCED DOORS

THE CARLTON



THE CONTINENTAL



THE CARLTON

Washington, D. C., M. Mesrobian, Architect

CHATEAU LAURIER

Ottawa, Canada, Ross & MacFarlane, Architects

THE COMMODORE

New York City, Warren & Wetmore, Architects

THE CONTINENTAL

Chicago, Walter W. Ahlschlager, Inc., Architects

DETROIT ATHLETIC CLUB

Albert Kahn, Inc., Architects

THE DRAKE

Chicago, Marshall & Fox, Architects

LOS ANGELES-BILTMORE

Schultze & Weaver, Architects

NEW YORK ATHLETIC CLUB

York & Sawyer, Architects

THE ROYAL ALEXANDRA

Winnipeg, Canada, Ross & McDonald, Architects

THE ROYAL YORK

Toronto, Canada, Sproatt & Rolph
and Ross & McDonald, Architects

THE STATLER

Washington, D. C., Holabird & Root, Architects

THE STEVENS

Chicago, Holabird & Roche, Architects

THE WALDORF-ASTORIA

New York City, Schultze & Weaver, Architects

THE WASHINGTON

Washington, D. C., Carrere & Hastings, Architects

Distinguished Hosts Choose The Stone of Distinction . . .

★ These are only a few of the continent's many fine hotels and athletic clubs built of Indiana Limestone.

Our Technical Division, with a century's experience in all applications of the nation's most frequently specified building stone, offers you personal counsel on questions unanswered by our Sweet's File Catalog.

You are invited to forward plans and specifications to the Institute for competitive cost estimates by our member companies.

INDIANA LIMESTONE INSTITUTE

P. O. BOX 471 • BEDFORD, INDIANA



THE WALDORF-ASTORIA



THE STEVENS



**It is never
too early to plan
the KITCHEN**

Nor too soon to call in Van Range

Van's century of kitchen engineering experience will assure

- Efficient Layout
- Modern Design
- Precision Manufacture
- Economical Operation

Early planning is essential



The John Van Range Co.

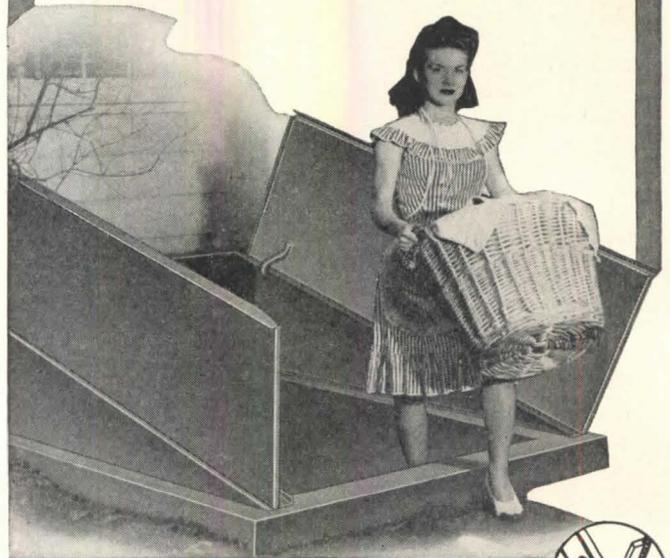
EQUIPMENT FOR THE PREPARATION AND SERVING OF FOOD

Branches in Principal Cities

429 Calvert St.

CINCINNATI 2, O.

**Your Clients
Will Thank You For
BILCO
COPPER-STEEL
OUTSIDE CELLAR DOORS**



Automatic Safety Catch . . . Doors Can't Blow Shut.



To the conveniences you have designed into your clients' new homes and to provide the safety of another exit in case of fire, add outside cellar doors — *permanent* Bilco copper-steel outside cellar bulkhead doors — and earn their lasting thanks.

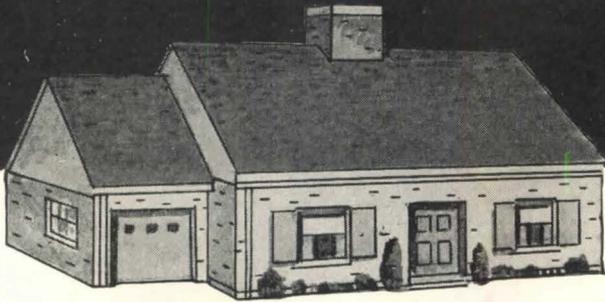
Bilco bulkheads are made in three standard sizes, or any special size, to fit neatly and unobtrusively into your plans. They cost no more to start with than old-fashioned wooden doors, far less in the long run. Rotproof, sagproof and rustproof Bilco doors never need repair or replacement. Their flange construction and sliding bolt lock keep Bilco doors weather-

proof and tamperproof. Many thousands already in use.

Available from most good building supply houses . . . installed quickly and easily in either masonry or frame construction by any semi-skilled workman. For complete data for your files and names of dealers in your locality, write The Bilco Company, 160 Hallock Avenue, New Haven, Connecticut. Also makers of Bilco roof scuttles, sidewalk and elevator door and vault covers.



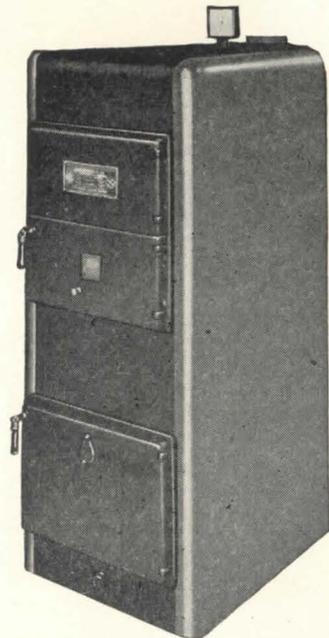
Luxurious Winter Comfort



....FOR SMALLER HOMES

MODERN radiant heating is neither luxury-priced nor limited only to larger homes. Smaller homes, too, can feature more healthful, more comfortable, more luxurious winter living with radiant heating, and that means added prestige for home-builder and home-owner.

THE "100" SERIES HEAT EXTRACTOR



This highly efficient radiant heating boiler was designed especially for smaller homes. A water insulated base provides extra safety in kitchen or utility room installations, and a copper coil within the boiler may be included to provide plenty of domestic hot water both winter and summer. The "100" Series Heat Extractor is designed for either manual or automatic firing.

For more healthful, comfortable living . . .
send for your *free* copy of our booklet—
"PLAN TO BE COMFORTABLE"



The NATIONAL RADIATOR Company

JOHNSTOWN, PENNSYLVANIA



*An Exclusive New Feature
of Decorative Micarta*

You can be sure this beauty will be in perfect condition on "opening night."

Now when Decorative Micarta* is inspected at the factory, its sparkling surface is immediately protected by a heavy kraft paper "beauty mask" ... insurance against mars and scratches in transit.

And there's another benefit, important to you. Installation, machining and fitting work on table tops, walls and counters can be done with this mask still in place.

Upon installation the mask is stripped off easily to reveal all the original beauty of Decorative Micarta.

Decorative Micarta is made in a wide variety of desirable colors and patterns. It is durable, beautiful, practical. Write for full information today.

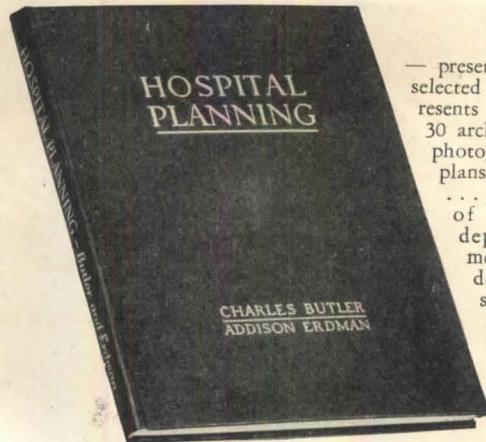
SIX DISTINCTIVE ADVANTAGES of DECORATIVE MICARTA

1. Will not chip, split or warp
2. Unharmd by alcohol, food, grease, fruit juices
3. Cigarette-proof grade withstands burning cigarettes
4. Easy to clean with a damp cloth
5. Colors and patterns never fade
6. Never needs refinishing

*Manufactured by Westinghouse Electric Corporation.
Reg. U. S. Pat. Off.

UNITED STATES PLYWOOD CORPORATION

55 West 44th Street, New York 18, N. Y.



— presents the plans of 51 selected hospitals ... represents creative efforts of 30 architects. Includes 32 photographs ... 11 site plans ... 187 floor plans ... 38 special unit plans of rooms, wards, departments ... numerous construction details. 236 pages, size 8½ x 11, illustrated and indexed, stiff, cloth binding. Price \$15.

AGAIN AVAILABLE

HOSPITAL PLANNING

by **CHARLES BUTLER, F.A.I.A.**
and **ADDISON ERDMAN, A.I.A.**

"HOSPITAL PLANNING," the first important textbook on the subject in a generation, offers a complete treatise on hospital architecture ... gives a cross-section of the best in hospitals produced in this country within recent years ... and provides exhaustive study and examination of new trends.

