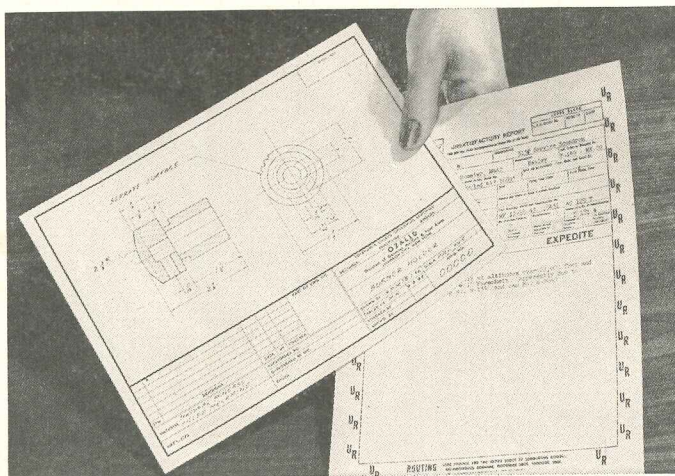


If you copy ANYTHING typed, drawn or written, you need OZALID!

It's Simple . . .

Take any letter, sales report, form, drawing . . . anything typed, drawn or written. Put it next to a sheet of Ozalid material (paper, plastic, cloth, black, blue, red, sepia) and feed it into an Ozalid machine.



It's Quick . . .

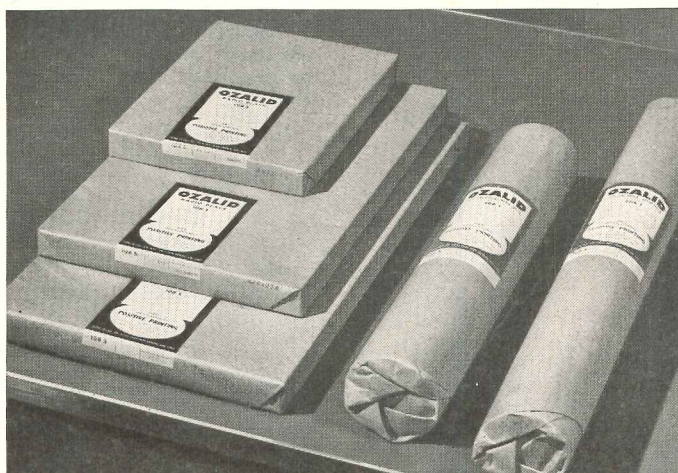
In as little as 25 seconds, you (anyone can operate Ozalid) will have a *dry, positive, exact* duplicate of your original material! Ozalid copies can be used as masters to obtain more copies! No proofreading . . . no mistakes . . . no delay!



It's OZALID!

You can make Ozalid copies any length, and almost any width. You can make them directly from translucent material, and from opaque originals with an intermediate step.

Write today on your letterhead for **FREE** booklet which tells the full Ozalid story, shows all the Ozalid prints, or consult your classified directory for local distributor.



Don't copy . . .



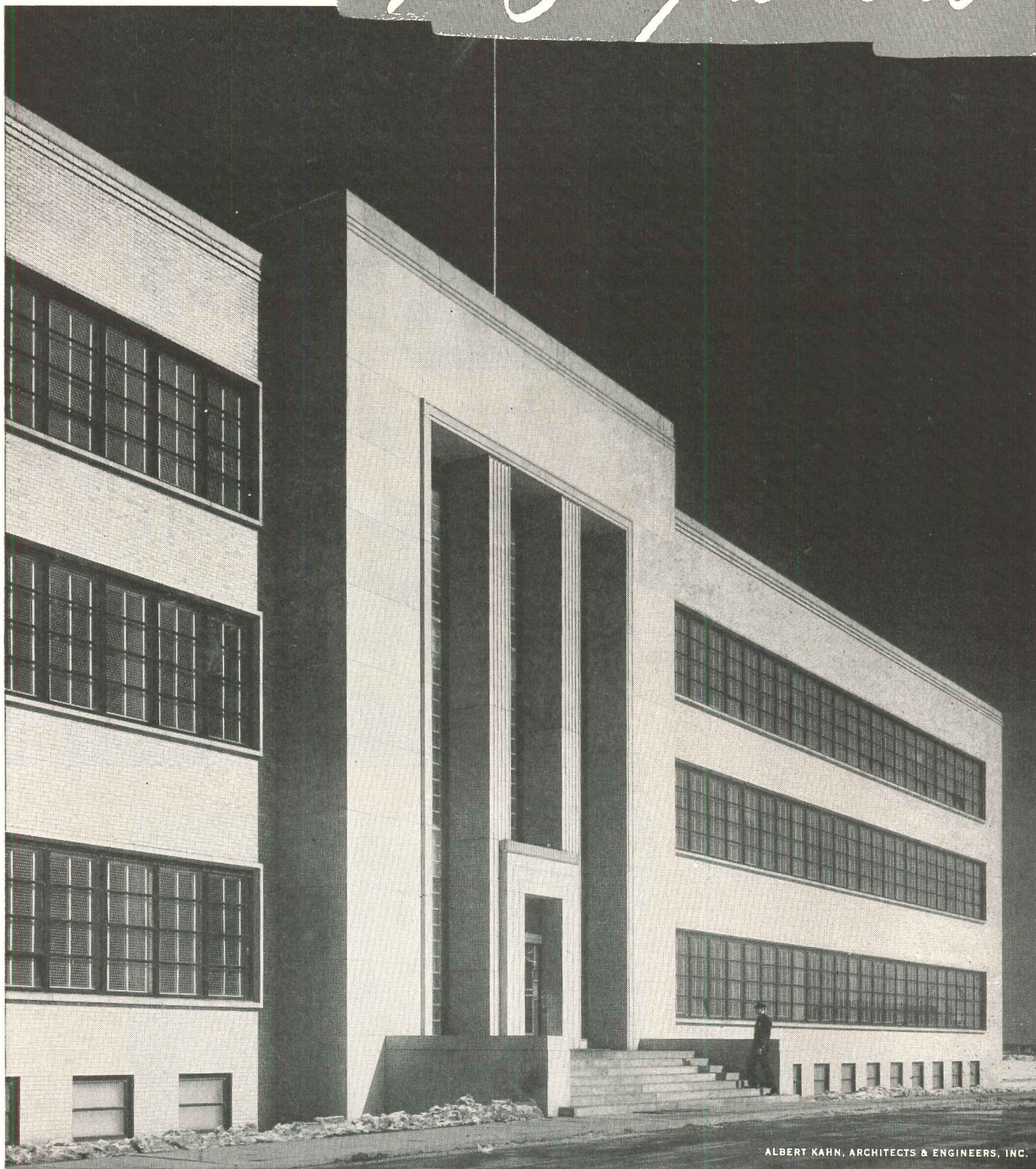
use **OZALID!**



Dept. 25, Johnson City, N. Y.

A Division of General Aniline & Film Corporation. "From Research to Reality"

To Complement



ALBERT KAHN, ARCHITECTS & ENGINEERS, INC.

In construction products **CECO ENGINEERING**

a Monument...

CECO Architectural Projected Windows

In keeping with architectural design, monumental buildings need windows that complement their structural magnificence . . . windows designed architecturally with an eye to good appearance. Ceco's Architectural Projected Window is just such a window. From every angle, here is outstanding beauty . . . complete utility. In Ceco's Architectural Projected Window, the sections are designed for maximum strength—the arrangement of glass lights makes for maximum beauty. Consider these features:

1. The frame section is $1\frac{3}{8}$ " deep. The ventilator section is $1\frac{1}{2}$ " deep. The extra $\frac{1}{8}$ " added to the ventilator depth provides the strength so necessary for proper window performance.
2. The frame and ventilators are welded at all four corners.
3. Standard hardware is solid bronze.
4. Easy to screen . . . a great convenience in public buildings, schools, and commercial and industrial buildings.

Yes, from every angle, here's a handsome window with every utility. So, specify Ceco Architectural Projected Windows, for no matter what the architectural design, Ceco has the right window for you.

CECO STEEL PRODUCTS CORPORATION

General Offices: 5601 West 26th Street, Chicago 50, Illinois
Offices, warehouses and fabricating plants in principal cities

**CECO
STEEL**®

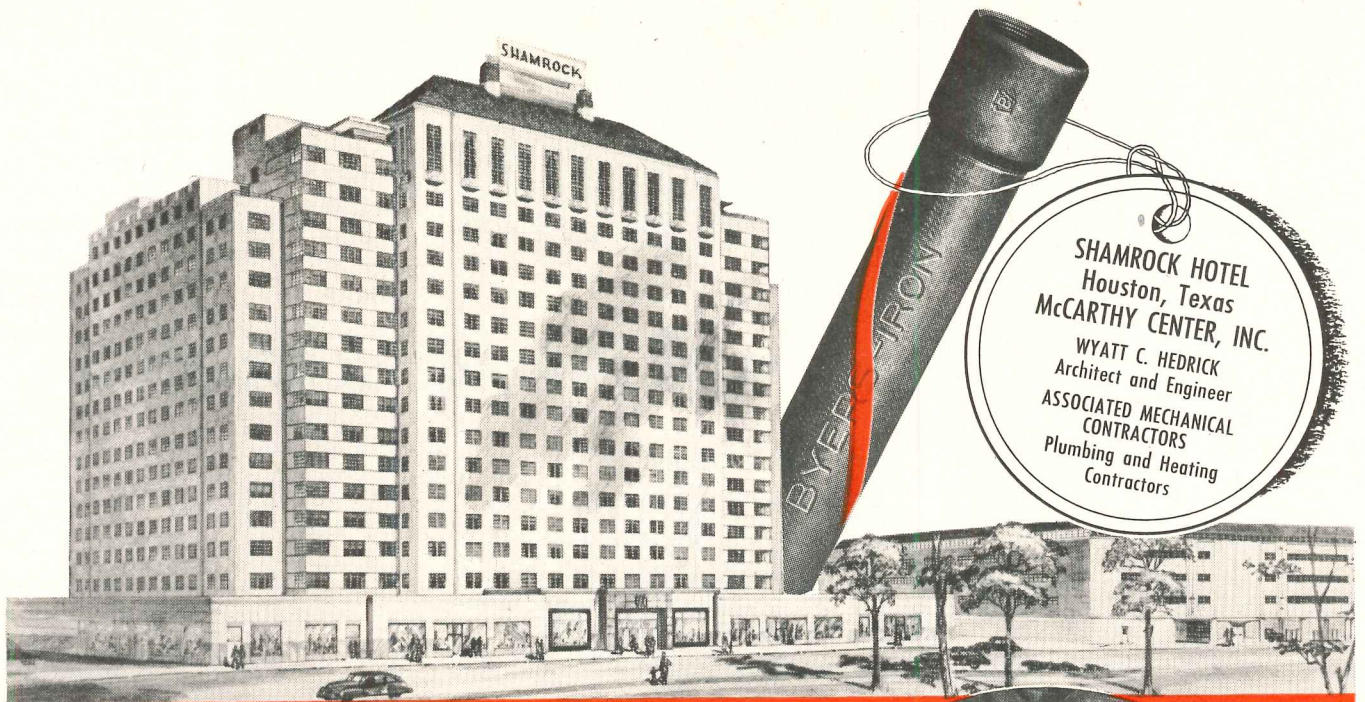
makes the big difference



Ceco Architectural Windows are constructed of hot rolled sections, bonderized and especially designed to provide rigidity and good weathering performance. Suitable for public, commercial and industrial buildings . . . designed to provide weather protection when open . . . adaptable to screening with Ceco standard screens, since each ventilating sash projects on only one side of window.

Partial List of Ceco Products

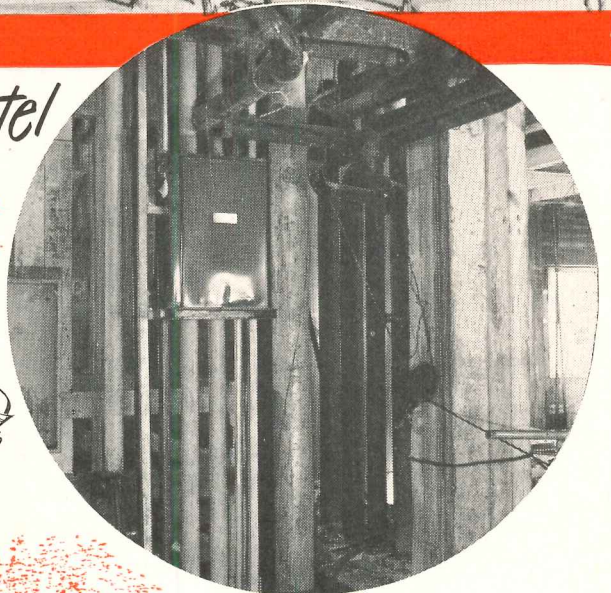
METAL RESIDENCE CASEMENTS • INDUSTRIAL WINDOWS AND DOORS • METAL FRAME SCREENS • ALUMINUM FRAME STORM WINDOWS • ALUMINUM COMBINATION STORM WINDOW AND SCREEN UNITS • METAL LATH AND ACCESSORIES • STEELFORMS • REINFORCING BARS • STEEL JOISTS AND ROOF DECK • HIGHWAY PRODUCTS



SHAMROCK HOTEL
Houston, Texas
McCARTHY CENTER, INC.
WYATT C. HEDRICK
Architect and Engineer
ASSOCIATED MECHANICAL
CONTRACTORS
Plumbing and Heating
Contractors

In the southwest's greatest hotel

BYERS
WROUGHT IRON PIPE
in eleven services



The Texas reputation for doing everything in a big way is upheld by the new \$20,000,000 "McCarthy Center" project, of which the Shamrock Hotel opening March 17 is a part. The fact that the job is being done in the *best* way is suggested by the specifications, which include wrought iron in eleven different services. Drainage lines, downspouts, fire lines, condenser water lines, condensate returns, exhaust lines, hot and cold water lines over 3 inches, chilled water lines over 3 inches, air lines, and swimming pool piping, are Byers Wrought Iron pipe, in sizes from 3/8-inch to 20-inch.

Every one of these services carries a corrosive threat—and every one represents a time-tried wrought iron application. Surveys of old buildings, made in a number of

areas, have shown wrought iron pipe still serving in heating and plumbing lines after periods of 40 to 50 years. The same surveys revealed many cases where pipe made of low-first-cost materials in newer buildings had failed in a fraction of that time.

Wrought iron's unusual serviceability comes from its unusual character. Tiny threads of glass-like silicate slag, threaded through the body of high-purity iron, halt and "detour" corrosive attack. They

also anchor the initial protective film, which shields the underlying metal.

Our bulletin, "Wrought Iron for Piping Systems" gives a digest of the experience of designers with wrought iron in building services. Ask for a complimentary copy.

A. M. Byers Co., Pittsburgh, Pa. Established 1864. Boston, New York, Philadelphia, Washington, Atlanta, Chicago, St. Louis, Houston, Salt Lake City, Seattle, San Francisco. Export Division: New York, 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 1949 by F. W. DODGE CORPORATION, with all rights reserved • Publishing Director, 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, Robert E. Fischer,

Florence A. van Wyck; Contributing Editor, Arthur McK. Stires; Western Editor, Elisabeth Kendall Thompson; Special Editorial Representative, Western Section, William C. Rodd; Associate in South America, Edmund J. Whiting, A.I.A.; Editorial Assistants, Jeanne Davern, Dorothy Jackson • ART DEPARTMENT: Myron S. Hall, 3rd, Director; Frances Torbert, Assistant; Sigman-Ward, Drafting • CONSULTANTS: Industry Relations Consultant, Thomas S. Holden; Statistical Consultant, Clyde Shute; Building Economics Consultant, Norbert Brown; Field Research Consultant, Clifford Dannels, Jr.

REVELATION BY COMPETITION 85
An Editorial . . . by Kenneth K. Stowell

HIDDEN TALENT COMPETITION 86
Report of the Jury

ARCHITECT-ENGINEER OFFICES, PEORIA, ILL. 97
Office Building of J. Fletcher Lankton—John N. Ziegele and Associates, Architects and Engineers

SO YOU'RE GOING TO MEXICO. 100
By Susanne Wasson-Tucker

"DESIGN FOR LIVING—WITH KIDS" 106
Residence of Mr. and Mrs. George P. Turner, La Canada, Calif. George P. Turner, Designer

BUILDING TYPES STUDY NO. 147 . . . SCHOOLS 110

SCHOOL PLANNING AND SCHOOL COSTS 110

A COST STUDY OF SCHOOL PLAN TYPES. 111
By Alonzo J. Harriman

PROJECTS

Memorial High School and Gymnasium, Calais, Maine. Alonzo J. Harriman, Inc., Architects-Engineers 116

Milan School, Mich. Walter T. Anicka, Architect 119

Shoreview School, San Mateo, Calif. By Ernest J. Kump & Mark Falk 120

Group of Schools for Edmonds, Wash. William Arild Johnson & Associates, Architects 126

Briarcliff and Dover Schools, Seattle. George Wellington Stoddard and Associates, Architects and Engineers 128

First Unit for Blackwell, Okla. Caudill, Rowland, Scott, Architects 130

ARCHITECTURAL ENGINEERING . . . Technical News and Research . . . 131

WATER REPELLENT PRESERVATIVES FOR WOOD 131
By F. L. Browne

SECOND THOUGHTS ON RADIANT HEATING 133
By W. P. Chapman and R. E. Fischer

TEST HOUSE HEATED ONLY BY SOLAR HEAT 136
Dr. Maria Telkes Residence, Boston area. Eleanor Raymond, Architect

TIME-SAVER STANDARDS 138
Modular Design Data for Wood Windows

PRODUCTS . . . for Better Building 139

MANUFACTURERS' LITERATURE 140

THE RECORD REPORTS . . . News from the Field 7

NEWS FROM CANADA . . . By John Caulfield Smith 10

CONSTRUCTION COST INDEXES 26

REQUIRED READING 28

EMPLOYMENT OPPORTUNITIES 208

INDEX TO ADVERTISEMENTS. 238

COVER: Quadrangle, Uxmal, Yucatan; Hedrich photo

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, N. Y. Western Editorial Office, 2813 Channing Way, Berkeley, Calif. 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 Circulation and Associated Business Papers, Inc. Architectural Record is indexed in Reader's Guide, Art Index, Industrial Arts Index and Engineering 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.

Fine Flush Valves for Fine Buildings



For complete
information on
Watrous Flush Valves
see our Catalog
in Sweet's.

JEFFERSON HOSPITAL

Birmingham, Alabama, one of the many
fine buildings equipped with Watrous
Flush Valves.

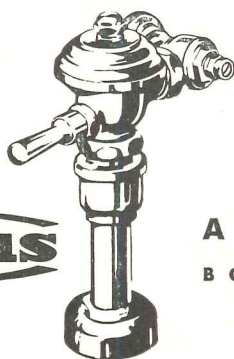
CHARLES H. MCCAULEY
Architect

THE PATE COMPANY
Plumbing Contractors

ADJUSTABLE FLUSH VALVES
BOTH DIAPHRAGM AND PISTON TYPES

THE IMPERIAL BRASS MANUFACTURING COMPANY
1240 W. Harrison Street, Chicago 7, Illinois

Watrous



THE RECORD REPORTS

Party Differences Fade as Congress Tackles Housing Measures • BRAB Executive Committee Announced • Truman Cuts VA Hospital Program

True to predictions, the Administration lost no time in applying the pressure to its own anti-inflation and housing programs once Congress settled down to work in the 81st session. Inauguration seemed to mark the starting date. A week after President Truman took the oath of office Congress had before it half a dozen major housing bills and both of the Banking Committees had approved a seven-months extension of voluntary allocations of scarce materials beyond March 1.

Democratic leaders announced they would try to get through Congress stand-by powers for the President to impose compulsory price, wage and allocation controls — part of the much-heralded anti-inflation pattern. All emphasis seemed to be on stepping up the legislative tempo, and bills having to do with rent controls, housing, export controls and allocations all were caught in this sudden draft of pressure.

(About the same time came the announcement that the Administration was readying a bill to create a Columbia River Authority, seen as further evidence of an all-embracing effort to revamp and “strengthen” laws having to do with construction matters.)

Party Cleavages Closing Up

Observers watched the party cleavages slip away in the first significant test of power in the House; 49 Republicans had voted with the Democrats to liberalize the House Rules Committee, the body that bottled up the housing bill in the 80th Congress. With that obstacle removed, the 81st Congress is generally expected to enact a comprehensive measure aimed at freer government financing guarantees and including the construction of public housing units. Builders favor the former provision, oppose the latter.

Further evidencing an area of inter-party agreement on the broad housing issues, Senator Robert Taft's followers and Administration supporters ignored differences long enough to agree on the fundamental methods of attacking the housing shortage legislatively.

Housing Bills Much Alike

When the bills of both parties had been unmasked, they were found to be remarkably alike in principle, differing essentially in the following points: the number of public housing units to be constructed, amount of capital grant outlays, and tax exemption for local bonds. Other points of difference noted: rate of construction of public housing units, length of program, and amortization period. The Administration and Republican bills approached the problem of home shortages along parallel lines in respect to slum clearance, farm housing, research and changes in Federal Housing Administration operations.

Summed up, both major parties jumped in to foster comprehensive housing measures, the Republicans making a somewhat softer approach toward the same end.

Banking Committees of both houses of Congress worked over the rent and housing proposal concurrently. A Senate Banking Subcommittee, under Sparkman of Alabama, started hearings on the housing bills almost immediately — early in February — while the House

Committee rushed its consideration of extending rent controls, in strengthened form, for two years beyond March 31. The agreement was for each of the committees to take up the other subject when it had finished with its initial hearing. This was arranged in an effort to get the bills on the floor as soon as possible.

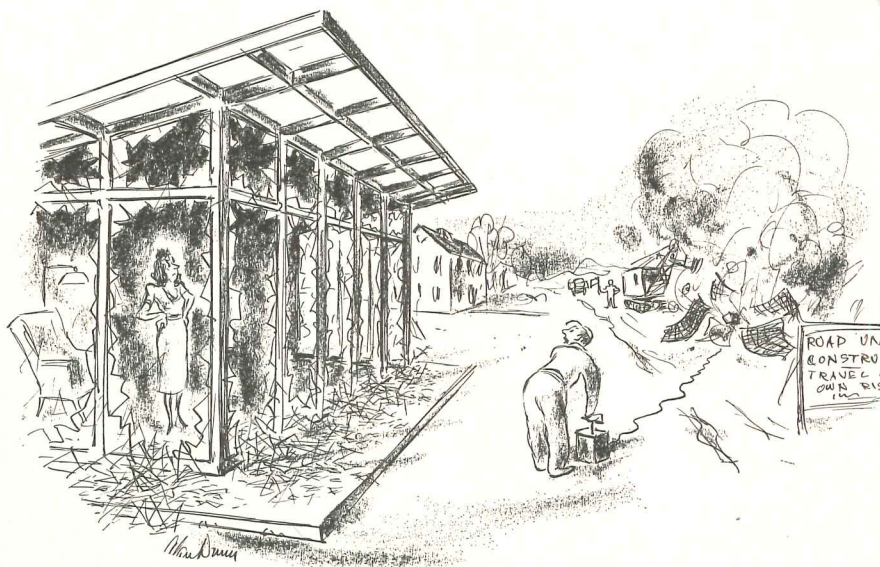
Throughout the legislation proposed runs an emphasis on more housing at lower sales and rental figures. Stressing this phase particularly is the Administration's own suggestion for amending the National Housing Act. This was introduced by the Banking Committee chairman, Senator Maybank of South Carolina, and Rep. Spence of Kentucky, clearly marking it for committee support. Dealing with the mortgage insurance programs and the secondary market program, it would, in brief:

1. Provide direct loans to veterans' housing cooperatives if private lending institutions failed to do the job. This is an entirely new proposal.

2. Exempt cooperatives, rental housing projects and low-cost homes built for sale from the present 50 per cent limitation on the amount of loans which the Federal National Mortgage Association can buy from any one mortgagee. This would have the effect of permitting the federal government to purchase without limit mortgages on low-priced housing.

3. Continue government insurance up to 90 per cent of 40-year, 4 per cent interest loans on nonprofit cooperative

(Continued on page 10)



“Sorry, lady—”

—Drawn for the RECORD by Alan Dunn

The use of Asphalt Tile in Modern Multiple Housing Projects

By Edwin H. Mittelbush, Architect

The design of a rental housing project is secondary only to the financing pattern. The selection of each and every detail of construction, and the selection of each and every material is influenced thereby. The physical security for long term loans, by that I mean 27 to 32 year loans, must fulfill certain fundamental requisites and standards, some of which are dictated to us by the lenders, others by the myriad of building ordinance, and still others imposed upon us by the future tenants themselves.

We arrive, eventually then, at an area or range within which we must design. It is necessary, in order to obtain a fair return, that both construction, operating, and maintenance costs be consistent with the rental income expectancy. The fullest possible advantage must be taken of

all the factors involved.

In the 366 unit rental project now under construction in LaGrange Park, there is about 360,000 square feet of floor area or surface (not including basement laundry, storage and boiler room area).

These floors consist of a 2½" concrete slab poured in place over light weight steel beams. The choice of a floor covering for these concrete floors received our utmost attention for many months.

We are faced primarily with a maintenance problem. In addition to that, we were concerned with the original cost of installation or first cost.

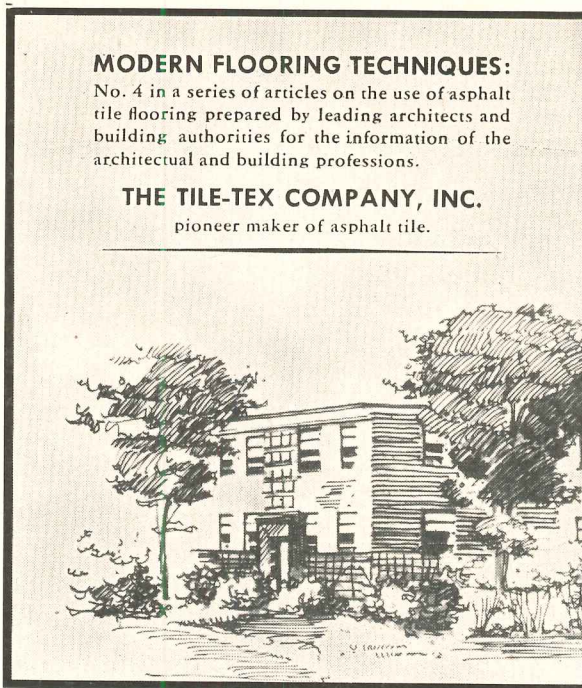
In this project there are 32 garden type apartments, in which the floors are about 2'-0" below grade. A floor

MODERN FLOORING TECHNIQUES:

No. 4 in a series of articles on the use of asphalt tile flooring prepared by leading architects and building authorities for the information of the architectural and building professions.

THE TILE-TEX COMPANY, INC.

pioneer maker of asphalt tile.



material, such as asphalt tile, which resists moisture is required in these units.

Then last but not least in importance was the matter of floor color and its effect on the apartment color scheme. With these four basic and fundamental requirements in mind, we selected asphalt tile as the material which would best fulfill and satisfy every one of these standards and many more.

MAINTENANCE

Plain soap and water mopping clean it easily. The dirt is never absorbed into the material itself but stays on the surface where it is easy to remove. An occasional waxing will bring out the rich colors although this is not necessary. We chose Greaseproof Asphalt Tile for the ground floor

Reading from left to right, Charles E. Joern, President of Wm. Joern & Sons, Builders; Edwin H. Mittelbush, Architect; and Elmer M. Larson, General Supt. for Wm. Joern & Sons... one of many discussions concerning "The Homestead."



This is a typical unit in "The Homestead," La Grange, Illinois. The development consists of 19 of these two and three story buildings containing four and five room apartments.



kitchens because it is grease proof, very seldom stains, and resists the passage of moisture. Replacement of tile is comparatively simple if unforeseen damage should occur in certain areas.

LOW FIRST COST

Asphalt Tile flooring is one of the lowest cost floor coverings available. The preparation of the surface for the concrete sub-floor is a very simple operation consisting only of troweling the concrete slabs to a smooth level surface in preparation for the mastic adhesive. The individual tiles can then be rapidly set in place, cleaned and ready for use immediately thereafter. Apartments are ready for occupancy in a matter of a few hours.

COLOR

We have selected a marbled deep

brown color for the living rooms and bedrooms, and a very light gray for the kitchen floors to harmonize with the cabinets and counter-tops. These floors will blend in with the driftwood finish of the mill-work and the aluminum sash. These color schemes, being somewhat neutral, will give the tenants the maximum utility as well as the least problem insofar as blending in with their present or new furniture, rugs, draperies, etc., is concerned. These are very real considerations which definitely affect rentability and in our experience we have found that asphalt tile has received the general acclaim and acceptance required of floor coverings in this type of dwelling unit.

LONG WEAR AND LONG LIFE

When the matter of long life was

given our attention, we examined asphalt tile floors that had been subjected to hard wear and traffic in stores and corridors for at least fifteen years. Upon close examination we came to the conclusion that this type of floor was practically "wear-proof."

RESILIENCY AND COMFORT

Figures indicate that the average housewife walks 25 miles per year making beds. This means that unless the floor is extremely resilient and comfortable, she wouldn't have enough energy left to complete the remaining household duties required of her. Asphalt tile is unusually resilient and less fatiguing than other type of floors. It is quiet as well, and provides a certain amount of sound-proofing, which is an important consideration in housing projects.

Tile-Tex Asphalt Tile floors have been in use for more than twenty years. This quality asphalt tile has convincingly demonstrated its ability to perform satisfactorily in many different types of applications where wear is heavy and budgets are limited. For more information, or reprints of this article, write The Tile-Tex Company, Inc. (subsidiary of The Flintkote Company), Chicago Heights, Illinois. Sales offices in Chicago, New York, Los Angeles, New Orleans, Toronto and Montreal.*

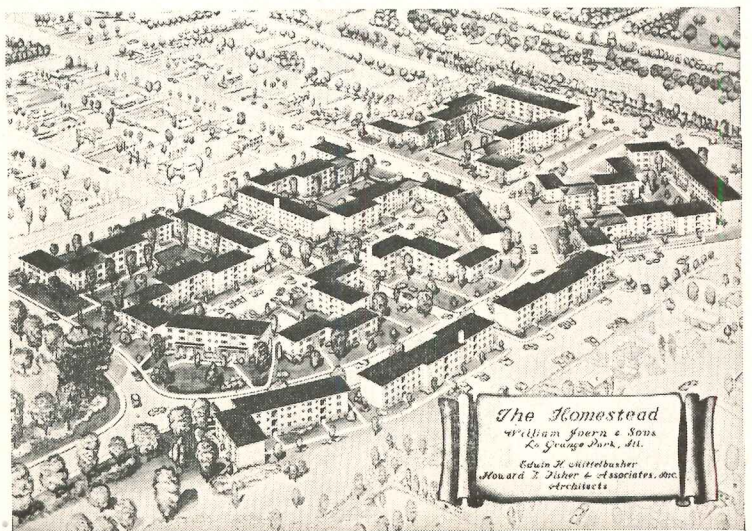
The TILE-TEX Company, Inc.

CHICAGO HEIGHTS, ILLINOIS

*REGISTERED TRADEMARK OF THE TILE-TEX COMPANY, INC.



This "aerial rendering" shows the entire "Homestead" project. There are 17 acres, 19 buildings, 366 four and five room apartments and 100 garages. Notice the careful planning of streets to minimize traffic hazards and provide "off-the-street" parking.



THE RECORD REPORTS

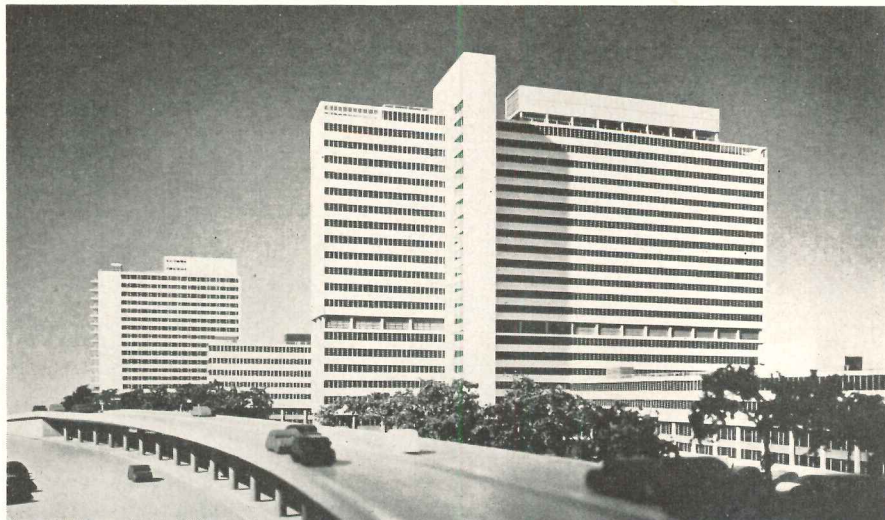
(Continued from page 7)

ownership housing projects but increase from 95 per cent to 100 per cent the insurance of such loans where at least 80 per cent of the members of the co-operative concerned are veterans of World War II. (Maximum amount of the mortgage in the case of the 90 per cent loan would remain at \$8100 per family dwelling, or \$1800 per room. In the case of the 100 per cent loan, maximum amount of the mortgage would be \$9000 per family dwelling or \$2000 per room. In all these instances the insurance would be based on current replacement costs.

4. Increase the total insurance authorization under Title II of the present Act by \$1 billion. Use of the fund would require approval of the President.

It is obvious that this piece of legislation, drawn under the guidance of Raymond M. Foley, Housing and Home Finance Agency administrator, would greatly liberalize the use of government credit for financing and the construction of lower cost homes.

(Continued on page 12)



Architects' model of the University section of New York University-Bellevue Medical Center. The 20-story University Hospital is at right, Hall of Residence at extreme left

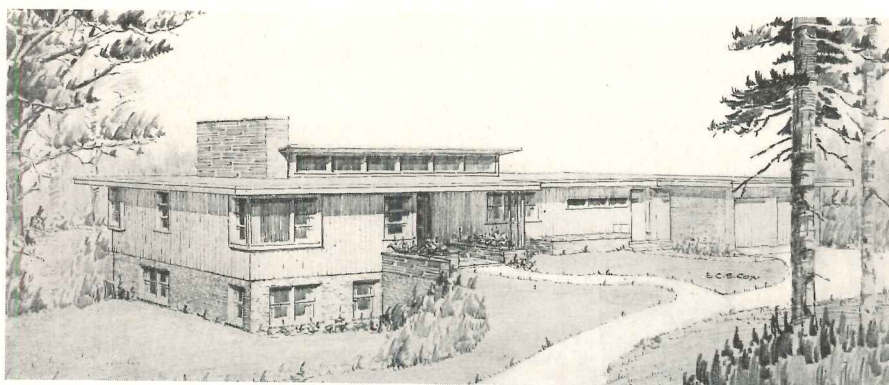
CONSTRUCTION OF MEDICAL CENTER TO START SOON

Details of new definitive architectural plans for the new University section of the New York University-Bellevue Medical Center, announced in mid-January, indicate a total cost of about \$32,744,000 for the University's share of the Center. The plans now

call for facilities for two medical schools, a 600-bed University Hospital designed primarily to serve patients in the middle-income brackets, and related clinics. Architects for the project are Skidmore, Owings & Merrill of New York. Construction is expected to begin this spring.

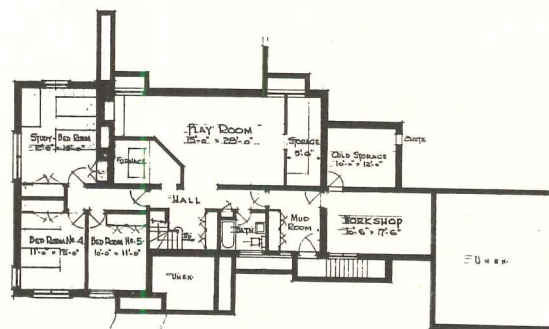
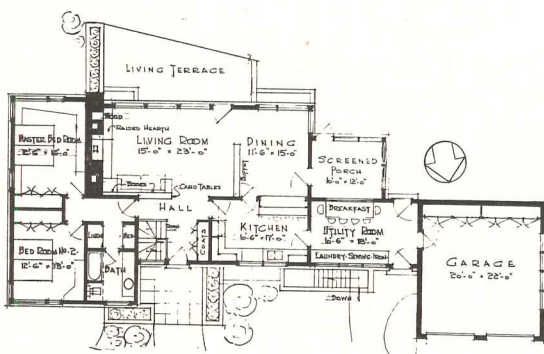
NEWS FROM CANADA

By John Caulfield Smith

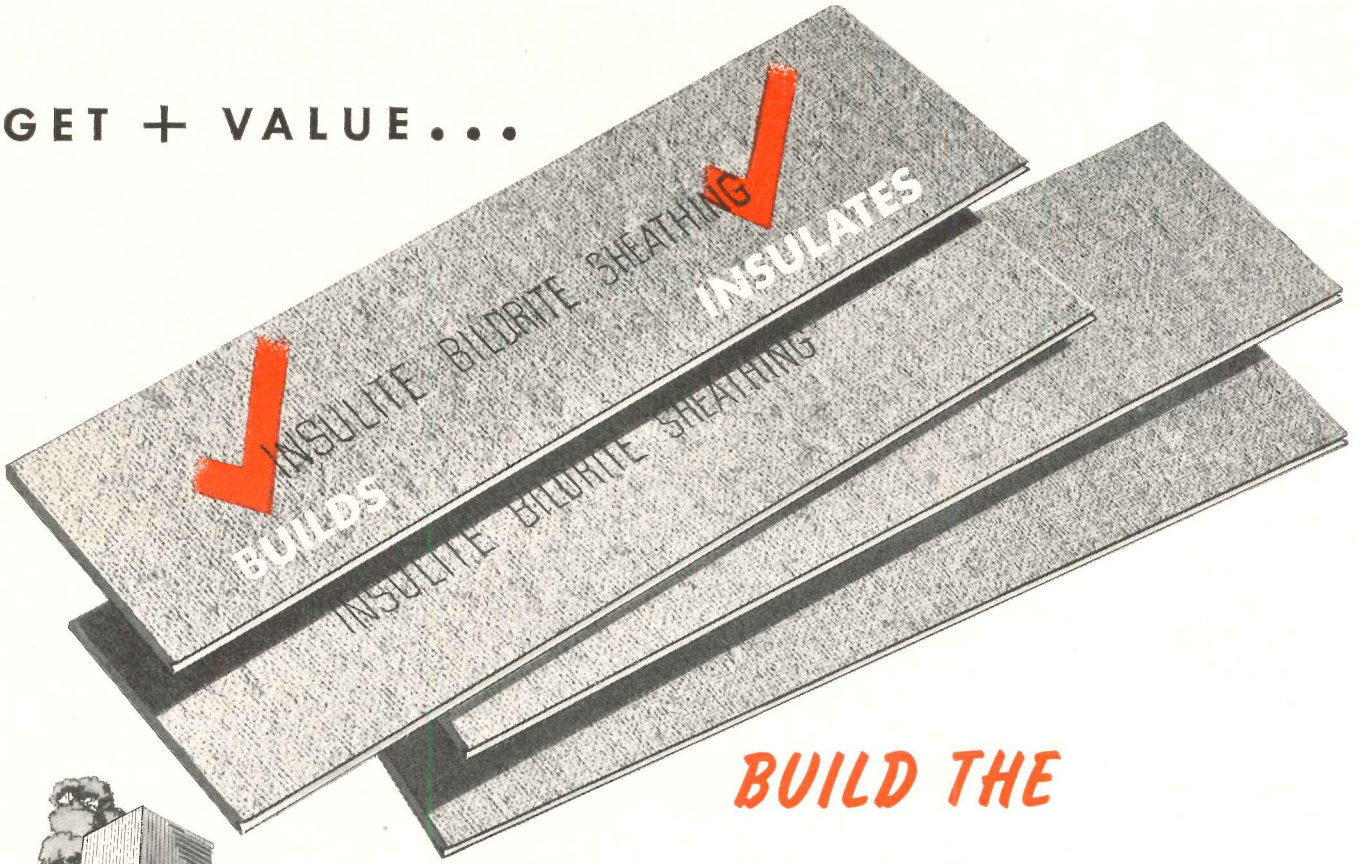


Stone and frame house (plans below) now under construction in Port Credit, Ont., 10 miles from Toronto, for Mr. and Mrs. T. C. Hewson. Designed by E. C. S. Cox, Architect, it faces south, overlooks a golf course, and combines one and two story height

(News continued on page 146)



GET + VALUE...



BUILD THE

Double Duty WAY

WITH

INSULITE

That's an easy way of giving your clients extra value without adding extra cost. Insulite *builds* ... and *insulates* at the same time.

Panels are interlocking — fit snugly to provide wind-proof, weather-tight sheathing. Tough and strong. Provides greater bracing strength than wood sheathing horizontally applied.

All this ... PLUS *insulating* value!

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



Double Duty

INSULITE

The GENUINE

INSULITE DIVISION PAPER COMPANY MINNEAPOLIS 2, MINNESOTA



MINNESOTA & ONTARIO COMPANY

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

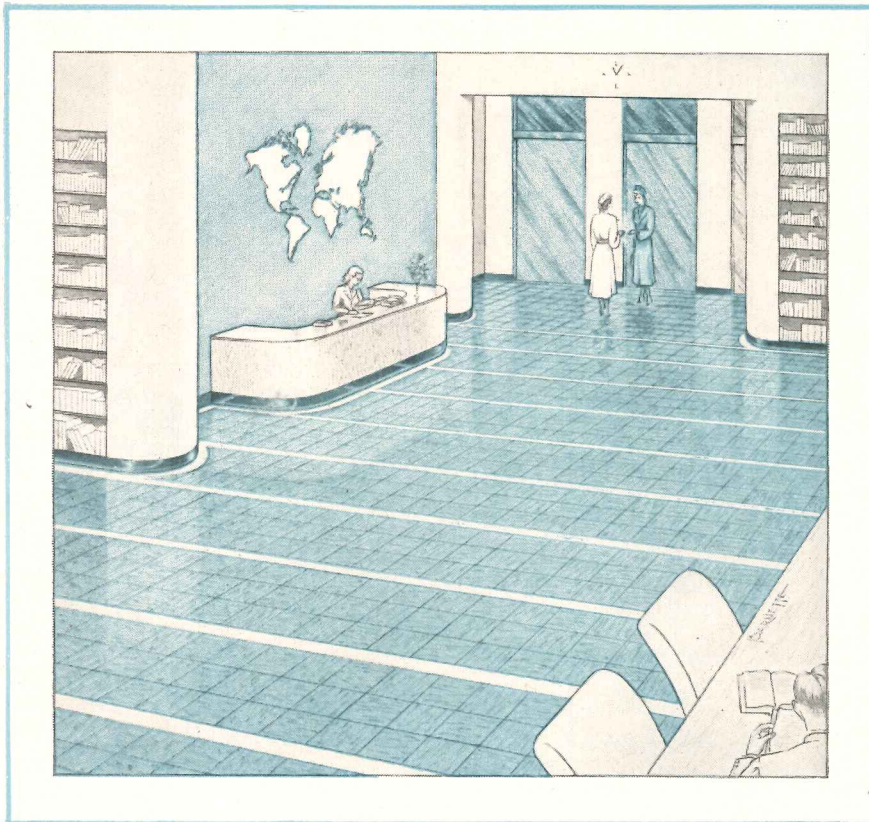


1-9



“ Sh-h-h!
I'm
designing
a Library! ”

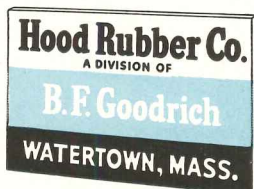
“and I need quiet . . . both here and in the library. That's why I'm specifying Hood Rubber Tile Flooring. Its resiliency assures quiet and comfort. The harmonizing colors enhance my decorating scheme, and they'll stay *fresh* and *bright* for a lifetime!”



For long life, permanent resilience, economy, and fine design, specify Hood Rubber Tile Flooring. Hood's exclusive *Super-Density* eliminates dirt-catching pores making maintenance easier. Case Histories of Hood installations show no appreciable wear

even under the most grueling service (10 years continuous use in a Boston Department Store). And the wide color variety means added charm and beauty for every interior. For complete information see Sweet's or write for full color catalog today.

RUBBER
TILE



ASPHALT
TILE

THE RECORD REPORTS

(Continued from page 10)

Lower Cost Homes Materializing

Meanwhile the National Association of Home Builders is pointing with pride to the success of its efforts to increase the number of lower-cost homes being built. Of more than one million units of all types added to the housing supply in 1948, N.A.H.B. reports, thousands were of the Economy House variety and sold for \$4500 to \$8500. Two of every five homes purchased last year were bought by families with income of less than \$3000, and four out of five by families with incomes under \$5000. Eighty per cent of all houses sold went for less than \$10,000 while the average purchase price paid by veterans for houses, old and new, was \$7600.

N.A.H.B. is proud of these figures, contending that home builders — private home builders — are meeting the needs of relatively low-income families.

Agencies of government, incidentally, have been speeding up their plans to bring down the cost of home construction. A meeting of those concerned with the HHFA drive — officials of both government and industry groups — was held in January and field sessions aimed at taking the gospel of economic home building to the men who handle actual construction details, to the architect, the contractor, supplier, etc., began on February 8. An effort will be made to hold similar meetings in every city in the country of 10,000 population or over. The U.S. Chamber of Commerce is cooperating and local FHA officials are handling details of the conclaves.