Messrs. Butler and Erdman, working as a team of specialists, have directed a nationwide, on-premise survey of hospital planning — in theory, in everyday practice and under the stress of unprecedented demands and emergencies. The most significant examples of hospital planning have been studied, assembled, abstracted and dramatized.

This 236-page volume is for architects and hospital groups alike. It will help architects and engineers to learn of the great advances made in hospital architecture ... to acquire a working knowledge of hospital procedure ... to avoid the many pitfalls which beset the hospital planner. It will help hospital administrators to visualize their problems in terms of community needs ... show them how others are meeting similar problems. Price \$15, postage prepaid.

BOOK DEPARTMENT ARCHITECTURAL RECORD
119 West 40th Street, New York 18, New York

Enter my order for copies of the new, 1946 edition of "Hospital Planning" by Charles Butler and Addison Erdman, at the price of \$15. I enclose payment of \$.....

For New York City Delivery add 30 cents for Sales Tax — \$15.30 in all.

Name

Address

City Zone State

The PLANNING BOARD



The Truscon Planning Board says, "Right now, February 15, our shipping schedules read like this: Industrial Pivoted and Projected Windows, 20 to 26 weeks; Architectural Projected Windows, 18 weeks; Open Truss Steel Joists, 8 to 10 weeks; Ferrobord Steeldeck, 18 weeks; Metal Lath Products contingent upon our ability to secure raw materials; Bank Vault Reinforcing, 8 to 10 weeks. Our suggestion is that you keep in close touch with your Truscon representative and work with him on your specifications."

Six Different Truscon Steel Building Products in this Job

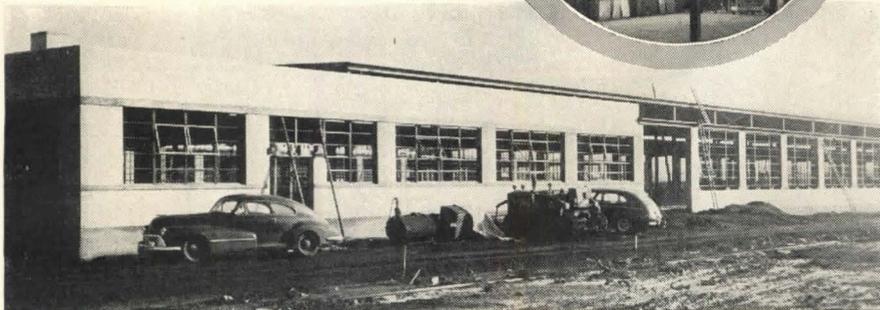
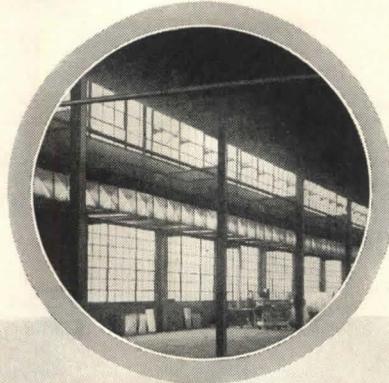
The Armstrong Furnace Company has just completed a fine new building in Columbus, Ohio, for the greatly expanded manufacture of its warm air furnaces. This well-designed structure is just about 100% steel, as far as the practical application of this material goes. R. W. Setterlin & Sons were the contractors. Truscon fabricated the structural steel members to exact specifications. Truscon "O-T" Open Truss Steel Joists permitted fire-resistant ceiling construction, especially since it was used with Truscon

trucks move very close to the inside wall of the building and any part of the window ventilator extending inward would create a potential accident risk. Thus the projected window with the ventilator projecting outward eliminates this hazard.

Efficient erection and completed enclosure of the structure was speeded considerably by the precision-made units fabricated in the Truscon factory, each item being made to fit without on-the-job retailoring.

If you are planning any kind of structure, it will be to your benefit to ask your Truscon representative to show how Truscon's complete line of steel building products and service can make your job easier and simpler. Truscon is the world's largest manufacturer of a complete line of steel building products.

Truscon Commercial Projected Windows from Interior of Armstrong Plant

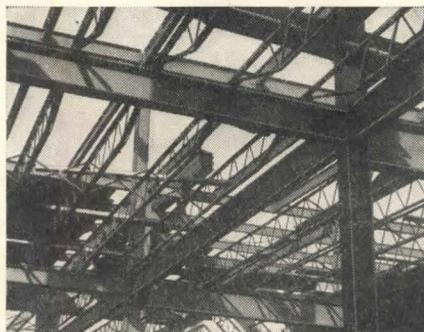


Exterior View of the Armstrong Furnace Company, Columbus, Ohio, Showing Truscon Architectural Projected Windows in Office Building.

"Ferrobord" Steeldeck for the Roofing. "O-T" Steel Joists are very simple to install, being completely shop fabricated and reaching the job ready for placing. The "Ferrobord" Steeldeck then can be applied easily and quickly. It's adaptable to flat, pitched or curved roofs.

The Armstrong Furnace Company also makes generous use of nature's free light and air, through Truscon Commercial Projected Windows with Rack and Pinion Operators in the factory, and Truscon Architectural Projected Windows in the office building. The Commercial Projected Windows were used to reduce the hazard of accidents by trucks moving materials. The material handling

Truscon Structural Steel in Armstrong Plant



Metal Lath Products

The recent series of fire tragedies in public buildings throughout America has pointed strong attention to fire-resistant construction. Truscon Metal Lath products are recognized by authorities for their fire-resistive qualities, especially for schools, hospitals, theaters, hotels and other buildings in congested areas. Truscon has a wide range of types of metal lath, corner beads, stucco mesh, corner reinforcements, hollow partition studs, base screeds, cold rolled channels and other products related to the plastering trades. All Truscon Metal Lath products are manufactured in accordance with U. S. Department of Commerce Simplified Practice Recommendation R 344. Write for free catalog showing the complete line, or refer to SWEET'S.



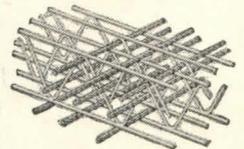
*Truscon Doublemesh
*Herringbone Metal Lath
Reg. U. S. Pat. Off.

Truscon Adds New Metal Lath Accessories

Within the past few weeks Truscon has added equipment to fabricate short and wide flange bull nose corner beads, special base screeds, picture mold and casings. The addition of these products will enable Truscon to furnish a more complete line of Metal Lath Accessories. More about this later.

Bank Vault Reinforcing

Where protection against unauthorized entry into a single room or an entire structure is paramount, use Truscon Welded Reinforcing. It assures maximum economy in the placing of construction materials, maximum efficiency of materials in resisting penetration, and No. 10 insurance rating.



Truscon Welded Bank Vault Reinforcing consists of welded steel units placed parallel to each other with their chord members forming a barrier of steel near the inner and outer faces of the walls, floor and ceiling slabs. The web members of the welded units provide reinforcement through the thickness of the concrete. Loose bars threaded through the welded units form rectangular barriers of steel at both inner and outer faces of walls, floor and ceiling slabs as well as providing a transverse barrier through their centers. All walls are securely bonded together at the vertical corners by means of specially formed dowel bars. Write for new folder giving complete description of Truscon Welded Bank Vault Reinforcing.

New Literature

A new 32 page catalog on Truscon's complete line of steel doors is now available. Includes illustrations, installation details and specifications. Write for your copy today.



TRUSCON STEEL COMPANY

YOUNGSTOWN 1, OHIO
Subsidiary of Republic Steel Corporation

For Comfort Unlimited

Specify

MODUFLOW

An entirely new conception
of Home Heating Comfort

MINNEAPOLIS - HONEYWELL

REGULATOR COMPANY

Minneapolis 8, Minnesota

Specify CENTURY 385

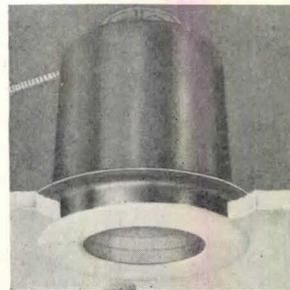
The Engineered Baffle Downlight

SHARP CUT-OFF 45° eliminates glare at normal angles of vision.

LOW SURFACE BRIGHTNESS at the fixture renders light source almost invisible.

EASY LAMP REPLACEMENT without removal of cover plate simplifies maintenance.

LONG LIFE GENERAL SERVICE reflector lamp insures high efficiency and low maintenance cost.



Catalog No. 385 List Price \$22
(U. S. Patent Pending)

**Specified Currently
By Architects & Engineers**

KETCHUM GINA & SHARP
EDWARD E. ASHLEY
THOMAS SMITH KELLY
KAHN AND JACOBS
FURNO AND SNOW
DONALD DESKEY
ASSOCIATES
DEYOUNG MOSKOWITZ
& ROSENBERG
ROSS FRANKEL
THOMAS M. BELL

CENTURY lighting equipment is ENGINEERED lighting equipment

CENTURY LIGHTING, INC.

419 WEST 55TH STREET
NEW YORK

626 NO. ROBERTSON BLVD.
LOS ANGELES

EMPLOYMENT OPPORTUNITIES AVAILABLE

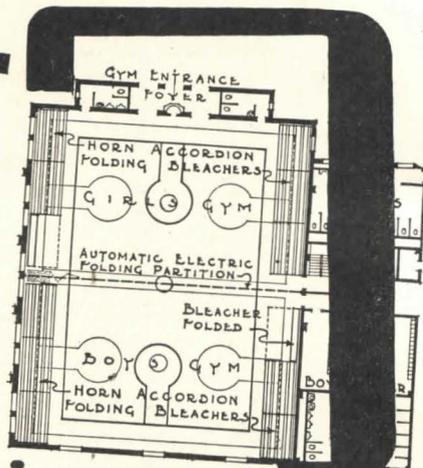
We have opening for two senior architectural draftsmen of job captain ability, also a specification writer. Well established office with volume and variety of work. Tinsley, Higgins & Lighter, 526 Liberty Bldg., Des Moines 9, Iowa.

ARCHITECT, with good following, wishing to become semi-active, has opportunity for ambitious young man, capable of taking over practice on partnership basis. Excellent opportunity for right man to start on his own in a small office, in thriving mid-west community. Furnished bachelor apartment, business transportation and office space furnished. Send all particulars. Do not reply if you cannot handle business from sketches thru to completed project. Several years business contracted and waiting. Herbert F. Smenner, 611 East Jackson Street, Muncie, Indiana.

MANUFACTURERS AGENTS: now calling on architects, engineers and contractors to represent established company. Our product is nationally advertised and is being specified by leading architects and engineers on new and remodeling building projects. Write details of territory covered and present lines. Box 218, ARCHITECTURAL RECORD, 119 W. 40th St., New York 18.

DESIGNER-DRAFTSMAN NEEDED: Graduate experienced man wanted in small individually owned office handling varied work. Must be capable of preparing sketches and developing working drawings for commercial, industrial and residential practice. Salary bonus basis. Give full particulars in writing to Albert L. Haskins, Jr., A.I.A., 508 Security Bank Bldg., Raleigh

** Since 1909 Horn has specialized in quality craftsmanship - our trained staff can solve your gym problems.*



in one...

WITH HORN FOLDING PARTITIONS AND FOLDING BLEACHER SEATS YOU HAVE 3 GYMS IN 1. WRITE FOR COMPLETE INFORMATION.

HORN BROTHERS

COMPANY
FORT DODGE, IOWA

"Well pleased with Petro Oil Heat"

... Reports Apartment House Specialist

TO THE OCCUPANTS of an apartment house, a Petro automatic oil burning installation means family comfort and good health . . . even in winter's severest weather. It assures both quiet surroundings undisturbed by noisy fuel deliveries . . . and cleanliness unsoiled by soot or smoke.

Because it contributes so largely to tenant satisfaction, Petro heating performance receives the architect's enthusiastic endorsement. But his interest goes even further. To him, Petro sturdiness and reliability reduce upkeep costs to a minimum . . . Petro flexibility of operation assures heat output conforms to the varying demands of changing weather . . . and Petro facility in burning the heavier, lower-cost grades of fuel oil at high combustion efficiency makes possible savings that cannot be over-emphasized.

Mr. Russell M. Boak, a specialist in apartment house design, puts it this way:

"We like Petro equipment because it keeps cost down, is sturdy and reliable, and the Petro engineering service is of great assistance. We have used Petro oil burning systems in many jobs since 1927 . . . from suburban residences and neighborhood theatres to 20-story apartments and apartment house developments. We have every reason to be well pleased with their use."

If you are interested in obtaining dependable automatic oil heat at low cost, Petro has a story for you that welcomes and merits your investigation.



RUSSELL M. BOAK, well-known architect of New York, has specialized over a long period in apartment house construction. The firm of Boak & Paris designed such representative apartments as those at 45 Christopher Street, 450 West End Avenue, 5 Riverside Drive, 100 Riverside Drive, 20 Fifth Avenue, and 177 East 77th Street, all in New York. Several years ago, Boak & Paris built their own apartment house for investment purposes, and in it installed Petro Burners.

More recently, the firm of Boak & Raad has designed the apartment building at 215 East 79th Street, the block square Peter Doelger development of seven fireproof apartment buildings at 55th to 56th Streets and Sutton Place, and other large-scale New York developments.

.....

INDUSTRIAL MODELS: No. 5 or No. 6 fuel oil; manual, semi- or full automatic operation; 8 sizes to 450 bhp. Thermal viscosity pre-heating.

DOMESTIC MODELS: No. 3 or lighter oils; "conversion" and combination-unit types, 7 sizes. Patented "Tubular Atomization."

FULL DATA on Petro Industrial Burners are in catalog files of Sweet's and Domestic Engineering. Details on Petro Domestic Models available in separate catalog. Copy of either sent gladly on request.

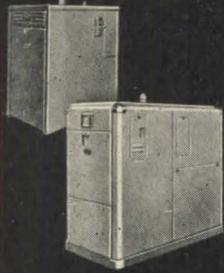
PETRO

REG. U. S. PAT. OFF.

cut steam costs

FITZGIBBONS

The right steel boiler in any size



Make it a Fitzgibbons and be sure, whether to heat a modest cottage or a towering sky-scraper. Be sure of full heating comfort, of vital savings in fuel cost, of a boiler that works in harmony with any good oil burner, gas burner, stoker, or gives full hand-fired satisfaction. Be sure, with a boiler that is A.S.M.E. constructed, Hartford inspected, S.B.I. rated, and with sixty continuous years of successful boiler building behind it. Check with your local Fitzgibbons engineer—or write us direct.

- 400 SERIES for modest homes
- OIL-EIGHTY for medium size homes
- R-Z-U JUNIOR for large residences and apartment buildings
- D-TYPE for institutional and office buildings, hospitals, theatres, etc.



Fitzgibbons Boiler Company, Inc. 101 PARK AVE. NEW YORK 17, N. Y.

WHICH COLOR?

Here's the Answer!



A "find" for the ARCHITECT!

When your clients ask "What color will be best?" you'll have a quick answer in the handsome Moleta COLOR GUIDE.

150 beautiful colors are displayed . . . Blues, Greens, Yellows, Grays, Browns . . . every tint from the palest to the darkest!

Formulas are given on the reverse of each color sheet (9" x 15") to show how the shade can be quickly made. Price, \$5.00 . . . delivered anywhere in the U.S.A. Write for your copy.

MONROE, LEDERER & TAUSSIG, INC.
606 N. AMERICAN STREET PHILA. 23, PA.

Moleta

ARCHITECTURAL

FLAT OIL PAINT

THE TRULY WASHABLE FLAT PAINT

LONE STAR CEMENTS

COVER EVERY CONSTRUCTION NEED



LONE STAR PORTLAND CEMENT

for concrete of outstanding quality in all types of construction

'INCOR' 24-HOUR CEMENT

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

LONE STAR MASONRY CEMENT

The modern masonry cement, for really great job performance

*Reg. U. S. Pat. Off.

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.