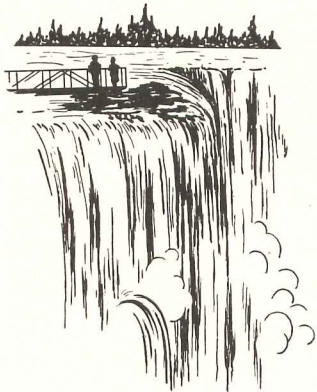
Housing Research Programmed

New attention also is being given to research on housing. A significant move in this field is the recent appointment of Joseph H. Orendorff as Director of Design and Methods in HHFA's Division of Standardized Building Codes and Materials. Mr. Orendorff had temporarily handled administration of management and disposition policies for the war-built Lanham Act housing and now returns to the Division to supervise the development of modular construction research involving standardized dimensions for building materials. This is certain to be an expanding activity under present agency plans. The Housing Act of 1948 authorized the HHFA to create the Division for advancing adop-

(Continued on page 14)



**SAVED...
A MILLION
GALLONS of
WATER A DAY*.**



**...with MARLO
COOLING
TOWERS**

**Total for these
Marlo installations
shown here*

— Conserves up to 95% of normal water demand

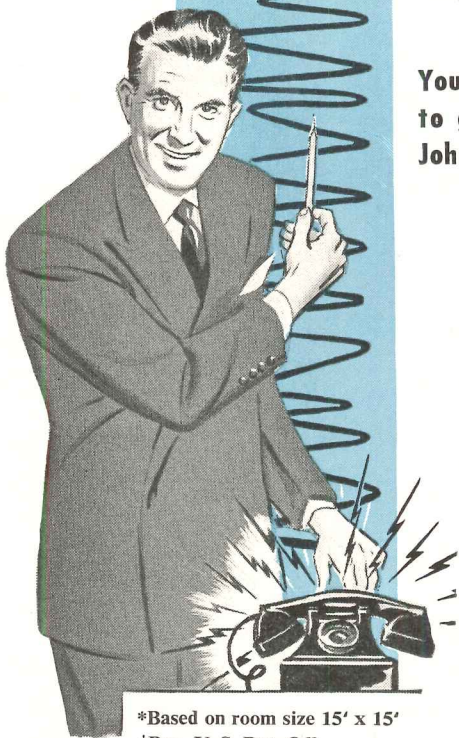
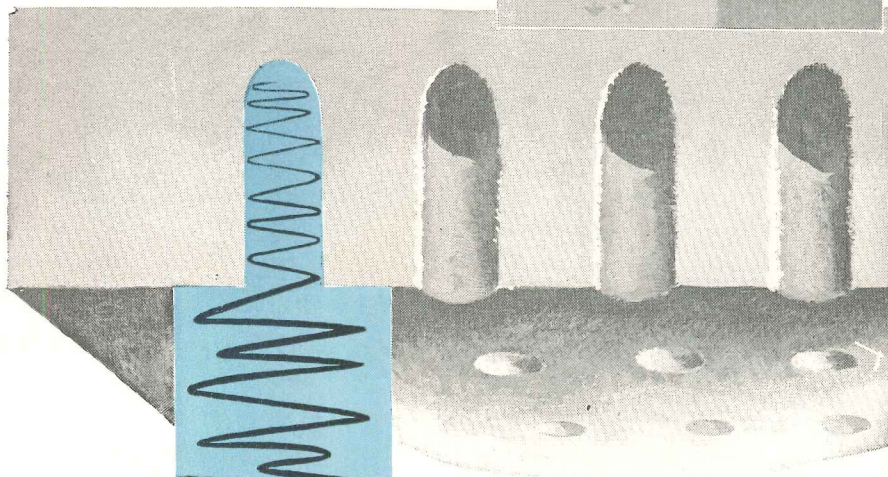
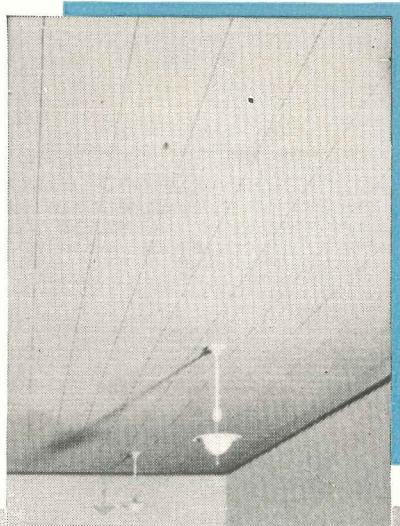
Because of their efficient design, Marlo Cooling Towers utilize water as the precious, costly commodity that it is . . . And, in large or modest installations, the other Marlo quality features are important too. Sump tank, frame, eliminators, wheels and scrolls are hot-dip galvanized; scroll and panels are mastic-coated for double protection . . . Bronze inspection-panel hardware for unfailing accessibility. Marlo evaporative condensers are available in 3 to 100-ton capacities that provide combinations for infinite requirements.

MARLO-HEAT TRANSFER
Since 1925

Cooling Tower Bulletin sent upon request.

Marlo COIL CO. • 6135 Manchester Rd. • St. Louis 10, Mo.

We've built
a better
"noise trap"



*Based on room size 15' x 15'
†Reg. U.S. Pat. Off.

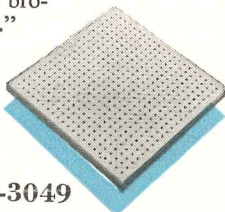
You'll have **108,900*** noise traps
to give you quiet, when you buy a
Johns-Manville Fibretone† Ceiling

• Every 12" unit of a Johns-Manville Fibretone Ceiling has hundreds of scientifically designed "noise traps" . . . small cylindrical holes drilled in the sound-absorbing panels.

Here the noise waves are trapped and dissipated *within* the holes.

Once you experience the benefits that noise-quieting Fibretone gives . . . greater comfort, less nerve strain, increased efficiency . . . you'll never again be satisfied to have an ordinary ceiling in any busy area. You'll be surprised, too, at Fibretone's *low cost*.

Send for Free, Fascinating Booklet: Whether you're interested in quieting an office, restaurant, bank, school, or factory, let us tell you more about Fibretone. Write for our new brochure, "Fibretone." Johns-Manville, Dept. AR-3, Box 290, New York 16, N. Y.



T-3049

Put a ceiling on noise with



Johns-Manville FIBRETONE CEILINGS

THE RECORD REPORTS

(Continued from page 12)

tion of standardized building codes and standardized dimensions and methods. Officials expect this work to increase its strides immeasurably under legislation now before Congress.

A few weeks ago Mr. Foley announced the completion of arrangements, involving the signing of a \$10,000 contract, whereby the National Research Council will act in an advisory capacity to the Division's research program on building techniques. National Council committees are composed of leading scientists and engineers from industry, educational and nonprofit organizations. Therefore this bridges the gap more effectively between government and industry research.

Making the announcement of the contract, Mr. Foley said: "Greater use of standardized parts, and improved methods of building are constructive policies, adoption of which would help in the solution of the problem of costs in the house building industry."

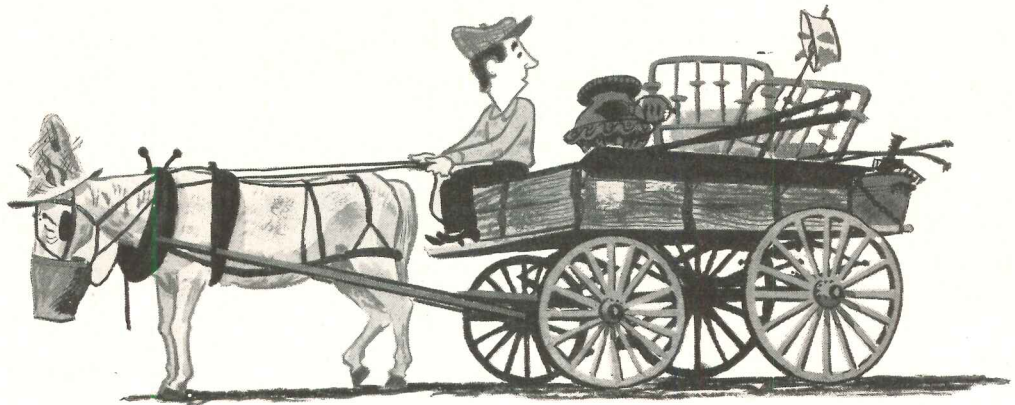
BRAB Pulse Is Quickened

Closer coordination of all research in construction was promised when members of the Building Research Advisory Board met in Washington in mid-February. This meeting breathed new life into the organization. BRAB was first thought of in the fall of 1946, was organized then and has been growing slowly since that time. The Board is a group of industry and government people interested in coordinating and advancing the research idea. It seeks eventually to get cooperation from all layers of industry, from the producers of building materials who now may be carrying on their own research projects in isolated and unknown instances. Bringing together information of these research activities, and making their benefits available to the construction industry as a whole, can go a long way toward improving building techniques — and lowering costs at the same time.

That is the aim. It is emphasized that BRAB intends to do no researching itself. The general chairman is Dr. Frank B. Jewett, a former president of the National Academy of Sciences. His executive committee is composed of Walter A. Taylor, director of research and education for the American Institute of Architects; Harry C. Plummer,

(Continued on page 16)

Nobody throws away Stainless Steel



Stainless steel *lasts*. Allegheny Metal stays bright and strong—gives lifetime service—under conditions of corrosion, heat and wear that send lesser metals to the junk-pile in a few years, or perhaps only months. Wherever a superior metal will give you advantage, you'll find it cheapest in the long run to use Allegheny Metal, the time-tested stainless steel.

Complete technical and fabricating data—engineering help, too—yours for the asking.

ALLEGHENY LUDLUM STEEL CORPORATION

The Nation's Leading Producer of Stainless Steel in All Forms

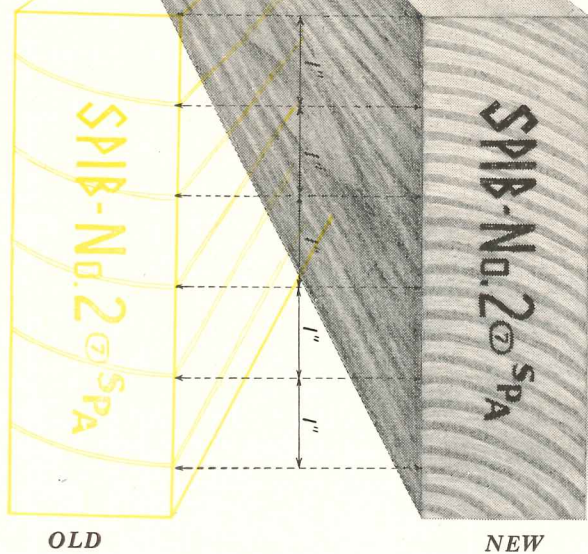


Pittsburgh, Penna. . . . Offices in Principal Cities

Allegheny Metal is stocked by all Jos. T. Ryerson & Son, Inc., Warehouses

NEW SOUTHERN PINE

STRESS VALUES provide a greatly improved No. 2 DIMENSION



EXAMPLE:

- ★ BENDING STRESS 1,100 POUNDS PER SQ. IN.
- ★ BETTER TEXTURE (MINIMUM 4 RINGS PER IN.)
- ★ SMALLER EDGE KNOTS
- ★ GUARDS AGAINST CROOKING

Possessing greater load-bearing strength than previous No. 2, this new grade of Southern Pine framing is better qualified for residential and light commercial construction. Proper seasoning is a definite provision, by which this material is *pre-shrunk* and may be used with safety for longer spans than heretofore.

AN ENGINEERED MATERIAL

Southern Pine has long been recognized as superior structural lumber. This new No. 2 grade can now be specified for definite load-bearing stresses *because it is an engineered material.*

WRITE FOR GRADING RULES

For authentic data to guide you in specifying or purchasing every Southern Pine classification, send for these new 1948 Grading Rules. Your copy, plus the Grade Use Guide, will be mailed on request.

Quality Southern Pine Is Available, Now!

SOUTHERN PINE ASSOCIATION

Canal Building . . . New Orleans 4, Louisiana



THE RECORD REPORTS

(Continued from page 14)

director of engineering and research for the Structural Clay Products Institute; Dr. C. F. Rassweiler, vice president in charge of research development for Johns-Manville Corp.; W. E. Reynolds, commissioner of the Public Buildings Administration; and Prof. William H. Scheick, coordinator of the Small Homes Council at the University of Illinois.

The form that BRAB activities will take from now on was more clearly defined at the Washington session. It may take its future operative clue from the National Highway Research Board, a group that has grown in 25 years to be a most valuable implementation instrument serving the highway industry. It is realized that the functions of the building industry are much different and in themselves diversified, but BRAB will grow into such an implementing body.

VA Hospital Program Cut

The architectural profession, along with all other segments of the building industry, was surprised by the President's sudden decision to cut back the Veterans Administration hospital construction program rather drastically. Mr. Truman revealed without previous indication that he had ordered the program slashed to the extent of 16,000 beds, both temporary and emergency types. Several firms throughout the country were caught in the midst of preparing plans and specifications for those hospitals struck from the list.

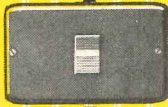
VA said the proposed construction of 24 new hospitals and reduction of the size of 14 others were involved in the mandate.

Repercussions are expected in Congress before the appropriation bills are passed. While Administrator Carl R. Gray, Jr., of the veterans' agency announced that the curtailed building program would not deny hospitalization to any service-connected veteran, the protest pressure on congressmen from their constituents is severe.

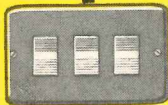
Veterans' organizations were quick to announce their opposition to the decision. The American Legion expressed this attitude when it announced: "At a time when there are two million veterans of both World Wars being compensated for service-incurred and aggra-

(Continued on page 18)

HERE convenient switch gives complete On-Off control



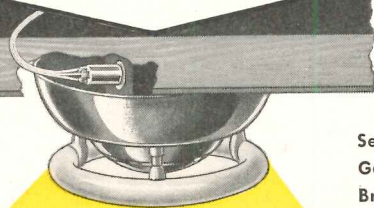
HERE, too, independent On and Off switching



and HERE, complete control of remote light



HERE, a small G-E remote-control relay does the work



Now, add dream-home lighting at budget-home cost!

Exciting, New General Electric Remote Control Wiring System Makes Multi-point Switching Practical, Economical

Convenience unlimited! That's General Electric's new wiring system—G-E remote control—the new design for electrical living that lets you plan downright ease for your most budget-minded clients.

With **G-E remote control** the homeowner no longer makes his nightly trip to check the cellar lights. He just pushes a button—in the living room, in the hall, or even in the bedroom—and he knows that troublesome cellar light is out. Garage lights, outside lights, the attic fan—all can be turned On or Off anywhere and everywhere in the house that's wired with the General Electric remote control wiring system. And, in every room, multi-point switching can put control of the lights in that room at every entranceway, even next to easy chairs or other convenient spots. And the really amazing part of the remote control story is that it's designed to go in easily and economically.

You owe it to yourself to find out about the General Electric remote control wiring system. Get the facts and talk them over with your electrical contractor . . . mail the coupon now for complete details on this important development.

Section D32-35
General Electric Company
Bridgeport 2, Connecticut

Please send me your free bulletin on the new General Electric remote control wiring system.

Name _____ Title _____

Company _____

Address _____

City _____ Zone _____ State _____

Mail
Coupon
Now!

GENERAL



ELECTRIC



Designed by: Perkins and Will,
Architects, Chicago
Guth Futurliters
Hedrich-Blessing Photo

HOW YOU CAN MAKE RECEPTION ROOMS SAY "WELCOME!" with Guth precision-planned lighting

This is the reception room and general office of the noteworthy new American Osteopathic Association Building in Chicago, recently featured in ARCHITECTURAL RECORD. See how skillfully the architects have created an atmosphere of welcoming warmth with Guth precision-planned Lighting!

You, too, will find the answer to many lighting problems in the functional, restrained design of Guth Luminaires . . . and in the competent cooperation of your nearby Guth Distributor and Resident Engineer.

Look over our complete line of finely designed Luminaires in our new Catalog 46A-J. Have you a copy?



YOUR TEAMMATE
IN *precision-planned* LIGHTING

LIGHTING

THE EDWIN F. GUTH COMPANY / ST. LOUIS 3, MISSOURI

Leaders in Lighting Since 1902

THE RECORD REPORTS

(Continued from page 16)

vated disabilities, when thousands of new claims are pending adjudication, and when nearly 15,000 veterans are awaiting hospital admission, we will strenuously fight curtailment of the VA hospital construction program."

(Note: VA itself estimates that the amount lost through the cutback order was nearly \$10 million. That is, \$1.4 million in site acquisition expenditures, and between \$7 million and \$8 million spent on all technical services including preparation of plans and specifications. The decision to reduce, of course, will result in an immense saving in construction costs otherwise charged to the VA program. Administrator Gray estimated this at \$280 million.)

The Administration had one argument

(Continued on page 20)

ELIOT CROSS

Eliot Cross, Architect, and founder of the New York real estate investment firm of Webb & Knapp, Inc., died on January 23 in Princeton, N. J., following a long illness. He was 65.

Mr. Cross was a practicing architect in New York for 40 years. He and his brother, John W. Cross, founded the architectural firm of Cross & Cross in 1907, and designed some of New York City's best-known buildings, among them the Hotel Barclay, Doctors Hospital, the Postum Building, the Harri-man Building, and the new Tiffany & Company building on Fifth Avenue at 57th Street. The firm was dissolved in 1942.

In 1922 Mr. Cross, with P. Seward Webb and the late Robert C. Knapp, founded Webb & Knapp, serving as chairman of the firm's board of directors from its founding until 1947 when ill health forced him to retire.

HENRY E. RICHARDS

Henry E. Richards, alumnus of Harvard University with the class of 1869 and of Massachusetts Institute of Technology with the class of 1871, died at his home in Gardiner, Me., on January 26 at the age of 100.

An architect by profession, Mr. Richards practiced in Boston for seven years following his graduation from M.I.T., and then moved to Gardiner, where he was for many years head of the Richards Paper Company.

In Miami Beach's gracious Seaview Hotel

LEES CARPETS

greet the great of the world

Leisure, luxury and lovely Lees carpets make a world-famous threesome in this renowned Florida pleasure spot. Throughout the Seaview Hotel you will find beautiful long-lasting Lees Contract Carpets—first choice of hundreds of hotels, theatres, offices, clubs, pullman cars, and public buildings everywhere.

Lees Contract Carpets give you the most per carpeting dollar

... Actual use proves they wear longer.

... Specially created for heavy traffic.

Lees Contract Carpets look better

... Add quality and elegance to any interior.

... Beautiful patterns or plain colors that delight the eye.

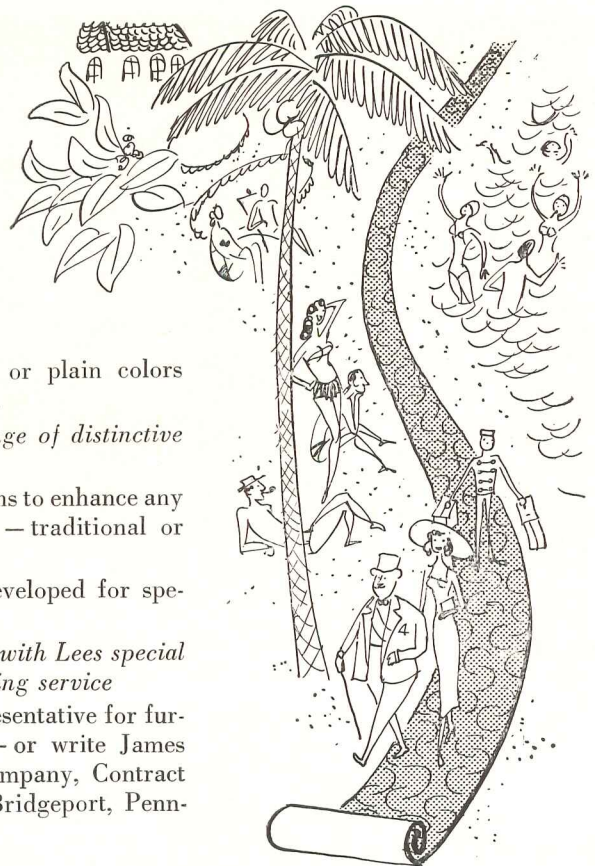
Choose from wide range of distinctive designs and colors

... Appropriate patterns to enhance any decorating scheme—traditional or modern.

... Custom designs developed for special interiors.

Discuss your problem with Lees special designing and consulting service

... Ask our local representative for further information—or write James Lees and Sons Company, Contract Carpet Division, Bridgeport, Pennsylvania.



JAMES LEES AND SONS COMPANY
Bridgeport, Pennsylvania



No More Slipping Accidents!

AW SUPER-DIAMOND FLOOR PLATE

A Better Footing for Product and Plant

Put this floor plate in your plant—or on your product—and say goodbye to costly slipping accidents. Even when the surface is wet or oily, exclusive engineered design with Super-Diamonds at 45° angles gives grip-without-a-slip safety! Easy to match without waste. Easy to clean with mop, broom or hose. Needs no maintenance. Use AW Super-Diamond for safe, strong, clean walkways, loading platforms, fire escapes, trench covers, running boards, machine tool bases—1001 other product and plant applications.



FREE

16-page Catalog L-33
cramped with valuable
information. Write now.

AW SUPER-DIAMOND FLOOR PLATES THAT GRIP

A Product of **ALAN WOOD STEEL COMPANY**

Conshohocken, Pa.

Other Products: Permaclad, Stainless Clad Steel—AW Super Grip,
Abrasive Floor Plate—Billets, Plates, Sheets (alloy and special grades)



THE RECORD REPORTS

(Continued from page 18)

for its decision: the saving on steel to result from cancellation of \$280 million worth of heavy construction. The rift between the White House and steel producers over additional capacity, how much should be built and by whom, was growing in extent as the President pressed for power to put the federal government in a position to build steel plants should industry fail to take advantage of federal loans he proposed to extend for the purpose.

The publicly-announced reason for the reduction in the hospital construction program was this—re-evaluation since the end of the war has shown that estimated needs for hospital beds were “considerably larger than actually has proven necessary.” Sixty-four individual projects not under contract at the time were surveyed in reaching the decision to drop 24 entirely and reduce 14 others.

The announcement came at a time when production prospects for most building materials, excluding steel and aluminum, are better than at any other time since the end of the war. The Producers' Council is confident that there will be an adequate supply to satisfy the volume of construction of all types anticipated in 1949.

Iron and steel companies spent \$583 million in 1948 to expand and improve production facilities. The figure will increase to \$627 million in 1949. Some producers have ventured the opinion that the 1949 requirements might actually be met in all major fields with the exception of transportation.

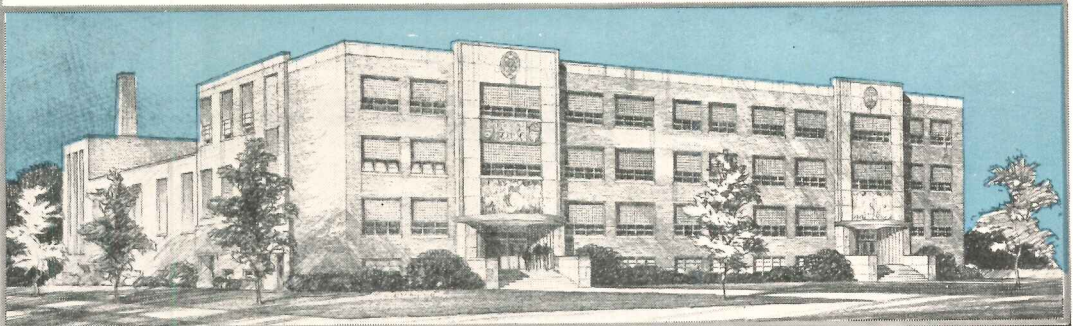
Federal Grants Promised Building

Large amounts of money in the form of federal grants are included in building construction bills introduced in the 81st Congress. The large scale federal aid to education bill which lost out in the last session and is being pushed again now, does not contain specific funds for building purposes. This fact has brought out a number of suggestions for direct federal grants to be used in school building construction alone. Foremost among these is the House bill authored by Rep. Joseph W. Martin, Jr., former GOP House Speaker. It would commit the government to an annual outlay of \$300 million over a three-year period and require state and local governments to match the

(Continued on page 22)

NOW

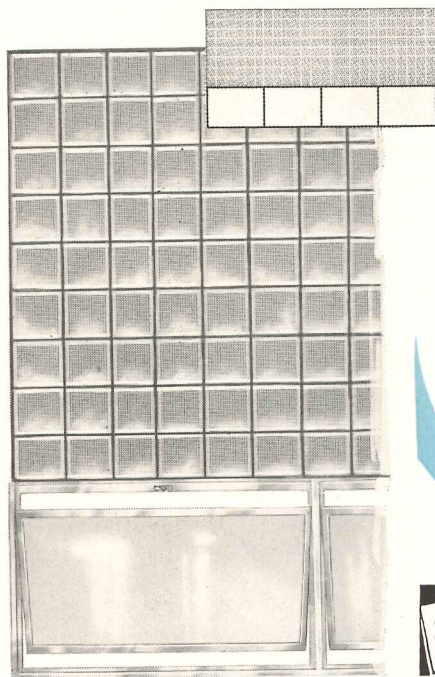
**A VERSATILE WINDOW
FOR *GLASS BLOCK*
CONSTRUCTION**



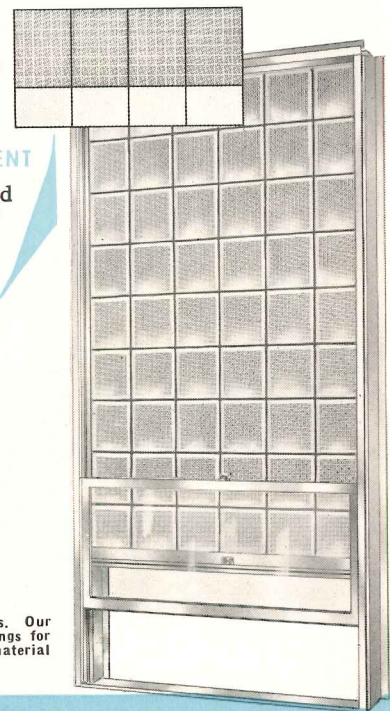
**THE
ALL**

ALUMINUM VAMPCO

Here's a new, greatly superior window that becomes an integral part of your glass brick construction. It's so *versatile* that you can use it in any type commercial or institutional building . . . so *adaptable* that it fits any space, large or small, you are likely to require . . . so *strong and rigid* that it can provide its own lintel under the glass blocks. It gives you vision — or ventilation — or both . . . with single pane or insulated glazing. Designed for use with Light Directional Glass Block. Constructed of high-tensile strength extruded aluminum alloy, it does away forever with maintenance costs . . . waterproof, weatherproof for life.



RIBBON TYPE



SINGLE HUNG

SINGLE OR MULTIPLE MULLION TREATMENT

This VAMPCO unit may be installed singly or in groups. Dimensioned for all standard glass block sizes to fit a wide variety of openings.

STRIP OR RIBBON TYPE INSTALLATION

For continuous ventilation or vision, VAMPCO ribbon units are fabricated to order up to 25 feet long and assembled ready for erection — as employed in the school building shown above. Vents may be as wide as 48 inches, up to 40 inches in height. Head and sill sections are continuous and absolutely watertight. No lintels required — deep head flanges, plus heavy mullions between ventilators, provide strength and stiffness to support entire load of glass block.



FOR COMPLETE DATA

Write for descriptive literature and full size details. Our Engineering Department will provide detailed drawings for ribbon-type installation when dimensional and material data are provided.

RIBBON TYPE

No structural lintel required . . . All-aluminum construction . . . Completely fabricated at factory — eliminating assembly of mullions and covers . . . Projected type ventilation.

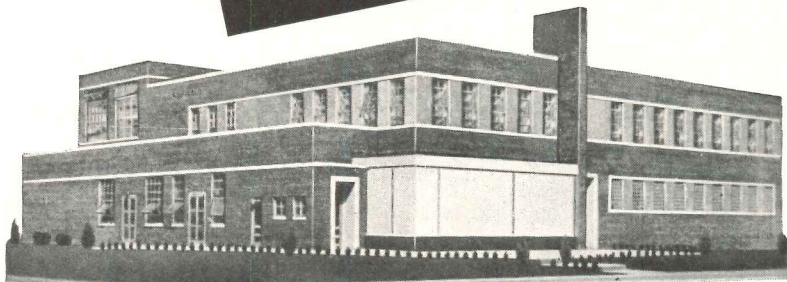
**VALLEY METAL PRODUCTS CO.
PLAINWELL, MICHIGAN**

SINGLE-HUNG WINDOWS

All-aluminum construction . . . Completely weatherproof and waterproof . . . Glass block in sash integral in one frame . . . Easy access for cleaning block and sash.

in **MODERN**
buildings...
it's

ALBERENE



Modern dairy plant in Richmond, Virginia.
Architects: Ballou & Justice

In this attractive, modern plant, it's *mullions* by Alberene — because Alberene mullions match so well the shadow effect of the windows . . . blend so perfectly with the exterior of the building as a whole.

And . . . it's Alberene Stone, too, for modern-looking, durable, maintenance-free spandrels . . . sills . . . stools . . . trim.

Here's why —

- **Esthetically**, Alberene soapstone is *right* for giving a building — institutional or industrial — the modern touch. *Because . . .* its natural greenish-blue color harmonizes with any decorative pattern. *And* its moisture-proof surface does not chip, scale, or split — it *always* looks good!

- **Financially**, Alberene soapstone is *right* for pleasing even your most budget-minded client. *Because . . .* its reasonable price . . . its ability to be cut into thin sections . . . *and* its outstanding durability makes it *triple economical*.

Why not write or phone us today
for samples and further information?

ALBERENE STONE CORPORATION
of VIRGINIA

419 — 4th Ave., New York 16, N. Y.

THE RECORD REPORTS

(Continued from page 20)

federal grants on a 50-50 basis. Altogether, this calls for a school building program nearing the \$2 billion figure over the three years.

Important in the Martin legislation is the fact that it gives state education departments authority to determine priorities for school buildings. This enhanced its chances for passage by removing a common area for criticism — federal regulation of the school systems.

The name of Senator Robert Taft gives strength to a measure introduced by four Senators; this would double the volume of construction of non-federal hospitals in the program administered by the U.S. Public Health Service under the Hill-Burton hospital construction act. Sponsoring the bill with Taft are Senators Ellender (La.), Hill (Ala.), and Smith (N.J.).

In addition to increasing federal grants for hospital and health center construction from \$75 million annually to \$150 million, the Senate bill provides for:

1. Extending the time of operation of the program another five years beyond 1949, making a total of eight years instead of the five originally specified.

2. Placing allotments of federal funds for individual projects on the same basis of "variable need" as that now determining the overall allotment to any state.

3. An extra \$1.2 million in federal money for research and experiment.

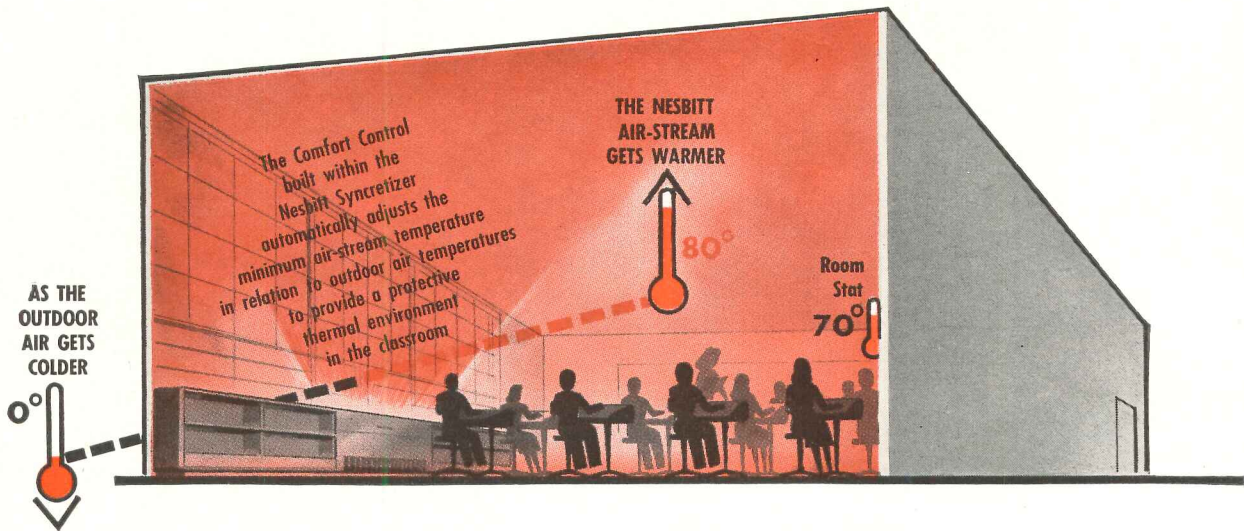
4. Federal funds to aid states in administration of hospitals and health centers.

The first specific indication of the nation's school construction and equipment needs has been given by the Federal Works Agency's Office of Economic Research. Following several months of work on the subject, this Office places total overall requirements, in terms of 1947 cost, at \$11 billion. This amount will have to be spent before the current critical shortage in classroom space for public elementary and secondary education can be overcome.

The extremely large backlog reflects a long period of underbuilding and persistent accumulation of needs through the past several years. Architects specializing in school buildings will be coping with this increasing work when

(Continued on page 160)

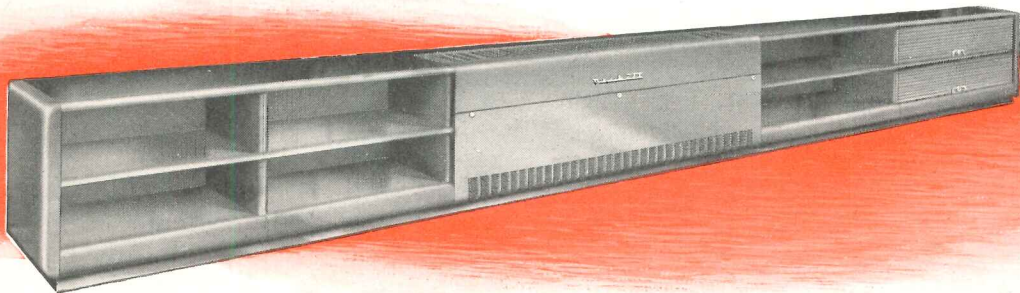
Is there a nesbitt thermal blanket in your schoolroom?



MINIMUM AIR DISCHARGE TEMPERATURE FOR VARIOUS OUTDOOR TEMPERATURES

Outdoor air temperature	0°	15°	20°	30°	40°	50°
Minimum air discharge temperature	80°	74°	72°	68°	64°	60°

Stop looking at that room thermostat! It is a deceiver! Modern air-conditioning has banished its "cold 70°." Today we know that the real threat to comfort in the classroom lies in cold walls and exposed surfaces—especially in the large window area. The built-in Comfort Control of the Nesbitt Syncretizer Unit Ventilator constantly samples outdoor air and automatically adjusts the minimum temperature of the air-stream—*warmer* as outside temperature goes down . . . *cooler* as outside temperature rises.



NESBITT *Syncretizer* THE UNIT VENTILATOR THAT SETS A NEW STANDARD OF CLASSROOM COMFORT

With the Nesbitt Outdoor Air Volume Stabilizer preventing sudden cold blasts on windy days, and the Nesbitt Directed-Flow Adjustable Outlet permitting a fan-like discharge of protective warm air, the pupils and the teacher are enveloped in a thermal blanket—never too hot nor too cold. These exclusive features of the Nesbitt Syncretizer create an entirely new standard of classroom comfort.

The new Series 500 Nesbitt Syncretizer is also today's most beautiful unit ventilator. It may be installed independently or as a unit of The Nesbitt Package with Storage Cabinets (and Connector when desired). Ask for Publication 258. Made and sold by John J. Nesbitt, Inc., Philadelphia 36, Pa., and sold also by American Blower Corporation.



MCCRORY STORE, 50, SALINA STREET, SYRACUSE, N. Y.

McCrory Stores Inc., Constr. Div.—*Architect* Funda-Austin Constr. Corp.—*Builder*

Another example of today's practical use of Enduro-Ashlar Architectural Terra Cotta. Entire facade of the So. Salina Street elevation is a finely textured light blue, with trim on both front and rear elevations a golden yellow.

business
puts its
best face
forward

...with

ENDURO-ASHLAR
architectural
terra cotta



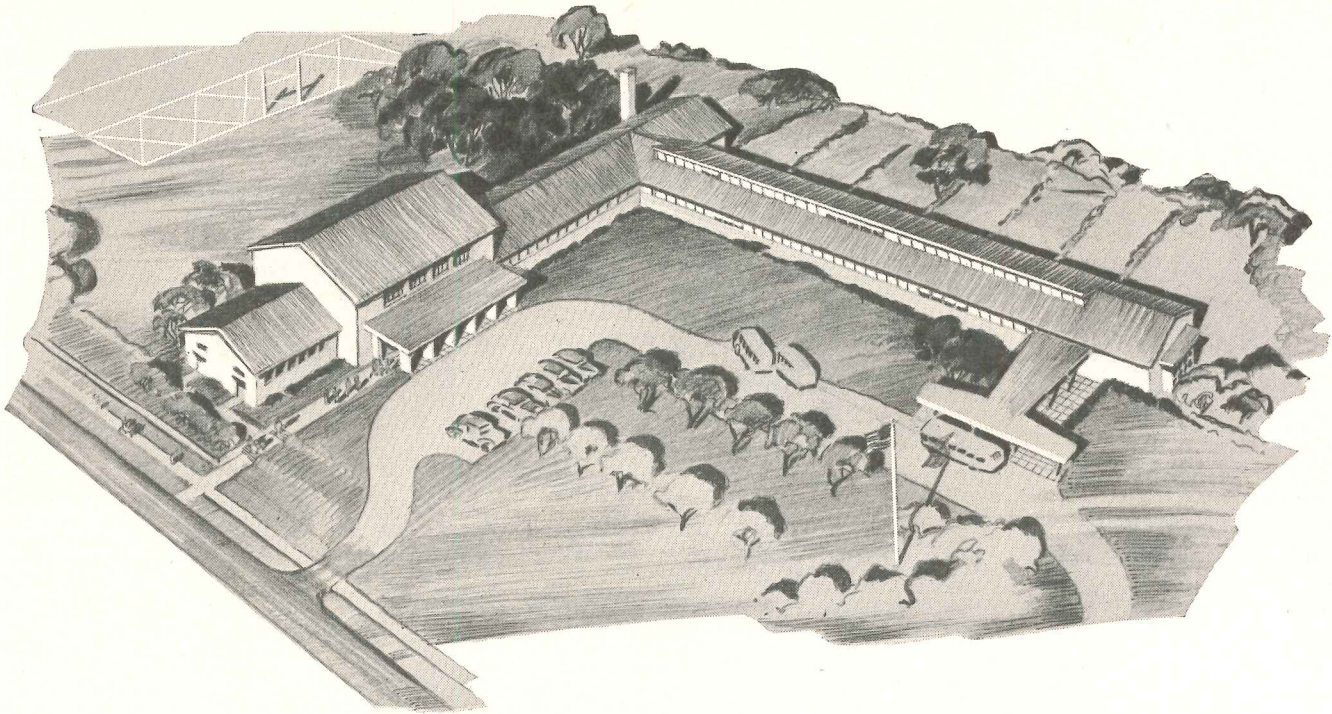
Combining maximum appearance with minimum maintenance, and possessing plasticity of form, color and texture as important added advantages, Enduro-Ashlar Architectural Terra Cotta is specified today by more architects than ever before. In imperishable ceramic colors that highlight the modern motif in architecture, this time-proved terra cotta is produced in individual units large or small—for mercantile, industrial and monumental construction, and for modernization. The fire-hardened surfaces of Enduro-Ashlar Architectural Terra Cotta resist weather-stain and big-city grime—require only simple soap-and-water washings to retain original richness indefinitely.

Without cost, we'll gladly advise on preliminary sketches, furnish construction detail, data, color samples and estimates. Your inquiry will receive prompt attention from our Architectural Dept.

FEDERAL SEABOARD TERRA COTTA CORP.



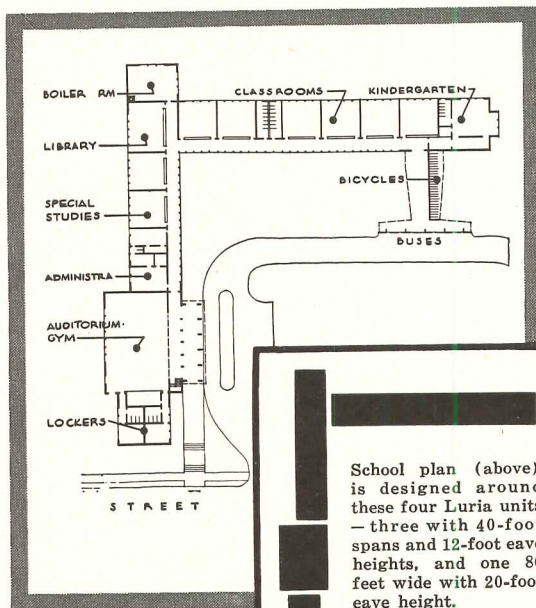
10 EAST 40th STREET, NEW YORK 16, N. Y.
PLANTS AT PERTH AMBOY AND SOUTH AMBOY, N. J.



We can have more new schools like this!

—thanks to the imagination of architects who realize

the tremendous new possibilities in STANDARD BUILDINGS by LURIA



School plan (above) is designed around these four Luria units — three with 40-foot spans and 12-foot eave heights, and one 80 feet wide with 20-foot eave height.

Most people would never guess, in looking at the fine modern school shown above, that it was designed around a group of perfectly *standard* buildings. For here is complete architectural freedom—even to the choice of collateral materials, optional features and accessories. Yet the fact that these are Standard Buildings by Luria makes this school readily available anywhere—and keeps it well within the limits of the average school budget!

Far from *limiting* the imagination of the architect, Standard Buildings by Luria actually create new opportunities for design, and widen the circle of his prospective clients. For here is a new and flexible medium to work with—permanent, steel-frame structures that can be incorporated into any one-story plan with complete confidence.

Schools, theatres, bus terminals, shopping centers, churches, libraries and industrial buildings—these are just a few of the hundreds of applications where Luria Buildings offer you all the cost-saving advantages of standardization, yet leave abundant scope for your own creative ingenuity.

For information on the complete Luria line, send for your copy of our new 20-page catalog, A.I.A. FILE 14-i.

Luria buildings are available now—with clear spans of 40 to 100 feet, eave heights of 12 to 20 feet, and any desired length in increments of 20 feet.

STANDARD BUILDINGS

BY

LURIA

LURIA ENGINEERING CORPORATION, Dept. D13
500 Fifth Ave., New York 18, N. Y.

Gentlemen: Please send me a copy of your new catalog.

NAME.....

COMPANY.....

ADDRESS.....

CITY.....STATE.....

CONSTRUCTION COST INDEXES — Labor and Materials

United States average 1926-1929 = 100

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

NEW YORK

ATLANTA

Period	Residential		Apts., Hotels, Office Bldgs. Brick and Concr.	Commercial and Factory Buildings		Residential		Apts., Hotels, Office Bldgs. Brick and Concr.	Commercial and Factory Buildings	
	Brick	Frame	Brick and Concr.	Brick and Concr.	Brick and Steel	Brick	Frame	Brick and Concr.	Brick and Concr.	Brick and Steel
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
1946	181.8	182.4	177.2	179.0	174.8	148.1	149.2	136.8	136.4	135.1
1947	219.3	222.0	207.6	207.5	203.8	180.4	184.0	158.1	157.1	158.0
Oct. 1948	257.5	257.8	248.1	252.2	246.6	204.8	207.7	186.5	185.8	184.7
Nov. 1948	256.1	256.0	247.8	252.0	246.2	202.7	205.0	186.1	185.6	184.2
Dec. 1948	252.6	251.5	247.2	251.6	245.3	199.2	200.5	188.5	185.2	183.3
	% increase over 1939					% increase over 1939				
Dec. 1948	104.5	105.5	89.1	88.6	88.6	130.8	141.3	98.2	90.1	93.6

Period	ST. LOUIS					SAN FRANCISCO				
	Brick	Frame	Brick and Concr.	Brick and Concr.	Brick and Steel	Brick	Frame	Brick and Concr.	Brick and Concr.	Brick and Steel
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
1946	167.1	167.4	159.1	161.1	158.1	159.7	157.5	157.9	159.3	160.0
1947	202.4	203.8	183.9	184.2	184.0	193.1	191.6	183.7	186.8	186.9
Oct. 1948	233.9	236.7	215.9	218.3	215.7	225.6	223.3	216.2	221.7	219.9
Nov. 1948	231.5	233.6	215.5	218.0	215.1	224.2	221.5	215.9	221.5	219.5
Dec. 1948	227.6	228.6	214.8	217.6	214.1	220.7	217.0	215.3	221.1	218.6
	% increase over 1939					% increase over 1939				
Dec. 1948	106.5	113.6	81.0	81.6	79.9	109.0	118.5	83.4	81.3	87.6

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 list prices, thus indexes reflect minimum costs and not necessarily actual costs.

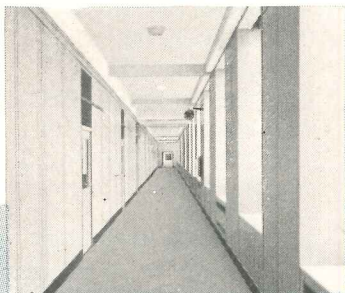
These index numbers will appear whenever changes are significant.



The Navy Uses
MILLS
 METAL PARTITIONS

A typical laboratory

**... more than four miles of them ... in the great new
 UNITED STATES NAVAL ORDNANCE LABORATORY**



A typical corridor

The U. S. Naval Ordnance Laboratory at White Oak, Maryland is one of the most modern and best equipped research and development establishments in the world. Comprising nearly 100 buildings on a 938 acre tract, it employs 2,300 people working in nearly every field of physical science and engineering.

Meeting the Navy's most exacting specifications, Mills standard and custom built partitions and wall linings and specially fabricated panels transform building interiors into offices, general laboratories, engineering and mechanical testing laboratories and many other enclosures. As White Oak's space needs change, these Mills partitions will be rearranged to fit the new requirements—quickly, easily, economically.

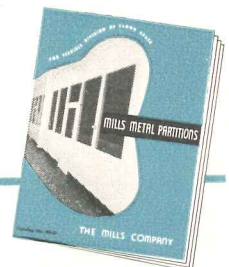
THIS IS one of the world's largest installations of movable steel partitions.

But *quality* rather than size is its most significant feature . . . quality that is characteristic of Mills Metal Partitions. These movable walls incorporate exclusive features . . . such as all welded construction of individual partition units and sound-deadening treatment of their surfaces . . . features that make Mills the demonstrably superior system for flexible division of floor space.

Insulated and sound proofed to provide ideal working conditions, Mills Metal Partitions are permanent in appearance and function. Yet they can be quickly dismantled and rearranged to meet changes in space requirements. In many instances the change can be accomplished over night or during a weekend.

Simple and refined in architectural design they are available in a wide variety of styles, durable finishes and attractive colors to meet specific requirements for buildings of every type.

Mills Metal Partitions can solve your space division problems. See the new 44 page Mills Catalog in Sweet's Architectural File for 1949 or write for your own easy-to-handle individual copy. Just ask for Mills Catalog 49-0.



THE MILLS COMPANY
 961 WAYSIDE ROAD • CLEVELAND 10, OHIO

REQUIRED READING

LE CORBUSIER AGAIN

Concerning Town Planning. By Le Corbusier. Translated by Clive Entwistle. The Yale University Press (New Haven, Conn.), 1948. 5¾ by 8¾ in. 128 pp., illus. \$2.75.

The publishers of this first English translation of Le Corbusier's PROPOS D'URBANISME call it that indefatigable and prolific author's "most important postwar book," and perhaps it is. Certainly it is one of his most interesting, packed full of typical Le Corbusier-isms and drawings.

"Towns are born, and grow throughout the ages; they deform under the assaults of life." From that introductory sentence all the way through to the final conclusion reached, this is a volume carefully calculated to stimulate and intrigue the imagination of its reader. It takes the form of replies to a series of 18 questions put to Le Corbusier in 1944 by an English source, and it takes the opportunity once again to expound the philosophies of town planning which for years have been synonymous with the name of their author.

CITY PLANNING

Planning the Modern City. By Harold MacLean Lewis. John Wiley & Sons, Inc. (440 Fourth Ave., New York 16), 1949. 7½ by 10¼ in. Two volumes: Vol. I, xxi + 284 pp.; Vol. II, xii + 224 pp.; illus. \$6.00 each.

Subtitled "A Modern Treatment Based on THE PLANNING OF THE MODERN CITY by Nelson P. Lewis," these two volumes are inherently a revised edition of the text first published in 1916, but the revision has been so extensive that the present work ranks as a new publication. Its author is the son of Nelson P. Lewis, author of the original volume.