IN PUBLIC BUILDINGS

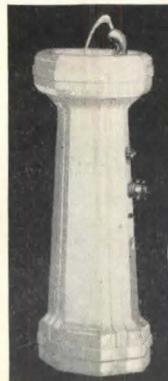


IN SCHOOLS



IN HOSPITALS

...the logical specification



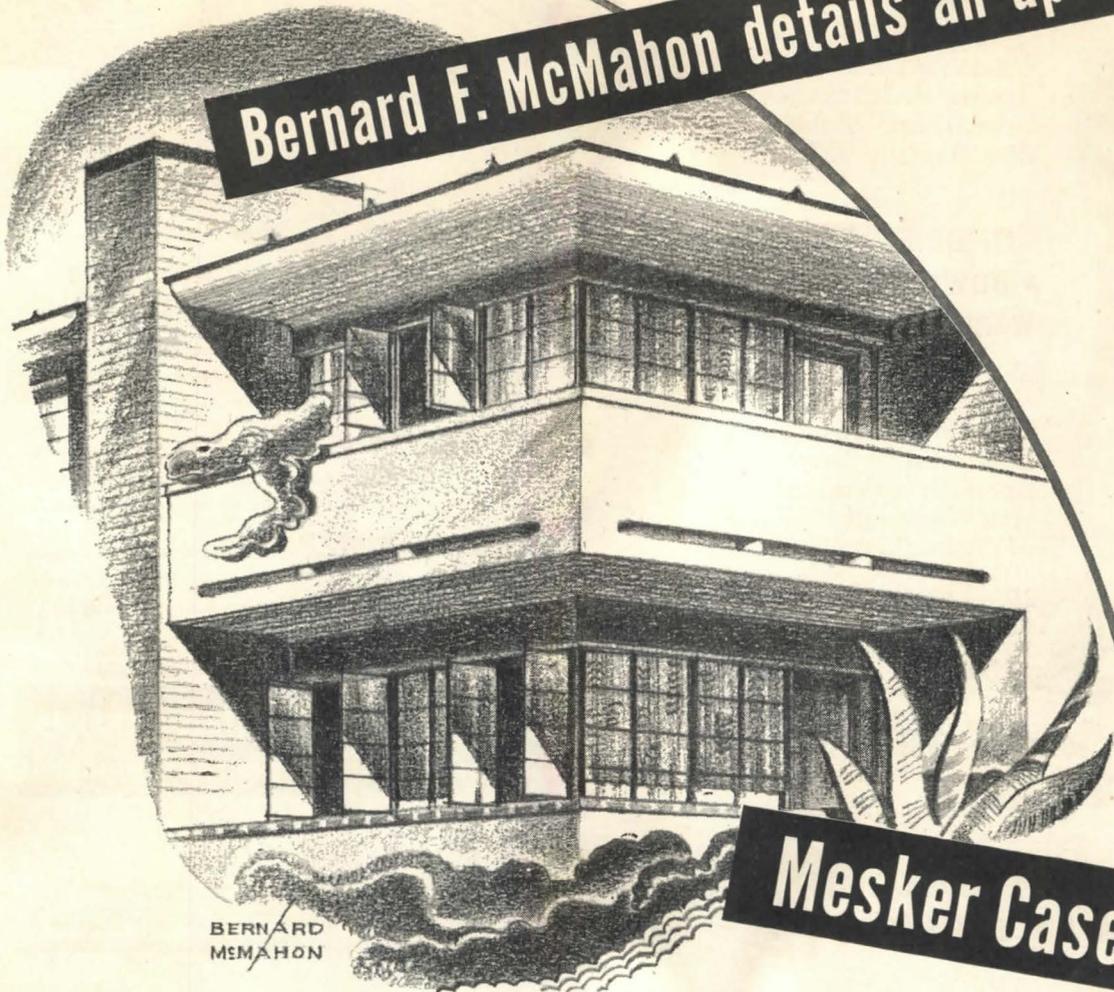
In office buildings in major cities throughout the country, in the nation's important hospitals, in public and parochial schools from coast to coast . . . and in thousands of industrial plants, too . . . you'll find Halsey Taylor Drinking Fountains the logical installations.

Patented health-promoting, trouble-proof features make them easily the most hygienic fountains you can specify! Get our latest catalog.

THE HALSEY W. TAYLOR CO.
WARREN, O.

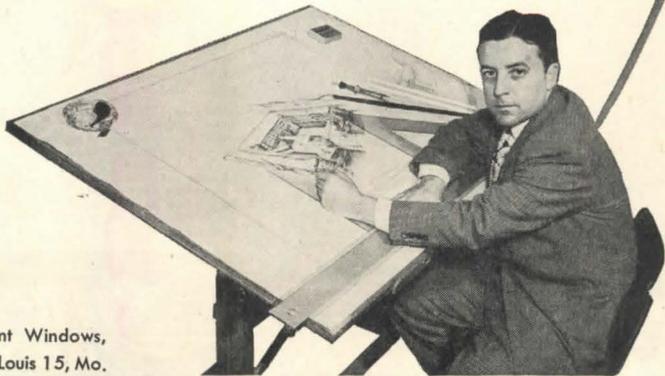
Halsey-Taylor
DRINKING FOUNTAINS

Bernard F. McMahon details an apartment...



Mesker Casements

"Planning apartments with anything but metal casements is unthinkable today. For adaptation to modern design, for low maintenance, for better ventilation, they stand alone."



For your copy of the Mesker Book of Apartment Windows, write to Mesker Brothers, 4338 Geraldine Ave., St. Louis 15, Mo.

Architect McMahon at his drawing board in St. Louis

ARCHITECTS . . .

You Need This Catalog

FREE!
Send for New
Catalog Now



Contains Latest Data . . .
Shows Advantages of
Specifying American
Bowstring Roof Trusses.

FOR:
**FACTORIES • GARAGES
• BOWLING ALLEYS •
WAREHOUSES • STORES**

and many other Industrial,
Commercial and Recreational
Buildings. Clear Floor Space . . .
Spans 25' to 150'. Exclusive
Waddington System of Truss
Construction.

25th Anniversary

1922-1947



AMERICAN ROOF TRUSS CO.

CHICAGO, 49 • 6844 Stony Island Avenue • Phone PLAZA 1772
LOS ANGELES, 37 • 292 W. Santa Barbara Ave. • Phone ADAMS 1-4379

LONG-LASTING PROTECTION FOR MASONRY SURFACES . . .

The present water resistant condition of masonry surfaces treated with Cabot's Clear Waterproofing more than twenty years ago definitely establishes its reliability. Cabot's Waterproofing protects brick and masonry surfaces from efflorescence . . . prevents scaling and disintegration caused by moisture absorption . . . prevents unpredictable weight increase of water laden masonry. Cabot's Clear Waterproofing actually soaks into the pores of the masonry, not only sealing the surface but cracks and joints as well. For satisfactory protection of red brick and dark colored masonry walls, specify Cabot's Clear Brick Waterproofing; for light colored masonry, Cabot's Clear Cement Waterproofing. Write today for free sample and complete information. Samuel Cabot, Inc., 1290 Oliver Bldg., Boston 9, Mass.

CABOT'S CLEAR WATERPROOFING



Always Specify



Olsonite

COSTS LESS Latest electronic manufacturing methods plus high volume production put Olsonite ahead of the field both in low unit cost and in speed of delivery.

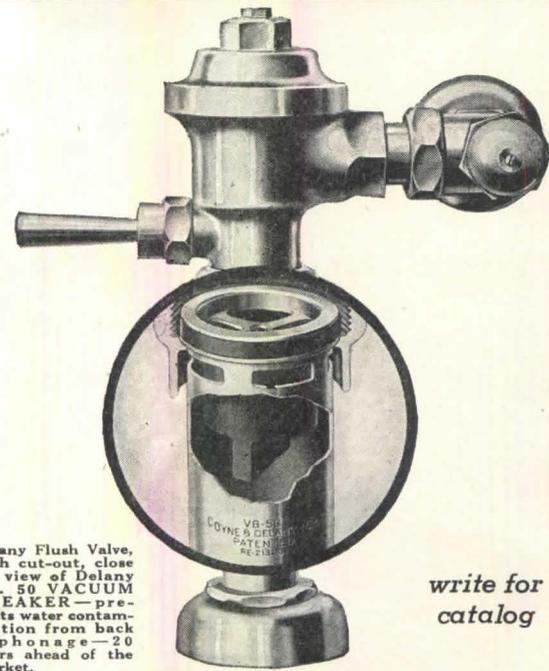
LOOKS BETTER Olsonite will not chip or mar and resists acid or cigarette burns. Non-corrosive brass hinges are covered with Olsonite so that no metal is exposed.

LASTS LONGER Solid homogeneous plastic construction has no core to split or warp. There are no joints, seams or crevices to give way.

WRITE DEPT. AR 3 FOR INFORMATION

Swedish CRUCIBLE STEEL COMPANY
PLASTICS DIVISION
8561 BUTLER AVENUE • DETROIT 11, MICHIGAN

DELANY FLUSH VALVES

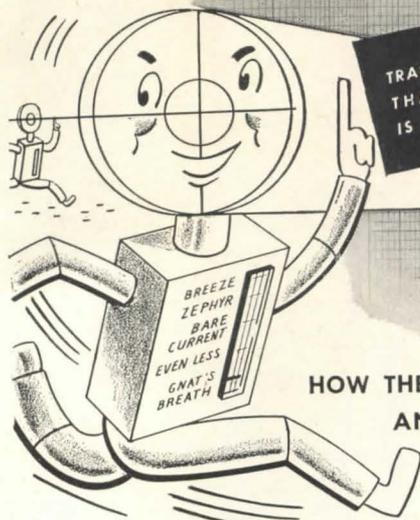


Delany Flush Valve, with cut-out, close up view of Delany No. 50 VACUUM BREAKER — prevents water contamination from back siphonage — 20 years ahead of the market.

write for catalog

SINCE 1879

Coyne & Delany Co.
BROOKLYN N.Y.



TRANE ENGINEERS KNOW THAT AIR MOVEMENT IS VITAL TO COMFORT,
So...

THEY MEASURE A BREEZE TOO GENTLE TO FEEL



HOW THE TRANE SUPERSENSITIVE THERMO-ELECTRIC ANEMOMETER HELPS PRODUCE BETTER *Weather Magic*

Air movement is vital to human comfort. To study and measure the delicate differences between too much and too little air in motion—and apply that knowledge to Trane products—Trane laboratory engineers had to go beyond the ordinary devices for determining air velocity.