Following several introductory chapters defining city planning and describing its goals, Volume I of the present edition plunges into such subjects as population distribution and trends, land surveys, zoning, transportation, development of shopping centers. Planning trends both here and abroad are discussed, and the mechanics of planning are thoroughly described. Volume II takes up neighborhood and community planning, housing, redevelopment of blighted areas, and special planning problems such as airport location, parking and decentralization of industry. A final section is devoted to legal, economic and administrative problems. Maps, diagrams, photos and drawings abound throughout both volumes.

Arranged as it is with questions and reference lists at the end of each chapter, the book is ideally suited for classroom use as well as for independent study.

Mr. Lewis has adhered closely to the planning principles laid down by his father, but has replaced references, brought statistics up to date, and added new chapters and much new material. The result is a book which very likely will be a standard text for some time.

NEIGHBORHOOD STANDARDS

Planning the Neighborhood. By the American Public Health Association Committee on the Hygiene of Housing. Public Administration Service (1313 E. 60th St., Chicago 7, Ill.), 1948. 7¾ by 10½ in. viii + 90 pp. \$2.50.

Based upon the authority, standards and findings of the American Public Health Association Committee on the Hygiene of Housing, PLANNING THE NEIGHBORHOOD is concerned with criteria for the environment of residential areas — with the physical setting in which homes should be located. It includes basic health standards which may direct the planning of the residential neighborhood, and the Committee's recommendations for the selection and development of sites.

Intended to reach several groups (personnel of planning and zoning boards, architects, builders, producers of building materials, government building program authorities, etc.), this brief volume is admittedly not a manual of design, but "a formulation of those principles and standards which the technician will use in combinations to be determined by him in the course of his design solutions."

ENVIRONMENTAL SANITATION

Public Health Engineering: Vol. I. By Earle B. Phelps. John Wiley & Sons, Inc. (440 Fourth Ave., New York 16), 1948. 5¾ by 8½ in. ix + 655 pp., illus. \$7.50.

In this highly technical book, written primarily for the public health engineer, the architect will find much information not readily available to him elsewhere. For instance, there is a detailed chapter on the air supply of enclosed places, which includes such items as air pollution by human occupancy and the effect of industrial operations. Another chapter deals with heating, ventilation and air conditioning needs and practice, and another with lighting. Still others treat sewage disposal, swimming pool requirements, and rural sanitation.

IT'S TERRIBLY SAD WHEN A CONE
IS FRUSTRATED AND STANDS ALL ALONE
WITH ITS APEX TRUNCATED... WHENEVER
I FIND ONE WHOSE SLOPE SEEMS INVITING
I COVER ITS SURFACE WITH METRICAL WRITING
IN CHEERFUL TETRAMETER, SOMEWHAT IDYLIC
CAST IN A MOULD THAT IS SLIGHTLY DACTYLIC
WHENEVER AN APEX HAS PROVEN SO FRAGILE
THE FRUSTUM HAS DEFINITE NEED OF A TONIC
TO LIGHTEN ITS SPIRIT AND SERVE AS A TONIC
FOR MALADIES EQUALLY CHRONIC AND CONIC
EXCUSE ME, DEAR CONE, IF MY METRE IS HECTIC
SOME OF THE SYLLABLES WENT CATALECTIC

"Dactyllic Frustum." From "Geo-Metric Verse" by Gerald Lynton Kaufman, A.I.A.

ARCHITECTONICS IN RHYME

Geo-metric Verse. By Gerald Lynton Kaufman. The Beechhurst Press (296 Broadway, New York 7), 1948. 5 by 6½ in. 64 pp., illus. \$1.50.

"Poetry forms in mathematics
Written mostly for fanatics" —
Squarody or Ellipsonnet?
Kaufman waxes glib upon it!
Dactyllic Frustum, Short Pantoum
Dissipate the darkest gloom.
If your sense of humor's failing
Concaverse will ease the ailing,
While Cubicouplets or Convextasy
Obviate neuro-perplextasy.
Growl because you have a headache?
Kaufman's cure will be an earthquake
To shake your ills
But quick: no pills.
For there's indeed no whim pedantic
In this volume's gyro-antic.
Let's give a rousing cheer, I say,
For Mr. Kaufman, A.I.A.!

LATIN AMERICAN ART

A Guide to the Art of Latin America. Edited by Robert C. Smith and Elizabeth Wilder. No. 21 in the Latin American Series of The Library of Congress. Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C., 5¾ by 9 in. 480 pp. \$1.50.

Architects participating in the tour to Mexico following the A.I.A. Convention in Houston this month will welcome this extensive bibliography listing some 5000 books and articles on the art of the 20 Latin American republics and Puerto Rico.

The bibliography is divided into three chronological periods: the Colonial Period, the 19th Century, and the Contemporary Period. A preliminary section lists general works covering the whole field, and texts dealing with two or more periods. For each period there are three preliminary groupings: Latin America,

(Continued on page 30)

FOR BETTER BUILDING JOBS

—turn to Wheeling!

Wheeling building materials help you do a good job better—give complete satisfaction year after year. For 59 years, the Wheeling Red Label has stood for matchless quality. Write for full details on the following products:

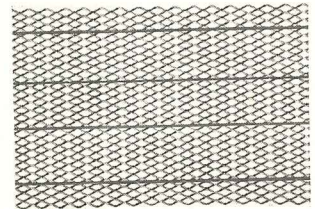


WHEELING TRI-RIB ROOF DECK

Designed for fast, economical construction. Lengths up to 22'6" permit assembly over four supports . . . serve as continuous beams. Designed for fast, economical construction. Made with Cop-R-Loy Steel to resist rust, corrosion.

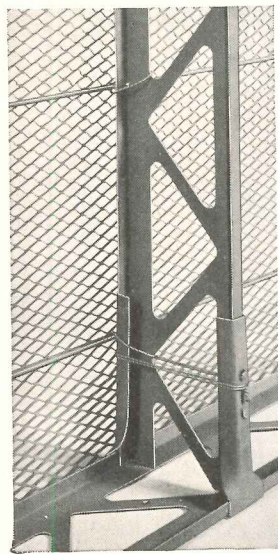
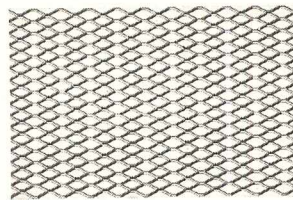
WHEELING BAR-X-LATH

It's stiff to the trowel, handles easier, faster, requires no stretching. Four sets of No. 11 rods welded through the mesh provide "stiff beam" reinforcement.



WHEELING DIAMOND LATH

For easy, fast installation, sheets are flat, perfectly straight with parallel sides. It's the stiffest lath of its type. Impervious to rust.



WHEELING BAR-Z PARTITIONS

BAR-Z PARTITIONS

For quick assembly into non-bearing hollow plastered steel stud and metal lath partitions, or free standing wall furring, from few unit parts.



WHEELING FLEXBEAD

Protects exposed plaster corners. Offers a rigid, straight line as a guide for workmen. Extremely adaptable for arch work.

WHEELING CORRUGATING COMPANY

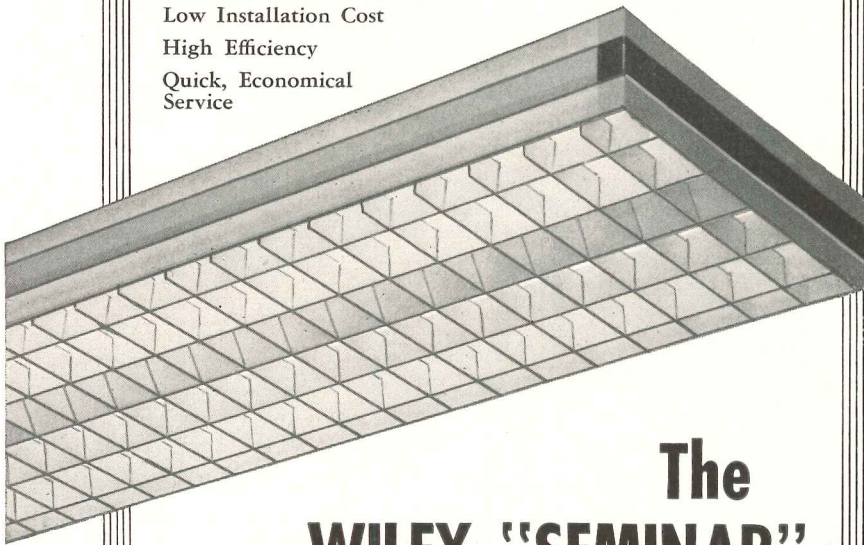
WHEELING, WEST VIRGINIA

Atlanta • Boston • Buffalo • Chicago • Cleveland • Columbus • Detroit • Kansas City
Louisville • Minneapolis • New Orleans • New York • Philadelphia • Pittsburgh • Richmond • St. Louis



ESPECIALLY DESIGNED . . . FOR SCHOOLROOM LIGHTING ADAPTABLE FOR ANY COMMERCIAL USE

Attractively Priced
Low Installation Cost
High Efficiency
Quick, Economical
Service



The WILEY "SEMINAR"

The Wiley "Seminar" is designed especially to meet the exacting requirements of planned schoolroom lighting. The extremely high efficiency and widespread light curve make possible an efficient, economical installation for any commercial use — offices, stores, showrooms, hospitals — with fewer units and wider spacing.

The "Seminar" is available with either two or four 40-Watt lamps. Side panels of Poly-Lite extruded plastic, Alba-Lite glass or Hi-Lited all-metal are optional.

There are no curved or slanting sides to trap light or collect dust and grime — and service is simple . . . one man, without tools, can quickly clean or replace lamps.

88%-89% EFFICIENT

Electrical Testing Laboratory Photometric Tests show these almost unbelievable efficiencies with excellent brightness control:

2-Lamp (Suspended) — 89%

4-Lamp (Suspended) — 88%



Suspended or
Flush to ceiling
•
Only 4 inches deep
•
Individual or
continuous rows



Underwriters
Approved

IBEW Union Label

Write Dept. AR for name of nearest District Sales Engineer

R. & W. WILEY, Inc.

DEARBORN AT BRIDGE STS.

BUFFALO 7, NEW YORK

REQUIRED READING

(Continued from page 28)

South America, Central America and the West Indies. These are followed by sections for each country, subdivided into subjects such as architecture, graphic arts, painting, sculpture, and so on. This simple pattern makes it easy to find exactly the kind of reference desired.

HOSPITALS

The Hospital Building: Seminar Addresses at the 1947 A.I.A. Convention. Compiled and Edited by Walter A. Taylor. The American Institute of Architects (The Octagon, Washington 6, D. C.), 1948. 8½ by 11 in. 72 pp., illus. To members of the A.I.A., \$1.00; to non-members, \$2.00.

In answer to repeated demands, the lectures given at the Hospital Seminars at the 1947 A.I.A. Convention have now been compiled in book form, supplemented by a comprehensive bibliography for the subjects covered and additional data and notes reprinted from the A.I.A. *Bulletin*. The result is a compact volume which no architect interested in hospital construction can afford to miss.

Subjects covered include: Administrative Aspects of Hospital Design; Programming for Hospital Design; Schematic Plans for Hospitals (with diagrams); The Elements of the Hospital; Hospital Construction, Detailing, Finishes, and Equipment. Authors include some of the foremost hospital architects and medical authorities in the country.

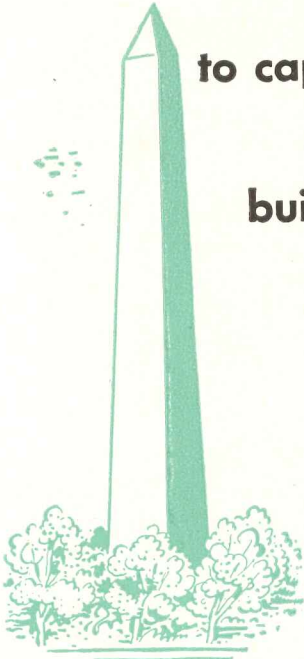
IDEAS FOR THE HOME

Home Furnishing. By Anna Hong Rutt. 2nd Edition. John Wiley & Sons, Inc. (440 Fourth Ave., New York 16), 1948. 6 by 9 in. viii + 508 pp., illus. \$6.00.

This new edition of Mrs. Rutt's basic text on home furnishing contains much material not included in the earlier edition, noticeably the entirely new chapters on landscaping, house planning, and exterior house design.

The book was written as a textbook for classes in home planning and furnishing as well as a general guide for homemakers and interior decorators. It is, therefore, both simply written and greatly detailed. Even so, architects may well find it interesting *per se*, and certainly will want to be familiar with it for the sake of their clients, many of whom are likely to have studied it assiduously.

The book is lavishly illustrated, and covers its subject all the way from foundations to flower arrangements.



to cap a monument
 eternal or a
 built-up roof:

aluminum

NOTHING better demonstrates the architectural versatility of aluminum than this contrast: the massive aluminum casting on top of the Washington Monument, substantially unchanged by more than a half century of weathering; and Reynolds .004" Embossed Aluminum, supplied in rolls and applied like felt to built-up roofs.

In the older instance, aluminum's light weight, freedom from rust and resistance to corrosion were the obvious advantages...together with stain-free beauty.

For the new 23-acre roofs of Alford Refrigerating Company warehouses, aluminum's capacity to reflect radiant heat was all-important, plus longer roof life and low maintenance.

Reynolds historic opening of America's once-restricted aluminum production did much to make this natural building material freely available. Exclusive embossing facilities have created new and attractive surface textures in Reynolds *Lifetime* Aluminum Gutters and Downspouts, Roofing and Siding. Reynolds Aluminum Windows embody definite engineering advances. Reynolds also offers a variety of Architectural Shapes.

For descriptive literature in A.I.A. File form, please write:

**Reynolds Metals Company,
 Building Products Division,
 2015 So. Ninth St., Louisville 1, Ky.,
 offices in 32 principal cities.**

IF YOU SEE RUST
 YOU KNOW IT'S NOT
 ALUMINUM

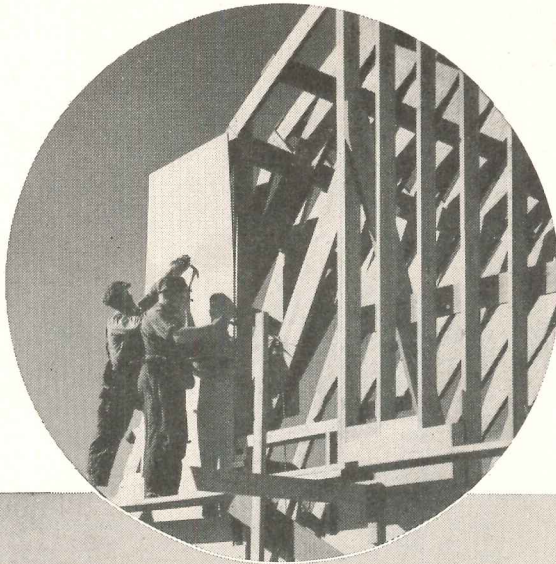


REYNOLDS
Lifetime ALUMINUM
 BUILDING PRODUCTS

REYNOLDS *Lifetime* ALUMINUM








ALFORD REFRIGERATING WAREHOUSES, DALLAS, TEXAS — NOW UNDER CONSTRUCTION, ROOFING CONTRACTOR: LLOYD GRAY, MT. AUBURN ROOFING COMPANY. SPECIFICATIONS FOR THE 23 ACRES OF BUILT-UP ROOF: 2 PLYS OF REYNOLDS .004" EMBOSSED ALUMINUM OVER 30 LB. FELT



PLYSCORD cuts building time and costs. The large, light panels cover big areas fast and require fewer fastenings. Contractors report 50% saving in time when using PlyScord for subflooring . . . even greater savings when the panels are used for roof decking and wall sheathing. Homes built with PlyScord are tighter and warmer, as well as stronger and more rigid.

Walls are Stronger—More Rigid, When Sheathed with **PLYSCORD**

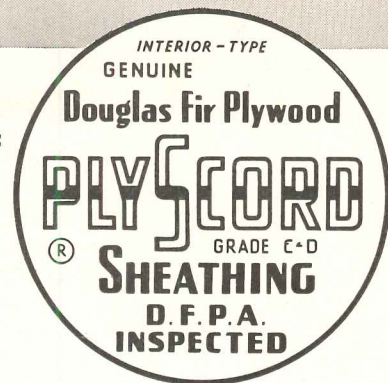
Here's how government tests at U. S. Forest Products laboratory rank the relative strength and rigidity of various sheathing materials on walls with openings:

STRENGTH AND RIGIDITY OF FRAME WALLS From U. S. Forest Products Laboratory Tests Wall with Openings			
Sheathing Material		Relative Rigidity	Relative Strength
	1x8" DIAGONAL SHEATHING	1.0	1.3
	29/32" FIBERBOARD	1.6	2.1
	HORIZONTAL with LET-IN BRACES	1.5	2.2
	1/4" PLYWOOD NAILED	2.0	2.8
	1/4" PLYWOOD GLUED TO FRAME	3.7	4.0

PLYSCORD—the unsanded sheathing grade of Interior-type Douglas fir plywood—contributes to better building in scores of ways.

PlyScord adds rigidity and strength to wall construction when used as sheathing. PlyScord is an ideal roof sheathing, too—suitable for any type of finish roofing. As subflooring, PlyScord provides a rigid, sturdy base for finish flooring, insulates, protects against drafts from below. PlyScord serves as a one-use concrete form panel as well; after form use, the panels are re-used as sheathing or subflooring—an added construction economy.

For details on PlyScord use and application, see Sweet's File, Architectural, or write for the new 1949 Basic Plywood Catalog. Also available is a new booklet, "The Wood of 1,000 Uses". Douglas Fir Plywood Association, Tacoma 2, Washington.



PLYSCORD—identified by this "grade-trade-mark"—is the sheathing grade of Interior-type Douglas fir plywood, manufactured in strict accordance with U. S. Commercial Standard CS45-48. It has a face panel of C veneer and a back panel of D veneer. Plys are bonded with highly water-resistant (but not waterproof) glues; the material will withstand occasional wetting such as might ordinarily be encountered during construction.

PlyScord Thicknesses: 5/16", 3/8", 1/2", 5/8".

PlyScord Lengths: 96", 108", 120", 144".

PlyScord Width: 48".

**Douglas Fir
PLYWOOD**

LARGE, LIGHT, STRONG

Real Wood
Panels



WITH PITTSBURGH COLOR DYNAMICS

you can use the energy in color to make office quarters more attractive and increase efficiency of workers.



For The Buildings You Plan

COLOR used for decorative purposes in office buildings has taken on added significance. Tests have shown that some colors stimulate, others relax, still others depress even causing discomfort and fatigue.

Pittsburgh technicians and color experts have long been studying, testing and proving the effect of this *energy in color* upon human beings. From their research were derived the principles of the new painting system of COLOR DYNAMICS.

With COLOR DYNAMICS, you can specify attractive color arrangements that will retard eye fatigue of workers, increase their efficiency, improve their morale and reduce the hazard of accidents.

Rooms can be made to seem more inviting and spacious, longer or wider, higher or lower. Halls and stairways can be made brighter and safer. Lobbies and reception rooms can be made to reflect more accurately the spirit and character of the organizations that use them.

You can apply the principles of the *energy in color* with scientific accuracy. What you can do with COLOR DYNAMICS—and why—is told in our profusely illustrated booklet. It also contains many practical suggestions for the decoration of lobbies, stairways, corridor as well as private and general offices.

Send this coupon for your free copy of this booklet.

Paint RIGHT with COLOR DYNAMICS
Paint BEST with Pittsburgh Paints!

The benefits of COLOR DYNAMICS are made extra long-lasting when you use Pittsburgh high-quality paints. There's a PITTSBURGH PAINT for every need!

WALLHIDE—in three types: **PBX**, extra-durable; **SEMI-GLOSS**, for higher sheen; **FLAT**, for velvet-like finish.

WATERSPAR ENAMEL—for furniture, woodwork and metal trim.

FLORHIDE—for floor surfaces; can be scrubbed repeatedly with soap solutions.

Pittsburgh Plate Glass Co., Paint Div.,
Department AR-39, Pittsburgh 22, Pa.

Please send me a FREE copy of your new revised and enlarged Booklet, "Color Dynamics In Industry."

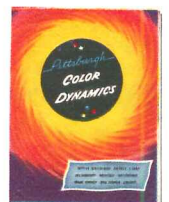
Please have your representative call for a Color Dynamics Survey of our properties without obligation on our part.

Name _____

Street _____

City _____ County _____ State _____

FREE BOOKLET! ➔



PITTSBURGH PAINTS
PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS

PITTSBURGH PLATE GLASS COMPANY

extra whiteness

for mass or contrast in architecture

Trinity White—the *whitest* white cement—is made to ASTM and Federal specifications. It is a true portland cement made from selected raw materials. It has all the excellent portland cement qualities of strength, endurance and workability. Use Trinity by itself for whiteness—with pigments for purer, truer color values. Use it in cast stone, architectural concrete units, terrazzo, stucco, light-reflecting floors; in cement paint.

TRINITY WHITE Portland Cement

As white  as snow

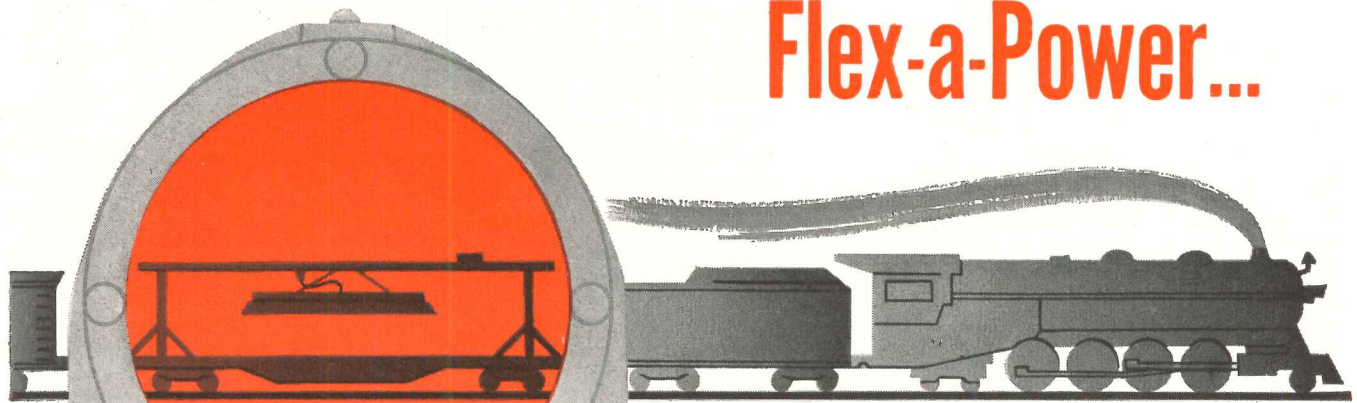
plain or waterproofed



Trinity Division, General Portland Cement Co., 111 W. Monroe St., Chicago; Republic Bank Bldg., Dallas; 816 W. 5th St., Los Angeles.



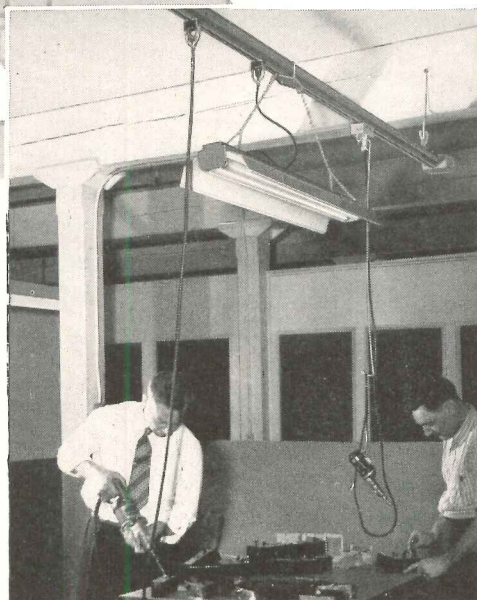
You get 6 big advantages with **New LTG**
Flex-a-Power...



The only unusually rugged plug-in or trolley busway in 2, 3 or 4 pole construction in one compact housing.

Pre-fabricated LTG FLEX-A-POWER — rated 50 amps — 250 v, AC or DC — supplies power for fluorescent lights and power tools. It provides both trolley power take-off and a continuous outlet — you can tap at any point . . . ideal for industrial plants, offices, stores, arenas, work shops and garages. Here are more new features:

- 1** EASY TO INSTALL — simplified hanging and joining methods speed up installation.
- 2** IT'S ECONOMICAL — two or more circuits can be run in one housing — controlled separately.
- 3** PERMITS BALANCED LOADS — plugs or trolleys are polarized which provides a convenient means of balancing loads.
- 4** IT'S REALLY RUGGED — rigid construction of housing itself prevents sagging — only 2 hangers needed for each 10 ft. section.
- 5** MORE FLEXIBILITY — standard fittings such as elbows and radius sections permit economical custom installations — easy to disassemble and relocate.
- 6** GREATER CONVENIENCE — trolley with silver alloy contacts may be inserted or removed at any point along the run — no "drop-out" section required.



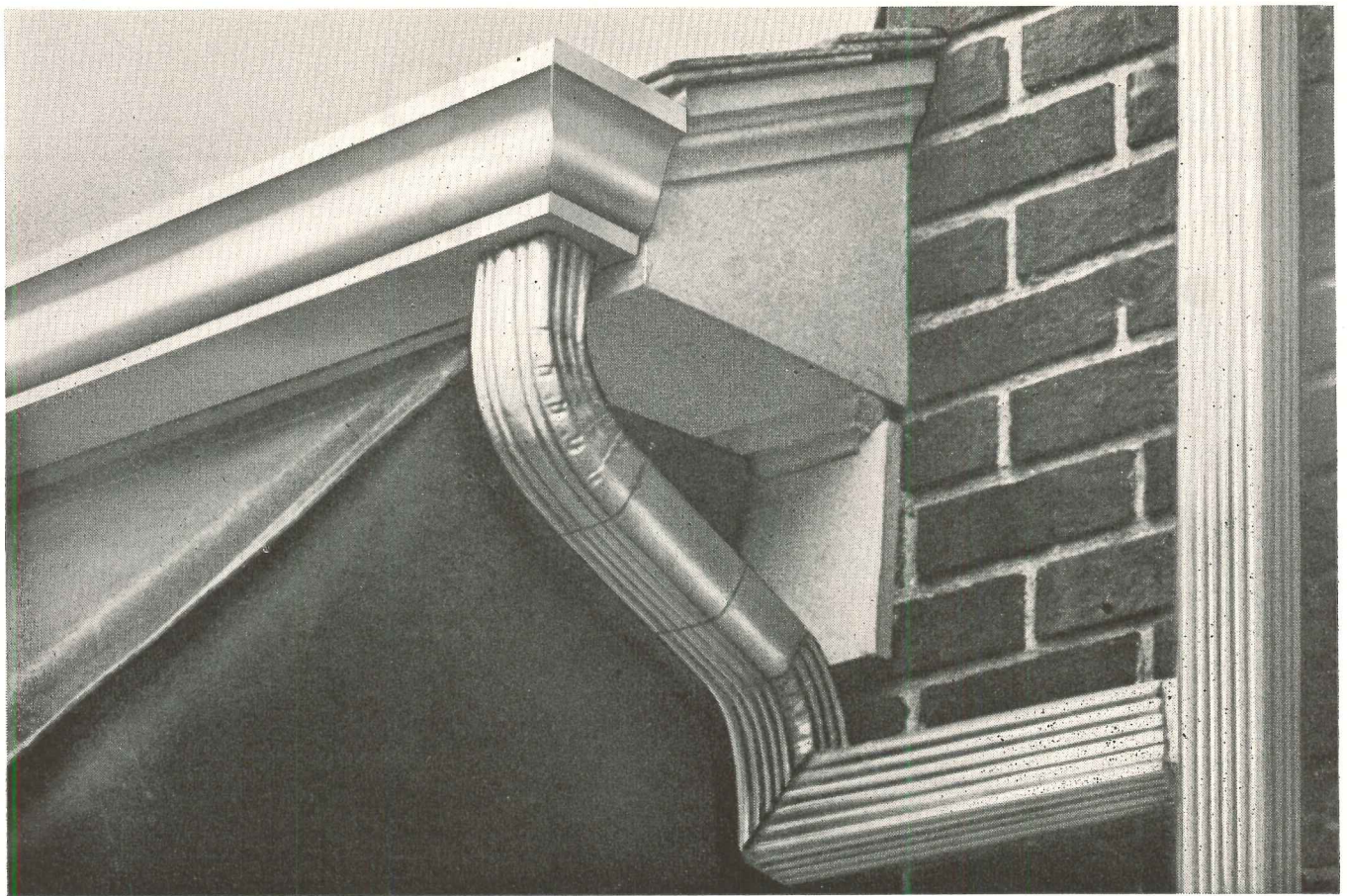
FOR MORE INFORMATION, write for circular TEC-3, THE TRUMBULL ELECTRIC MANUFACTURING COMPANY, Plainville, Conn.

Men Who Observe the Best Electrical Practice Make It a Practice to Use

TRUMBULL **T** ELECTRIC



TRUMBULL'S TRAINLOAD OF NEW PRODUCTS



Here's new beauty and durability for your roof-drainage systems

Satisfaction for the home owner, reputation for the builder, and prestige for the architect—all these result from a roof-drainage system of strong, beautiful, rustless ARMCO Stainless Steel.

This long-lasting steel needs no protective covering. Its neutral satiny finish blends with any architectural design or color scheme. ARMCO Stainless fights corrosion, stays clean and sound for years. It will not "bleed" and stain surrounding areas. It withstands heavy loads of ice and snow without sagging and is good insurance against buckling and cracking due to extreme temperature changes.

And this is important: ARMCO Stainless actually costs less over its long years of service than any other metal used for quality roof drainage.

The many advantages of this lifetime roof-drainage metal are described fully in the new ARMCO book, *Stainless Steel Roof Drainage*, prepared especially for architects and builders. Write for your free copy today. Armco Steel Corporation, 8 Curtis Street, Middletown, Ohio. Export: The Armco International Corporation.

★ ★ ★

SEE SWEET'S CATALOG for uses, advantages and specifications of these other ARMCO Special-Purpose Steels.

ARMCO ZINGGRIP-PAINTGRIP Steel—an extra corrosion-resistant metal that can be severely worked without damage to the special zinc coating. Also takes and preserves paint.

ARMCO Enameling Iron (for porcelain enamel)

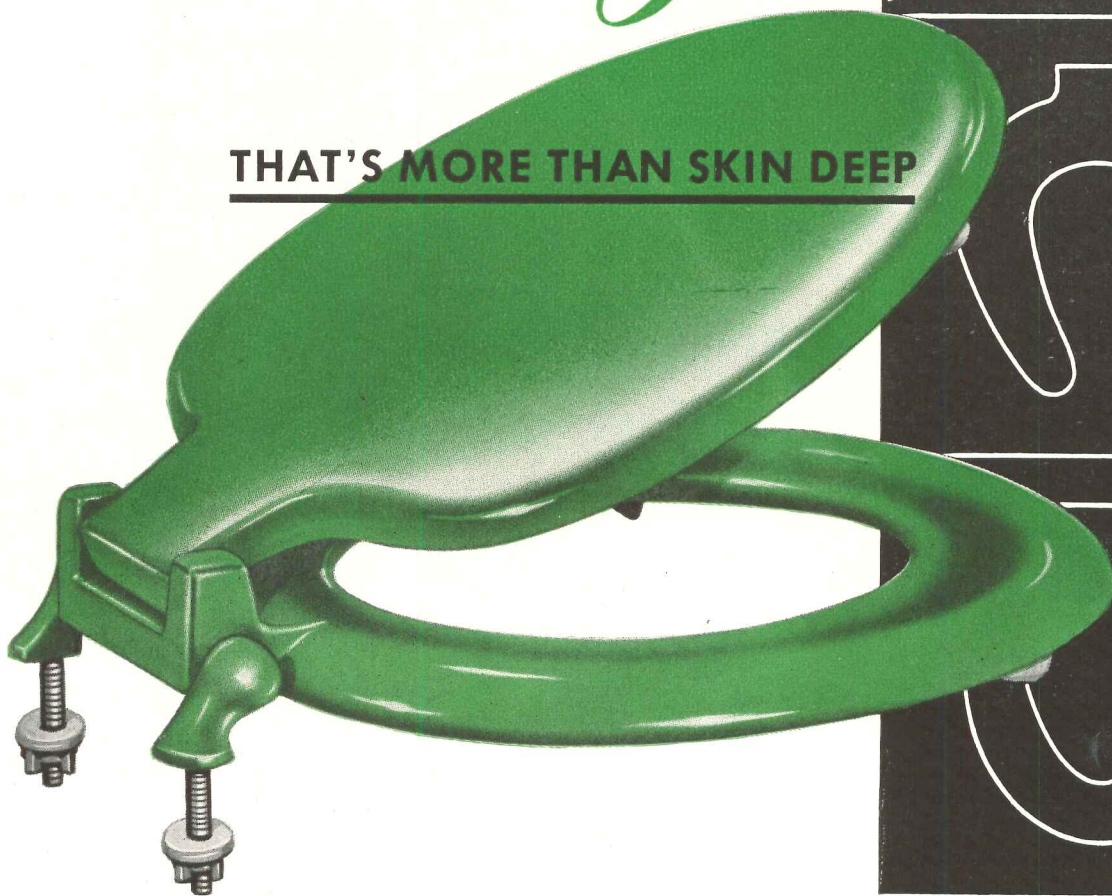
Ask for this **FREE** book published especially for architects and builders—*Stainless Steel Roof Drainage*. Filled with installation and fabricating data on this long-life roof-drainage metal.



STAINLESS STEELS

Beauty

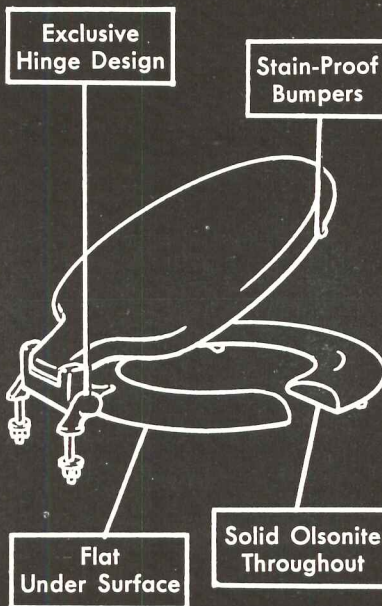
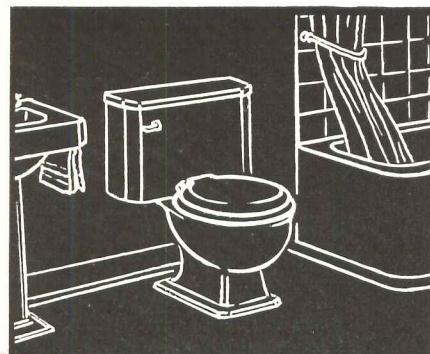
THAT'S MORE THAN SKIN DEEP

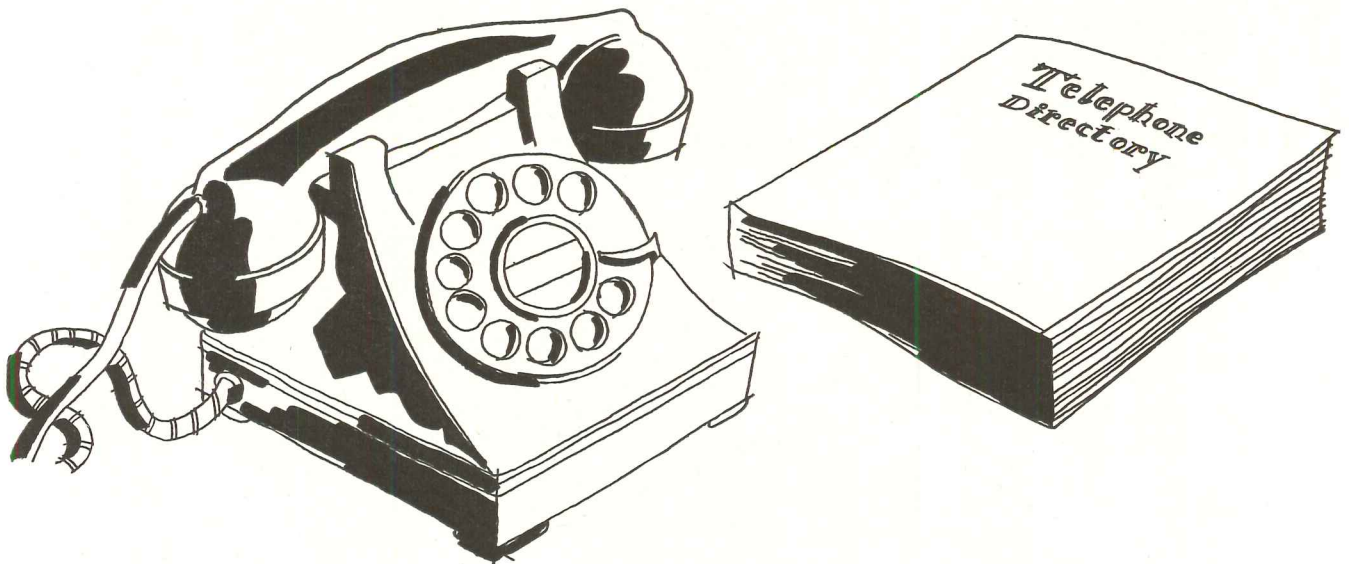


Bathroom beauty and long life, are but two features that keynote solid Olsonite seats. Their beauty and durability has convinced industry and home owners alike, that there is no better seat. Whenever solid Olsonite is specified—chip proof, peel proof, stain proof, fire and wear resistant, long life is assured. See your plumbing and heating distributor, jobber or contractor.

Olsonite

Division of Swedish Crucible Steel Co.
8561 BUTLER AVENUE • DETROIT 11, MICHIGAN





This is all the equipment you need to solve your toughest carpet problems



JUST AT THE other end of your telephone is one of Bigelow's 25 Carpet Counsel Offices.

Awaiting your call are men who can start wheels turning to give you the most complete service in

the business.

Here's how the Bigelow Carpet Counsel works:

1. Sizing up your problem. The Bigelow representative gets complete information as to the type of installation, carpet yardage required, color and design desired, time factor, etc.

2. Experts work out a solution. Men with years of experience in contract carpeting help you choose the grade, weave, color and design most suitable to your needs.

3. Your order gets personal supervision. After you approve the recommendations, specifications are drawn up and manufacturing orders placed. Bigelow's Contract Sales Service Department checks on the status of your order at regular intervals, and your Bigelow representative reports to you.

4. Your satisfaction is assured. Your Bigelow representative will check installation details. Upon completion of the work, he will make sure that your Bigelow Carpet installation is satisfactory to you in every way.

Bring your carpet problems to Bigelow's Carpet Counsel! Used for more than ten years by America's leading architects, store and hotel owners, purchasing agents. Find *your* Bigelow Office listed below.

Atlanta Walnut 2417
 Baltimore Plaza 1600
 Boston Hubbard 2-0133
 Buffalo Cleveland 8420
 Chicago Mohawk 4-4500
 Cincinnati Dunbar 1697
 Cleveland Cherry 2650
 Columbus Adams 1163

Dallas Central 5293
 Denver Cherry 8319
 Detroit Woodworth 1-4723
 Hartford Hartford 7-3205
 Indianapolis Riley 5345
 Kansas City Grand 8576
 Los Angeles Trinity 3771
 Memphis Memphis 5-1361
 Milwaukee Broadway 2-0123

Minneapolis Main 2377
 New York Murray Hill 4-0100
 Philadelphia Walnut 2-0700
 Pittsburgh Grant 2233
 St. Louis Main 1835
 Salt Lake City Salt Lake City 4-4566
 San Francisco Yukon 6-3900
 Seattle Seneca 5995

BIGELOW Rugs and Carpets

Beauty you can see . . . quality you can trust . . . since 1825

Try to imagine the drawing instrument of 2049...



It may be a pencil made of a substance not yet dreamed of
or a stylus filled with electronic tubes.
Perhaps it will emboss lines automatically
so prints can be pressure-molded in seconds.
Yet one thing will remain unchanged:

The finest drawing-writing materials will still bear the name

The golden nugget means more than the fact that the Eberhard Faber Pencil Company was founded in the year of the great California Gold Rush. It is symbolic of the enduring respect age brings a name ... a good reputation is truly golden.



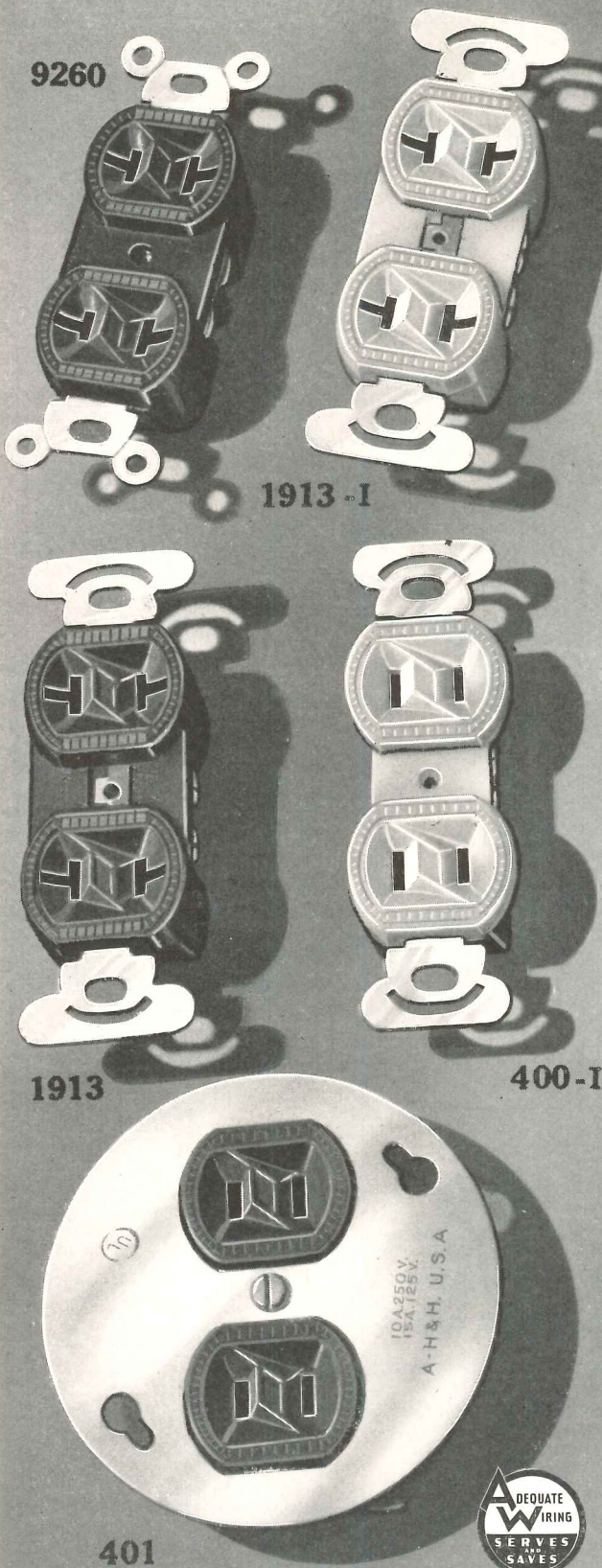
EBERHARD FABER

ENTERING OUR SECOND CENTURY OF LEADERSHIP

H & H

DUPLEX RECEPTACLES

*Complete Line
for General
Installations*



No. 9260 — the *new* Back-Wired Duplex Convenience Outlet — can be side-wired too but the back-wiring feature makes easier, more secure installation. Built-in stripping guide assures correct stripping, eliminates exposed wire. Individual terminal clamps hold wires with a no-slip grip. Strong plastic base (No. 9260, brown; No. 9260-I, white Ivorylite), with double T-slots. Double side-contacts with large recessed binding screws ample for No. 10 wire; washer-type plaster ears. Altogether a new "high" in receptacles.

No. 1913-I — Duplex Convenience Outlet of white Ivorylite, with 4 binding screws for side-wiring only. T-slots and wide plaster ears. Long-proved a most dependable receptacle for high-grade residential wiring. (For brown plastic base, specify No. 1913.)

No. 400-I — New intermediate-grade Convenience Outlet, sturdily built, entirely encased in molded white Ivorylite. Double side-contacts with 4 contact screws ample for No. 10 wire. Parallel slots with guiding grooves for easy plug insertion; wide plaster ears. Meets REA and Federal specifications. (For brown plastic base, specify No. 400.)

No. 401 — Same receptacle body as No. 400 but furnished with metal outlet box cover for 3½" or 4" boxes for basement work, private garages etc.

DISTRIBUTED THROUGH ELECTRICAL WHOLESALERS

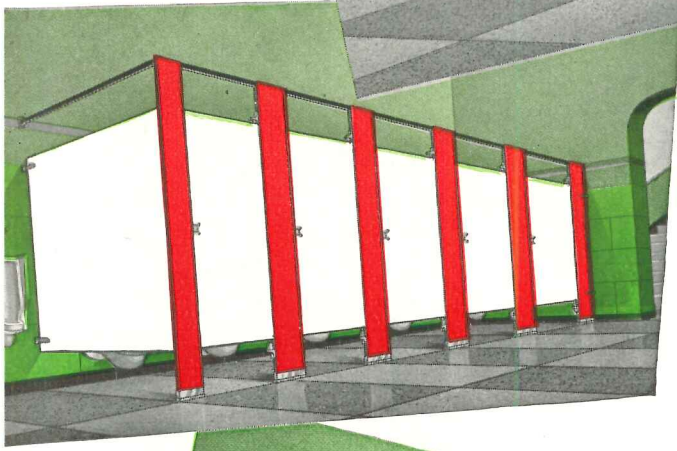
HART & HEGEMAN DIVISION

THE ARROW-HART & HEGEMAN ELECTRIC COMPANY, HARTFORD 6, CONN., U.S.A.

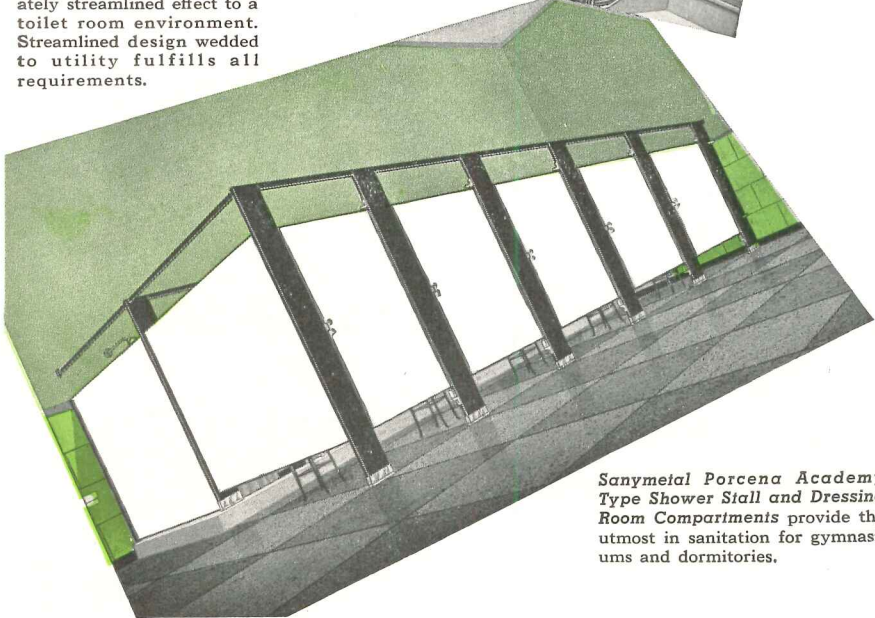
Expediency May Invite Premature Obsolescence in a Toilet Room Environment

Sanymetal Century Type Ceiling Hung Toilet Compartments are particularly appropriate for schools. They impart dignity, refinement, and cheerfulness to the toilet room environment.

Sanymetal Porcena Academy Type Toilet Compartments satisfy architects who desire a conservative but modern toilet room environmental treatment.



Sanymetal Porcena Normandie Type Toilet Compartments impart a moderately streamlined effect to a toilet room environment. Streamlined design wedded to utility fulfills all requirements.



Sanymetal Porcena Academy Type Shower Stall and Dressing Room Compartments provide the utmost in sanitation for gymnasiums and dormitories.

*Sanymetal**

"PORCENA"

(Porcelain on Steel) TOILET COMPARTMENTS

possess the natural structural strength of steel, not one sheet, but two 16-gauge sheets securely bonded on opposite sides of dense insulating core, strengthened by porcelain enamel (four layers on each sheet) which provides a non-porous, flint-hard, glass-smooth surface that is positively impervious to odors, acids and moisture.

● Toilet compartments usually dominate the toilet room, influencing the environment of the one room that is important to everyone occupying the building. Toilet compartments sometimes become outmoded quickly by changes in design and materials. Sanymetal "PORCENA" (Porcelain on Steel) Toilet Compartments provide a generous measure of protection against premature obsolescence because of their modernity and beauty, fadeless color combinations, utmost sanitation, and a correct combination of the hardness of glass with the structural strength of steel, which assures years more of unvarying service.

Fabricated of the ageless, fadeless material—"PORCENA" (Porcelain on Steel)—Sanymetal "PORCENA" Toilet Compartments are available in a wide range of beautiful, never-fade colors imbedded deep into a glass-smooth, flint-hard, non-porous surface that is moisture and rust-proof, does not absorb odors, and is impervious to ordinary acids, oils and grease. The glistening porcelain finish discourages defacement; is easily cleaned, and the brilliance of the surface renewed by wiping with a damp cloth.

Ask the Sanymetal Representative in your vicinity (see "Partitions" in phone book) for helpful suggestions on planning modern toilet room environments. Refer to Sanymetal Catalog 21-B6 in Sweet's Architectural File for 1949 or write for file copy of Catalog 86.

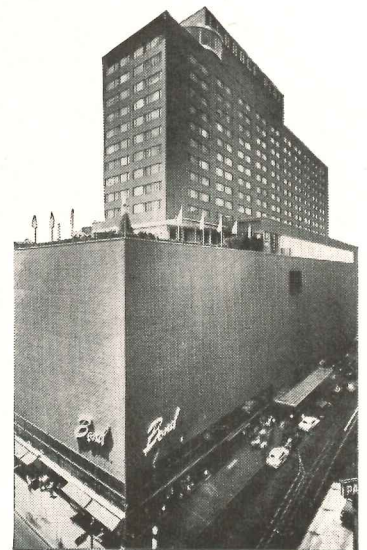
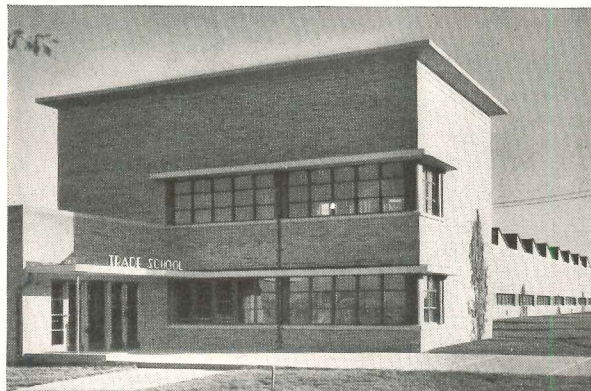
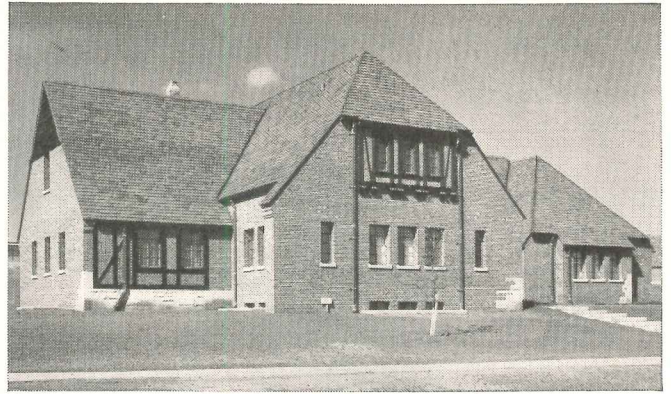
THE SANYMETAL PRODUCTS COMPANY, INC.
1689 URBANA ROAD • CLEVELAND 12, OHIO

Sanymetal Catalog 86 illustrates several typical toilet room environments as well as shower stall and dressing room suggestions.



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

**TOILET COMPARTMENTS,
SHOWER STALLS AND
DRESSING ROOMS**



Whatever the type of building...

Whatever its window requirements...

You can build for distinction and keep costs low by specifying

FENESTRA

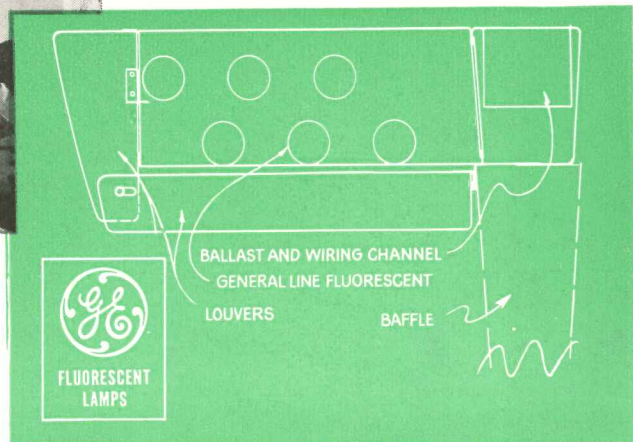
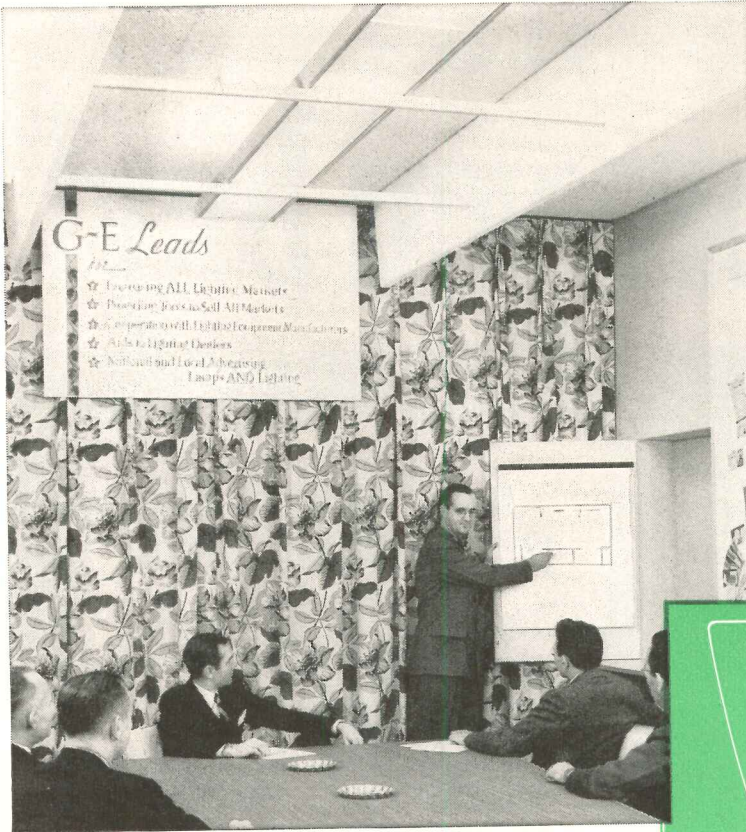
Fenestra* Fenecraft Windows are made of high-quality casement sections of advanced design—fabricated into 51 different projected windows, 14 casement windows and 36 combination windows. Each good looking, finely made . . . and economical, because Fenestra's standardization plan permits volume production. For full information, see Sweet's Architectural File, section 16a/13, or write Detroit Steel Products Company, Dept. AR-3, 2252 E. Grand Blvd., Detroit 11, Mich.

*®

Fenestra

FENCRAFT STEEL WINDOWS
FOR BETTER BUILDINGS

BRIGHT IDEA FOR IDEA ROOMS



IDEAS come easier in a comfortable, well-lighted conference room like the one above. The General Electric 40-watt, instant-start fluorescent lamps in ceiling fixtures provide 60 footcandles of soft, comfortable light on the table, yet are shielded from direct view. Charts and displays on the tackboards are highlighted by the same ceiling lamps.

The two rows of G-E Lumiline lamps in the center of the ceiling provide a "bridge" between blackout (for film

projection) and full lighting. They are controlled by a dimmer rheostat at the end of the table.

Whether you're designing a conference room, a home, or a department store, be sure to specify General Electric lamps. Their quality is assured by over 480 tests and inspections. And the more than 10,000 types and sizes of G-E lamps are being constantly improved by research to *Stay Brighter Longer*.

You can put your confidence in —

GENERAL ELECTRIC

THE BEST QUALIFIED HELP...THE HIGHEST QUALITY LAMPS



FLUORESCENT
Many new types, sizes,
colors now available.



PROJECTOR
spot or flood. Moulded
glass for ruggedness.

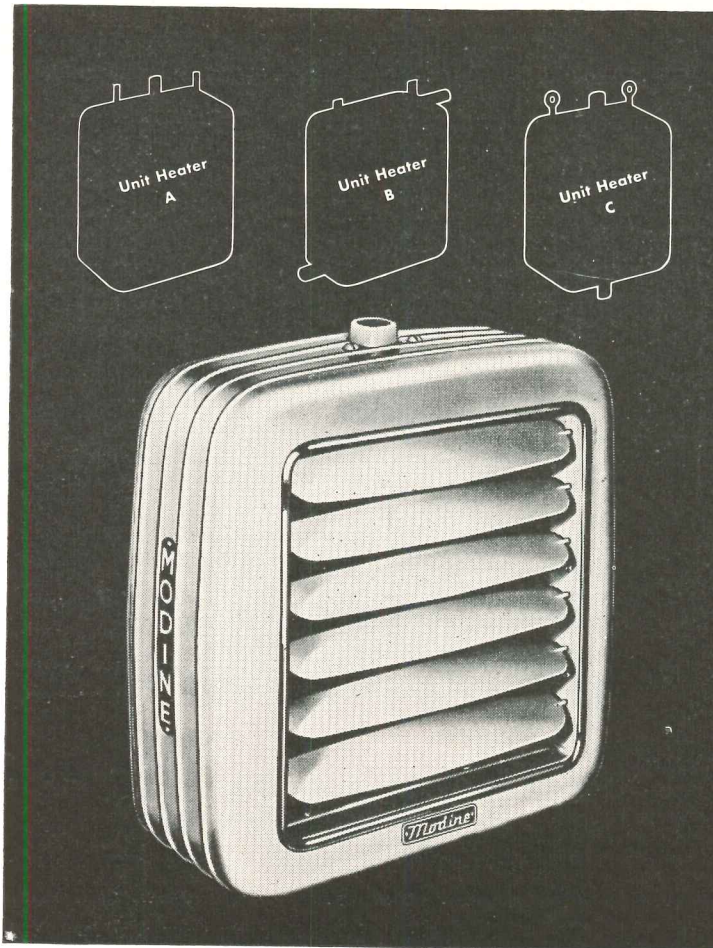


REFLECTOR
spot or flood lamps.
Built-in reflector directs
light where needed.



SILVERED BOWL
Indirect lighting at low cost.
60 to 1000 w.

To everyone about to order unit heaters, Modine says,
“Look before you buy!”



**YES, look before you buy..
 and you'll buy Modine!**

Guesswork is gone from unit heater buying when you compare Modine with all other makes. Yes—your best judgment will tell you Modine is the leader—the only unit heater which gives you ALL these important features. Modern Beauty . . . Individual Tube Expansion . . . Velocity Generator . . . Rugged Safety Fan Guard . . . Patented Direct Suspension . . . Built-in Air Control Device. What's more, you can choose from three types and 47 capacities to meet your specific heat, air delivery, height and location needs.

When you look before you buy, you'll see why Modine leads the field. Call your Modine Representative for further details. He's listed in the "Where-to-Buy-it" section of your phone book. Or write direct for Modine's new 52-page catalog. Modine Manufacturing Company, 1510 Dekoven Avenue, Racine, Wisconsin.

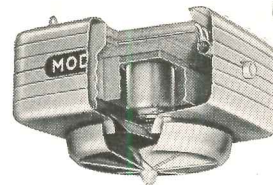
Modine UNIT HEATERS

**MODINE MAKES
 THIS SPECIAL OFFER!**



Now you can check Modine's quality features . . . without leaving your office. Call your Modine Representative today to show you an actual Modine Unit Heater . . . to explain its advantages in detail.

You'll like its attractive appearance, sound engineering, rugged construction. Examine Modine—compare it with other unit heaters before you make your decision.



**MOTOR AND FAN
 REMOVABLE**

**MOTOR PROTECTED
 FROM CONDENSER
 RADIANT HEAT**

**HARMONIZES WITH
 MODERN INTERIORS**

Look at Modine Power!

See how motors must meet rigid performance requirements before they can team up with Modine Unit Heaters. Check motor's heavy-duty, totally enclosed construction. See how it's rubber-mounted, noise-proofed for silent service.



HORIZONTAL VERTICAL POWER-THROW

Look at Modine Line!

See how Modine's complete line of three distinct types and 47 basic capacities can solve your specific space heating problems. Find out how there's a Modine Unit Heater for every industrial or commercial need.

**LAWSON PRESENTS IMPORTANT
NEW ADVANTAGES IN
MODERN BATHROOM CABINETS**

★ **BONDERIZING**



AFTER FORMING

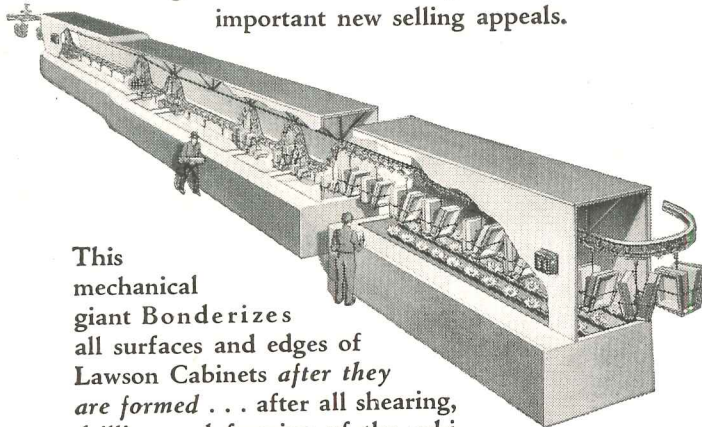
NOW! LAWSON BATHROOM CABINETS are Bonderized **AFTER FORMING!** AND they cost not a penny more!

AFTER FORMING provides 100% Bonderized protection to *every point* of surface; all edges and drilled holes are positively protected against rust and corrosion. The advantages of Bonderizing **AFTER FORMING** give Lawson Cabinets important new selling appeals.

ADVANTAGES OF BONDERIZING AFTER FORMING

1. Bonderizing **AFTER FORMING** protects all surfaces and edges. Resists rust and corrosion.
2. Enamel finish is bonded to metal at all points, for long life.

AND Lawson Cabinets cost no more with Bonderizing AFTER FORMING!



This mechanical giant Bonderizes all surfaces and edges of Lawson Cabinets *after they are formed . . .* after all shearing, drilling and forming of the cabinet body. Enamel finish is securely bonded with the metal.

★ **BONDERIZING** is a special chemical process sponsored by the Parker Rust Proof Company. It converts the metal surface to a thin layer of tiny phosphate

crystals integral with the metal itself, making a perfect gripping surface for the enamel. Bonderizing shields the metal from moisture and its damaging effects,

THE F. H. LAWSON CO.

802 EVANS ST.

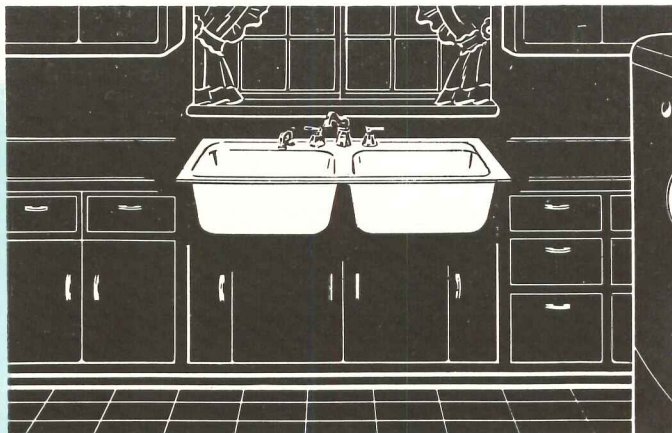
CINCINNATI 4, O.

Established 1816

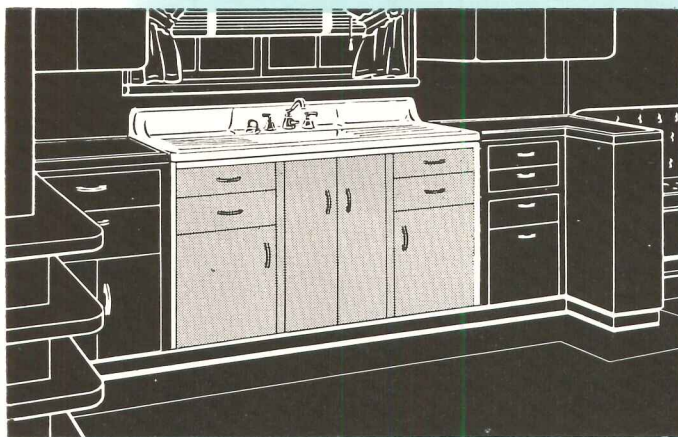


THE WORLD'S LARGEST BUILDER OF BATHROOM CABINETS

For sure sink satisfaction!

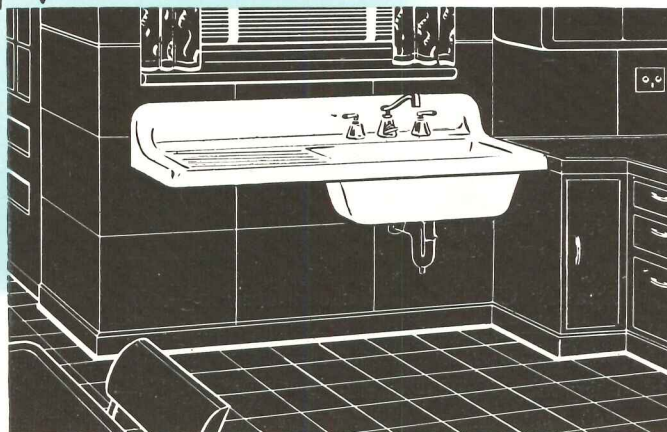


▲ **BUILT-IN COUNTER TOP** installations are no problem to the Richmond line of fine enameled sinks. Shown here is the Shelton, plate No. 2115, a flat rim sink with double compartments—drilled for supply fittings. Sizes 32" x 21" and 42" x 21".



▲ **DESIGNED FOR BEAUTY AND EFFICIENCY**—Richmond ledgeback sinks with single or double drainboards are ideal for base cabinet installations in the most modern of kitchens. Drilled for deck-type supply fittings with hose and spray. Model shown is the Servilla, plate No. 1535, available in two sizes, 54" x 25" and 60" x 25".

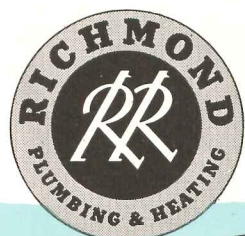
▼ **WHEN ECONOMY** of space and cost is paramount, Richmond wall hung units, such as the Sewanee shown here, are just the thing. Unit illustrated as a modern roll-rim sink with single drainboard. Drilled for combination fittings and large strainer. Right drainboard (plate No. 1552) or left drainboard (plate No. 1550), both 42" x 25".



Specify and install RICHMOND Enameled Cast Iron Sinks...

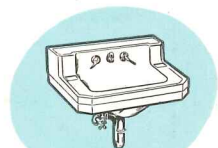
Sinks for any situation: Wall hung, for counter top, for base cabinets—left, right or double drainboard—single or double compartment. Whether your job is large or small,

Richmond has just the sink for you...Versatile design, acid-resisting enamel and rugged cast iron construction guarantee you a superior installation—one that assures customer satisfaction.

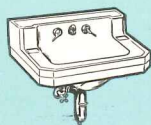


RICHMOND

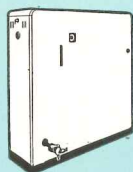
RICHMOND RADIATOR CO.—AFFILIATE OF REYNOLDS METALS CO.



Vitreous China at its best is embodied in the Richmond line of fine lavatories.



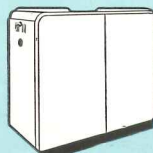
Vitreous China



Gas Boilers



Enameled Cast Iron Ware



Winter Air Conditioners
Gas—Cast iron or steel
Oil—Steel

See your wholesaler or MAIL COUPON TODAY

AR-3

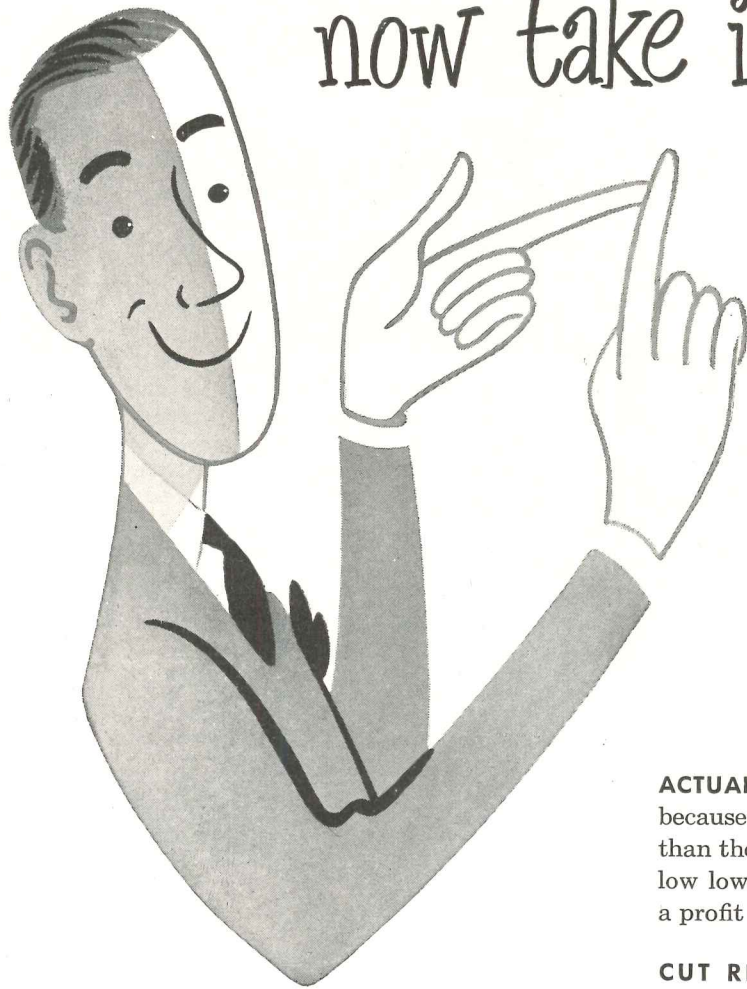
Richmond Radiator Company
19 East 47th Street, New York 17, N. Y.

I am interested in further information on the Richmond Enameled Cast Iron sinks. Please send me full details. No obligations, of course.

Name

Company

Address



now take it Point by Point

Specify Columbia Window Shades — and you get everything you could ask of a shade, plus a name that's known and trusted by millions of users.

Specify COLUMBIA PYROXYLIN — and you get *more* of everything you want! It's a super shade, Columbia's best! Check it point by point!

Columbia Window Shades and Venetian Blinds are sold only through Columbia Authorized Dealers — leading department and furniture stores and shade shops. May we send you samples of PYROXYLIN Window Shades and the name of the Columbia Authorized Dealer nearest you? Write today.

Ask a Columbia Authorized Dealer.

Columbia
WINDOW SHADES
AND VENETIAN BLINDS

ACTUALLY PAY A PROFIT! Pyroxylin shades, because they're top quality, wear longer than the usual shade life expectancy . . . allow low maintenance costs . . . actually make a profit for you, as one large user puts it.

CUT REPLACEMENTS — PYROXYLIN IS WASHABLE! Takes to actual scrubbing — repeated washings — fabric remains firm and sturdy, colors stay fresh. It's waterproof, too, to rain, steam, dampness.

FORGET PINHOLES OR CRACKS! Pyroxylin shades are made on such a closely-woven base, without filler, that they're impervious to cracks and pinholes. Better, *longer* wear!

COLOR SCHEMING — TAKE YOUR CHOICE! Match or harmonize Pyroxylin with any color plans . . . 14 solid colors, including high-fashion pastels and decorator darks. Duplex combinations, also. Popular PRINTED shades.

VELVET-SMOOTH TO OPERATE! Columbia's shade rollers, made in Columbia's own plant, take care of that! Dependable, silent service throughout Pyroxylin's career.

PIGMY TO GIANT SIZES! Your Columbia Authorized Dealer will make these fine shades to your exact window sizes.



French, Shriner & Urner chose METLWALS for beauty, movability, durability

Here's what
this
METLWAL
user says:

FRENCH SHRINER & URNER

EXTRA QUALITY MEN'S SHOES
FACTORY AND EXECUTIVE OFFICES
BOSTON 10, MASS.

"The M-P METLWAL installation in our offices certainly exceeds our expectations..."

...We decided to purchase your partitions since the qualities we sought were so markedly embodied in them...

...The completeness of the erection and final appearance of modern simplicity and exceptional wood grain finish have more than justified our investment...

...We have received many favorable comments from visitors."

B. M. Shriner

METLWAL Partitions and Paneling have a lot to offer! Metlwals alone combine distinctive beauty—simple construction—easy maintenance—and rapid installation. They're factory-finished in rich wood grain reproductions or baked enamel . . . will not reflect harsh, metallic light . . . will not chip, crack or craze . . . are Bonderized against rust.

METLWALS are installed in four easy steps by erection crews . . . (1) attach floor and ceiling channels; (2) insert studs in channels; (3) snap on panels; (4) slip on base. One man can handle a full-size panel. All parts and panels can be cut on the job. No need for plaster in new construction. No filler

boards or patchwork. *Only a few standard parts from warehouse stock.* And Martin-Parry's modern production facilities, in our huge new Toledo plant (*one wing shown below*), insure uniform panels for interchangeability . . . long-wearing installations that hold maintenance costs to a new low!

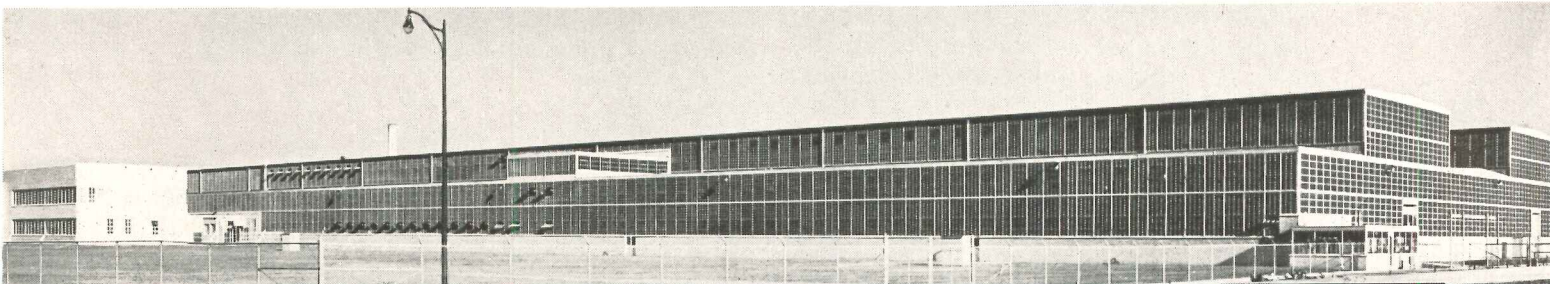


Write today for your copy of our latest catalog A-3, containing METLWAL specifications, drawings and installation photographs. See how METLWAL can help you plan beautiful interiors. Send for

information to: Martin-Parry Corporation, Toledo 1, Ohio.



Mr. B. M. Shriner, President
French, Shriner & Urner
Boston, Mass.



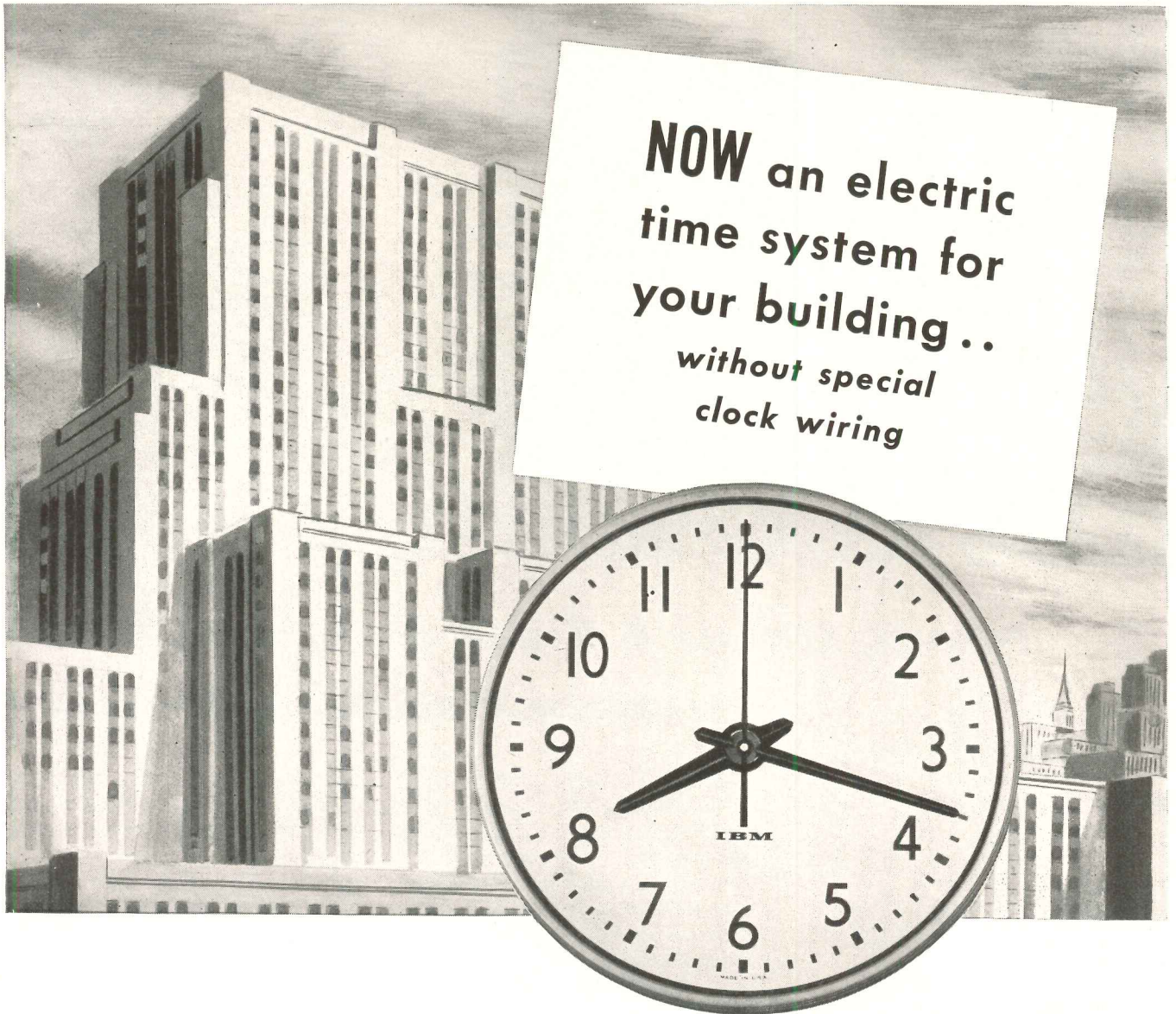
MARTIN PARRY
MP
PRODUCTS

METLWALS

69 Years of Service

**ALL-FLUSH PANELING
MOVABLE PARTITIONS**

ENGINEERING AND ERECTING SERVICE AND
WAREHOUSE STOCKS FROM COAST-TO-COAST



Every clock in the building or plant showing the same uniform time to the second; signals ringing in synchronism according to any schedule; time recorders and time stamps uniform with system time—this is the new IBM Electric Time System with Electronic Self-regulation.

This is the great advance in time control which utilizes electronic principles. Clocks are merely connected to the nearest 60-cycle AC current, and are self-regulated

continuously and automatically day after day, year after year, WITHOUT SPECIAL CLOCK WIRING.

The same time on every clock, on every signal, on every recorder—a real contribution to efficient coordination in your office building, school, hospital, plant, or hotel.

Call your local IBM office today or write to the address below for additional information.



TIME RECORDERS AND ELECTRIC TIME SYSTEMS
 Proof Machines • Electric Punched Card Accounting Machines
 and Service Bureau Facilities • Electric Typewriters

International Business Machines Corporation, World Headquarters Building, 590 Madison Avenue, New York 22, N. Y.



Available Again!

Increased production now
makes it possible to furnish
Bruce Blocks for large and
small areas.

**For modern beauty...for long-time economy
in apartments, homes, offices, stores, schools**

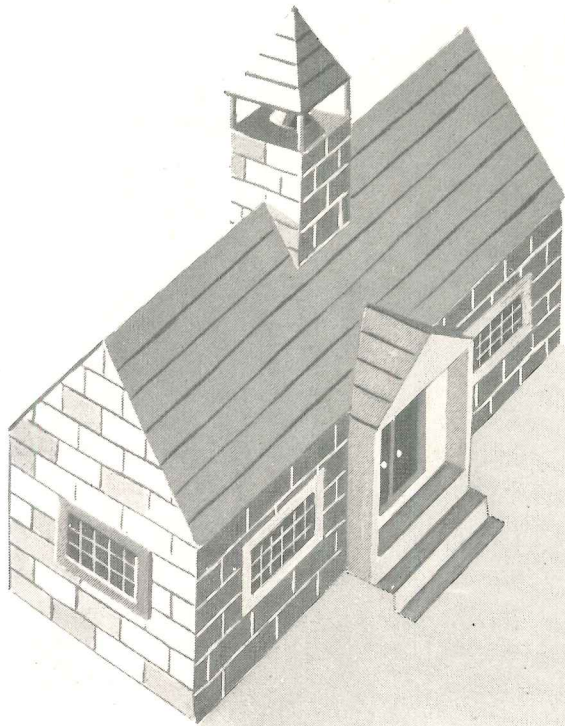
This modern hardwood floor will last the lifetime of a home or building. Thus it's far more economical than floors or floor coverings that must be replaced every few years. It's a quiet, resilient, warm, comfortable floor... easy to keep clean and beautiful. Installation is simple: laid in mastic over concrete, or nailed over wood subfloor.



Bruce Block
HARDWOOD FLOORS

See our catalog in Sweet's, or write: E. L. BRUCE CO., MEMPHIS, TENN. • World's Largest Maker of Hardwood Floors

"The best seat in the school house"



Church Mol-Tex Seats are the preferred choice for schools because they give lasting service and complete satisfaction. Built to take plenty of punishment, they always retain their gleaming, attractive appearance. Specify Church Mol-Tex — the first cost is the last cost. They never need replacing.



No. 9900
CHURCH MOL-TEX SEAT

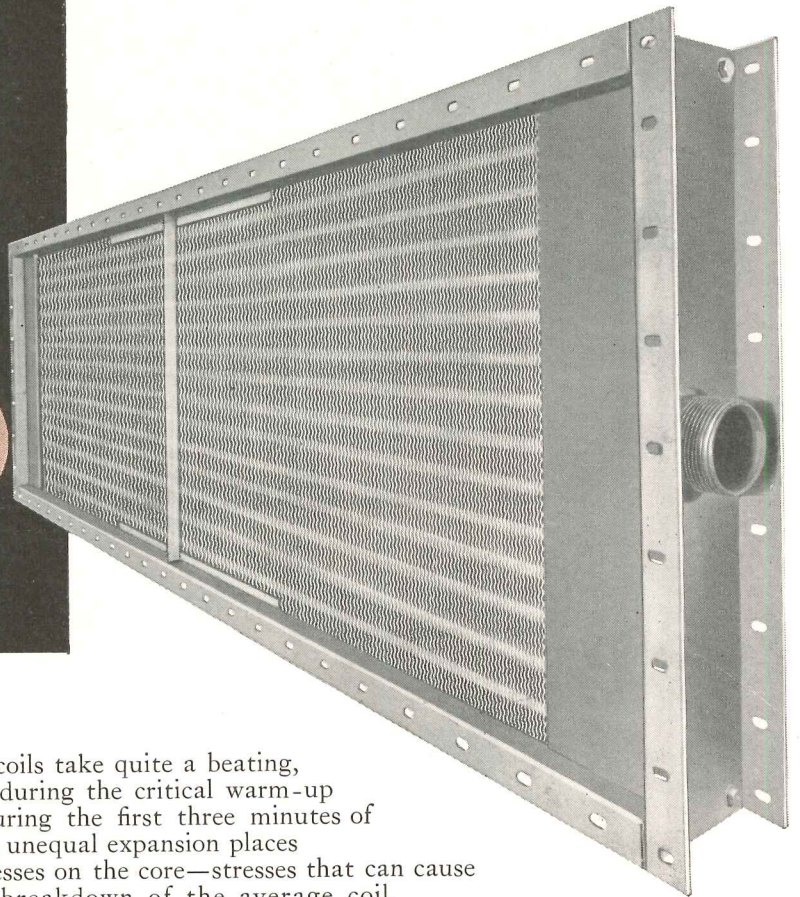
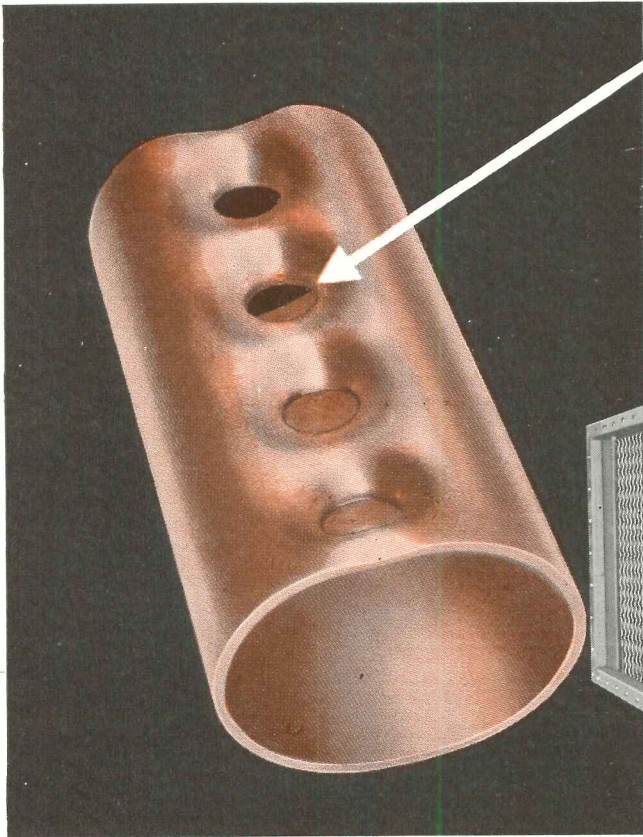
Church Seats

C. F. CHURCH MFG. CO. HOLYOKE, MASS.
Division of AMERICAN RADIATOR & Standard Sanitary CORPORATION

Serving home and industry
AMERICAN-STANDARD • AMERICAN BLOWER • CHURCH SEATS • DETROIT LUBRICATOR • KEWANEE BOILER • ROSS HEATER • TONAWANDA IRON

Pardon the *intrusion*

...but it makes
a better coil!



↑
Intruded tube holes—
elliptical headers—two
reasons why McQuay
blast coils last longer.
Inherent flexibility of the
eliptube header plus the
semi-bellows effect of
the intruded tube holes
puts warm-up loads
where they belong—on
the header and not on
the core of the coil.

Blast coils take quite a beating, especially during the critical warm-up period. During the first three minutes of operation, unequal expansion places heavy stresses on the core—stresses that can cause eventual breakdown of the average coil.

McQuay blast coils are engineered to put the load on the heavy wall headers rather than on the thin wall tubes. McQuay headers in turn are designed to compensate for these stresses by flexing with the expanding or contracting core.

Flexible eliptube headers with intruded tube holes mean longer coil life despite operational rigors. Ripple-Fin construction with plate-type fins locked to tubes by hydraulic expansion means maximum heat transfer efficiency year after year. For all coil requirements and especially for high pressure applications it's good planning to specify McQuay.

Representatives in principal cities, or write McQuay, Inc., 1605 Broadway Street N.E., Minneapolis 13, Minnesota.

McQuay INC.

HEATING • AIR CONDITIONING • REFRIGERATION



ROOF DATA ON THE BROADWAY DEPARTMENT STORE • LOS ANGELES, CALIF.

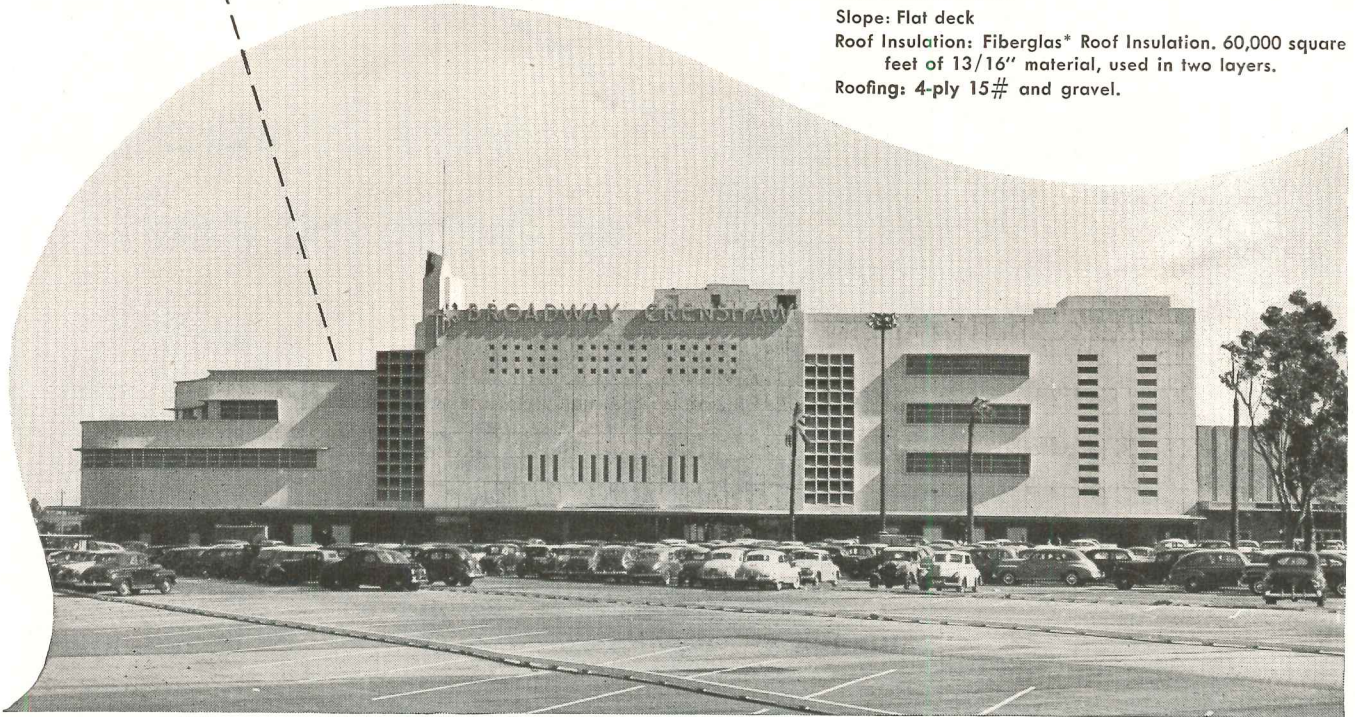
Architect: Albert B. Gardner, Los Angeles

Roof Deck: Concrete

Slope: Flat deck

Roof Insulation: Fiberglas* Roof Insulation, 60,000 square feet of 13/16" material, used in two layers.

Roofing: 4-ply 15# and gravel.



Outstanding Reasons for specifying Fiberglas Roof Insulation



"The Design of Insulated Roofs"

This 36-page manual contains a wealth of information on the design of roof structures, and gives full details on the proper specification of Fiberglas Roof Insulation. A.I.A. File No. 37. If you do not have a copy, write us today. Owens-Corning Fiberglas Corporation, Dept. 831, Toledo 1, Ohio . . . In Canada: Fiberglas Canada Ltd., Toronto, Ontario.

*Fiberglas is the trade-mark (Reg. U. S. Pat. Off.) of Owens-Corning Fiberglas Corporation for a variety of products made of or with glass fibers.

•**Exceptionally low thermal conductance** of Fiberglas Roof Insulation contributes markedly to interior comfort and heating economy. Permits use of minimum thickness for any desired degree of protection.

•**Virtual immunity to moisture.** Its glass fibers will not rot or decay. (Accelerated weathering tests in an independent laboratory prove that Fiberglas Board, after the equivalent of 75 years service, retains the characteristics of a satisfactory insulation.)

•**Dimensional stability.** Fiberglas Roof Insulation will not swell, shrink, warp or buckle. Recent technological improvements permit a substantial increase in rigidity without affecting its high insulating efficiency.

•**Low weight.** Weighs only 1.31 lbs. per square foot in 1" thickness; adds no significant dead load to the structure.

•**Competitive cost.** Fiberglas Roof Insulation is competitive in price with most ordinary materials, costs no more to install.

Whenever you want these qualities, you can specify Fiberglas with complete confidence.