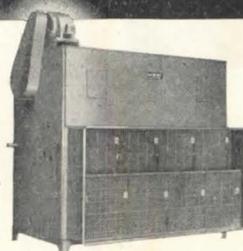
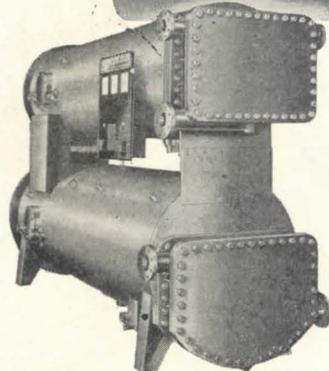
To achieve the precision in measuring very slight air currents they needed, Trane engineers developed a Supersensitive Thermo-Electric Anemometer, a device so responsive that a man's normal breath registers like a small hurricane on its dial. With this amazing instrument, Trane laboratory engineers are able to establish and

maintain *exactly* the amount of air in motion most conducive to human comfort.

Developing this Supersensitive Thermo-Electric Anemometer (sorry, but it's not for sale) is one more example of the ingenuity of the men who engineer and produce the complete line of Trane matched products—products that are designed and built together for use together.

More than 200 Trane Field Engineers in principal cities all over the country co-operate with architects, engineers, and contractors in the application of Trane products and systems—the utilization of Trane Weather Magic.

ONLY TRANE AIR CONDITIONING PRODUCTS CAN PRODUCE *Weather Magic*



Above: The Trane Vertical Climate Changer
Left: The Trane Turbovacuum Compressor
Right: A Trane Cooling Coil

The adaptability and versatility of Trane products make them ideal for any comfort or process air conditioning application.

The Trane Turbovacuum Compressor is a self-contained centrifugal compressor. Virtually an entire equipment room is housed within this quiet, almost vibrationless machine.

Trane Climate Changers perform every function of true air conditioning in any combination—heating, cooling, humidification, dehumidification, filtering, and circulation.

The heart of any Trane air conditioning system is the famed Trane tube and fin cooling coil. There are Trane Cooling Coil types for clean or sedimented chilled water and for direct expansion refrigerants.

THE TRANE COMPANY
The House of Weather Magic
LA CROSSE • WISCONSIN
TRANE COMPANY OF CANADA, LTD., TORONTO
MANUFACTURING ENGINEERS OF HEATING AND AIR CONDITIONING EQUIPMENT

SELF-CONTAINED AIR CONDITIONERS

COOLING COILS

CONVECTOR RADIATORS

COMPRESSORS

CLIMATE CHANGERS

UNIT HEATERS

HEATING COILS

HOT WATER PRODUCTS

STEAM HEATING SPECIALTIES

SHELL AND TUBE HEAT EXCHANGERS

UNIT VENTILATORS

EVAPORATIVE CONDENSERS

CENTRIFUGAL FANS

"I Specify SUPRO LUX
It's the Better Baked
Fluorescent Glass Tubing."

Satisfied users have recommended SUPRO LUX Baked Fluorescent Glass TUBING for more than 12 years. Today Architects, too, recognize SUPRO LUX as *tops* for superior fluorescent lighting performance. SUPRO LUX research—workmanship—rigid inspection—have created the Baked Fluorescent Glass *they specify* for all types of Neon Signs and Cold Cathode Lighting.

Specify SUPRO LUX

for years, the choice of the country's leading sign and lighting manufacturers.

- Controlled high temperature baking
- 12% to 15% Brighter color
- Economical, trouble-free use
- Precision coating
- No color variation
- Guaranteed satisfaction

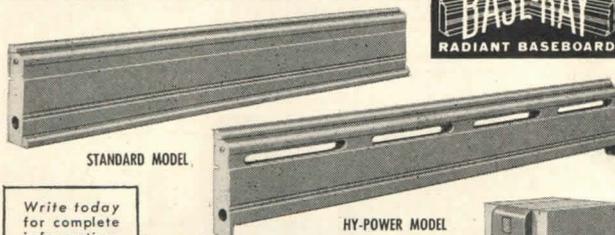
A SPECIAL SERVICE
SUPRO LUX is equipped to assist in the preparation of lighting specifications. Inquire for complete information.

SUPRO LUX MANUFACTURING CO., INC.
127 West 17th St. • New York 11, N. Y.

FIRST INTRODUCED IN JUNE, '45
THIS

*New Development
in Radiant Heating*

HAS CREATED TREMENDOUS
PUBLIC INTEREST



STANDARD MODEL

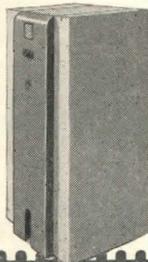
HY-POWER MODEL

Write today for complete information. You may be asked about BASE-RAY* tomorrow.
*Reg. U.S. Pat. Off.

Burnham Boiler Corporation

IRVINGTON, N. Y.

MAKERS OF THE FAMOUS
YELLO-JACKET BOILER



*Maas
Genuine
Cathedral
Chimes*

*WHEN Spring comes, bringing Easter
—clean and fresh over the land...
when the old things of earth are revived
and the new things are born... in the res-
urrection of the world you will hear music.*

*And the music that tells the story of Easter
more beautifully than any other is the music
of cathedral chimes from a church tower.*

MAAS
Carillons

Write for descriptive literature
MAAS ORGAN COMPANY
DEPT. R, 3015 CASITAS AVE.
LOS ANGELES 26, CALIF.

the **LUMINALL** line
of interior flat wall paints



LUMINALL... has casein
binder for extra light reflection

ULTRA LUMINALL... has synthetic
resin binder for extra washability

FREE... Send for fully illustrated 24-page
book, "Painting for Light & Decoration."



NATIONAL
3627 South

Factories:

CHEMICAL & MFG. CO.
May Street, Dept. G, Chicago 9, Illinois

Chicago, Ill., Brooklyn, N. Y.
Distributors in all principal cities

for

LONG TIME ECONOMY

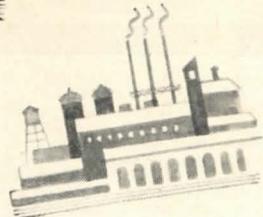
HERE



HOUSING



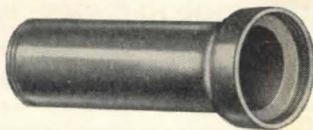
PUBLIC BUILDINGS



COMMERCIAL BUILDINGS

USE

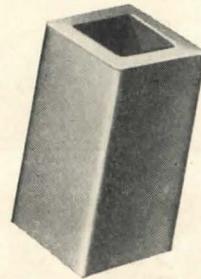
DEPENDABLE ALL-PURPOSE



CLAY PIPE



CLAY WALL COPING



CLAY FLUE LINING

BECAUSE THEY NEVER WEAR OUT

Far-sighted architects rely on Clay Pipe, Clay Wall Coping and Clay Flue Lining because they contribute so much to the permanence and long-time economy of structures. These Clay Products in today's plans will eliminate future "headaches." Clay Pipe is chemical-proof and abrasion-proof. It can be depended on to do its job year after year without crumbling, corroding or rusting. Clay Wall Coping is not affected by

the elements, and adds lasting beauty to the tops of walls. Clay Flue Lining is acidproof and fireproof . . . does not deteriorate or crumble:

A Modern Planning Tip: The many advantages of Extra Strength Clay Pipe are making it an "every day" material with architects. It is the new pipe for extra-heavy live or dead loads. On many jobs it eliminates the need for cradling or casement.



CLAY PIPE

For information about Clay Pipe, write to:

NATIONAL CLAY PIPE MANUFACTURERS, INC.
111 W. Washington St., Chicago 2, Ill.
522 First National Bank Bldg., Atlanta 3, Ga.
1105 Huntington Bank Bldg., Columbus 15, Ohio
571 Chamber of Commerce Bldg.,
Los Angeles 15, Calif.

C-1146-4

Get to the best of thirst!



A ready, dependable supply of cool, clean drinking water is a "must" in today's modern buildings. To any class of occupant a refreshing drink increases efficiency, reduces fatigue, improves accuracy, boosts morale and guards health. Specify Oasis Electric Water Coolers and be sure of the finest quality — plus the extra beauty and durability of a stainless steel top... dial-type bubbler control... full-capacity cooling and storage... a fully recessed base for toe comfort, and many other plus features. Every OASIS detail reflects EBCO's 20 years of water-cooler leadership.

Write for proof

The **EBCO** MANUFACTURING COMPANY
401 WEST TOWN ST., COLUMBUS 8, OHIO

Lockwood

**IDENTIFIES QUALITY
IN BUILDERS' HARDWARE**

LOCKWOOD identifies its Builders' Hardware with this famous Trade Mark. You will find it on cylinder locks and keys, on mortise locks, on door closers . . . a symbol of enduring quality since 1882.