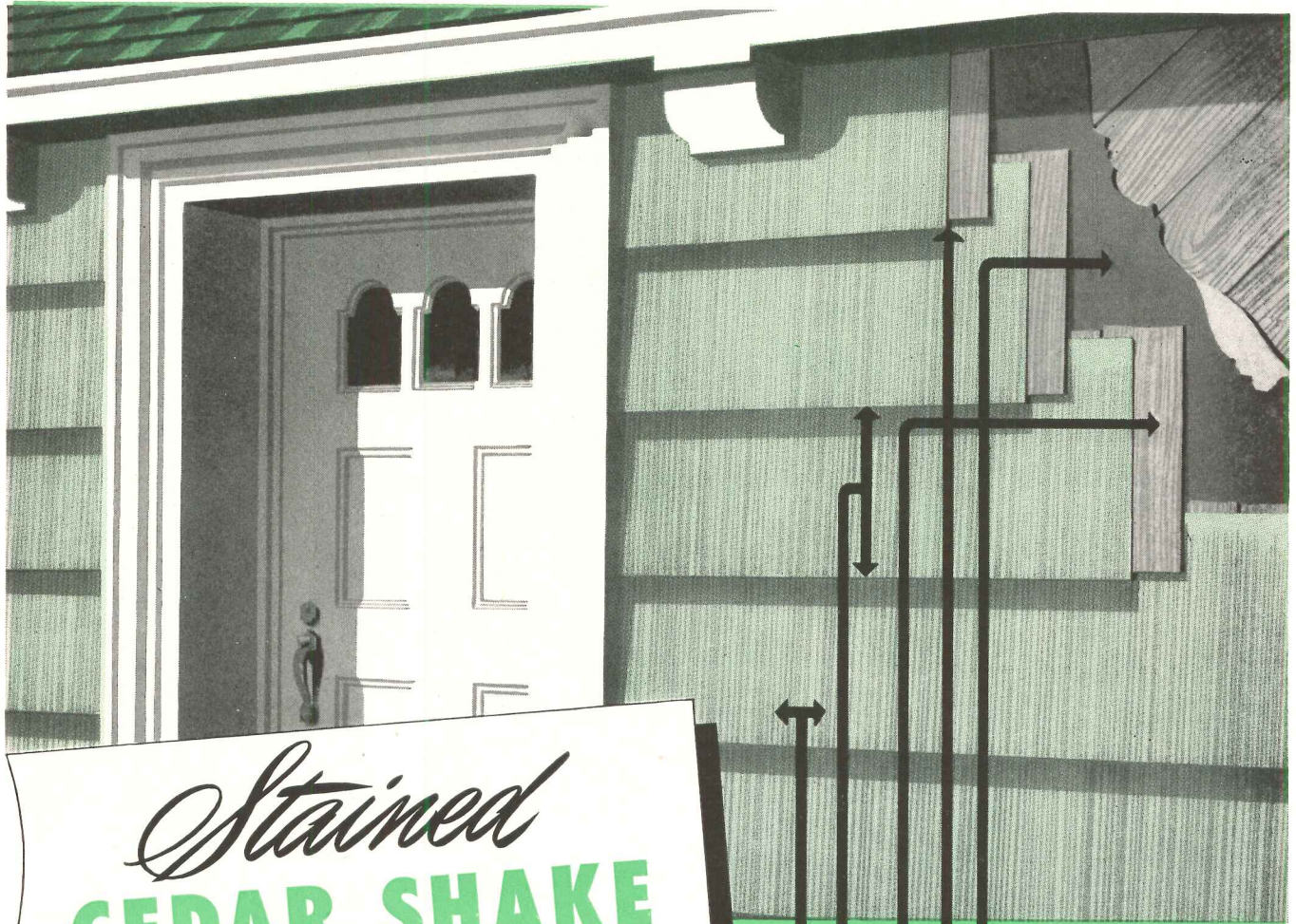
OWENS-CORNING

FIBERGLAS

U.S. REG. U.S. PAT. OFF.

BUILDING
MATERIALS

BUILDING INSULATION • ACOUSTICAL TILE AND BOARD • ROOF INSULATION • MEMBRANE FABRIC • ALSO BASIC MATERIALS FOR SIDING, ETC



Stained
CEDAR SHAKE
DOUBLE-COURSED
SIDEWALLS

Utilize this modern, versatile treatment for exterior sidewalls to achieve economy, beauty and durability. Pre-stained cedar shakes are being specified with increasing frequency because they offer the advantages of true parallel edges, machine-squared butts and attractive "combed" groove surface resembling natural hand split shake texture. Dip-staining while still dry from the kilns assures deep penetration of the protective, life-giving stains; and adds surface seal to eliminate expansion and contraction of shakes after application.

Modular exposure (optional from 8" to 16") of double-coursed shake sidewalls offers the architect greater flexibility of design, and the utilization of inexpensive "undercoursing" grade shingles for the concealed layers makes the double-coursing method of application truly economical. Tight joints, unbroken horizontal shadow lines, color variety and simplicity of application are inherent in Stained Cedar Shakes for homes of all sizes.

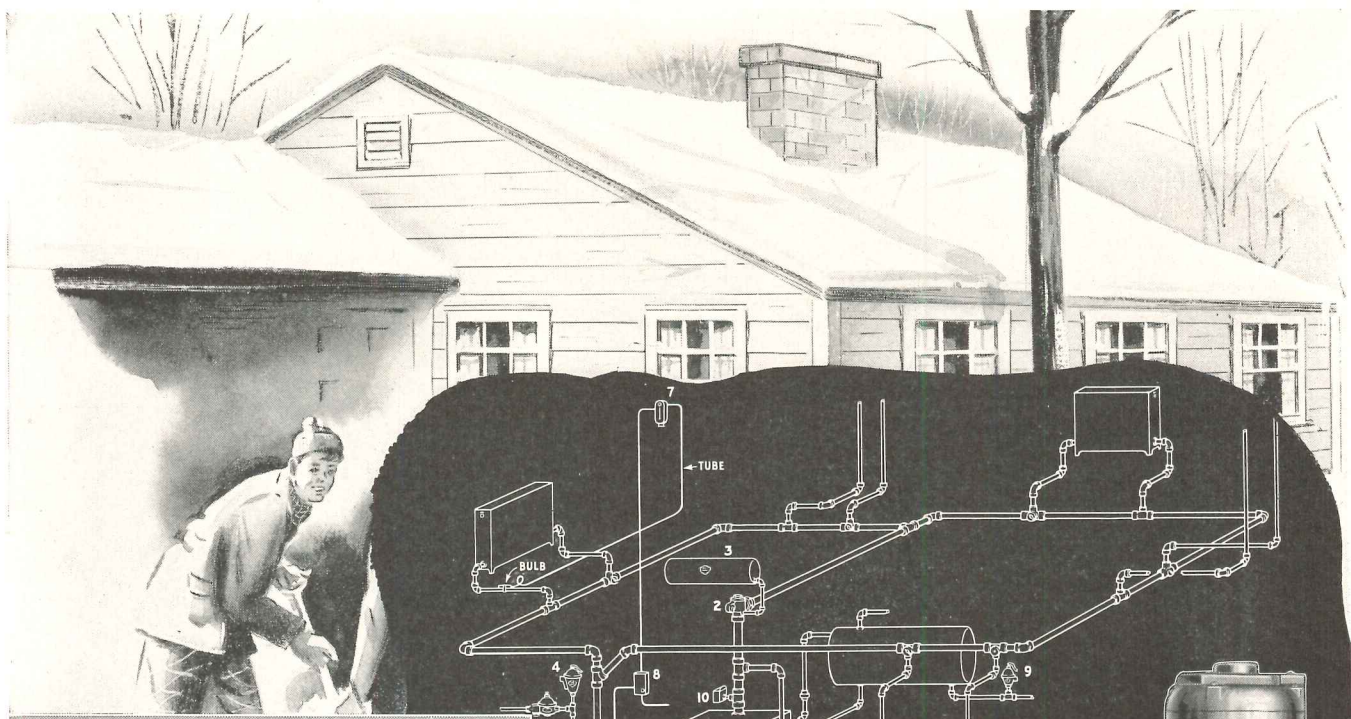


REFER TO SWEET'S FILE 8b/7a
 for complete details and specifications

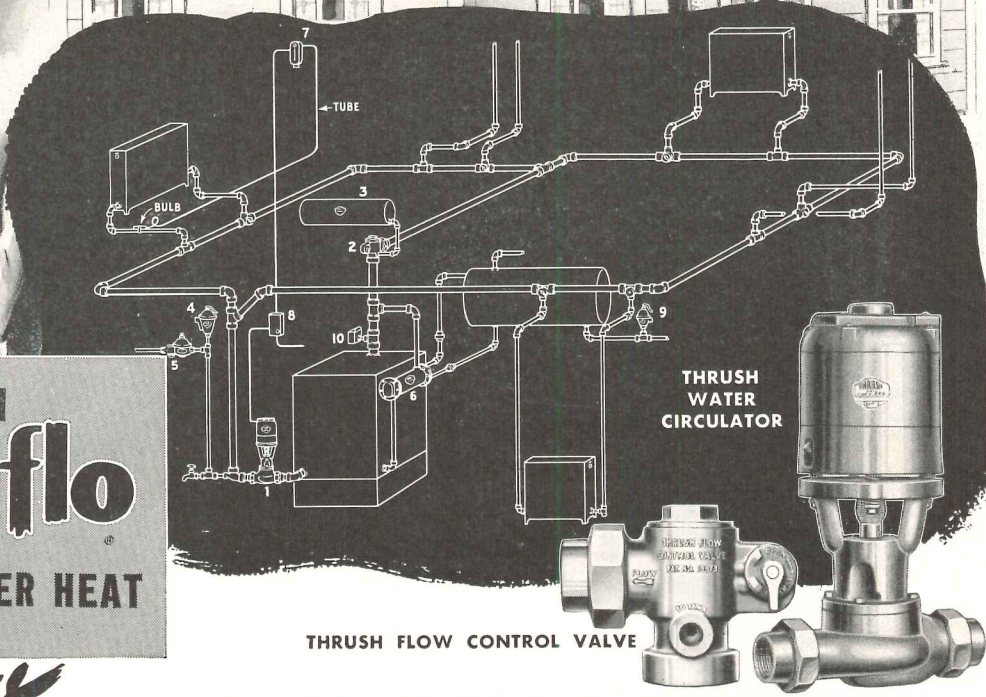
ASSOCIATED MANUFACTURERS

- Canadian Forest Products, Ltd., Vancouver, British Columbia • The Robert McNair Shingle Co., Ltd., Vancouver, British Columbia
- Creo-Dipt Company, Inc., North Tonawanda, New York • Everett Shingle & Shake Company, Everett, Washington • Capilano Shingle Company, Ltd., Vancouver, British Columbia • Perma-Products Company, Cleveland, Ohio • West Coast Stained Shingle Co., Seattle, Washington • Portland Shingle Company, Portland, Oregon • Wood Beautifiers, Seattle, Washington • Colonial Cedar Company, Seattle, Washington • M. R. Smith Lumber & Shingle Co., Seattle, Washington

- Unsaturated building paper.
- Outer course is laid 1/2" lower than the concealed layer.
- Unstained Red Label, No. 3 or undercoursing Grade Shingles are used for the under course.
- Weather exposures may be varied to achieve many desirable architectural effects. Sixteen-inch shakes may be exposed up to 12" to the weather. Eighteen-inch shakes allow exposures as great as 14" to the weather. Twenty-four-inch shakes allow 16" exposures.
- Two rust-resistant, small head 5d nails per shake for outer course, applied 2" above butt-line and 3/4" from edges. Use a third nail in shingles wider than eight inches. Joints are tight or spaced.



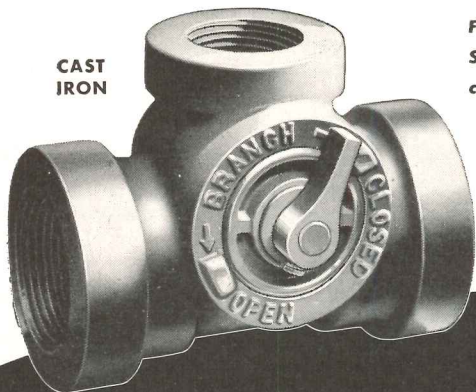
THRUSH
Ajustaflo
 SINGLE MAIN SYSTEM OF
FORCED HOT WATER HEAT



Now... **YOU CAN INSTALL AJUSTAFLO SYSTEMS WITH COPPER OR STEEL PIPE**

THRUSH Adjustable Supply Tees for perfectly balanced one-pipe heating, are now available in bronze for solder connections as well as cast iron. You may offer the many advantages of the Ajustaflo System with either copper or steel pipe installations. Heating efficiency is improved because just the right amount of water may be diverted to each radiator. Convenient exterior lever adjustment determines the amount of hot water passing from the main through each radiator. This assures uniform heating in every room. Flow of water through the main is increased . . . not throttled . . . when branch flow is cut down by this method.

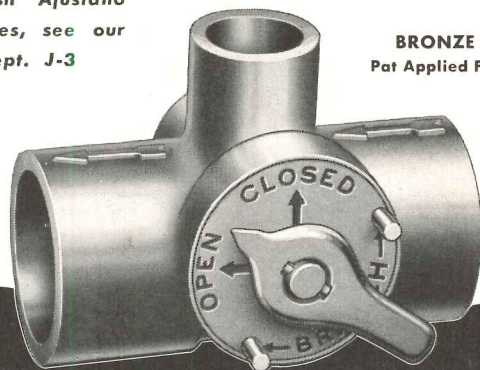
CAST IRON



For more information on Thrush Ajustaflo System or Adjustable Supply Tees, see our catalog in Sweet's or address Dept. J-3

H. A. THRUSH & CO.
PERU, INDIANA

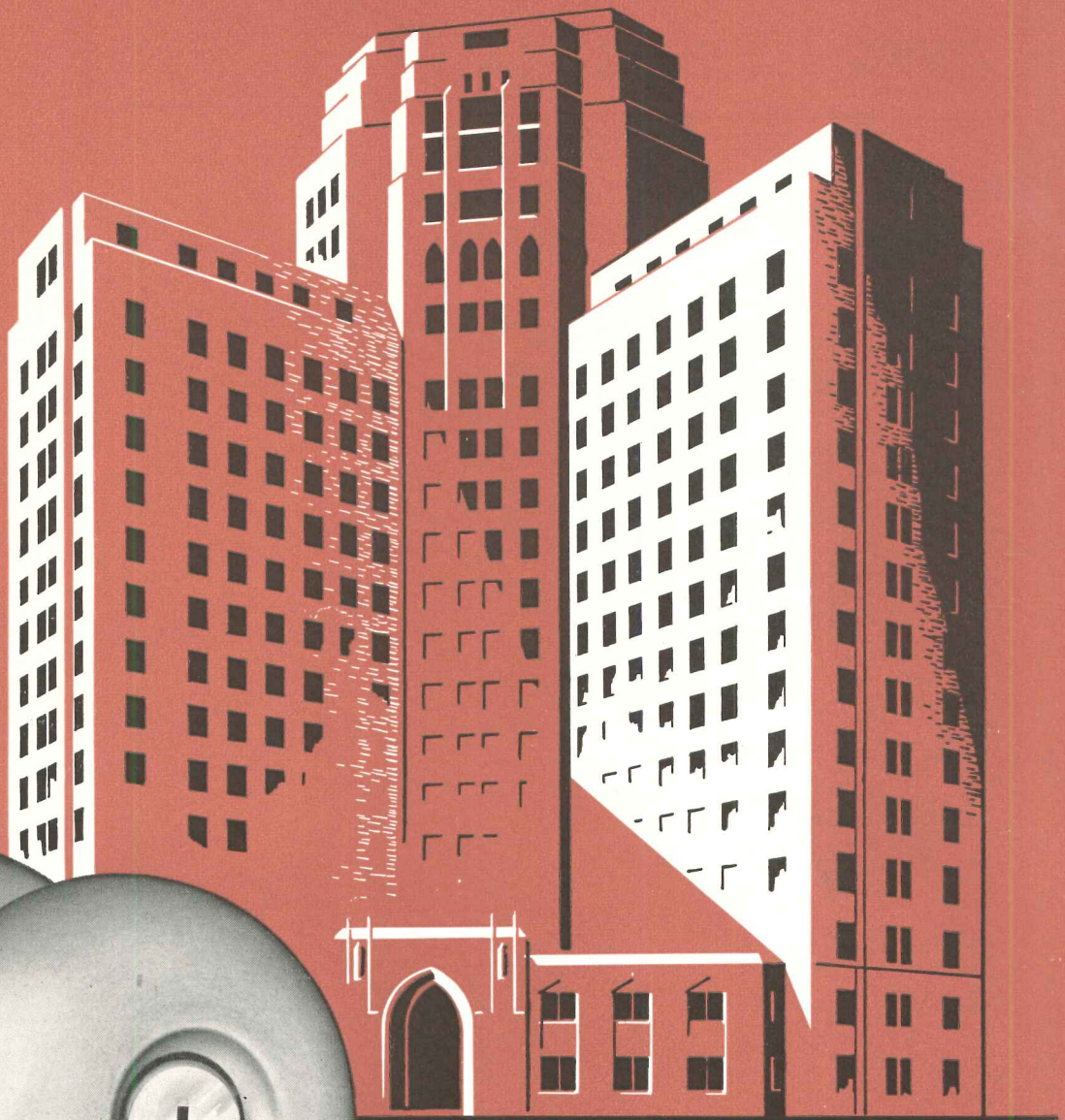
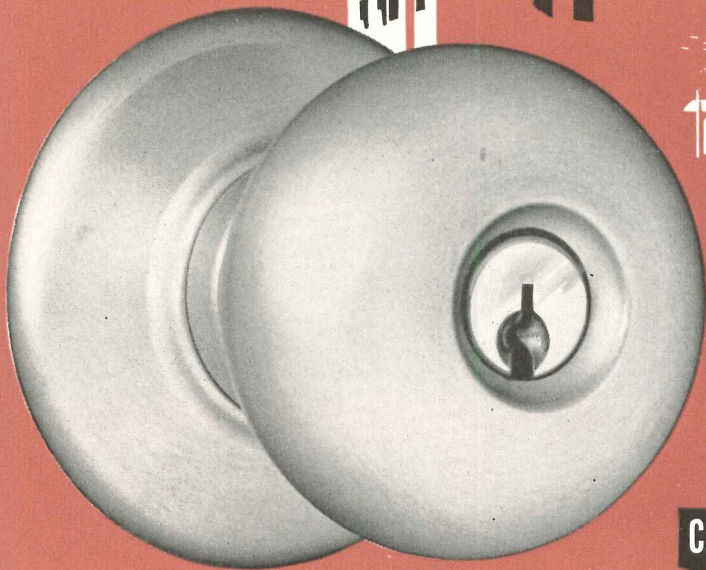
BRONZE
 Pat Applied For



PERFECTLY BALANCED ONE-PIPE HEATING

SCHLAGE

... first name in cylindrical locks



Chicago's Wesley Memorial Hospital

a Schlage installation of heavy-duty cylindrical locks.

Architects: Fugard, Burt and Wilkinson
Successors to Thielbar & Fugard

Cambridge Design

illustrated at left was used in this outstanding hospital.

SCHLAGE

LOCK COMPANY

SAN FRANCISCO · NEW YORK

December 20, 1948

Kimberly-Clark Corporation
Neenah, Wisconsin

Gentlemen:

Our experience with Kimsul insulation during the past few years has been most satisfactory. We found it particularly suitable for the Buckner house, a very special project of ours in Carmel, California.

In addition to fulfilling the wishes of our client, we wanted to prove that low-cost homes can be erected in a short period of time and still be attractively designed. We therefore selected Kimsul for its low cost and high insulating efficiency. As usual, it proved to be exceptionally easy to install, and helped to keep construction moving along rapidly.

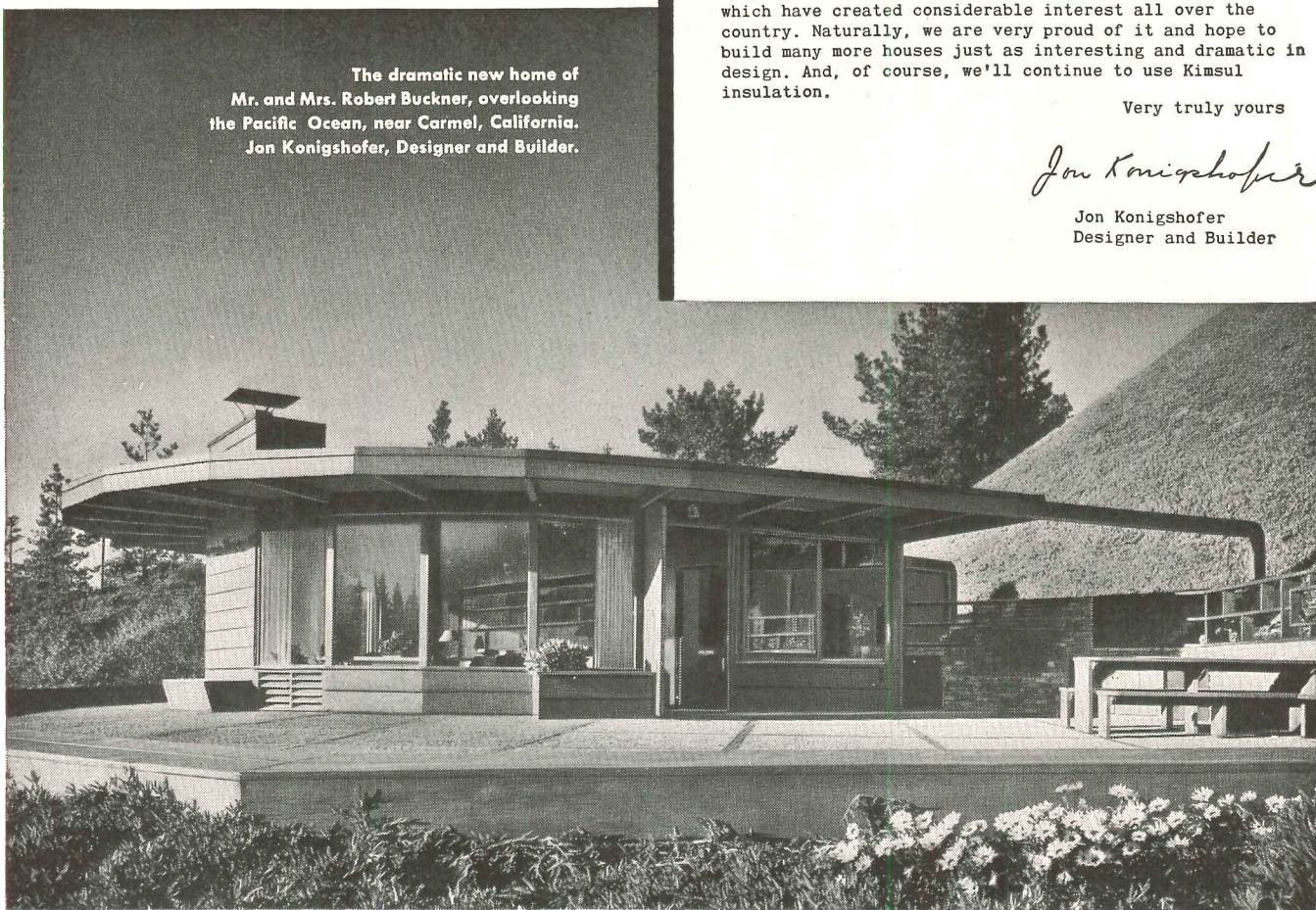
As you can see, the Buckner house has many unusual features which have created considerable interest all over the country. Naturally, we are very proud of it and hope to build many more houses just as interesting and dramatic in design. And, of course, we'll continue to use Kimsul insulation.

Very truly yours

Jon Konigshofer
Designer and Builder

Prominent architect selects KIMSUL* for low cost, high insulating efficiency

The dramatic new home of
Mr. and Mrs. Robert Buckner, overlooking
the Pacific Ocean, near Carmel, California.
Jon Konigshofer, Designer and Builder.



Designers and builders of every type home across the country are discovering that it pays *more* to insulate with KIMSUL. For KIMSUL offers an exceptional combination of low cost and high insulating efficiency (0.27).

KIMSUL is the only many-layer stitched blanket insulation, and provides an entirely different kind of

comfort. "KIMSUL comfort" means *uniform* temperatures throughout every room in the house! No thick spots — no thin spots where heat can leak out. KIMSUL comes in light, handy compressed rolls, so it's easier and more profitable to install. No need for skilled workmen or expensive machinery. And the fire-resistant PYROGARD*

cover is an exclusive feature of this fine insulation.

For further information and free technical literature, see your KIMSUL dealer. Or simply write to:

KIMBERLY-CLARK CORPORATION
KIMSUL Division • Neenah, Wisconsin

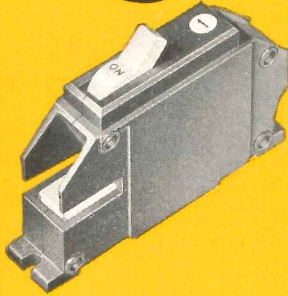
America's Finest New Homes
Are Insulated With KIMSUL!



*T. M. Reg. U. S. & Can. Pat. Off.

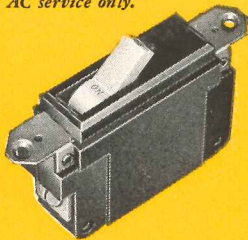
the modern
"fuse box"
is now...

**FUSELESS!
SHOCKPROOF!
AUTOMATIC!**



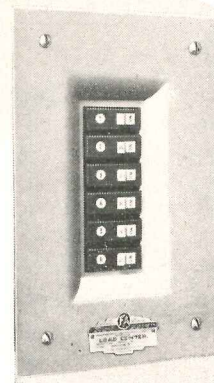
FA THERMAL-MAGNETIC CIRCUIT BREAKER

For use in load centers up to 16 single poles or a combination of single and double poles totaling 16 poles maximum. Capacities: 15-20-30-40-50 amps.; for 120 and 120/240 volts AC service only.



FA TYPE A C JUNIOR CIRCUIT BREAKER

Automatic thermal trip for use in load centers, 6 circuits or less. Also for oil burner or stoker protection . . . or where smaller capacity circuit breakers are desired. Capacities: 10-15-20-30 amps.; 120 volts, AC service only, single pole.



THAT'S RIGHT! When short circuits or *dangerous* overloads occur, the Thermal-Magnetic action of the FA THERMAG Circuit Breaker Load Center instantly and *automatically* opens the circuit and trips the circuit breaker handle to "off" position. Then, safely and conveniently, a simple flip of the handle to "on" position restores the circuit to normal operation. And there is nothing to replace!

On harmless momentary overload, the *thermal* action of the individual circuit breaker maintains the circuit without needless interruption of service.

In cases of smaller capacity requirements, the new FA JUNIOR Circuit Breaker Load Center provides *automatic* protection for small residences, garages, stores, etc.

For more information, consult your FA Representative (he's listed in Sweet's) or write for Bulletins No. 202 and 203.



Frank Adam Electric Co.

ST. LOUIS 13, MISSOURI

Makers of BUSDUCT • PANELBOARDS • SWITCHBOARDS • SERVICE EQUIPMENT • SAFETY SWITCHES • LOAD CENTERS • QUIKHETER

Roddiscraft

Symbol of Quality for over 50 Years

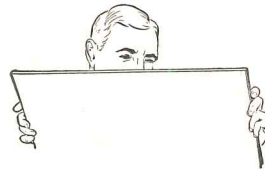
HARDWOOD PLYWOOD

FIR PLYWOOD

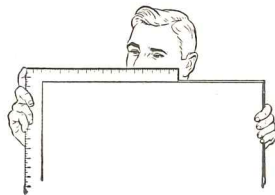
FORMICA



Belt sanded to
satin smoothness



Edges clean
as a whistle



Corners . . .
precision true

The knowledge and experience gained through more than fifty years of working with wood is built into Roddiscraft plywood. You can see the difference in faces, edges, corners—it's a quality product.

You know Roddiscraft knows your needs when

you deal with our warehouses. They are service-centers equipped and stocked to meet the needs of customers in each area.

This combination of quality products and service keyed to your needs is a Roddiscraft tradition.

Fir Plywood

Available in both interior and exterior grades. Complete warehouse stocks in standard sizes and thicknesses.

Roddiscraft Hardwood Plywood

Lumber and veneer core — available in a variety of domestic and foreign woods. Standard sizes and thicknesses available for immediate delivery from warehouse stocks.

Formica sheet stock available in a wide variety of colors and patterns.

NATIONWIDE Roddiscraft WAREHOUSE SERVICE

Cambridge 39, Mass. . . 229 Vassar St.
Chicago 8, Ill. . . 1440 W. Cermak Rd.
Cincinnati 2, Ohio . . . 457 E. Sixth St.
Dallas 10, Texas . . . 2800 Medill St.
Detroit 14, Mich. . . 11855 E. Jefferson St.
Kansas City 3, Kan. . . 35-53 Southwest Blvd.
L. I. City, N. Y. . . Review & Greenpoint Ave.
Los Angeles 11, Calif. . . 2860 E. 54th St.

Louisville 10, Ky. . . 1201-5 S. 15th St.
Marshfield, Wis. . . 115 S. Palmetto St.
Milwaukee 8, Wis. . . 4601 W. State St.
New York 55, N. Y. . . 920 E. 149th St.
Port Newark 5, N. J. . . 103 Marsh St.
St. Louis, Mo. 4453 Duncan Ave.
San Antonio, Texas . . . 727 N. Cherry St.
San Francisco 24, Cal. . . 345 Williams Ave.

DEALERS IN ALL PRINCIPAL CITIES

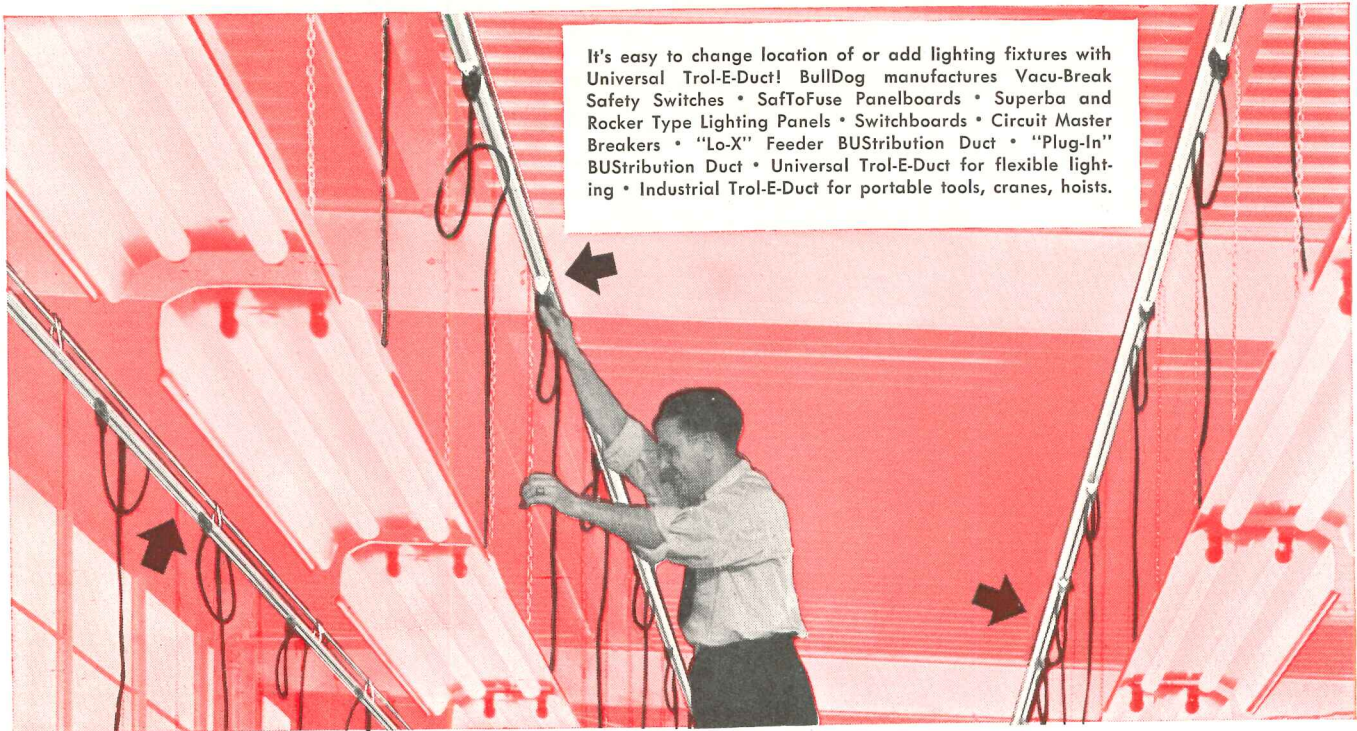
Roddiscraft

Roddis Plywood Corporation

Formerly Roddis Lumber & Veneer Co.
MARSHFIELD, WISCONSIN

ARCHITECTS and ENGINEERS

This message will also appear in a broad list of publications that are read by the men you seek to influence . . . your prospective clients



It's easy to change location of or add lighting fixtures with Universal Trol-E-Duct! Bulldog manufactures Vacu-Break Safety Switches • SafToFuse Panelboards • Superba and Rocker Type Lighting Panels • Switchboards • Circuit Master Breakers • "Lo-X" Feeder BUStrihution Duct • "Plug-In" BUStrihution Duct • Universal Trol-E-Duct for flexible lighting • Industrial Trol-E-Duct for portable tools, cranes, hoists.

Highlights on low lighting costs

HAVE you ever looked into the cost of a simple job like moving or adding a fixture in an ordinary lighting system?

First, there are new materials—wire, conduit, junction box, outlet box, hangers, etc.; then, labor expense for splicing, threading, bending, taping, etc.; finally, loss of production while power is shut off for connections.

There is no need to see profits drain away like this. Plug the leak with Bulldog Universal Trol-E-Duct.

Bulldog Universal Trol-E-Duct is a flexible electrical system providing current *where* you want it, *when* you want it. Every inch of the enclosed copper bus bars in Universal Trol-E-Duct can be utilized as an outlet for lighting fixtures. You can plug in for current at any point along its slotted duct. Bus bar capacity: 50 Amps., 250 Volts.

Bulldog Universal Trol-E-Duct is 100% salvable, thus lends itself to major or minor plant changes. Simply dismantle prefabricated parts and reinstall to meet your new requirements. *Not a single piece need be scrapped.*

Ask your local Bulldog Field Engineer to show you a Universal Trol-E-Duct installation in your own neighborhood.

Bulldog Field Engineers welcome the opportunity to sit in with you during the early planning stages of a building project. Their knowledge of electrical distribution layout can mean savings in installation costs, as well as efficiency and reliability in actual operation. Why not take advantage of this service?

BULLDOG ELECTRIC PRODUCTS COMPANY

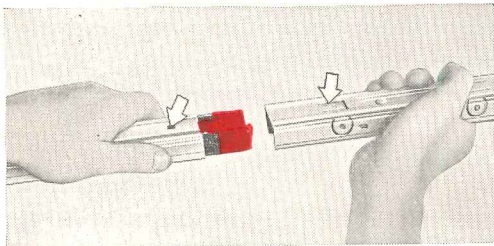
DETROIT 32, MICHIGAN • FIELD OFFICES IN ALL PRINCIPAL CITIES

IN CANADA: BULLDOG ELECTRIC PRODUCTS OF CANADA, LTD., TORONTO

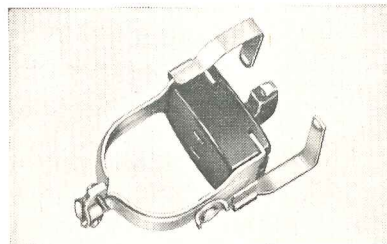


BULLDOG

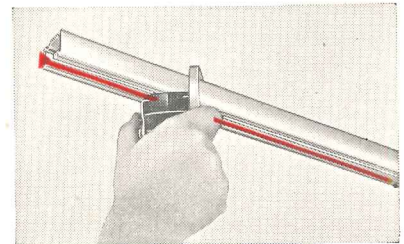
HEADQUARTERS FOR ELECTRICAL DISTRIBUTION



Bulldog Universal Trol-E-Duct is prefabricated in one to ten foot lengths for easy installation. A variety of couplings with specialized purposes join sections. Connections slip together; no nuts or bolts.



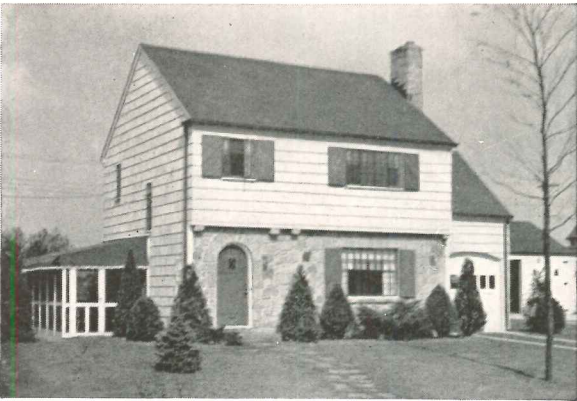
Terminal Twistout Plug, one of several types used to tap current from Universal Trol-E-Duct. Duct also accommodates movable trolley-type outlets.



Inserting a twistout plug is easy. Contact end is inserted in slot and twisted. "L" shaped supporting fingers slide easily over top of duct.



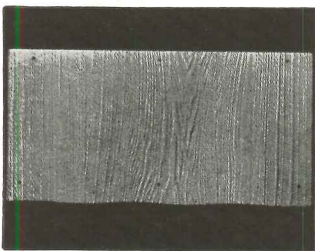
This Indiana housing development features "Century" Asbestos-Cement Siding on first stories, with K&M "Century" Apac board used as skirting at the foundations.



On this attractive home, "Century" Siding creates a pleasing effect, while blending with other materials.

**For low-cost
housing developments
or individual homes...**

**K & M "Century"
Asbestos-Cement Siding
provides maximum protection
with beauty and simplicity**



No. 57 "Century" Asbestos-Cement Siding supplied in shell white or graytone, straight or wavy butline styles.

When you specify "Century" Asbestos-Cement Siding, you provide a trim, attractive appearance . . . while guaranteeing a practical, fire-weather-and-rot-resisting exterior that will actually toughen with age.

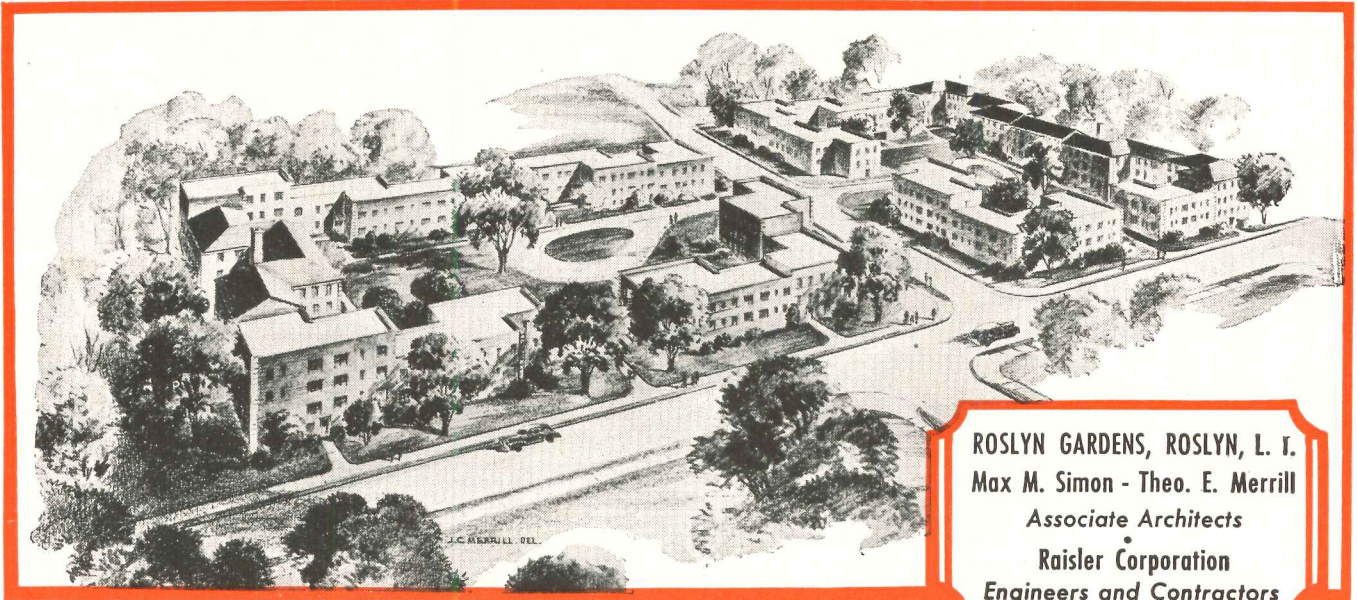
"Century" Siding has a deep-grained, weathered cypress finish that effectively duplicates wood . . . with thick butts that cast the deep shadow line your clients desire. It resists attacks by rodents and termites, never needs protective painting.

In computing your costs, remember "Century" Asbestos-Cement Siding comes in large unit sizes, 12" x 24", which make for speedy, economical application. Any good carpenter can install them easily and quickly. Investigate the full benefits of "Century" Siding. Your letter will receive our prompt attention.

*Original manufacturers of Asbestos-Cement
Shingles in this Country*

**KEASBEY & MATTISON
COMPANY • AMBLER • PENNSYLVANIA**





ROSLYN GARDENS, ROSLYN, L. I.
 Max M. Simon - Theo. E. Merrill
 Associate Architects
 Raisler Corporation
 Engineers and Contractors

Another BIG APARTMENT PROJECT SELECTS SARCO THERM

Simplified Heat Control

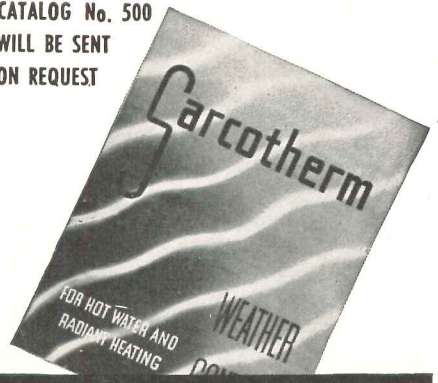
The engineers of this six acre F.H.A. development, providing 217 moderate priced apartments, assured utmost heating comfort by deciding on Sarcotherm Control for the forced hot water system.

"Simplicity and Low Cost" were again the deciding factors. More and more engineers are realizing that the luxury of a control that modulates for both outside and inside temperatures is also an economy—in first cost, in fuel, and in maintenance costs.

Sarcotherm has thrived on comparisons. On plans, on price, in service, the more you compare, the better Sarcotherm looks. Why not see some of the many jobs in your territory?



CATALOG No. 500
WILL BE SENT
ON REQUEST



12

Sarcotherm

SARCO THERM CONTROLS, INC. • Empire State Bldg. • NEW YORK 1, N. Y.



Comfort should be

Hundreds of homes have been built around Servel ALL-YEAR Air Conditioning

When you plan new homes around Servel *All-Year* Air Conditioning, you not only provide your clients or buyers with a heating and cooling plant; you give them *comfort*. For, with a Servel unit, the home owner can control his indoor climate the year round . . . at the flick of a finger.

In summer, the Servel *All-Year* Air Conditioner refrigerates the air, removes sticky, wilting humidity. In winter, this same unit floods the home with warmth, adds just the right amount of moisture for comfort. In between seasons, Servel circulates air without drafts or "layers" of hot and cold air. Year round, Servel filters out dust, dirt, and irritating pollen. And

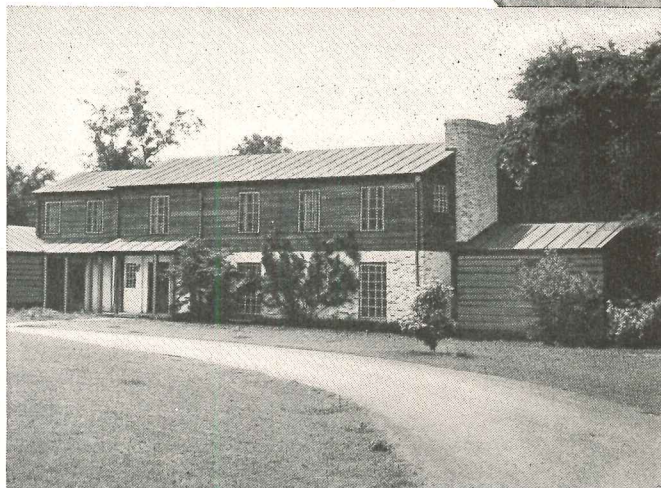
no effort or extra work is required on the part of the home owner. He simply dials the desired climate and flips a switch for cooling or heating.

Planning your clients' homes around Servel *All-Year* Air Conditioning gives you the opportunity for many innovations in design. You can effect construction economies, too, which will materially reduce the net cost of the conditioner. Once installed, Servel is economical to operate. Every unit is backed by a 5-year factory warranty against defective parts.

Get the facts on Servel *All-Year* Air Conditioning from your local Gas Company or Servel dealer. Or write direct to Servel, Inc., 8902 Morton Ave., Evansville 20, Indiana.