To the Architect the name LOCKWOOD also signifies a line of Builders' Hardware embracing all requirements, characterized by steady advancement in feature and design . . . and a company that never hesitates to give full and prompt co-operation.

We aim to keep it that way.

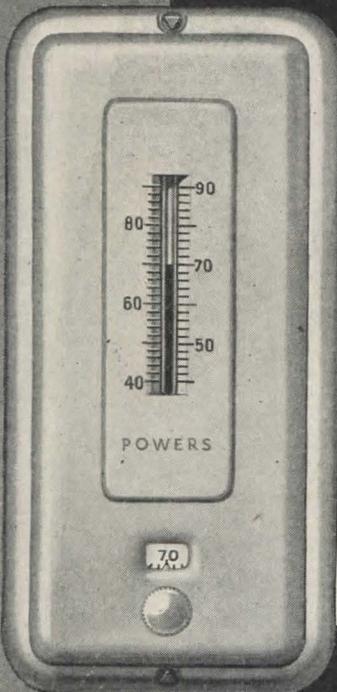
R-1

LOCKWOOD HARDWARE MFG. COMPANY

Division of Independent Lock Company

Fitchburg • Massachusetts

**GRADUAL
CONTROL**



has been an outstanding feature of Powers regulation since 1891. With this type of control, valves or dampers are opened or closed gradually, which results in exceedingly close regulation and the maximum of comfort obtainable with automatic control.

● THE POWERS REGULATOR CO., 2752 Greenview Avenue, CHICAGO. Offices in 47 Cities. See your phone book. 43

WRITE FOR
BULLETIN NO. 200

POWERS TEMPERATURE
and

Available Now!



**CHENEY
FLASHING**

3-Way Bond

16 OZ. COPPER

**CHENEY
FLASHING
REGLET**

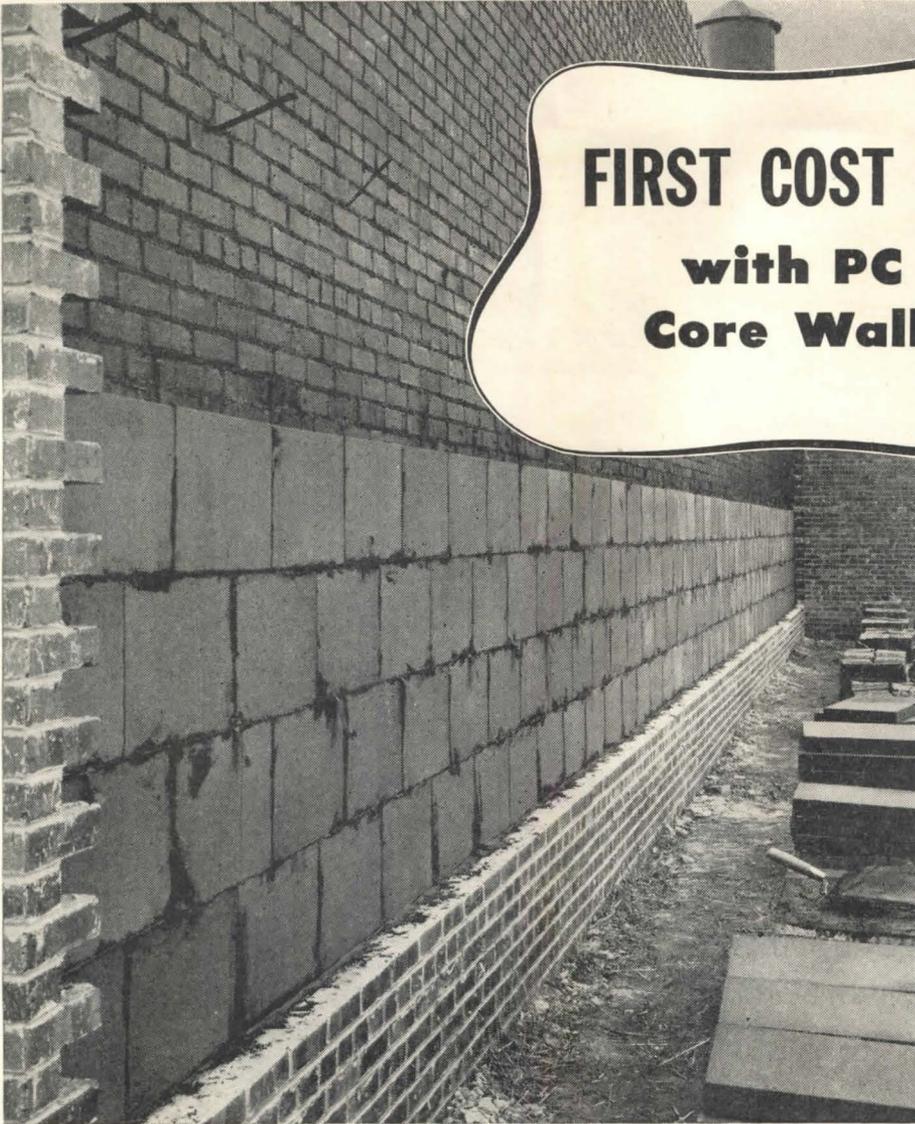
16 OZ. COPPER

CHENEY FLASHING is again being made by the original inventor who pioneered the art of thru-wall flashing eighteen years ago.

No thru-wall flashing can operate successfully unless it has the two very important features that are found in CHENEY FLASHING—proven weep-hole drainage and the three-way bond, vertical as well as longitudinal and lateral.

Remember, the inferior two-way flashings, crimped copper and membranes, have neither the vertical bond nor do they drain moisture from the wall fast enough. Furthermore, their first cost advantage has disappeared because today Cheney Flashing is no longer a specialty—it's a standard commodity.

WRITE FOR
DESCRIPTIVE FOLDER Dept. R



FIRST COST IS LAST COST

with PC Foamglas Core Wall Insulation



BECAUSE—The big light blocks consist of millions of minute air cells, enclosed in pure glass.

Because, being glass, PC Foamglas is waterproof, fireproof, verminproof, and impervious to most acids. It withstands high humidities, helps to maintain predetermined temperature levels, to minimize condensation.

Because repairs, maintenance, replacement—due to failure of the material—are virtually unknown. When you insulate with PC Foamglas, you insulate FOR GOOD.

Check other insulations carefully, when you are considering insulation for roofs, walls and floors, and compare them with PC Foamglas. That is how you can buy insulation on a “last cost” basis, with PC Foamglas. For full information, send for free copies of our booklets. Pittsburgh Corning Corporation, 632 Duquesne Way, Pittsburgh 22, Pa.

• Also Makers of PC Glass Blocks •

FOR ADDITIONAL INFORMATION SEE OUR INSERTS IN SWEET'S CATALOGS.



Pittsburgh Corning Corporation
Room 427, 632 Duquesne Way
Pittsburgh 22, Pa.

Please send me without obligation,
your free booklets on the use of PC
Foamglas insulation for:

Roofs..... Walls..... Floors.....

Name.....

Address.....

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

PC FOAMGLAS *Waterproof* *Fireproof* **INSULATION**

T. M. REG. U. S. PAT. OFF.

New Idea...

SIMPLIFIES CONSTRUCTION

SAVES SPACE



Levelator lowered becomes part of floor and can be trucked over. When loaded, levelator rises smoothly to required level.



Cross loading docks and ramps off your plans by specifying Rotary Levelators. Floors can be poured on grade instead of at railway car or truck bed height. You save space and give clients more efficient buildings at lower cost. Levelators lift loads quickly to trucks, freight cars or different building levels. Operated by Oil-draulic power. Installation simple. Write for Catalog RE-201.

ROTARY LIFT CO.
1007 Kentucky
Memphis 2, Tenn.



Rotary
LEVELATORS

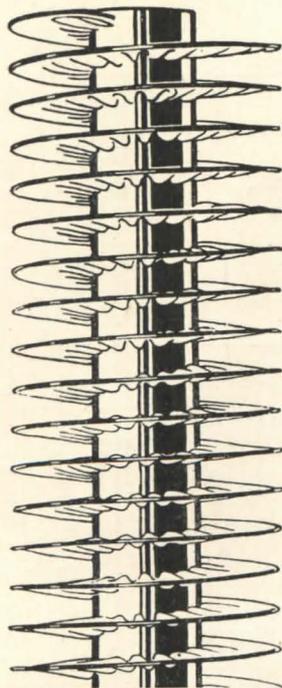
AEROFIN

FIN-TYPE COILS
For
Fast, Efficient
HEATING
and
COOLING

*Write for
Information*

AEROFIN
CORPORATION

S. Geddes St. Syracuse 4, N.Y.



ARCHITECTS!

specify

HAWS



DRINKING FOUNTAINS FOR AIRPORT INSTALLATION



A wide range of designs and models is offered the Architect for the selection of a drinking fountain to meet any particular need. Write TODAY for literature.