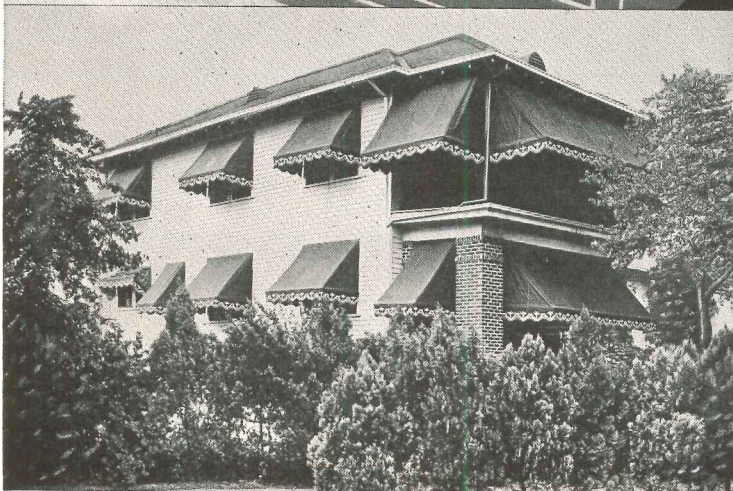
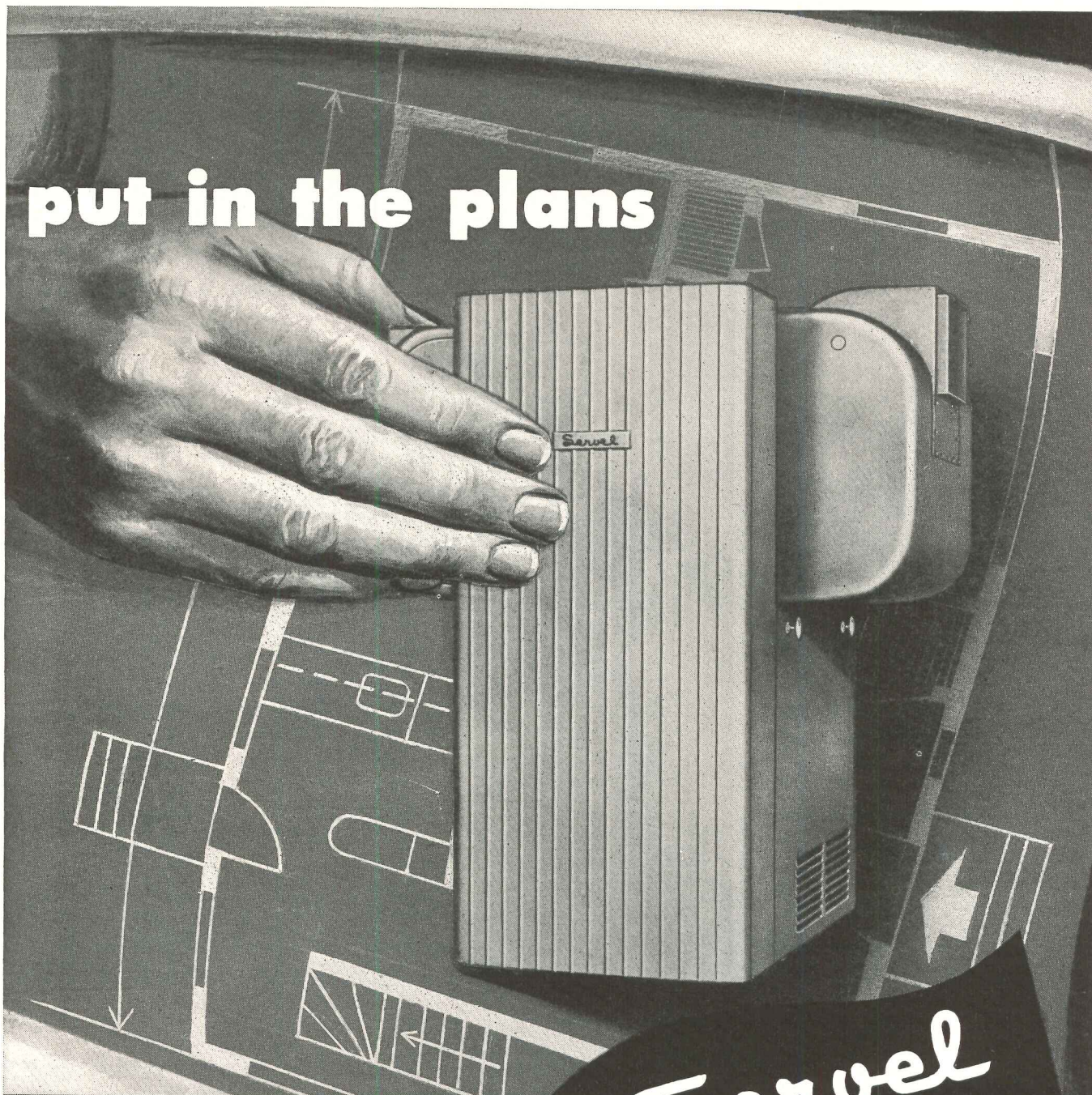


OKLAHOMA. "Our entire family praises our Servel *All-Year* Air Conditioning unit, and we are always proud to have visitors come in," writes Mr. G. W. Athey of 1106 W. York Street, Enid.



LOUISIANA. "We are very much satisfied with our investment in a Servel *All-Year* Air Conditioner," states Clay W. Beckner, 5 Newcomb Boulevard, New Orleans.

put in the plans



TEXAS. "We keep our home cool all summer and warm all winter with Servel All-Year Air Conditioning," comments Mr. Nelson Waggener, 7700 Mockingbird Lane, Dallas.

Servel
All-Year
AIR CONDITIONER

COPPER makes COMMON SENSE for "MODERN"!

Architect: Lester C. Tichy, New York;
General Contractor: Fairchester Builders,
Inc., Pleasantville, N. Y.; Sheet Metal Con-
tractor: W. R. Robinson, Elmsford, N. Y.



Note the facing of Revere 20 oz. cold rolled copper, in sheets approximately 2'x4', which goes around 3 sides of this modern store building. The copper will be allowed to age naturally, and at all stages (particularly after the patina develops) will harmonize with the chocolate brown siding. 16 oz. Revere Copper was used for flashing.

Colorful and lasting beauty is provided by the sheet copper facing around the new Home Textures store in White Plains, New York. In addition, both original cost and maintenance of the copper facing are extremely low.

This new building is another striking proof of the versatility of Revere Sheet Copper—the metal that is equally suitable for modern or traditional architecture . . . for big jobs or small jobs . . . indoors or outdoors. In fact, it makes sense to rely on copper *whenever you want beautiful and lasting sheet metal construction.*

And for the answers to your problems on design or installation of sheet copper, it will pay you to use the new technical data developed by the Revere Research Laboratories. You'll find these data in Revere's booklet, "Copper and Common Sense." This authoritative

manual of sheet copper construction has been widely distributed to architects and sheet metal contractors, and there is probably a copy in your files. Be sure to refer to it as your guide to fine and durable sheet copper construction.

Revere materials are available from leading distributors throughout the United States. A Revere Technical Advisor will always be glad to consult with you without obligation.

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.

YOUR CUSTOMERS LOOK FOR
all **THESE ADVANTAGES OF . . .**

GENUINE CLAY
tile

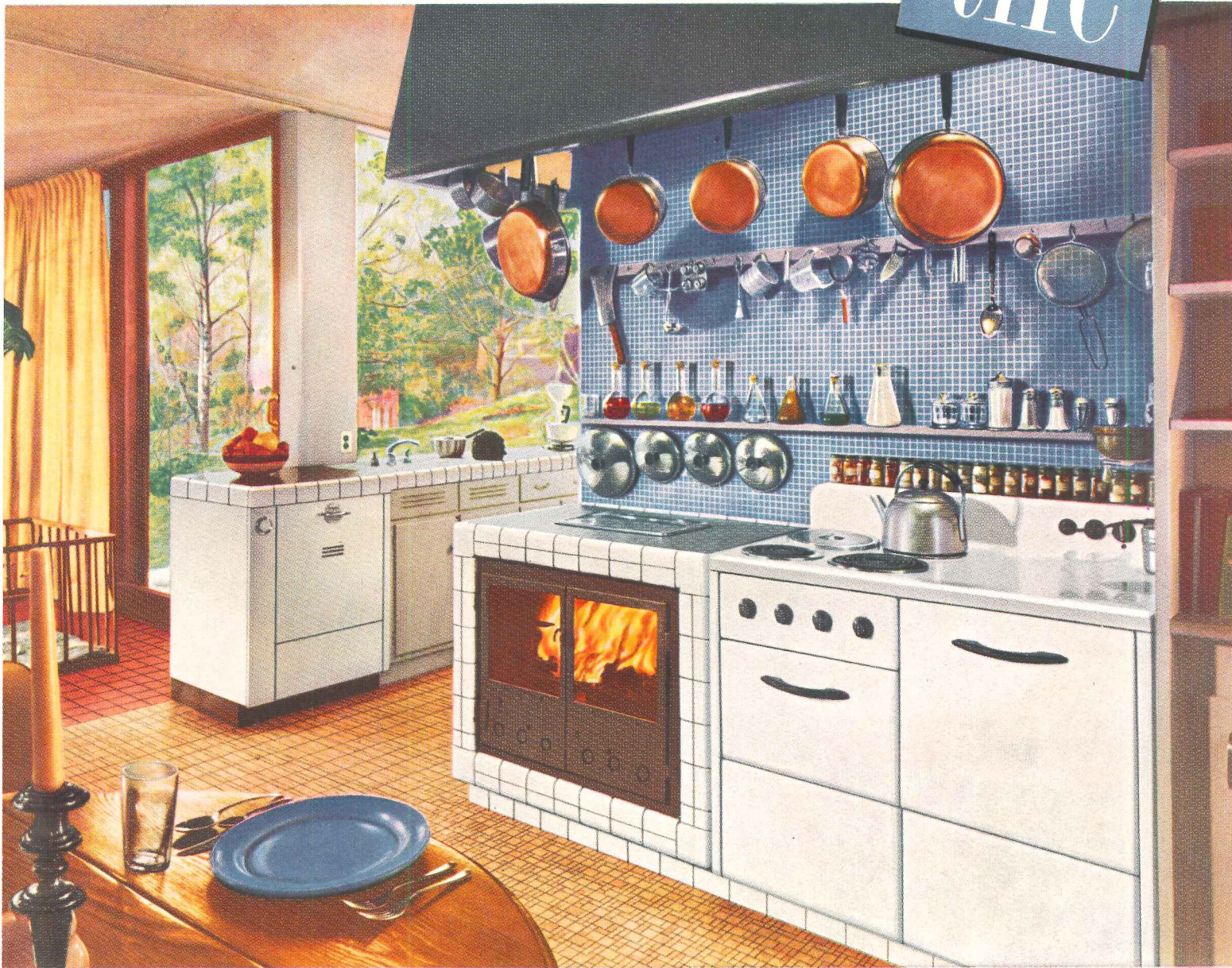


Photo by Ezra Stoller: Pictorial Services.

Design flexibility of tile makes possible such imaginative applications as this kitchen. Carl Koch, Architect, designed it for his own home at Snake Hill, Belmont, Massachusetts.

Sparkling tile colors can be used in modern arrangements or patterns to enhance any decorative theme. And, you know that colors won't fade or darken because tile's beauty is fired-in for a lifetime of loveliness.

Easy to clean and keep clean, tile never needs waxing, polishing or refinishing. Homeowners appreciate, too, the fact that water rolls off without leaving stubborn, streaky blemishes.

The Tile Council of America was formed in January 1945 to provide a central source of information about floor and wall tile, and to sponsor research and development projects designed to increase the usefulness of tile in all types of private and public building.

Bright and efficient, clay tile for floors, walls and countertops keeps its fresh, spic-and-span appearance for a lifetime. Exposure to heat or cold, dampness or dryness will not affect clay tile.

Long term economy of clay tile means lower end-cost for the homeowner. With no recurring charges for maintenance or replacement, tile is a sure sign of careful, thrifty planning.

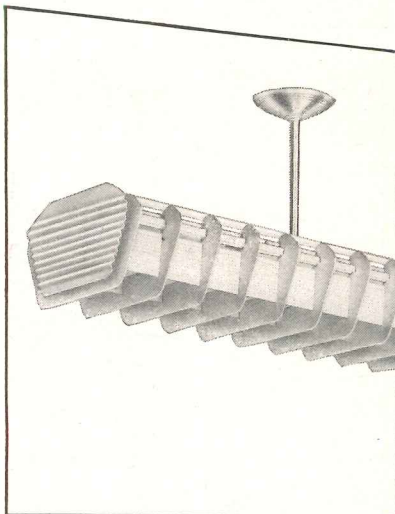
For specific information regarding available types, sizes and colors, see *Sweets Architectural* or *E-C-A File*. THE TILE COUNCIL OF AMERICA, Room 3401: 10 East 40th Street, New York 16, N. Y. Room 433: 727 West Seventh Street, Los Angeles, California.

PARTICIPATING COMPANIES—American Encaustic Tiling Company • Architectural Tiling Company, Inc. • Atlantic Tile Manufacturing Company • B. Mifflin Hood Company • Cambridge Tile Manufacturing Company • Carlyle Tile Company • General Tile Corp. • Gladding, McBean & Company • Mosaic Tile Co. • Murray Tile Company, Inc. • National Tile & Manufacturing Company • Olean Tile Company • Pacific Clay Products • Pacific Tile and Porcelain Co. • Pomona Tile Manufacturing Company • Robertson Manufacturing Company • Sparta Ceramic Company • Summitville Face Brick Company • United States Quarry Tile Company

THE MODERN STYLE IS TILE

now! classrooms of light!
completely packaged!

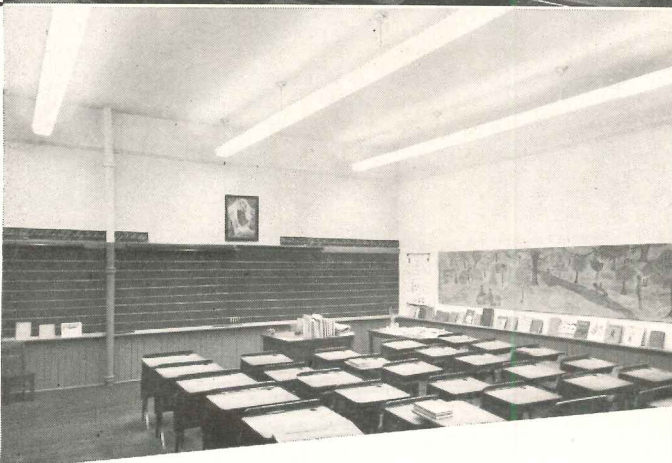
2



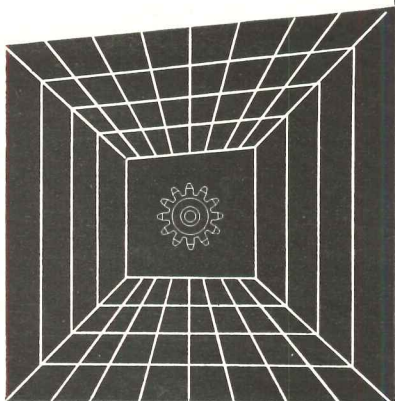
Latest of a long series of Pioneering "Firsts" in Good Lighting.



Typical classroom with old lighting.



Same classroom relighted with Miller Series-Louver Luminaires.



Packages of light for classroom lighting — everything necessary for providing well-diffused illumination for the average classroom. These packages contain Miller C62 Series-Louver luminaires for 40-watt fluorescent lamps. Pre-planned for easy seeing. Nothing else to buy. Local contractors can install. Wire or write for details. Miller Lighting Service is all-inclusive. Miller field engineers and distributors, conveniently located, are at your call.

THE miller COMPANY

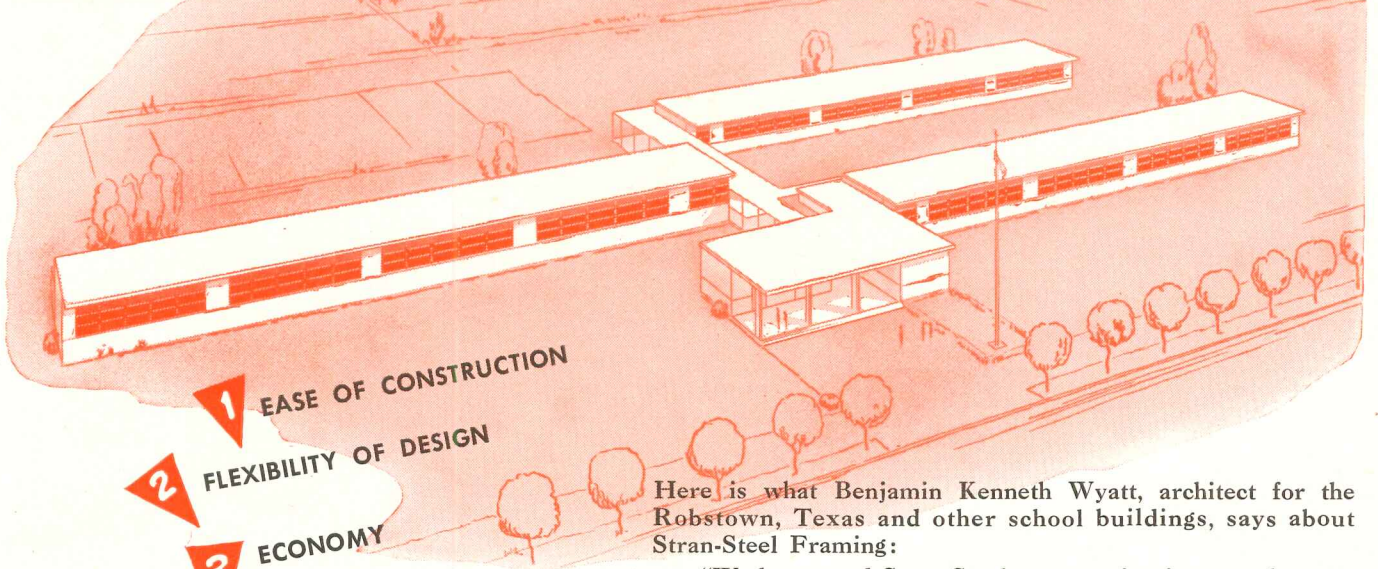
SINCE 1844

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

**3 REASONS WHY
ONE ARCHITECT CHOSE**

STRAN-STEEL FRAMING



- 1 EASE OF CONSTRUCTION**
- 2 FLEXIBILITY OF DESIGN**
- 3 ECONOMY**

Here is what Benjamin Kenneth Wyatt, architect for the Robstown, Texas and other school buildings, says about Stran-Steel Framing:

"We have used Stran-Steel construction in several recent school buildings.

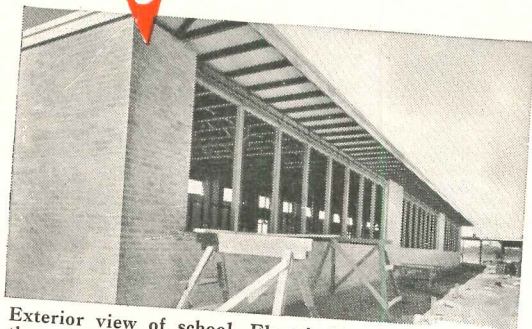
"Besides being most flexible for modern design, providing light cantilevered construction, thin window mullions used with collateral materials, economical suspended furring, Stran-Steel offers great rigidity with speed of erection for greater economy.

"Being able to nail to Stran-Steel framing gives the economy of wood framing for dry wall construction (Knox School) also eliminates furring for metal lath (Robstown Schools) in plaster construction. Fire-safety and long life is of paramount importance in school building construction, and incombustible Stran-Steel framework meets both of these requirements."

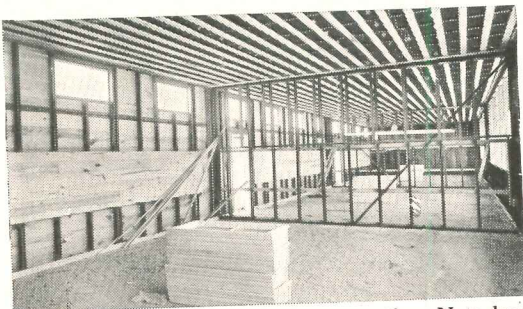
Stran-Steel framing makes it easy to design, easy to build **BETTER BUILDINGS** economically! If you are planning a housing project, a light industrial building or a private home, you can give your buildings a backbone of steel with Stran-Steel framing.

GREAT LAKES STEEL CORPORATION

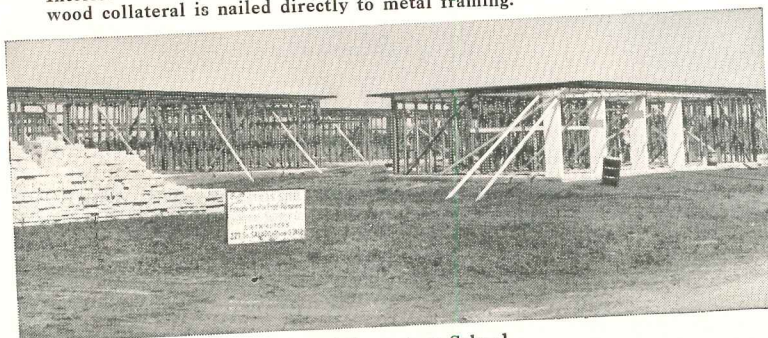
Stran-Steel Division • Dept. 36 • Penobscot Bldg. • Detroit 26, Mich.
UNIT OF NATIONAL STEEL CORPORATION



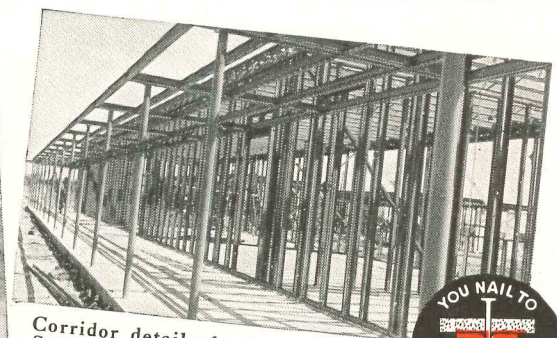
Exterior view of school. Electrical wiring is installed through factory-punched holes in frame members.



Interior view of school under construction. Note how wood collateral is nailed directly to metal framing.



Stran-Steel framing for Robstown Elementary School.



Corridor detail of school showing Stran-Steel framing.



STRAN-STEEL REG. U.S. PAT. OFF.

Figure it at

FULL RATING

AEROFIN RATINGS ARE ACCURATE AND RELIABLE

Aerofin's continued research has developed accurate ratings that are good for the life of the unit. You can always count on Aerofin to deliver full-rated capacity — full efficiency.

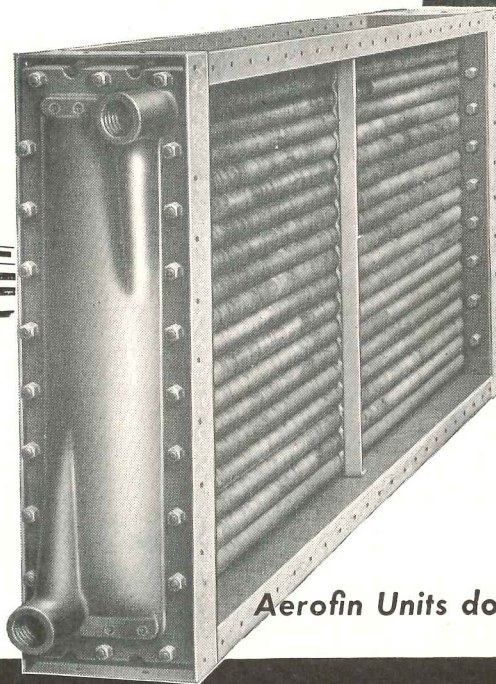
Over 25 years' experience, combined with unequalled production facilities, enables Aerofin to select just the right surface and materials for each particular job. Aerofin rigidly controls every phase of the production of its heat-transfer coils and units.



This man is looking for air bubbles — he is testing Aerofin heat-transfer coils with air pressure in a specially illuminated tank. If there are no bubbles, it means the immersed Aerofin unit has withstood the severe strains of steam and hydrostatic pressure tests and is ready to give you long, efficient service.



Throughout the
AIR CONDITIONING
Industry —



Aerofin Units do the Job Better, Faster, Cheaper

AEROFIN CORPORATION

410 South Geddes St. SYRACUSE 1, N. Y.

NEW YORK • CHICAGO • CLEVELAND • DETROIT • PHILADELPHIA • DALLAS • MONTREAL

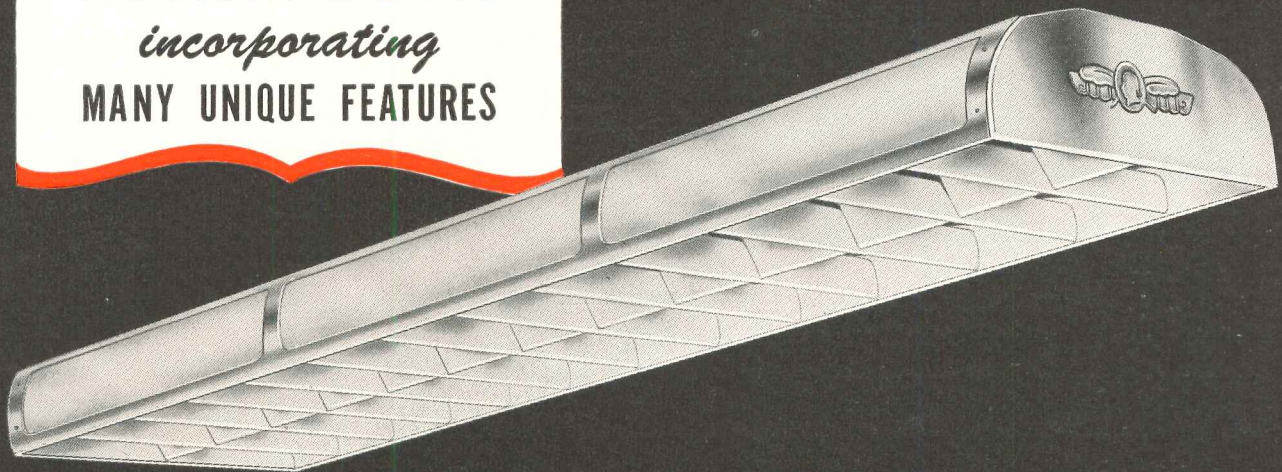
"Something Better
Has Come to Light"

3 New UNITS
FOR SCHOOL & OFFICE
incorporating
MANY UNIQUE FEATURES

"The Monroe"

A-5000 SERIES *

FLUORESCENT LUMINAIRES



THREE DISTINCTIVE PITTSBURGH PERMAFLECTOR FLUORESCENT LUMINAIRES combine maximum lumen output and minimum brightness ratios with economical initial cost and low installation cost.

All three "Monroe" Units give both downward and upward light distribution and have 35° crosswise and 25° lengthwise shielding. "Quick release" fittings allow hinging of the baffle-bottom from either side or complete assembly removal. Knockouts permit any type of installation. Adjustable hangers are available for individual or end-to-end pendant mounting.

"The Monroe" 2-Lamp Luminaires are typical of Pittsburgh Permaflector Quality Lighting Equipment designed for efficient performance, easy installation and simple maintenance. Before you buy or specify—check the many advantages of *Planned Lighting with Pittsburgh Permaflector Fluorescent and Incandescent Units.*

Pittsburgh Reflector Company

402 OLIVER BUILDING • PITTSBURGH 22, PENNSYLVANIA
MANUFACTURERS OF FLUORESCENT & INCANDESCENT LIGHTING EQUIPMENT

Permaflector Lighting Engineers in All Principal Cities



CONDENSED DATA ON "The Monroe"

A-5240-PL LUMINAIRE*—White translucent plastic side-panels are firmly secured in a one-piece, stamped steel; baked-on white enamel baffle-louvers and reflector. Efficiency —81%.

A-5240-AL LUMINAIRE*—Aluminum side-panels and transverse louvers distinguish this unit. Side-panels are longitudinally embossed for added appearance and strength. Efficiency —78%.

A-5240-ST LUMINAIRE*—Entire unit is 20 gauge sheet-steel. Transverse louvers and longitudinal reflectors are baked-on white enamel. Embossed side-panels are baked-on metallic silver-finish. Efficiency —83%.

Die-formed, metal parts assure precision fit, maximum rigidity and strength. One-piece construction with open bottom allows ready access to wiring channels from below when installing the luminaires. Medallion silhouettes of President Monroe, superimposed over cross-quills, add a decorative note to the ends and conceal knockouts used for continuous-runs.

For Full Details on "The Monroe"

Send for Advance Notice Sheet A-7. For information on other Fluorescent or Incandescent Equipment, request Catalogs 48 and 46 on your letterhead.

*Patent Pending



PITTSBURGH PERMAFLECTOR LIGHTING EQUIPMENT IS DISTRIBUTED BY BETTER ELECTRICAL WHOLESALERS EVERYWHERE



Illustrating use of individual "LS" LINE-O-FLO units set into exposed ducts in a large retail store and show room.

line-o-flo

CEILING OUTLETS

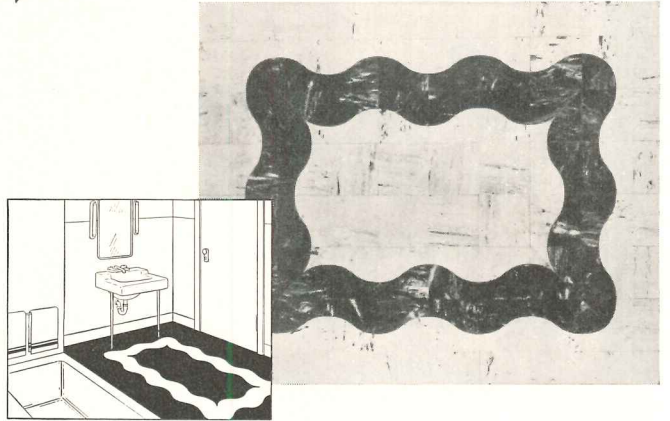
- Low pressure drop — Low noise level.
- Dimensionally coordinated for use with acoustical ceilings.
- High diffusion efficiency.
- Accurate performance data tables.
- Two models — "LS" standard and "LL" with M21118 Day-Bright light unit.



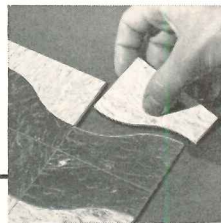
Illustration of continuous-strip "LL" LINE-O-FLO units with lights in the ceiling of a hotel dining room.

WRITE FOR LITERATURE
BARBER-COLMAN COMPANY
 1232 Rock St., ROCKFORD, ILLINOIS

New Horizons in Floor Design



● Square tile — with all its versatility — is just one design channel available to you in durable Danbury Rubber Tile. Danbury also offers you the curve via a simple, precision die-cut unit — Wavedge. Above, Wavedge forms a wavy border, a custom effect achieved with standard installation techniques.



Here you see how easily Wavedge handles. Note that two Wavedge tile form a square, yet color separation is along a curved line. As with Danbury square tile, Wavedge comes in 30 colors.



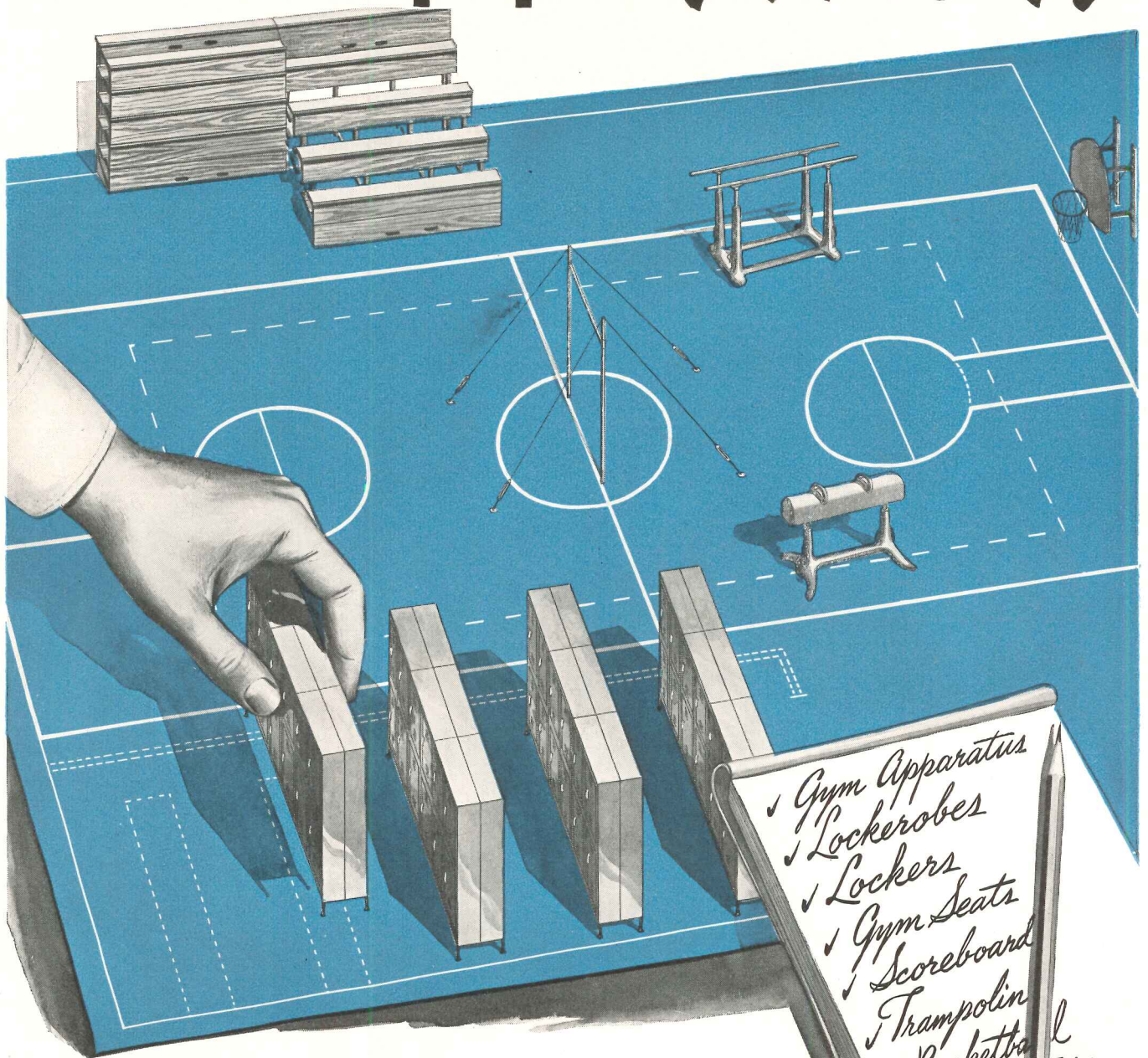
WRITE FOR FREE LITERATURE
 You can learn the facts about Wavedge and get many new practical design ideas in our free literature. Write now to be ready with distinctive flooring ideas tomorrow.

Copyright, 1949 — The Danbury Rubber Company, Inc.

DANBURY

THE DANBURY RUBBER COMPANY, INC.
 DANBURY, CONNECTICUT

Get it on paper **FIRST!**



rely on Medart for complete planning service...

Whatever type installation you are considering, consult Medart engineers first... for honest, unbiased analysis of your installation problems. The use of Medart planning and engineering facilities entails no cost or obligation on your part. Yet the savings... in actual installation costs... and in arriving at the proper kind of

installation based on your architectural requirements... are apt to be considerable! Yes... it costs no more... and results are sure, if you put it on paper, *first!* And remember! Over 75 years of serving the nation's schools has given Medart unquestioned leadership in the field of locker room, gym and physical educational equipment.

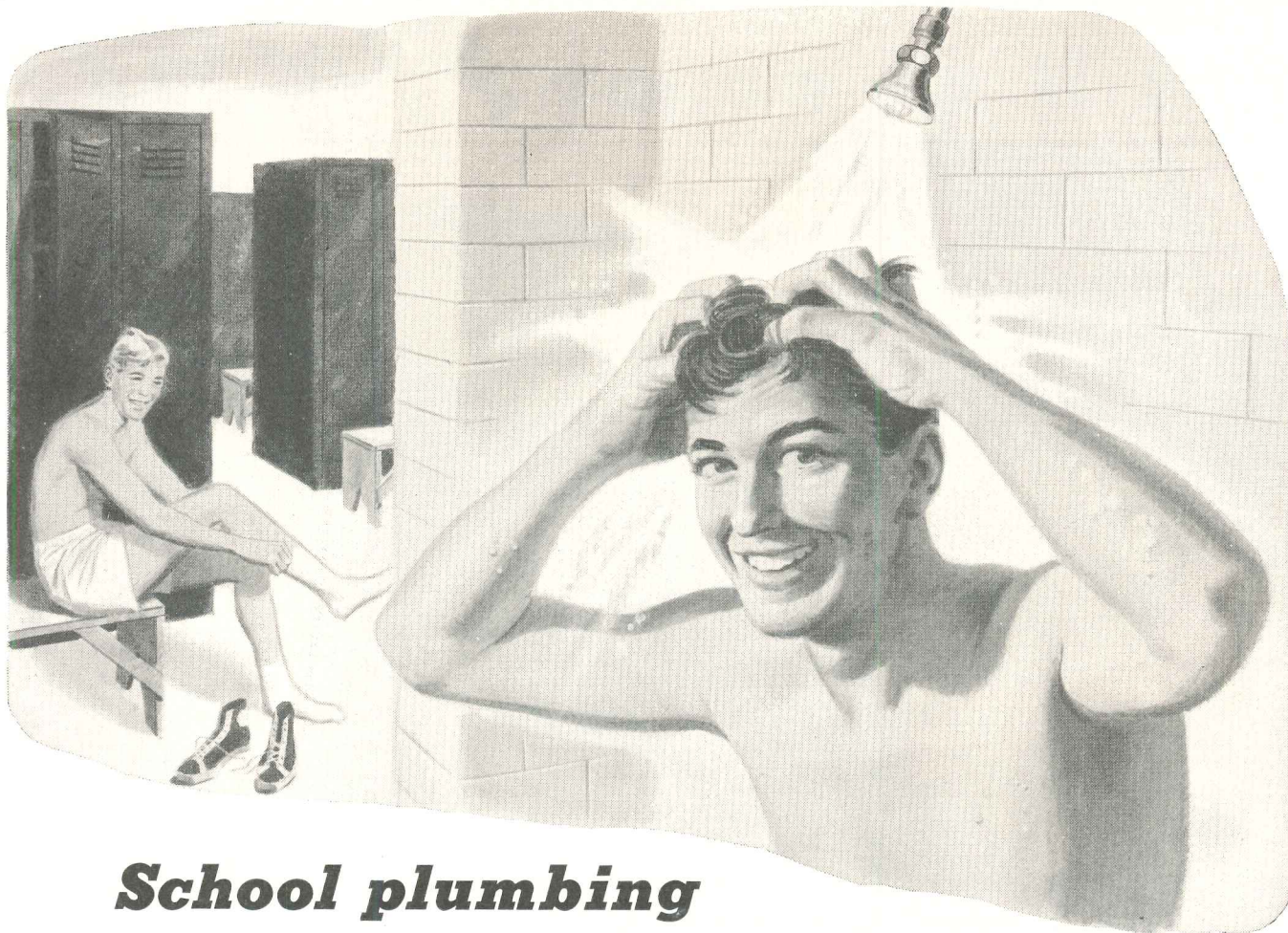
fim

FRED MEDART PRODUCTS, INC.

3535 DEKALB STREET

ST. LOUIS 18, MISSOURI

LEADERS FOR OVER 75 YEARS IN THE MANUFACTURE OF SCHOOL EQUIPMENT



School plumbing is always getting a workout!

Day in, day out—through the whole school year.

Crane designers keep that in mind. They know that school plumbing fixtures are going to take a beating . . . they *allow* for it. That's why Crane fixtures stand up through year after year of hard school usage.

Crane builds this extra strength into a complete line of school plumbing—fixtures of a type and size for students of all ages.

The Crane school line is represented in your copy of Crane Service for Architects. For special requirements, check with your Crane Branch or Crane Wholesaler.

CRANE

CRANE CO., GENERAL OFFICES; 836 SOUTH MICHIGAN AVE., CHICAGO 5, ILLINOIS

SCHOOL PLUMBING

PLUMBING AND HEATING • VALVES • FITTINGS • PIPE

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

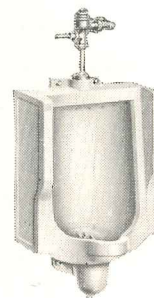
Highest Sanitation

... Crane provides extra safeguards to protect student health. Drinking fountains are designed to prevent any possible contamination. Shown: the C-9268 Corridor Fountain.



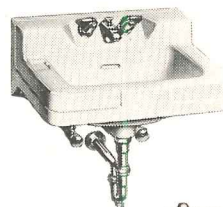
Complete Selection

... The broad Crane line includes every last requirement in school plumbing—not only the fixtures, but the piping that makes them work. Shown: the 7-87 Correcto Urinal.



Easy Replacement

... To renew one of these Dial-ese faucets, you merely slip out the old cartridge unit, slip in the new. One unit fits all Crane faucets. Shown: the 1-135 Oxford Lavatory.

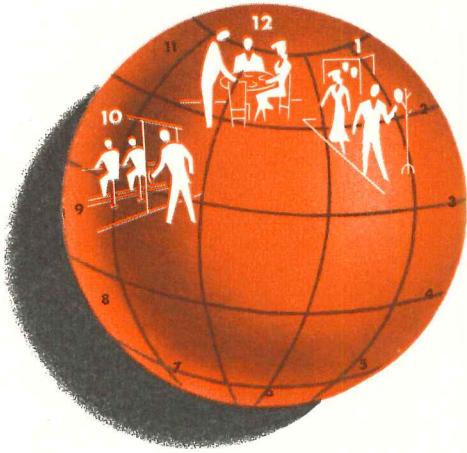
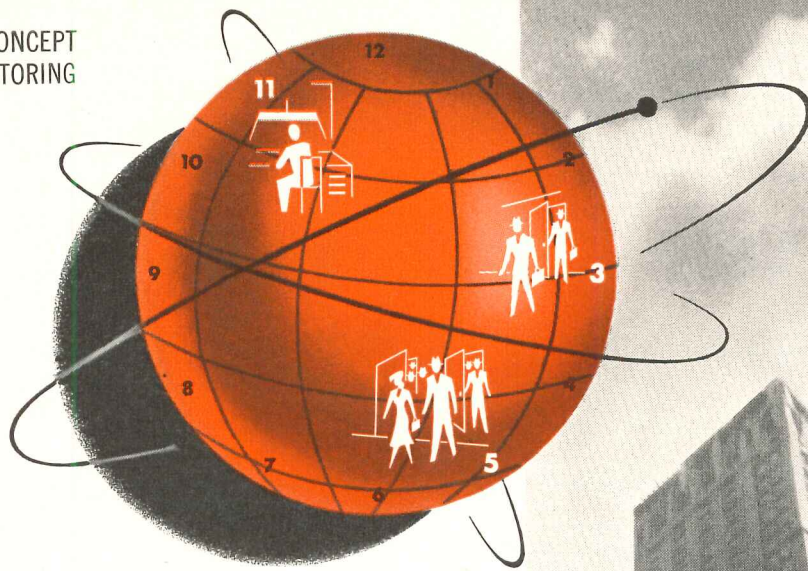


Quick Cleaning

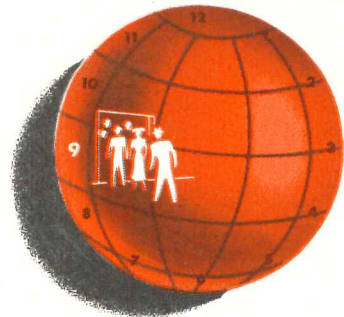
... It is easy with wall-mounted toilets like this one. Once over with a damp cloth, and Crane school fixtures shine like new. Shown: the 3-468 Lowall Closet.



AN ENTIRELY NEW CONCEPT
OF ELEVATORING



timed to the **ENTIRE BUSINESS DAY**



Let's examine a typical business day in an office building. At 9, everybody UP to work . . . all morning, it's DOWN—UP, UP—DOWN for appointments or snacks . . . 12 noon, mostly DOWN . . . 1 o'clock, heavier UP travel . . . all afternoon, it's DOWN—UP, UP—DOWN again . . . and then at 5—swoosh! everybody DOWN . . . finally, just stragglers and building employees. In all, there are 6 definite patterns of elevator traffic. Otis AUTOTRONIC Traffic-Timed ELEVATORING is the first system to match service to all 6 of today's traffic patterns. Further, it operates automatically—without constant attention and frequent adjustment by the starter. Otis Booklet B-721-F explains how AUTOTRONIC Traffic-Timed ELEVATORING increases the efficiency of new or existing groups of elevators in office buildings, hotels, hospitals and department stores. Address: Otis Elevator Company, 260 11th Avenue, New York 1, N. Y.

OTIS . . . first with Electronic Signal Control . . .
again first with Traffic-Timed Elevatoring



OTIS AUTOTRONIC *Traffic
Timed* **ELEVATORING**

One of a series of papers prepared by leading authorities on air conditioning. The opinions and methods presented are their own and are not necessarily endorsed by Kinetic Chemicals, Inc.

AIR CONDITIONING THE MODERN SPECIALTY SHOP

by Bruce Jacobi, Chief Engineer, Lerner Stores Corporation, New York.



Bruce Jacobi, a graduate engineer of Carnegie Institute of Technology, has complete control of design and installation of air conditioning systems in chain of 200 stores in 42 states. He is a member of the A. S. H. V. E.

Because women spend from 20 minutes to well over an hour in the average specialty shop, air conditioning serves a double purpose. It affords both comfort for customers and protection for merchandise. Ordinarily, without air conditioning, merchandise losses may run high owing to handling, perspiration, staining and the like. A "pre-cooled" customer who tries on a dress seldom damages it.

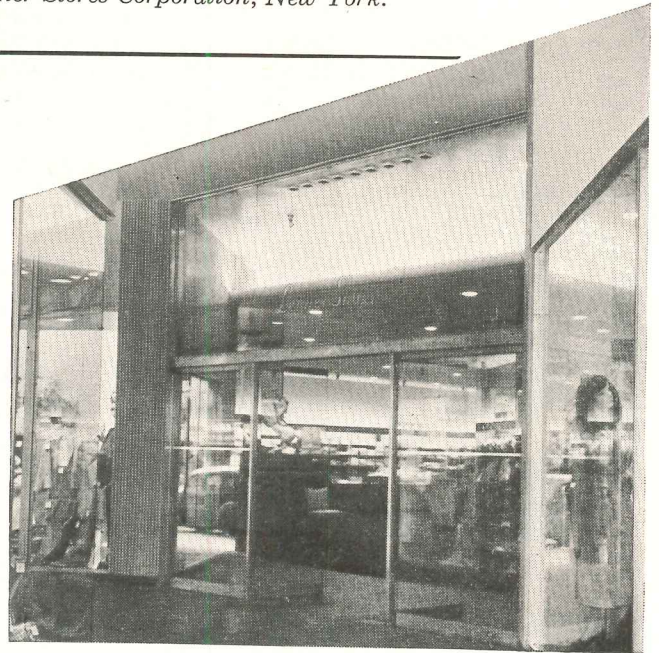
STORE ENTRANCE DOORS

One of the most critical points in cooling or heating the busy store is at the entranceway. Adequate provision for this area facilitates conditioning the main sales area.

Doors are opened so frequently in most shops that cooling loads must be calculated on the assumption that they are *constantly* open. For this reason it is necessary to develop a positive air pressure at the entrance and to provide for exfiltration of air into the store lobby. This may be accomplished by adjusting the return air damper on the sales floor until a positive pressure condition is obtained at the doorway.

In tall buildings, a stack effect is frequently prevalent. In such cases, the return air damper adjustment may be insufficient to effect suitable exfiltration into the lobby. A supply outlet above the entrance, however, can be designed to deliver sufficient air to blanket infiltration.

Heating during cold months is as important as cooling during the warm periods. For the cold seasons, a booster heating coil—controlled by a



Store entranceway showing front door booster system, utilizing high velocity ejectors.

thermostat located near the doors—may be placed in a supply duct at the entrance. In some instances, a thermostatically controlled unit heater can be recessed in the wall near the entrance. Care should be taken to avoid insufficient, or excessive, heating, at this point.

Multiple entrances in wider stores will require a separate centrifugal blower installed in the hung ceiling above the entrance, or in the basement below it. A separate duct system with cooling and heating coils and high velocity ejectors, installed along the entire width, is most effective.

AIR DISTRIBUTION

Air distribution presents a different problem for each store. It is contended by many that wall type grilles frequently interfere with decorative plans and that, like light sources, air outlets should not be apparent. Hung ceilings allow for architectural blending of lighting fixtures with the air outlets, and the use of ceiling air dispersal points permits designing a draftless type of distribution.

SYSTEMS

In larger stores with installations of 50 tons or more, two or more separate air conditioning units,

each complete in itself, will provide better results than one large, central unit with a single blower. The separate units increase flexibility and allow greater ease of operation. In the event that one unit becomes inoperative, the other continues to function and the store will not then be entirely without air conditioning. Several small units also permit by-passing one into another if required during a breakdown period. Although more expensive to install, the savings over a period of years, obtained through flexibility of operation and better air conditioning, more than offset initial costs.

An air conditioning system does not improve with age and use. It is therefore desirable to install a system slightly larger than design calculations indicate to overcome inefficiencies which may develop, such as dirt collection on coils or normal wearing of mechanical parts.