At the airport... for office, waiting room, hangar or outdoor installation, there is a HAWS Drinking Fountain that can easily solve your drinking water problems. Modern in design and dependable in operation... they are economical and provide complete drinking water sanitation. YOU can be assured of drinking water satisfaction and long, trouble-free service when you specify HAWS.

HAWS DRINKING FAUCET CO.
1808 HARMON STREET (Since 1909) BERKELEY 3, CALIFORNIA
Agents and Sales Representatives in All Principal Cities

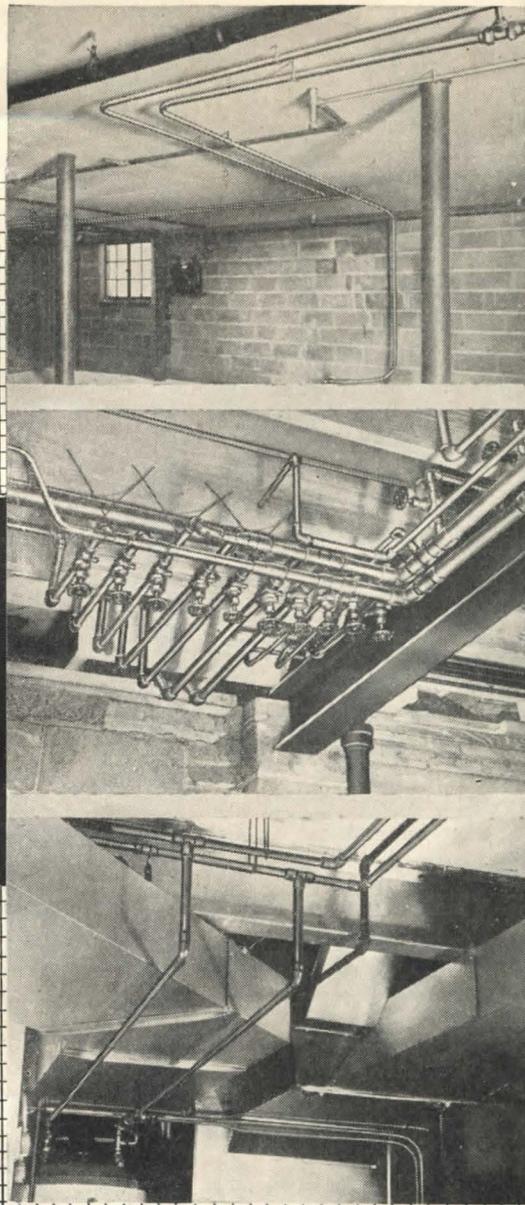
SPECIFY THIS CONVERTIBLE BEDROOM

Two small bedrooms... or one big one! You can specify both... with Modernfold, the accordion-type door. The illustration and floor plan show how easy it is to change rooms to suit the occasion. With Modernfold folded to the walls, the expansiveness of the entire area is enjoyed. Close the door — and strict privacy is assured in either small room. Write for full details on Modernfold — it's fabric-covered for beauty... metal-framed for rigidity and strength.

modernfold
DOORS

NEW CASTLE PRODUCTS
NEW CASTLE, INDIANA
Dealers in all principal cities in the United States and many foreign countries

**Any type of system
works better,
lasts longer with
REVERE COPPER**



REVERE Copper Water Tube, because of its smooth gun-barrel interior finish and its permanent immunity to rust, makes superior lines for heating and water service. Hot water can circulate freely at high velocity. Steam return lines stay corrosion-resistant. Hot and cold water flows unobstructed to the taps, remains rust-free and clear. Joints made with either soldered or compression fittings help further to minimize friction loss.

Revere Copper Water Tube is made for water supply, heating, air conditioning and other services in all types of buildings. The Revere name and the type, stamped on this tube at regular intervals, are your assurance of full wall thickness and the close gauge tolerances essential for tight sweated joints.

Remember, when you specify this product you are saving money for your clients, because *trouble always costs more than Revere Copper Water Tube.*

You can also specify such long-lived Revere materials as Red-Brass Pipe; Sheet Copper for tanks, ducts, pans and trays; Dryseal Copper Refrigeration Tube (dehydrated and sealed); Copper oil burner, heat control and capillary tubes . . . and, of course, Sheet Copper for roofing, flashing and other sheet metal construction.

Revere materials are handled by Revere Distributors in all parts of the country. The Revere Technical Advisory Service, Architectural, is always ready to serve you.

REVERE

COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801

230 Park Avenue, New York 17, New York

*Mills: Baltimore, Md.; Chicago, Ill.; Detroit, Mich.;
New Bedford, Mass.; Rome, N. Y.*

Sales Offices in Principal Cities, Distributors Everywhere.

STOP *that* WATER *with* FORMULA # 640

A Clear Liquid Waterproofing for Old or New Construction

PENETRATES deeply—one inch or more—is not a surface treatment. Brush, spray, or float on stone, cast stone, concrete, mortar, stucco, tile, brick, plaster, wood, wall board — any absorbent material.

WATERPROOFS, preserves, prevents dusting of floors, surface dirt washes away in rain.

FORMULA No. 640 is a balanced formula of seven different waxes and resins in a hydrocarbon solvent.

ACID-ALKALI proof — does not oxidize, unchanged by temperature.

PERFORMANCE — It is our opinion it will last as long as the concrete, mortar, stucco, etc., lasts.

OIL PAINT saponifies on cement unless sealed first with Formula No. 640.

APPLY to either side: **The pressure side, or opposite side** — it is equally effective.

HYDROSTATIC PRESSURE — A 20 foot head has been held by Formula No. 640.

CUTS WATERPROOFING COSTS because it applies three times as fast as paint, requires no special technique. No preparation — comes ready to apply. Eliminates necessity of furring. Concrete floors and walls need no membraning.

KEEPS IN ALL CLIMATES • **HARMLESS TO USE**
GOOD COVERAGE • **MODERATE PRICE**

WRITE OUR ENGINEERING DEPARTMENT for office test kit, technical data, or regarding any special problem.
J. Wilbur Haynes, Engineer

OTHER PRODUCTS: Formula No. 640 Toxic, combines waterproofing with termite and fungus protection; cement hardener; cement paint; floor mastic; roof coatings, etc.

HAYNES PRODUCTS CO.

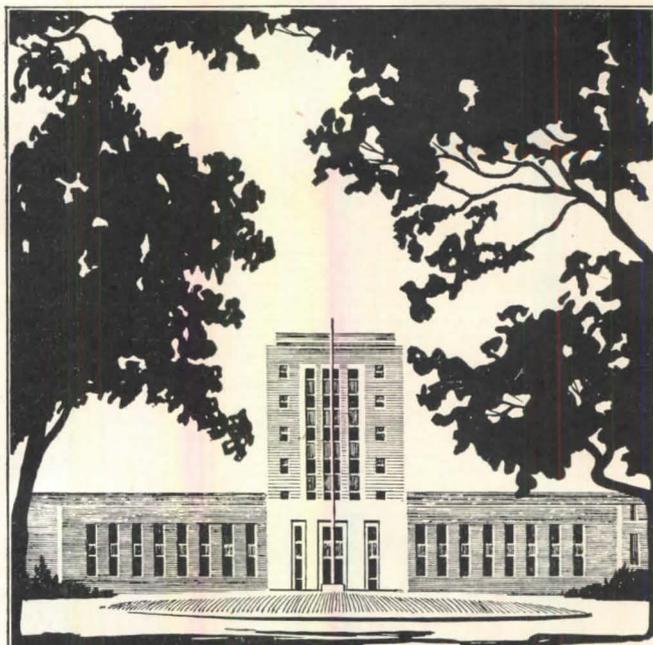
4007 FARNAM STREET • OMAHA 3, NEBRASKA



FOR THE PIPING YOU ARE PLANNING

SPECIFY
CRANE VALVES
AND
FITTINGS

CRANE...



Naval Hospital at Houston
ARCHITECTS—Messrs Finn, Cummings & Taylor
Every Hospital Should Have **CUTLER MAIL CHUTES**. This One Has Three

ESTABLISHED 1883

Cutler Mail Chute Co

ROCHESTER 7, N. Y.

Contemporary Shops in the United States

By EMRICH NICHOLSON

"Contemporary Shops in the United States" is a treasury of beautiful yet practical samples of store fronts and interiors, selected from among America's most progressive stores.

Including the supplement of 24 pages, over 400 illustrations, plans, etc., showing 113 shops, large and small, handling many lines of merchandise, located from coast to coast, designed by 70 leading designers and architects. 216 pages. 8½ by 11. \$10.00.

Book Department, Architectural Record
119 West 40th Street, New York 18, N. Y.

Please send _____ copy(s) at \$10 per copy.