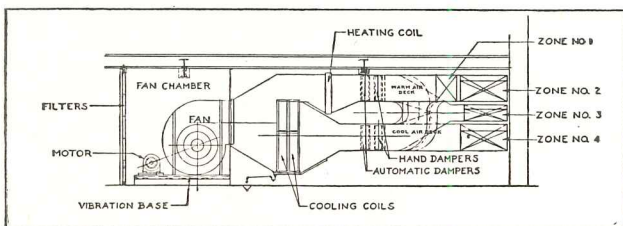
FITTING ROOMS

This area has a more concentrated occupancy than any other part of the store. Generally it is enclosed with a low ceiling and is separated from the sales area. Customers spend more time here than in other areas.

It is desirable to install a separate zone from the fan outlet into the fitting room area. A booster coil connected to a small condensing unit may be installed within this duct and a booster coil may also be placed in it. The area usually requires slightly higher temperature than other parts of the store because customers disrobe while trying on various garments. A two or three degree differential has been found satisfactory in most cases.

It is important that a sufficient amount of outside air be circulated in fitting rooms to prevent odors. This air must be rapidly exhausted, discarded and not re-circulated.

DOUBLE PLENUM SYSTEM



Typical elevation illustrating the double plenum system. Note cooling and heating coils.

Zoning is important where more than one sales floor is encountered. Recently, many stores have been designed with the double plenum hot and cold deck, blow through system (see diagram). Thermostatically controlled dampers regulate conditions in each zone. The double plenum system has the advantage of concentrating all air conditioning equipment in one room. It possesses a vast amount of flexibility in being able to divert heat-

ing and cooling loads from regions where they are less required to areas in which there is a heavy concentration.

LIGHTING and SHOW WINDOWS

Lighting in most stores is designed to maintain a level of 35 to 50 foot-candles. Because of color distortion in apparel shops, fluorescent lighting is generally confined to decorative treatments and incandescent lighting is used as a primary source. Consideration should be given to the popular trend of eliminating show window backings. Where formerly an insulated partition separated show windows from sales areas, today the windows of many stores are part of the general sales area.



Air conditioning outlet in modern, backless window which extends into the main sales area.

Windows are normally lighted along their periphery with 150 watts per running foot. In addition, during the cooling season the solar effect upon the window, with increased cooling load, must be considered. Conversely, heat loss is experienced during the colder periods of the year. Glass of low thermal conductivity aids in reducing this condition.

To overcome increased loads, air outlets are required within display window areas. These provide comfort for window trimmers and also provide protection for materials that are affected by extremes of heat or cold. A concealed blower and heating coil above the window ceiling, so placed that air is directed against the glass, will prevent frosting and objectionable condensation . . . keeping the window clear at all times.

In specifying air conditioning equipment for modern stores, restaurants, theaters, and other public gathering places, it is well to be certain that the recommended equipment is designed to utilize "Freon" refrigerants. These refrigerants are safe . . . nontoxic, nonflammable, nonexplosive, noncorrosive, anhydrous, and are as pure as scientific methods of manufacture can produce. They assure dependable, economical operation of the system and aid in prolonging its useful life. Kinetic Chemicals, Inc., Tenth and Market Sts., Wilmington 98, Delaware.

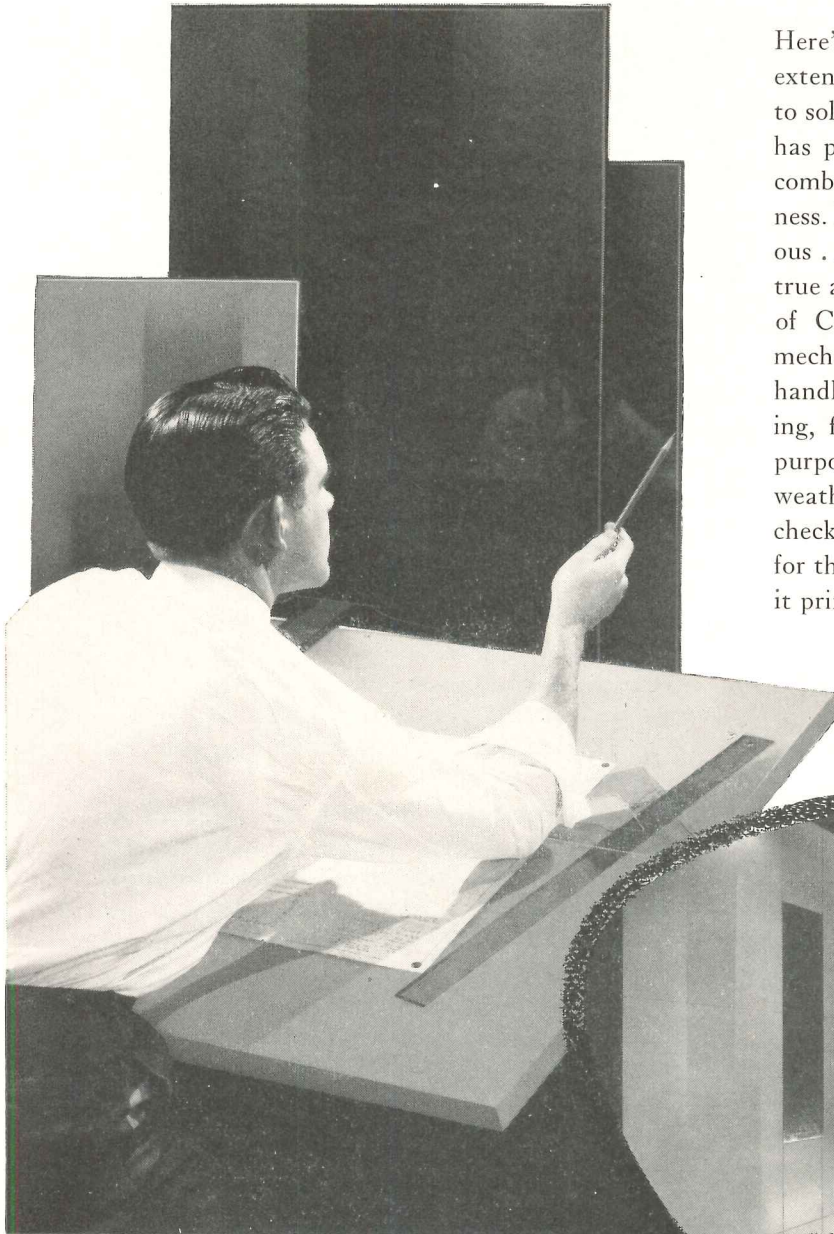


FREON SAFE REFRIGERANTS

"Freon" is Kinetic's registered trade mark for its fluorinated hydrocarbon refrigerants and propellents.

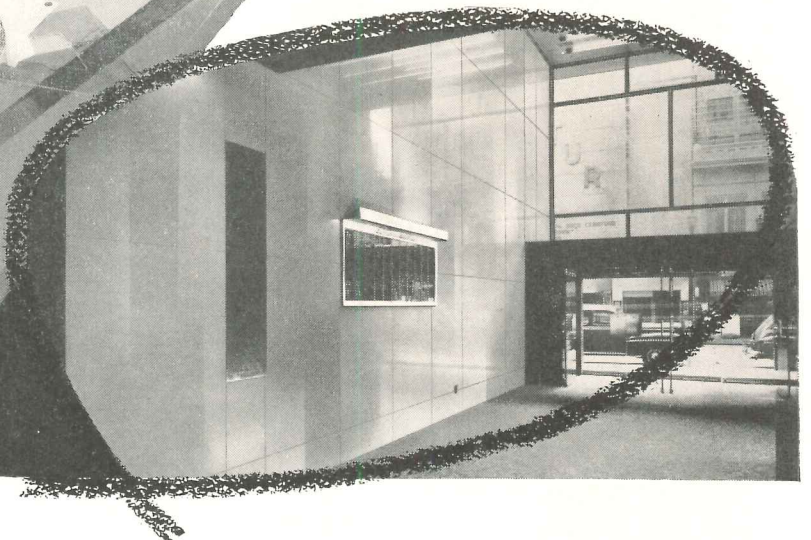
FOR BEAUTY, PERMANENCE AND SOLIDITY

— *design it with Carrara Glass*



Here's a quality structural glass that's the result of extensive "Pittsburgh" research, aimed at helping to solve architectural problems. For Carrara Glass has proved its ability to produce structures that combine beauty, permanence and structural soundness. It's a finely-machined product . . . homogeneous . . . flawless. There is no lippage; its joints are true and even. It's free from warpage. Every piece of Carrara, of whatever color or thickness, is mechanically ground and polished. It's very easily handled, too. And it can be decorated by sand-blasting, fluting, shading, or painting for ornamental purposes. Carrara Glass is impervious to moisture, weather, chemicals, grease, pencil marks. It will not check, craze, fade nor stain. It's the ideal material for the perpetuation of your creative designs. Give it prime consideration in your plans.

Architect: Pietro Belluschi, Portland, Oregon



Carrara *the quality structural glass*

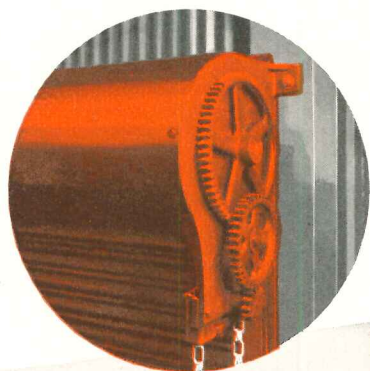


PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS

PITTSBURGH PLATE GLASS COMPANY

Rolling Steel

DOORS



Manually • Mechanically • Power Operated

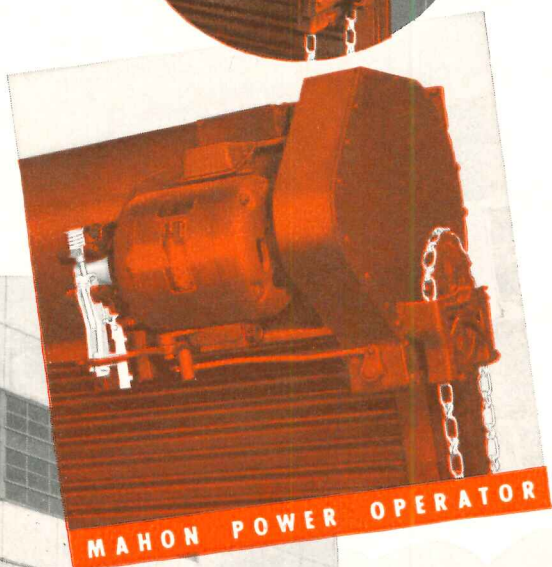
No door offers the inherent advantages of a good Rolling Steel Door . . . no other type of door offers the permanence of all-steel construction, the saving in space adjacent to door openings—and, most important, the satisfaction born of a lifetime of trouble-free door performance. These advantages are realized to the fullest degree in Mahon Rolling Steel Doors . . . comparison of details of construction and materials employed at critical points will reveal a greater door value . . . exclusive Mahon features will be found very desirable from an everyday operating standpoint. See Mahon's Insert in Sweet's Files for complete information, details and specifications.

THE R. C. MAHON COMPANY

Detroit 11, Michigan • Western Sales Division, Chicago 4, Illinois

Representatives in All Principal Cities

Manufacturers of Rolling Steel Doors, Shutters and Grilles, and Mahon Steel Deck for Roofs, Sidewalls, Partitions, Acoustical Ceilings, Permanent Floor Forms and Oversize Doors.



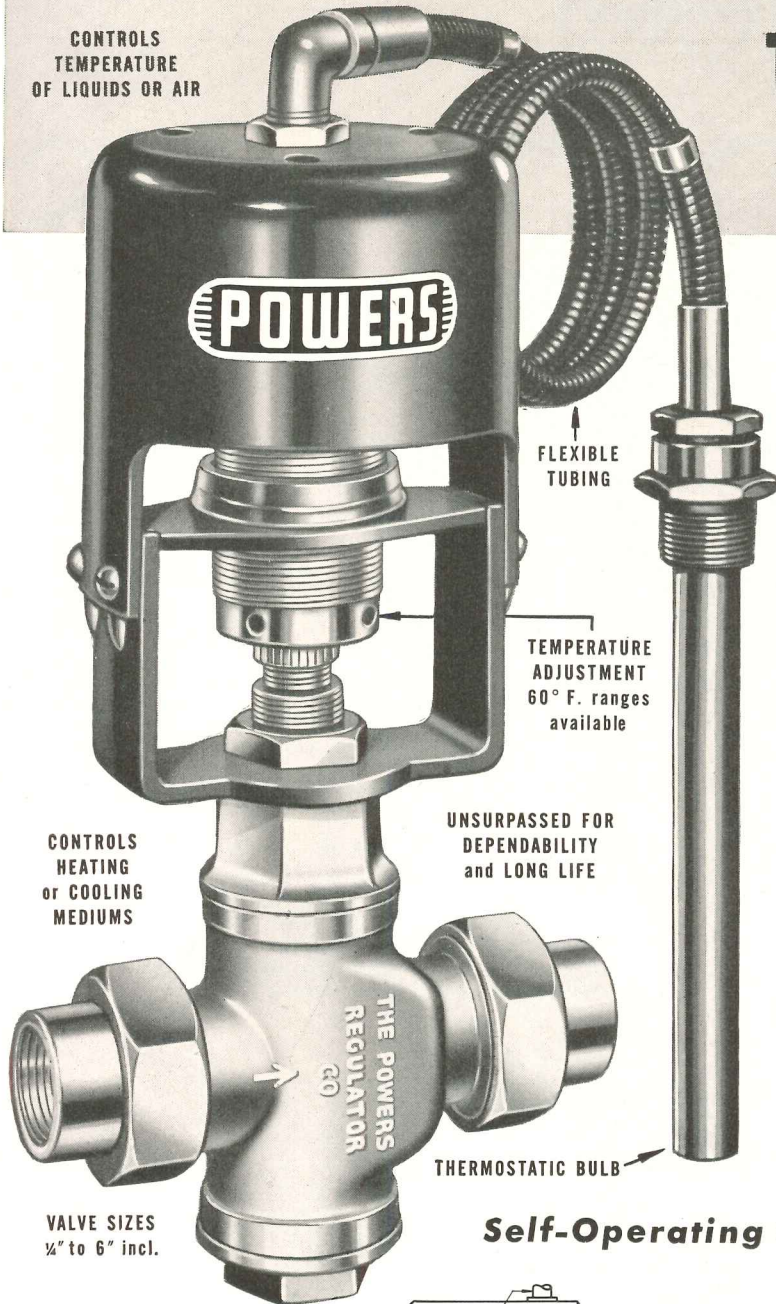
ROLLING STEEL DOORS, SHUTTERS AND GRILLES TO MEET EVERY REQUIREMENT

Seventy Five Mahon Rolling Steel Doors are installed in the new building illustrated above, which was built by Spence Bros., Gen. Contrs. Saginaw, Mich., for a large midwestern Foundry Company.

MAHON

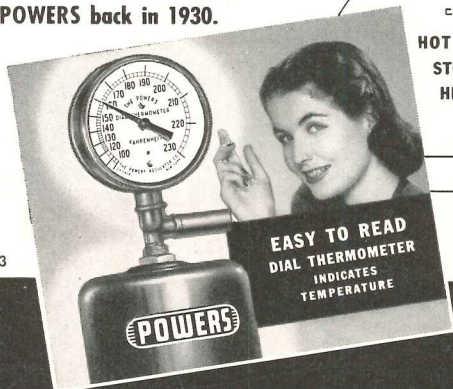
When You Want **LOW COST** **TEMPERATURE** **CONTROL**

CONTROLS
TEMPERATURE
OF LIQUIDS OR AIR



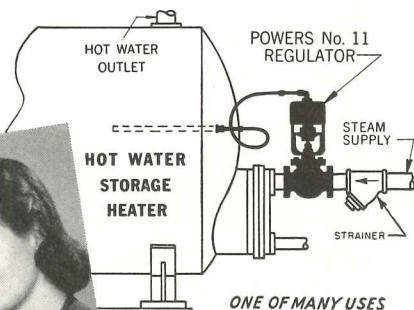
VALVE SIZES
1/4" to 6" incl.

Regulator can be supplied with Dial Thermometer—a feature pioneered by POWERS back in 1930.



1183

Self-Operating • Easy To Install • Economical



SIMPLIFY your temperature control problems with Powers No. 11 Regulators. They prevent over-heating—save steam and labor—often give 10 to 25 years of dependable control and pay back their cost several times a year. Just the regulator for many applications requiring a constant temperature.

• Phone or write our nearest office for Bulletin 329 and prices.

CHICAGO 14, ILL., 2720 Greenview Ave. • NEW YORK 17, N. Y., 231 East 46th Street
LOS ANGELES 5, CAL., 1808 West Eighth Street • TORONTO, ONT., 195 Spadina Ave.

THE POWERS REGULATOR CO.
OFFICES IN 50 CITIES • SEE YOUR PHONE BOOK
Over 55 Years of Temperature and Humidity Control

for

- WATER HEATERS
- FUEL OIL HEATERS
- HOT WATER LINE CONTROL
- DRINKING WATER COOLING
- DISH WASHERS
- STEAM TABLES • COFFEE URNS
- COOKING KETTLES
- STORAGE ROOMS

Use



No. 11 REGULATORS

For the architect who wants something different

STANLEY **Extra Heavy**

BALL BEARING OLIVE KNUCKLE BUTT HINGE



Has all the advantages of ball bearing hinges—plus distinctive appearance



I like those sleek lines



Gets my vote because it's inconspicuous



Goes well with the modern designs of my buildings



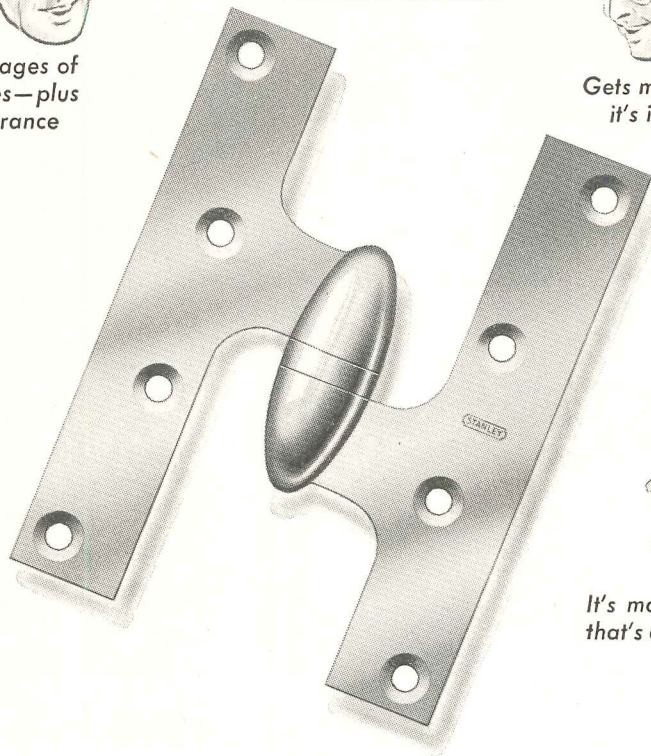
Olive knuckles can't collect dust



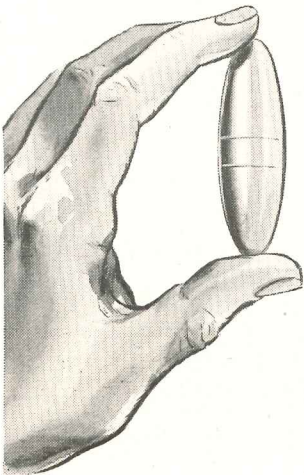
Ball bearings eliminate wear in hinge joints



It's made by Stanley—that's all I need to know



Knuckle only is visible when door is closed

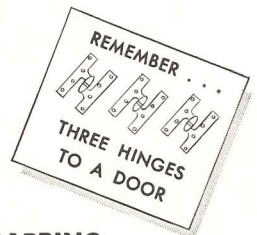


ARCHITECTS who like to get away from the conventional in design often find what they're looking for—in Stanley Olive Knuckle Butt Hinges. For hollow metal doors or heavy wood doors in office buildings, hotels and public buildings you couldn't ask for a finer hinge. (Also furnished in regular weight for residential doors.) The Stanley non-detachable, permanently lubricated ball bearing assures smooth, trouble-free service. Easy to install on metal doors and jambs since all leading metal door manufacturers have dies for recessing to fit.

THE STANLEY WORKS, NEW BRITAIN, CONN.

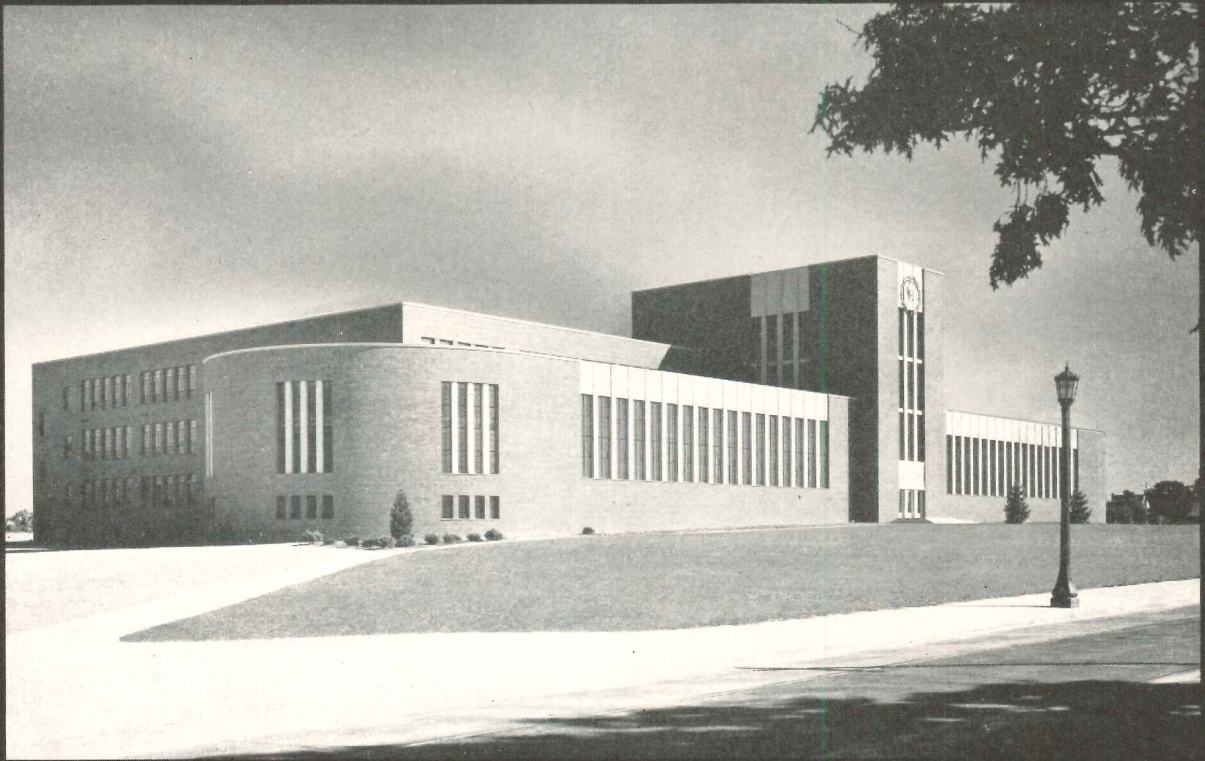


Reg. U.S. Pat. Off.



HARDWARE • HAND TOOLS • ELECTRIC TOOLS • STEEL STRAPPING

1818 HOPE'S 1949 SCHOOL WINDOWS



*Wellington C. Mepham Central High School, North Belmore, L. I., New York
Frederic P. Wiedersum, Architect*

● The satisfaction enjoyed by a community from the possession of a fine school building derives from the architect's skill in combining the desired exterior impression with practical features that meet the needs of an exacting duty. Hope's School Windows assist in both respects. Their versatility in layout helps the designer to obtain the effect he desires; the practical features of these durable steel windows assure such advantages as maximum daylight for the size of window openings, draftless but invigorating ventilation, winter-defying weather-tightness, and lifetime convenience of operation.

HOPE'S WINDOWS, INC., Jamestown, N. Y.

THE FINEST BUILDINGS THROUGHOUT THE WORLD ARE FITTED WITH HOPE'S WINDOWS

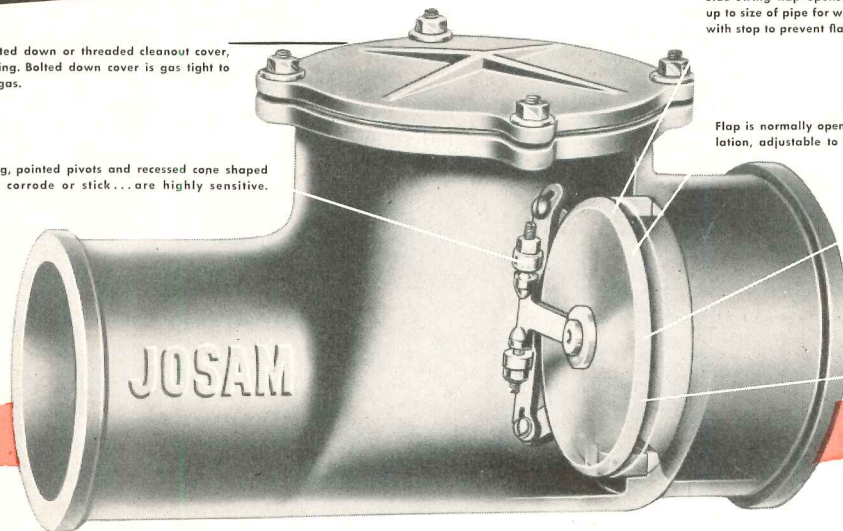
...HERE'S **MUD**
IN YOUR BASEMENT!

PLUS ALL THE OTHER DESTRUCTION CAUSED BY **BACKWATER**

Provide **24** hour a day protection
 with
Josam **BACKWATER VALVES!**

Furnished with either bolted down or threaded cleanout cover, easily removed for cleaning. Bolted down cover is gas tight to prevent escape of sewer gas.

Brnze, self-cleaning, pointed pivots and recessed cone shaped bearings will not corrode or stick...are highly sensitive.



Side-swing flap opens wide to allow full waterway up to size of pipe for which it was designed. Equipped with stop to prevent flap opening beyond 90 degrees.

Flap is normally open 3/4" to allow continuous circulation, adjustable to closed seat type when desired.

Disc revolves, eliminating uneven wear, and is cleaned with each discharge of water.

Flap closes with slightest backflow, preventing entry of backwater into drain lines.

● There'll be **MUD** in the basement of the finest home, store or building you plan... unless you provide proper backwater control. If the sewerage 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 material stored in the basement will become water soaked - expensive repair and cleaning bills will result.

Guard against this ever happening to your homes or buildings by including a Josam Backwater Sewer Valve in every specification. It is positive-acting, trouble-proof, easy to install and the cost is so little compared with the protection it provides!

Send coupon for specifications, installation details, sizes and other helpful information!



JOSAM MANUFACTURING COMPANY

Main Sales Offices, Josam Building, Cleveland 13, Ohio
 Manufacturing Division - Michigan City, Indiana

Representatives In All Principal Cities

JOSAM-PACIFIC CO., San Francisco, Cal., West Coast Dstbrs.
EMPIRE BRASS CO., LTD., London, Ont., Canadian Dstbrs.

See our Catalog in Sweets'

Member of the Producer's Council

FILL OUT AND MAIL THIS COUPON-TODAY!

Josam Mfg. Co., 302 Josam Bldg., Cleveland 13, Ohio

Please send me free folder on "Backwater Control"

NAME _____

FIRM _____

ADDRESS _____

CITY and STATE _____

DON'T WASTE THE ROOF!

Now you can let your creative imagination have full sway. Today complete utilization of valuable roof areas is fully practical with Ruberoid Built-Up Roof Specifications.

These specifications are carefully engineered and fully tested in actual performance. Their use opens interesting possibilities. Typical and current examples include Garden Roofs for apartments and hotels. Promenade Roofs for schools, hospitals and office buildings. Industrial buildings find endless uses for the new Heavy Traffic Roofs that allow any activity that won't damage a sidewalk.

No matter what type of building now has your attention, you'll find these tested specifications of real help in planning more attractive, more efficient roofs. Copies are available from the nearest Ruberoid Sales office or your local Ruberoid Approved Dealer.



OPEN RECREATION SPACE EVEN IN CROWDED AREAS!

Promenade roofs like this will solve the outdoor recreation space problem for many institutions. Safely above dangerous traffic, they allow unlimited access to air and sunshine.

The **RUBEROID** Co.

BUILT-UP ROOFINGS

Building Materials for Industry, Home and Farm
Executive Offices: 500 Fifth Ave., N. Y. 18, N. Y.

SALES
OFFICES

BALTIMORE, MD.
CHICAGO, ILL.
DALLAS, TEXAS
ERIE, PENN.

MILLIS, MASS.
MINNEAPOLIS, MINN.
MOBILE, ALA.
NEW YORK, N. Y.

The right roof for any job — from ONE source!

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. Ruberoid Approved Roofers are not prejudiced in favor of any one type. You are assured of one source for all materials, centralized responsibility, smoother operation, uniform quality!

ARCHITECTURAL
RECORD

REVELATION BY COMPETITION

WHEN you come to think of it (and we hope you will), the designs submitted in competition are most revealing — and in more ways than one. They disclose present architectural virtues, vices and significant trends, as well as discovering a modicum of hidden talent. They are worth far more than a casual glance and a dismissal with a note of personal approval or rejection. The designs inherently reflect and express current influences, philosophies, tastes, theories, educational emphases, esthetic tenets — and these, rather than the designs themselves, are food for thought. They thus reveal much of the present state of architectural design — and are portents of its future. They may even suggest that it is time to take stock of the current approaches and emphases with an eye to clarifying our own thinking and establishing a new or reaffirmed direction.

It is natural, in part because of the forward-looking sponsorship of the competition, that one should find no designs that hark back to period stylism. All are in the vernacular and idioms of the present. It is not difficult, however, to find the sources of inspiration (or imitation) for most of the designs; the great tradition of architecture — eclecticism — is still evident. The designers no longer choose the masses, molding and mannerisms of Brunelleschi, Bramante, Sanmicheli and Vignola, but select as models the works of Mies, Wright, Corbusier, Gropius, Breuer or other modern masters.

As has always been the case, some designers use their chosen precedent intelligently, others adopt unthinkingly forms or details from the latest magazine-featured building. Novelty of design rather than appropriateness of form to purpose too often proves more intriguing to the young (or old) disciple whose mental processes do not involve analysis.

Too few designs show minds and hands thoroughly trained to plan for use — to analyze the activities to be housed and the character of the space and facilities to serve them. It takes imagination as well as logic to provide an environment that is both thoroughly convenient in use and a joy to experience. Too many plans submitted seemed to be exercises in abstract pattern rather than indications of thoughtfully organized space for people to use and enjoy.

This preoccupation with form may indicate the current dominance of the esthetic interest in architecture rather than the materialistic, scientific, or so-called "functional." Such an interest may augur well for the future of the fine art of architecture, whether one expects or hopes the developments will tend toward "monumentality," "the new empiricism," "indigenous localism," the "organic" or what have you.

Whether or not you find that any of the designs chosen by the jury solve the problem of a Mid-Western community center "which will arouse civic pride as well as serve its particular function," we commend to your attention the designs and the jury report and comment as indications of the influences of present educational methods, current periodicals, and professional design leadership on the younger generation whose genius or talent will not always be hidden.

Kenneth K. Stowell
EDITOR

HIDDEN TALENT COMPETITION

REPORT OF THE JURY

Joseph Hudnut, Chairman



The jurors are puzzled by a plan. In the usual order, Wallace K. Harrison (hiding Morris Ketchum), Eero Saarinen, Mies van der Rohe, and Dean Hudnut. Below: Mr. Ketchum is no longer hidden



The jury looks up at a design still in the running. From left to right, Morris Ketchum, Ludwig Mies van der Rohe, Eero Saarinen, Wallace K. Harrison and Dean Joseph Hudnut



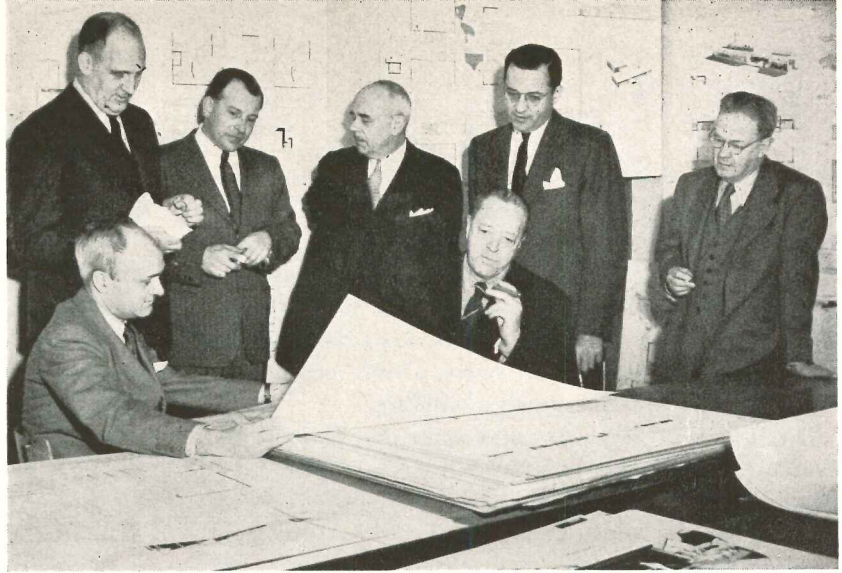
APPROXIMATELY 500 designs were submitted in the Hidden Talent Competition. These came from every part of the country and furnished as a whole an arresting presentation of the attitude and the ideals of our younger designers in the field of architecture.

In general it can not be said that the impression created by these designs is an inspiring one. Most of the designs were humdrum in the extreme and the quantity of gold which they unearthed seemed shockingly disproportionate to the dross. Most of the competitors seemed well satisfied to present a practical or commonsense arrangement of the elements and then to clothe these with the familiar clichés of modernism. Rare, indeed, was the designer who attempted to draw from the work to be done and the method to be used that organic form and expression which are the essentials of good design.

The jury gave First Prize to the design of Mr. Joseph Yusuru Fujikawa, of Chicago, because it seemed to them that the design he submitted did possess that kind of organic order which has its source directly in the purpose of the building and in its structure.

It may be thought that a design which is symmetrical in its space arrangement and as simple as the Parthenon in its outward aspects could not be called modern, but to the jury it seemed quite obvious that this symmetry of space was not forced upon the program from some academic source and that the simplicity of the enframement was arrived at through a sincere desire to achieve an expression consistent with the idea of community participation. After all, the requirements of the building were very simple and certainly did not require that torturing of space into all manner of strange relationships and forms which was characteristic of at least half of the designs submitted and it seemed to the jury that no expression could be more suitable for the life of the community than classic purity in outward form. Community life is not expressed in extreme individuality but rather

The Jury, beginning its work January 7th, 1949. Final decisions were made on the 8th. Seated, Philip C. Johnson, Professional Adviser (Museum of Modern Art); Ludwig Mies van der Rohe, Director, Department of Architecture, Illinois Institute of Technology. Standing, left to right: Wallace K. Harrison, Director of Planning, United Nations Headquarters; Eero Saarinen, winner of Jefferson National Memorial Competition; Kenneth K. Stowell, Professional Adviser (ARCHITECTURAL RECORD); Morris Ketchum, author "Shops and Stores"; Joseph Hudnut, Dean, Graduate School of Design, Harvard University, Chairman of Jury



in that serene universality which we associate with Greek architecture and which it should be our effort to recapture and make visible in terms of our own technologies.

The Second Prize — a design submitted by Mr. G. Lee Everidge, of Oklahoma City — would seem at first glance to present a curious contrast to the design given First Prize. Certainly it lacks the classic restraint and dignity of the First Prize entry. The jury nevertheless felt that more than one form of expression might be appropriate to the program and that a design based upon the exploitation of present-day structural techniques and upon an ordering of space which is in every way simple and organic might deserve almost equal consideration with the more abstract beauty of the design awarded First Prize. The relationship of lounge, lobby and auditorium is admirable and if the relation of the structure to the spatial pattern is somewhat arbitrary it does not, at any rate, do violence to good sense in planning and construction. There is about the Second Prize design a certain sculptural quality which gives it great interest. Its esthetic might be defined as structural baroque — a form of expression certainly not wholly uncongenial to a mechanized civilization. Some members of the jury could not accept the use of a costly and conspicuous ramp as a means of access to general purpose rooms in a balcony, but it must be admitted that this feature is a source of vitality and interest in the design.

The Third Prize, submitted by Mr. Edward Chase Weren, of Bloomfield Hills, is a design which in many ways achieves the more classic qualities of the design given First Prize. Mr. Weren's design is indeed the most original in conception among those submitted and it combines in a striking way novelty of esthetic expression and excellent judgment in the arrangement of plans. The lounge is so placed as to command wide vistas into the surrounding park, while the elements placed to

right and left are enclosed in a double enframement — first of glass and then of stone. This contrast of open centre and enclosed areas might well result in a pattern of great distinction and beauty. The sense of enclosure would play against the open vistas in a charming manner, and the quality of lighting, especially that of the auditorium, would be not only novel but certainly most satisfying. It may be that in the Third Prize design there is lacking that sense of the community which seemed to the jury to be an essential in the expression to be given the building. Community life could hardly be expressed in an enclosure of blank stone walls. Perhaps also the intimate quality of the interior spaces would be more suitable for a residence than for a public building.

The design submitted by Herbert S. Johnson, of Gainesville, Florida, was given Fourth Place since it offered a plan which seemed logical, even if somewhat more loosely organized than the designs previously mentioned. Mr. Johnson has exploited two of the favorite clichés in modern design; namely, the butterfly roof and the court open through the roof. These were once interesting devices but it must be said frankly that they have lost something of their novelty after 100,000 repetitions.

The design awarded Fifth Place submitted by Mr. William R. Reed, of Chicago, won the jury by its daring originality and the boldness of its attack upon the problem. Had the theme been other than that of a community centre, this design would have received a higher rating; but the jury found it hard to reconcile the design with the requirements or the expression of a mid-western community.

The design of Mr. Louis F. Mammier, of Brooklyn, New York, would have received a higher place, had it not been for the strange inconsistency of judgment which weighted a row of metal columns with a wall of rubble masonry. Mr. Mammier's plan is excellent, not

only because of its good sense but also because of a feeling of organic unity throughout the enclosed spaces, and its exterior has a reticence combined with a bold exploitation of modern techniques which is admirable.

The design submitted by Mr. Clifford G. Foreman, of Homestead, Pennsylvania, shows competence in the organization of facilities but seems a little complex in its outward forms for so small a building.

The design of Mr. Edward Fearney, of Gainesville, Florida, held the jury's attention for a considerable period of time, and his design was considered one of the most original and daring among those submitted — especially in its management of flowing space — but as a whole it lacked those practical qualities which were obviously essential to the program.

The design submitted by Mr. Spero Paul Daltas, of Boston, is that of a man who is especially sensitive to spatial values; and that of Mr. George Rafferty, of St.

Paul, pleased the jury by its clarity in plan, organization and exterior expression.

Elnor M. Hoops, of Pontiac, Michigan submitted a plan showing very great promise but it was not sufficiently studied; and the design of Mary Ellen Linberger, of Brooklyn, although admirable in directness of organization, was held to be somewhat too Spartan in exploitation of exterior elements.

The design of James V. Hirsch, of St. Paul, was much too busy in plan for so simple a building, giving on the exterior an effect more suited to a commercial building than a building devoted to civic use.

It was the feeling of the jury that the Museum of Modern Art and the ARCHITECTURAL RECORD have rendered an important service to the architectural profession in the conduct of this competition, which was in every way exceptionally well managed. We hope that the experiment will be repeated frequently.

A Few Thoughts about the Hidden Talent Competition

By Eero Saarinen

I would like to add a few thoughts to the Jury's report. It seems to me that the outcome of the competition can be taken as a statement that there are certain aspects of architecture that should be emphasized—simplicity, the need for an over-all concept in a building, a clear structural system, and, in some cases, the need for a certain formality. I wholeheartedly concur with this, but I also can see the danger in an emphasis on these aspects too early in the design of the building. One runs the risk of designing from the outside in. I therefore would like to emphasize the one thing that is fundamental in any of these expressions of architecture: whatever the expression may be, its roots should be in life itself—the way the building is used and a love for the people who use it.

To illustrate what I mean, I would like to focus on one plan. In my opinion, the plan by Clifford G.

Foreman has these qualities to a high degree, I think more so than many placed higher than his. His plan is a clean, simple, unsophisticated plan, and one can tell that he understands the life and the problems around a community building as they occur in actual life. One can tell that, while designing the building and using the lounge, the game room, etc. in a community house, there is the problem of both separation and concentration. Small committees and meetings need to be closed off; but for other occasions, such as dances, much of the space should be thrown together. Mr. Foreman has understood this part of the problem well. Office, coat room, fireplaces, storage spaces, toilets, etc., are all located well in relation to the normal activities of the community house. Perhaps the only criticism I have is the location and size of

the kitchen. A larger kitchen located to serve one or two of the small rooms as well as the auditorium pleases many a sewing circle. While cost was not a limitation of the program, still we cannot divorce economy from architecture. I think it is to Mr. Foreman's credit that he did not embark upon an extravagant solution. Few communities could afford anything but a modest solution; and if they could, they would add more usable space instead of architecture. It is unfortunate that the over-all mass of the building, as well as its exterior treatment with too complicated roofs, is not up to the standard of the very livable, honest plan.

I am not writing this in the spirit of a minority report, because we were all pretty much in agreement on the Jury. I am writing it more as a postscript on my thinking about the competition.

E. S.

HIDDEN TALENT COMPETITION WINNERS

FIRST PRIZE

Joseph Yusuru Fujikawa
Chicago, Ill.

SECOND PRIZE

G. Lee Everidge
Oklahoma City, Okla.

THIRD PRIZE

Edward Chase Weren
Bloomfield Hills, Mich.

HONORABLE MENTIONS

Herbert S. Johnson
Gainesville, Fla.

William R. Reed
Chicago, Ill.

Louis F. Mammier
Brooklyn, N. Y.

Clifford G. Foreman
Homestead, Pa.

Edward M. Fearney
Gainesville, Fla.

Spero Paul Daltas
Boston, Mass.

George E. Rafferty
St. Paul, Minn.

Elnor M. Hoops
Pontiac, Mich.

Mary Ellen Linberger
Brooklyn, N. Y.

James V. Hirsch
St. Paul, Minn.

Arthur C. Giorchino
New York, N. Y.

James Philip Storm
San Francisco, Cal.

Jules Gregory
New York, N. Y.

Jules Gregory
New York, N. Y.

John David Parrish
New Orleans, La.

ADDITIONAL PRIZES

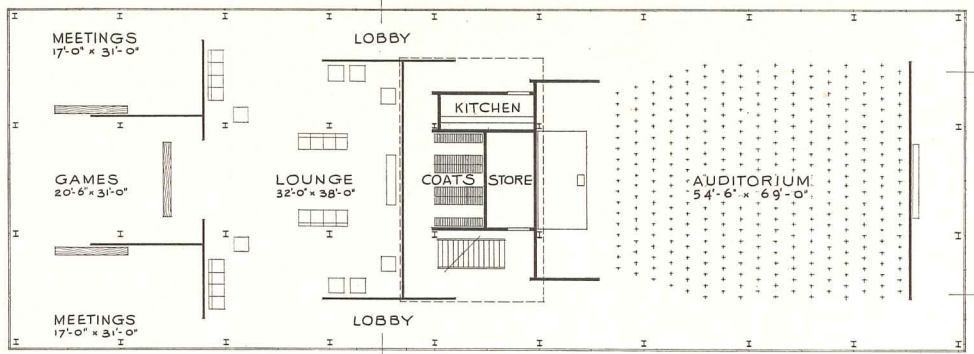
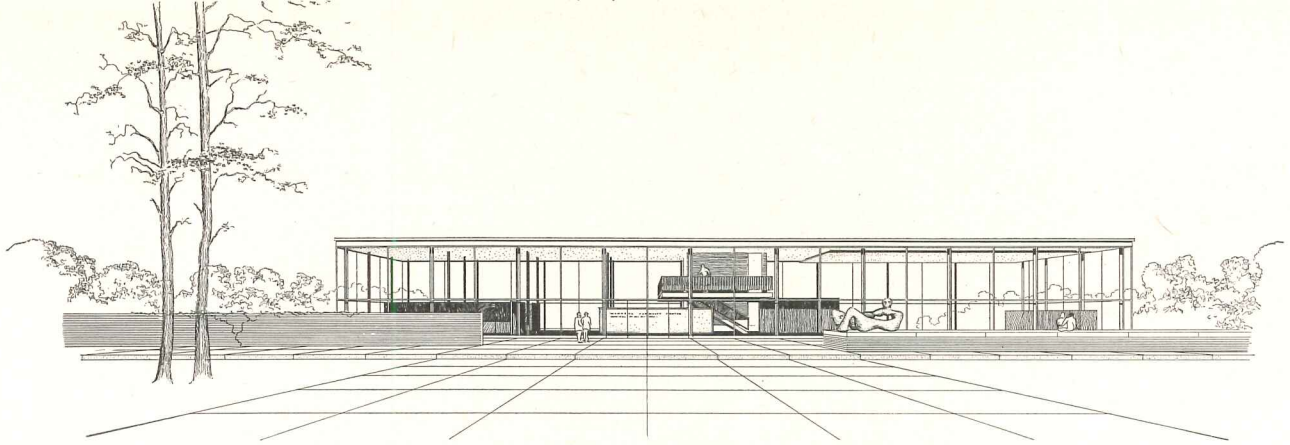
Claude M. Pendley, Jr.
Austin, Tex.

Charles A. Woehrl, Jr.
Knoxville, Tenn.

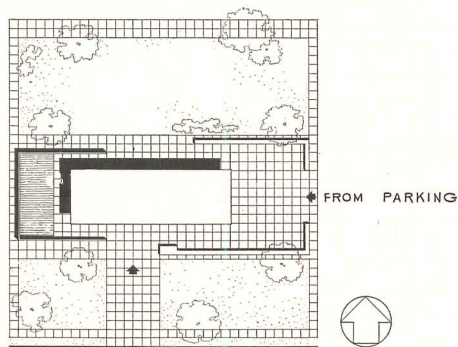
Harold C. Rose
Gainesville, Fla.

Vanu Gopalji Bhuta
Bloomfield Hills, Mich.

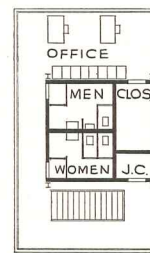
James H. Hofmann
Oakland, Cal.