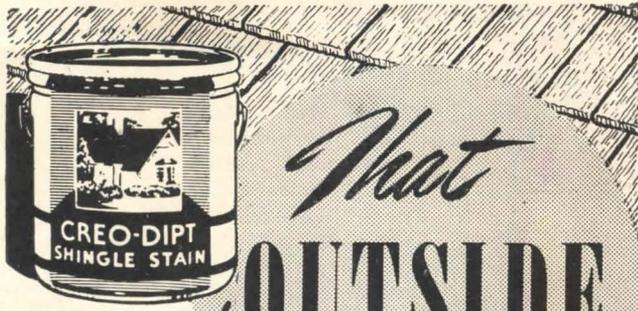
CONTEMPORARY SHOPS IN THE UNITED STATES

Money order or check for \$ _____ enclosed
(For N. Y. City Delivery add 2% Sales Tax — \$10.20 in all)

Name

Address

City Zone State



Neat
**OUTSIDE
LOOK**

*Beautify!
Preserve!
Protect!*

CREO-DIPT STAINS
FOR WOOD SHINGLE ROOFS AND SIDE WALLS

CREO-DIPT
COMPANY, INC.
Established 1911
NORTH TONAWANDA, N. Y.



**NOW YOU CAN "Hang the Sky"
TO HELP THEM SEE BETTER**

Over-ALL Lighting

by Wakefield

a new approach to office lighting
Specifically designed for eyesight protection, Wakefield's new Over-ALL lighting provides smooth, pleasing, diffused light over all... makes for fewer errors, less eyestrain, more cheerfulness. Based on lighting results where they count. Ask your Wakefield distributor or power company lighting engineer about Over-ALL lighting—or write for new catalog No. 46. The F. W. Wakefield Brass Co., Vermilion, Ohio.

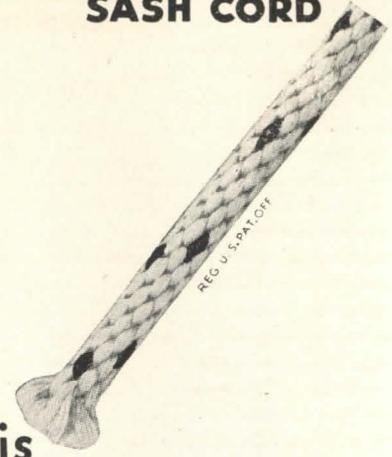
**It's brand new!
The STAR**
Combines both fluorescent and luminous indirect light. User-checked to give extra assurance of simple, sturdy construction, easy maintenance. Ideal for office, school or drafting room. Ask for details.



Wakefield

LIGHTING EQUIPMENT FOR OFFICE, SCHOOL AND DRAFTING ROOM

SPOT
REG. U.S. PAT. OFF.
SASH CORD



is
TOPS
in *Value*



SAMSON CORDAGE WORKS
BOSTON 10, MASS.

● ASK FOR THEM BY NAME

**EBERHARD
FABER**



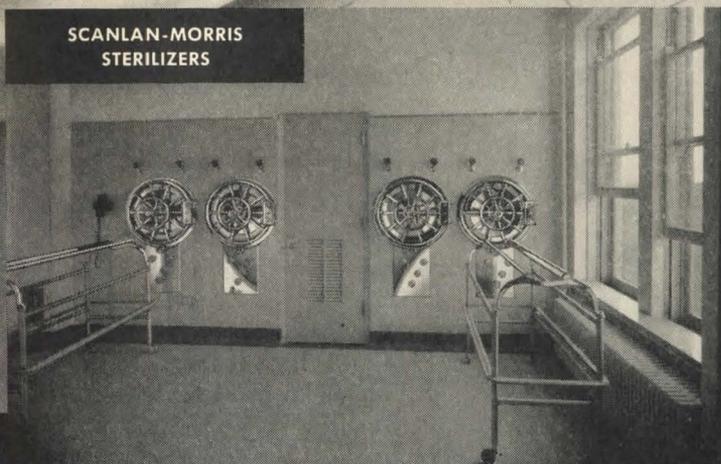
ERASERS



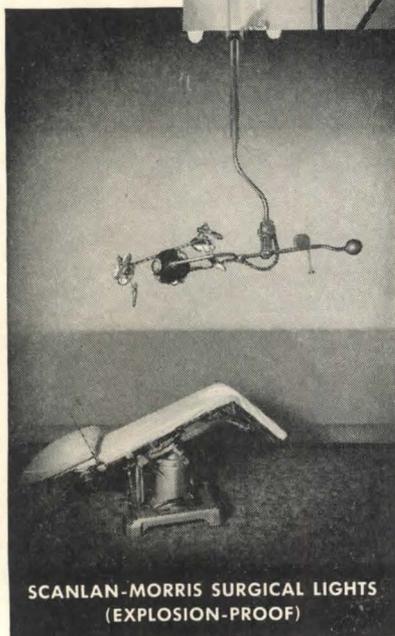
**FOR CLEAN
CORRECTIONS**

AUTHENTIC DATA and CONSTRUCTIVE ASSISTANCE for Hospital Architects

SCANLAN-MORRIS
STERILIZERS



SCANLAN-MORRIS
RECESSED CABINETS



SCANLAN-MORRIS SURGICAL LIGHTS
(EXPLOSION-PROOF)

● Many prominent hospitals, both large and small, are equipped with Scanlan-Morris sterilizers, surgical lights and recessed custom-built metal cabinets, as well as other Ohio Chemical equipment. Years of experience in manufacturing and equipping hospitals and clinics, and the direct personal contact with architects, superintendents, surgeons and engineers, qualify our Technical Sales Service Department to give valuable assistance and authentic guidance in

the planning of hospital facilities. Architects are invited to write for Scanlan-Morris illustrated catalogs and planning manuals on: (1) Surgical Sterilizers and Bedpan Apparatus; (2) Operay Surgical Lights, and (3) Recessed Custom-Built Metal Cabinets. Our Technical Sales Service Department will be glad to supply suggested layouts and recommendations for the most efficient and economical installations to meet requirements.

THE OHIO CHEMICAL & MFG. COMPANY
1400 East Washington Ave., Madison 3, Wisconsin
Represented in Canada by Oxygen Company of Canada
Limited, and Internationally by Airco Export Corporation,
33 West 42nd Street, New York

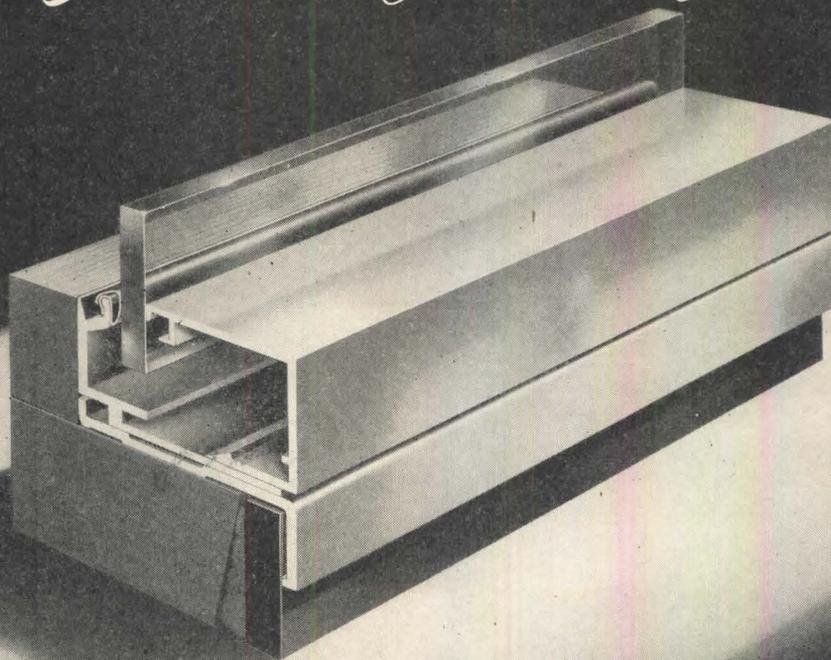
Ohio Chemical

MANUFACTURERS OF MEDICAL APPARATUS,
GASES AND SUPPLIES FOR THE PROFESSION,
HOSPITALS AND RESEARCH LABORATORIES

BRANCH OFFICES IN PRINCIPAL CITIES



Designed by Request



a NEW SASH in Pittco De Luxe Store Front Metal

This new sash (Pittco De Luxe 12C) was designed to meet demands for a plain, rectangular sash to harmonize with certain modern store front designs. It is styled to blend with and complement the many mouldings in the Pittco De Luxe line. It is finished with the same satin-smooth richness which has made De Luxe so pleasing to architects and owners alike. And its extruded method of manufacture assures rugged strength and a clear, sharp profile. Pittco De Luxe offers a wide variety of impressive combinations for top quality installations.

Where economy is of prime importance, Premier, the other Pittco line of store front metal, is the ideal choice. It embodies the same perfection of finish as Pittco De Luxe, but it is lighter in weight and provides a shallower reveal for show windows. It can be set more quickly and easily than any other metal construction.

PITTCO
STORE FRONT METAL



"PITTSBURGH" stands for Quality Glass and Paint

PITTSBURGH PLATE GLASS COMPANY