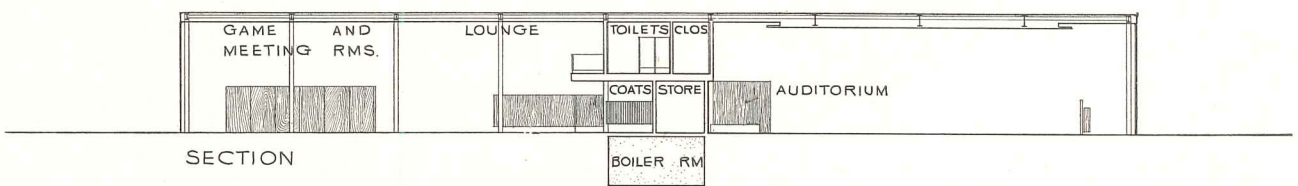
MAIN FLOOR



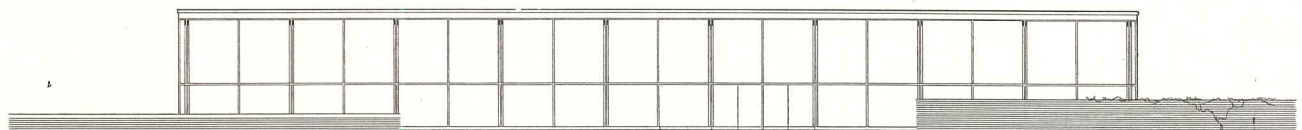
PLOT PLAN



MEZZANINE



SECTION



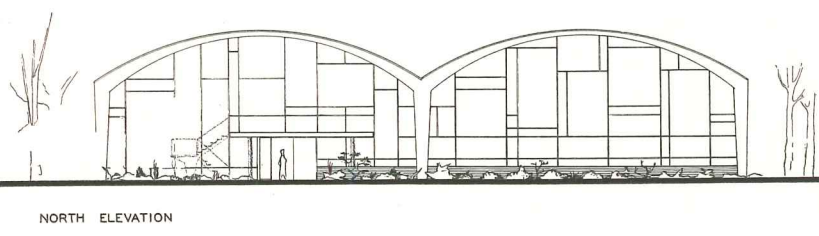
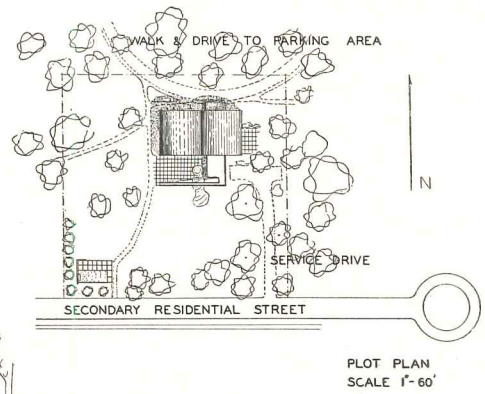
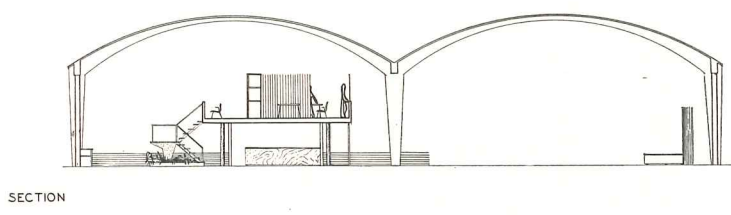
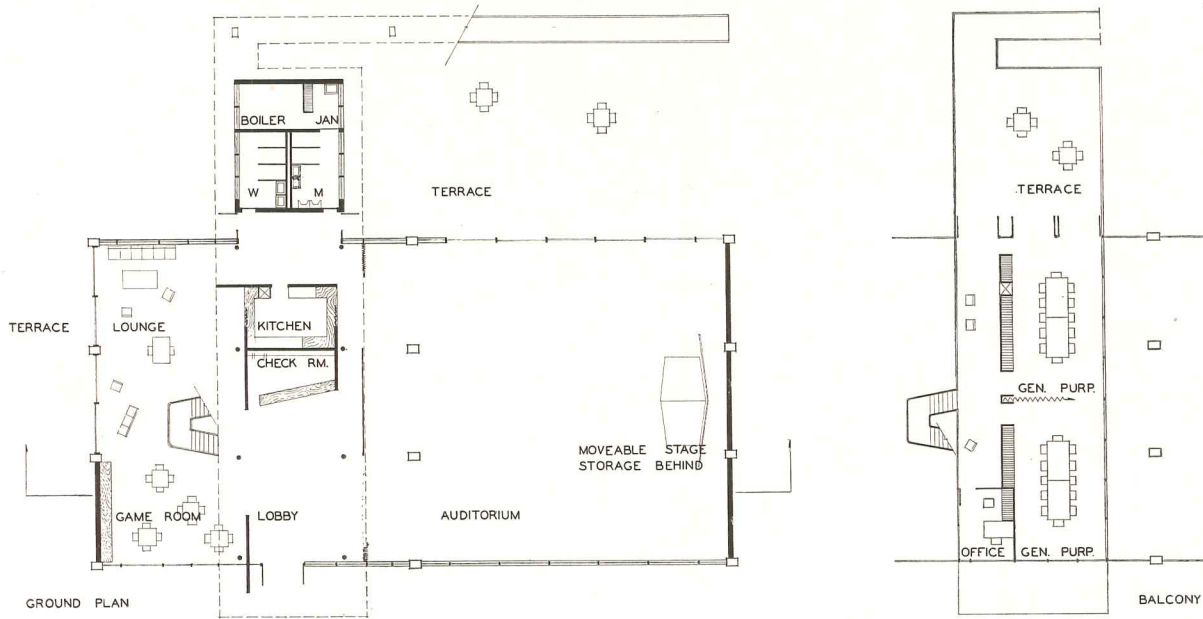
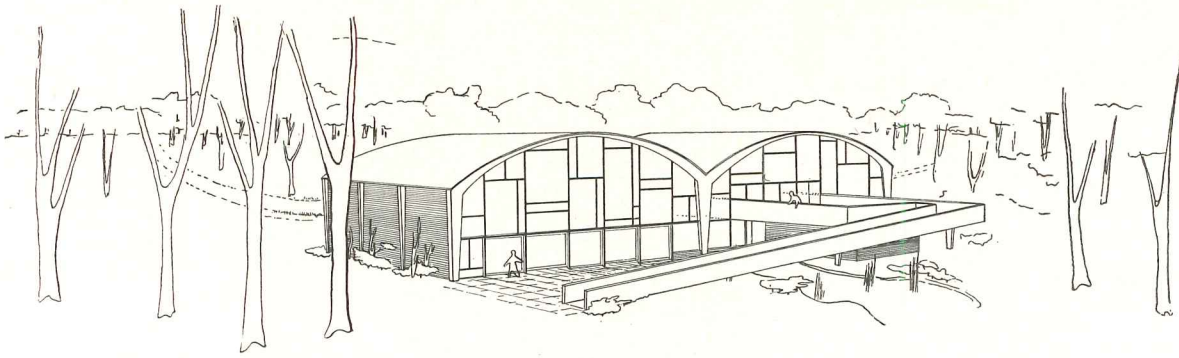
NORTH ELEVATION

FIRST PRIZE: \$1000.00

Joseph Y. Fujikawa, Chicago, Illinois

Born in 1922, attended the University of Southern California 1939-42, and then went to Illinois Institute of Technology where he received his degree B.S. in Architecture in 1944. He served in the United States Army 1944-45 and since 1946 has been in the office of Ludwig Mies van der Rohe, and also has been doing graduate work at Illinois Tech.

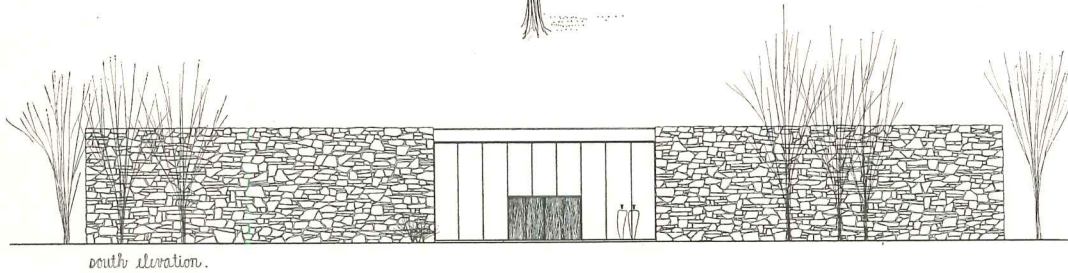
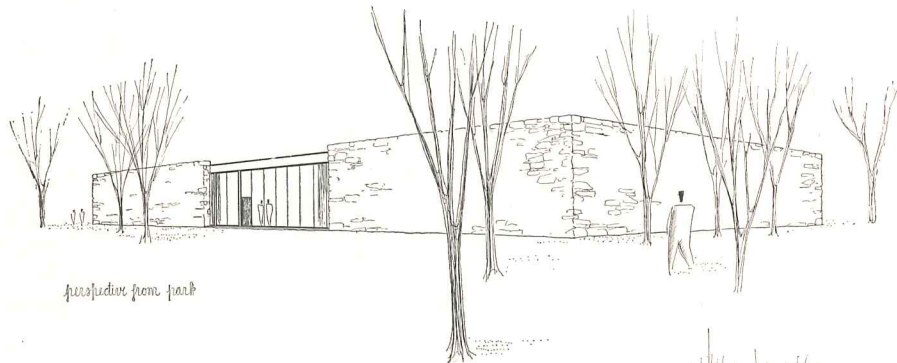
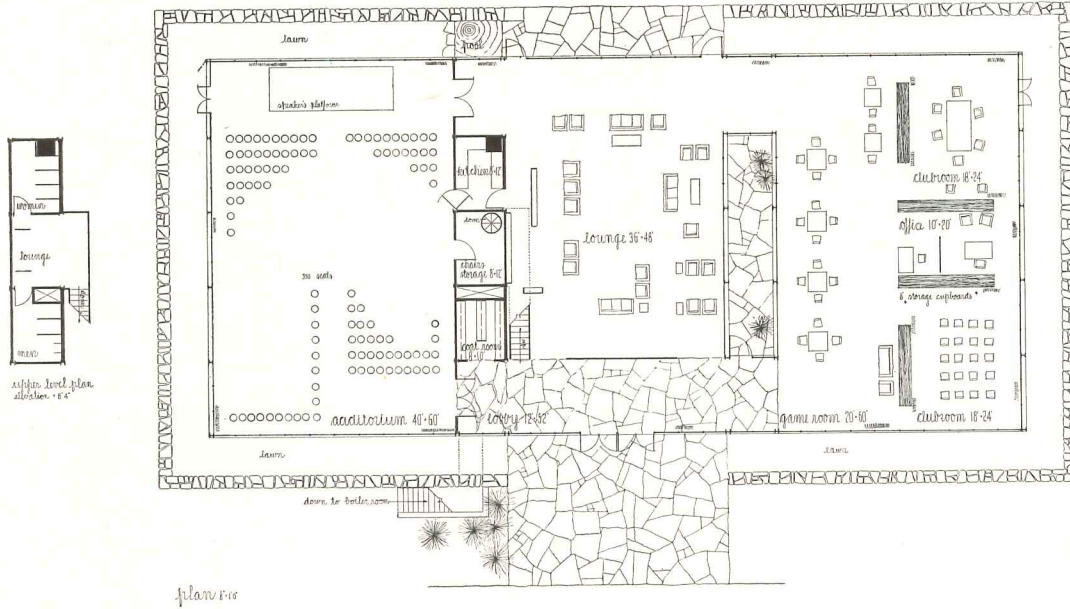
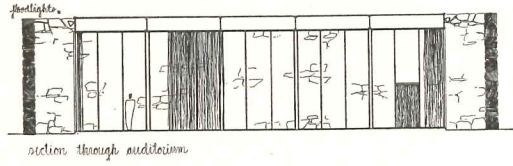
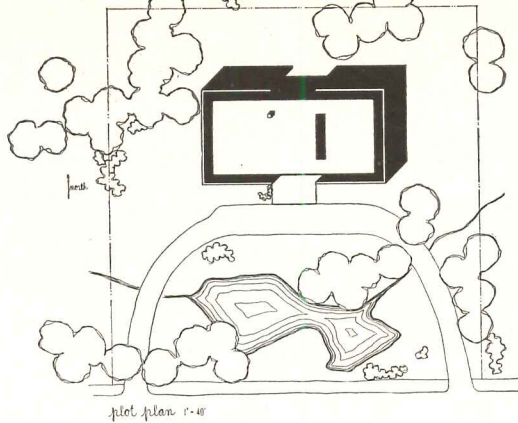




SECOND PRIZE: \$750.00
G. J. Lee Everidge, Oklahoma City, Okla.



Of part Choctaw Indian descent, he was born in Oklahoma in 1926; studied architecture at University of Oklahoma 1943. After serving in the Army Air Corps 1944-45, returned to University of Oklahoma, then moved to North Carolina State College to continue his studies with the same faculty which went to organize the new School of Design at North Carolina

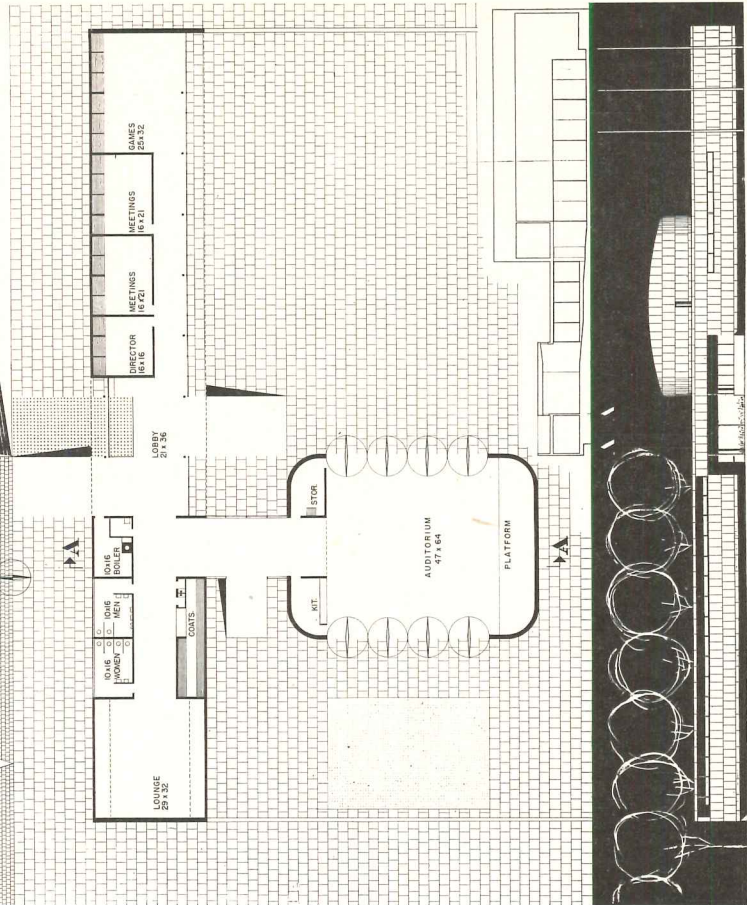
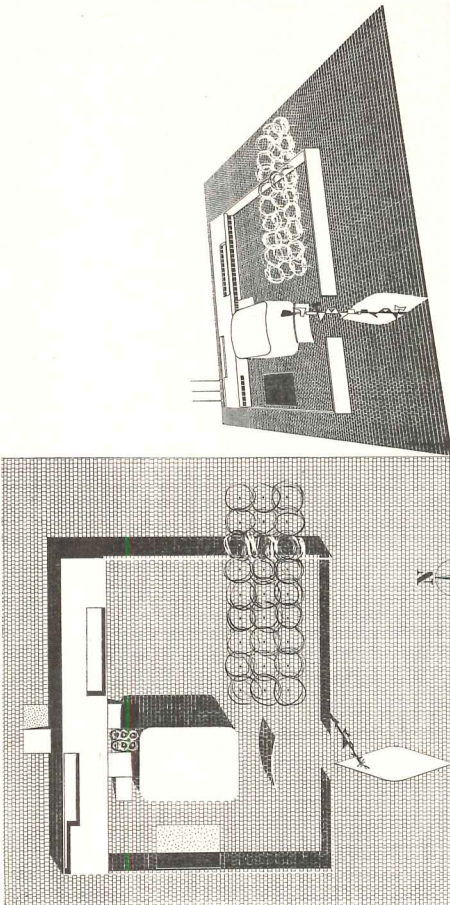


THIRD PRIZE: \$500.00

Edward Chase Weren, Bloomfield Hills, Mich.

A native New Yorker, born in 1920, he received his secondary education at Phillips Academy, Andover, Massachusetts, received his A.B. at Harvard College, 1942. Served as a lieutenant in the U. S. Naval Reserve 1942-46, received his degree of B. Arch. 1948 at Harvard University where he was awarded the A.I.A. School Medal. Was associated with the architectural firm of Ketchum, Gina and Sharp, and is at present with Saarinen, Saarinen and Associates

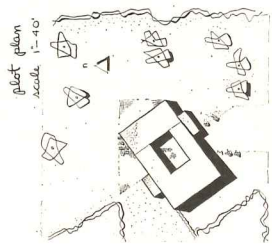
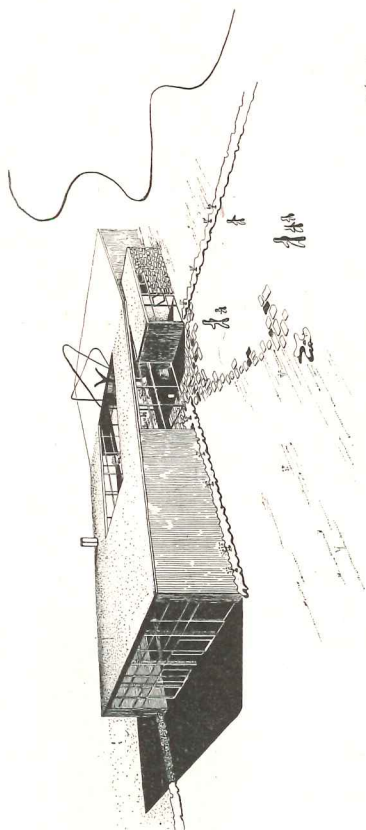




HONORABLE MENTION : \$50.00

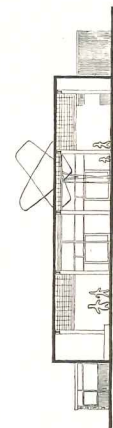
William R. Reed. Moved from Cincinnati where he was born in 1922, to Chicago in 1930, where he later entered the American Conservatory of Music. He attended Harvard University, 1940, the Institute of Design, 1941, and served with the Army Air Force from 1943-46. He is associated with Robert Bruce Tague, A.I.A., and is currently remodeling a Chicago building as his office

HIDDEN TALENT COMPETITION

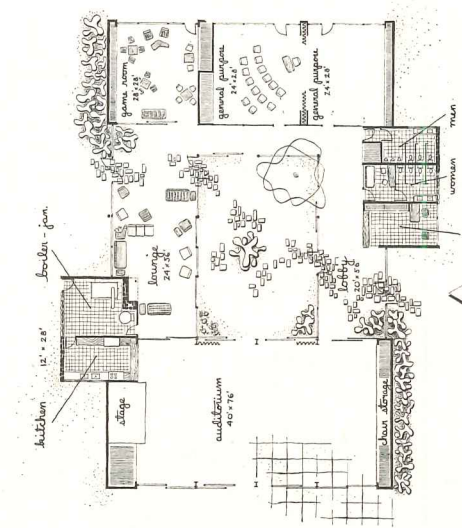


plot plan
scale 1" = 40'

Steel frame construction
rigid frame over auditorium
luncheon ... general gypsum
slab roof on wood joist
stained vertical siding
multiple stone walls ...
asphalt tile floors in game
and general purpose rooms
Hemlock floor in auditorium
luncheon ... radiused heating
with oil fired boiler ...



section
scale 1/8" = 1'-0"



northwest elevation
scale 1/8" = 1'-0"

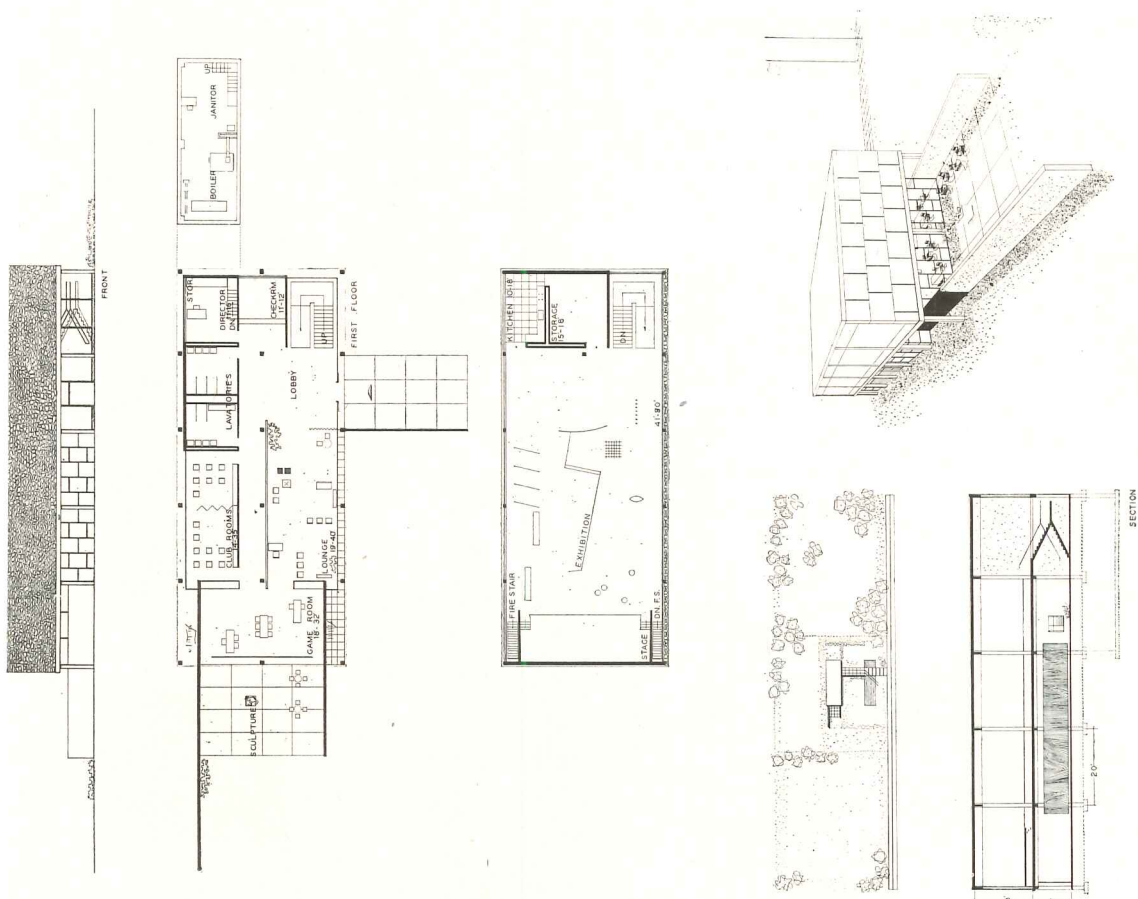
plan
scale 1/8" = 1'-0"



HONORABLE MENTION : \$50.00

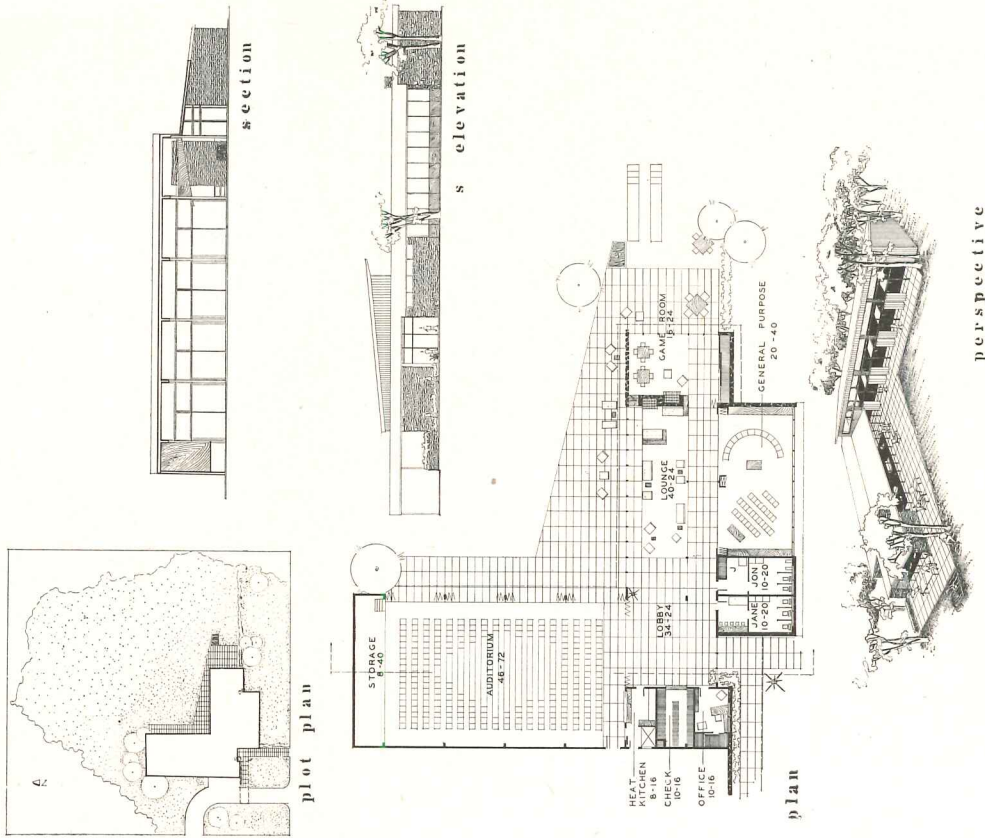
Herbert Johnson. Born in Chicago 28 years ago, he attended Chicago Latin School, and the Asheville School, Asheville, North Carolina, before entering the University of Florida, College of Architecture and Allied Arts. He served three years with the Seabees in both European and Pacific Theaters of the war, married, and returned to the University of Florida in 1946.





HONORABLE MENTION: \$50.00

Louis F. Mammier. Born and educated in New York state (son of Louis E. Mammier, architect), he graduated from Pratt Institute, Brooklyn, with degree of B. Arch. in 1948. He received 1st prize in Brooklyn A.I.A. Design Competition, 1947. He served with the U. S. Area Engineers at Steward Air Field, Newburgh, New York; and is now with architects Lorimer Rich and Robbins Conn



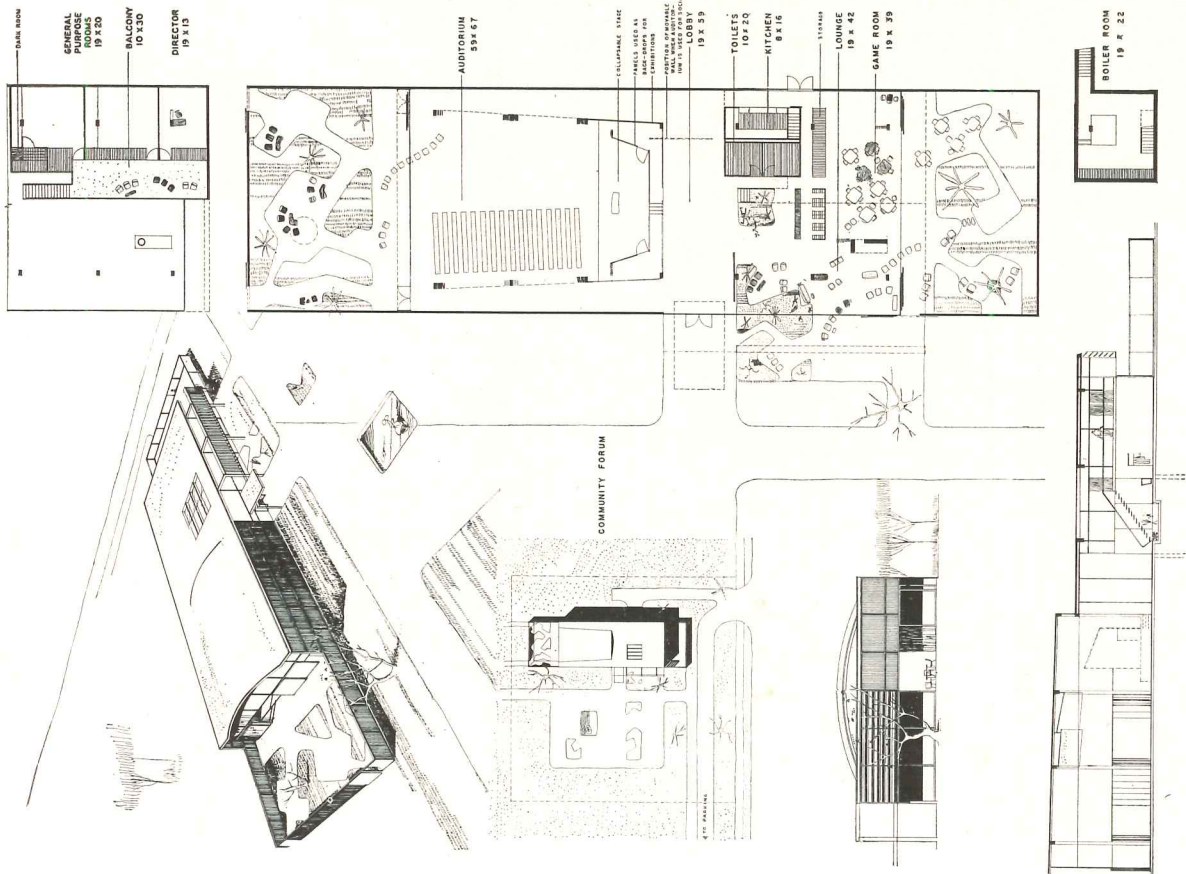
HONORABLE MENTION: \$50.00

Clifford G. Foreman. A Pennsylvanian, born in 1926 in Pittsburgh, he received his secondary education in Homestead, Pennsylvania, and is now a student in the Department of Architecture of Carnegie Institute of Technology



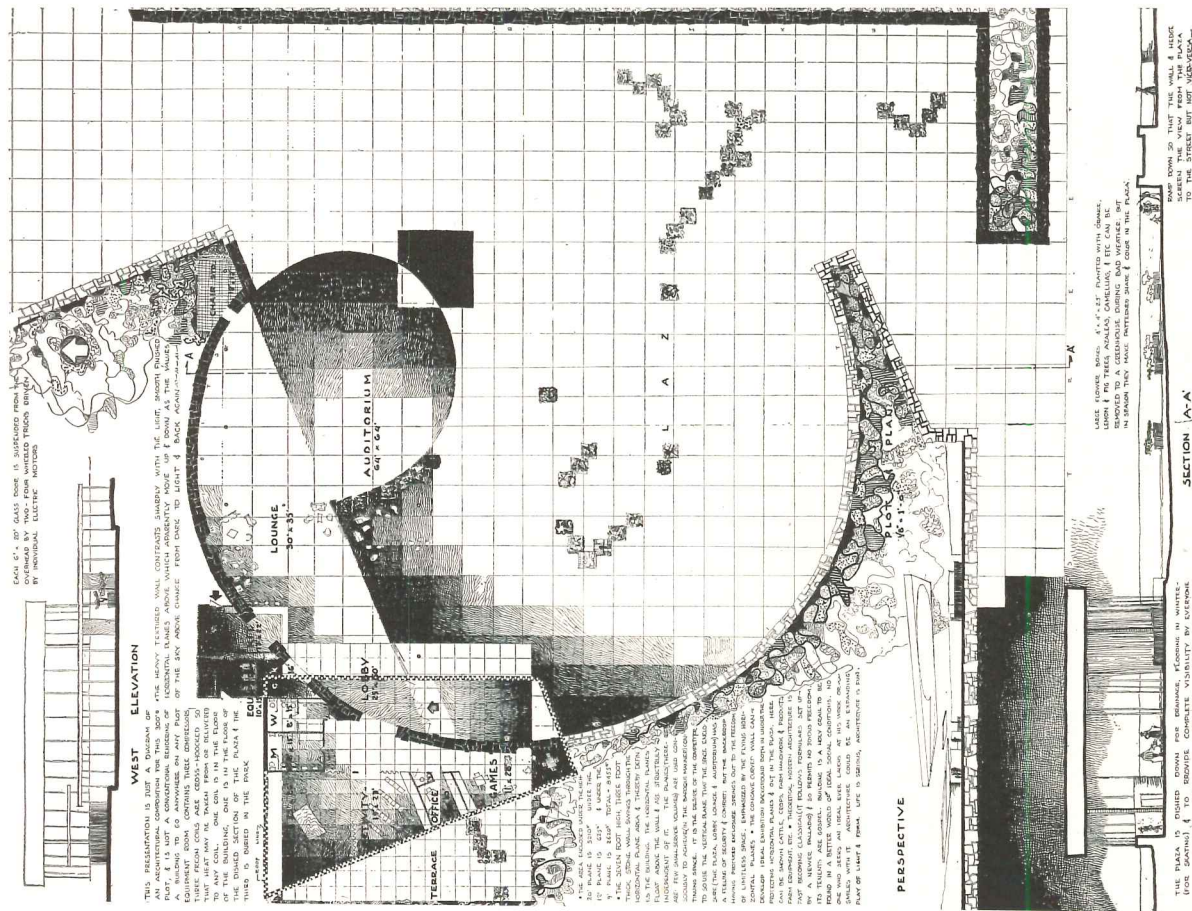
Sponsored and conducted by THE MUSEUM OF MODERN ART and ARCHITECTURAL RECORD

HIDDEN TALENT COMPETITION



HONORABLE MENTION: \$50.00

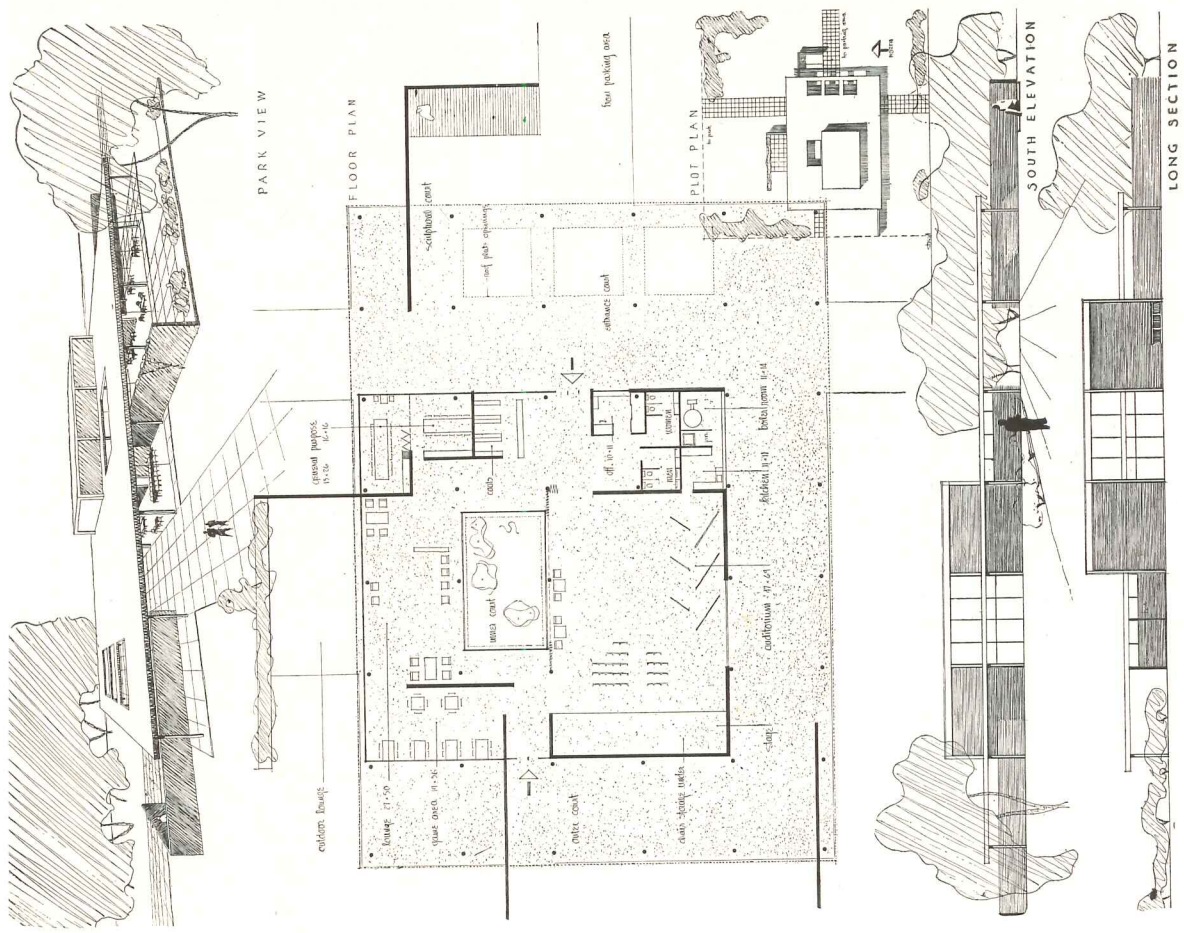
Spero Paul Daltas. A native of St. Paul, age 28, he attended the University of Minnesota 1938-43, receiving his B. Arch. degree. He was a gunnery and torpedo officer on a destroyer in the Pacific from 1943-46, was an architectural designer for Northwest Airlines 1946-47, received M. Arch. at M. I. T. in 1948, where he won the Chamberlain Prize. Now with Carl Koch and Associates, Cambridge, Mass



HONORABLE MENTION: \$50.00

Edward M. Fearney, A.I.A. Born in 1915 in Providence, Rhode Island, he attended Brown University, but transferred to Carnegie Institute of Technology, B. Arch. 1939. Served as Marine Aviation Cadet, and worked in Newfoundland and on the Alaska Highway. Was with Dickey Associates, Architects, in Honolulu; now teaching in the University of Florida, College of Architecture and Allied Arts

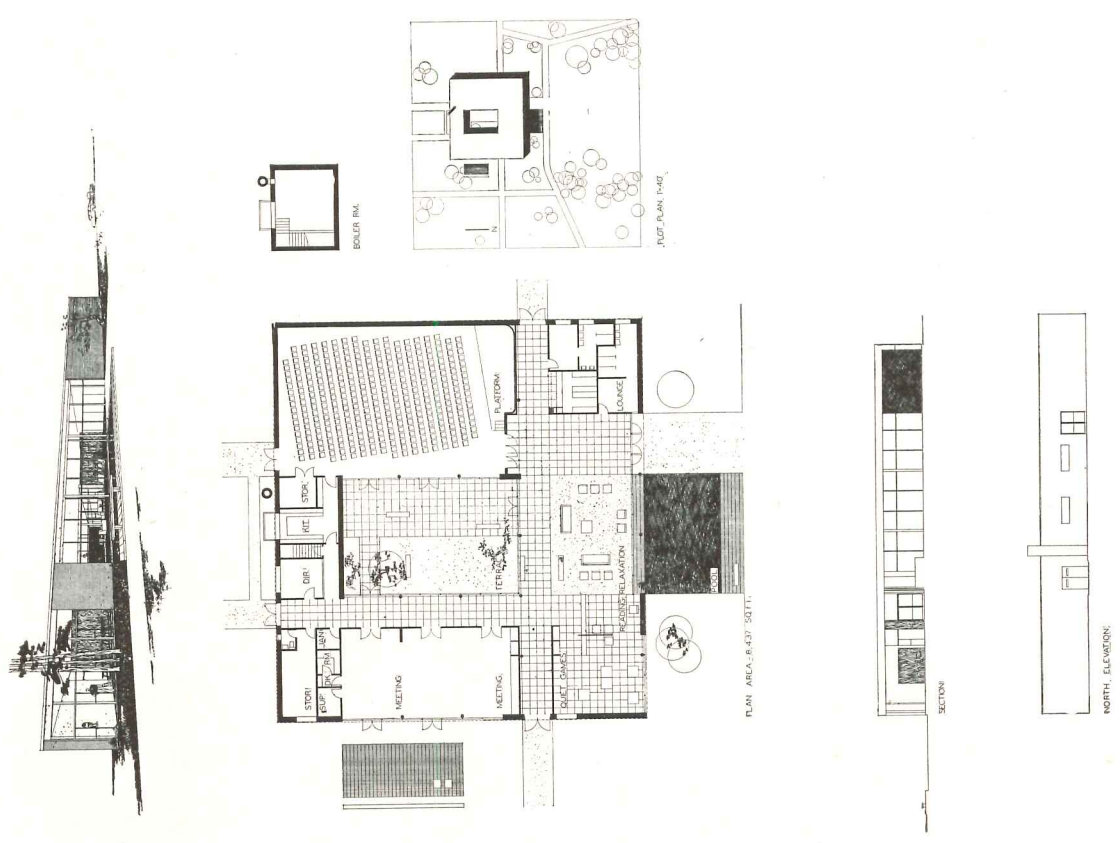




HONORABLE MENTION: \$50.00

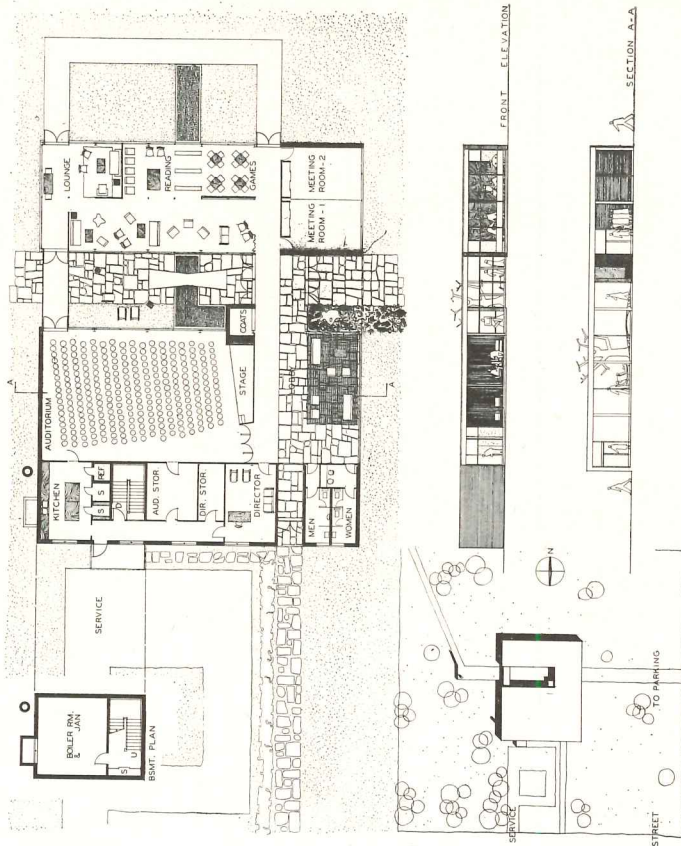
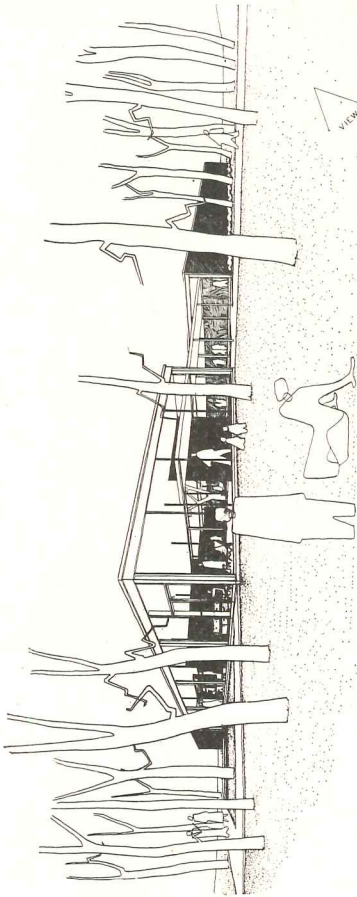
Elinor M. Hoops. Born in Brooklyn, New York, in 1924, she graduated from Middlebury College, Vermont, in 1946, having majored in liberal arts. Though she has had no formal architectural education she shares with her husband, a graduate student at Cranbrook Academy of Art, Bloomfield Hills, Michigan, an intense interest in the development of modern architecture

Sponsored and conducted by THE MUSEUM OF MODERN ART and ARCHITECTURAL RECORD



HONORABLE MENTION: \$50.00

George E. Rafferty. A native of St. Paul, Minnesota, born 1917, he graduated in architecture at the University of Minnesota 1942. He was a sergeant in the Air Corps and an instructor 1942-46. He is a designer with Ingemann, Bergstedt, and Cavin, Jr., architects, in St. Paul, and an instructor in design at the University of Minnesota

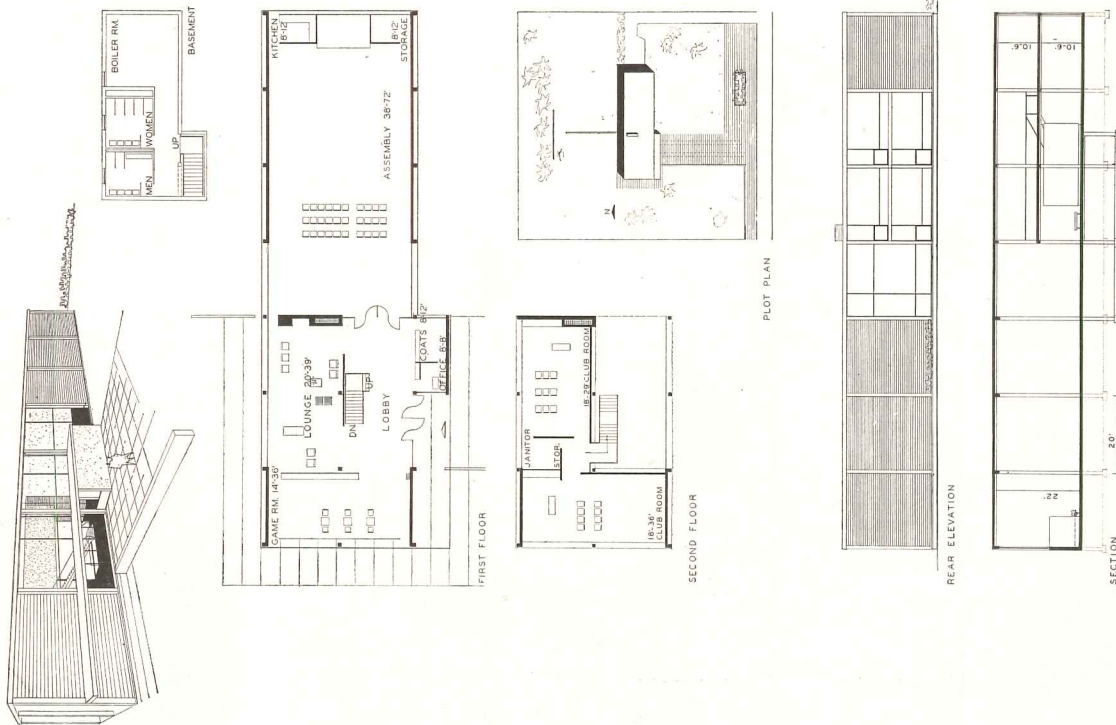


HONORABLE MENTION: \$50.00

James V. Hirsch. Born in Medford, Wisconsin 25 years ago, he studied at the University of Minnesota, graduating with distinction in 1947 with a degree B. Arch. He served in Europe as a sergeant in the Infantry 12th Armored Division 1943-46, and is now a designer with Ingemann, Bergstedt and Cavin, Jr., of St. Paul, Minnesota



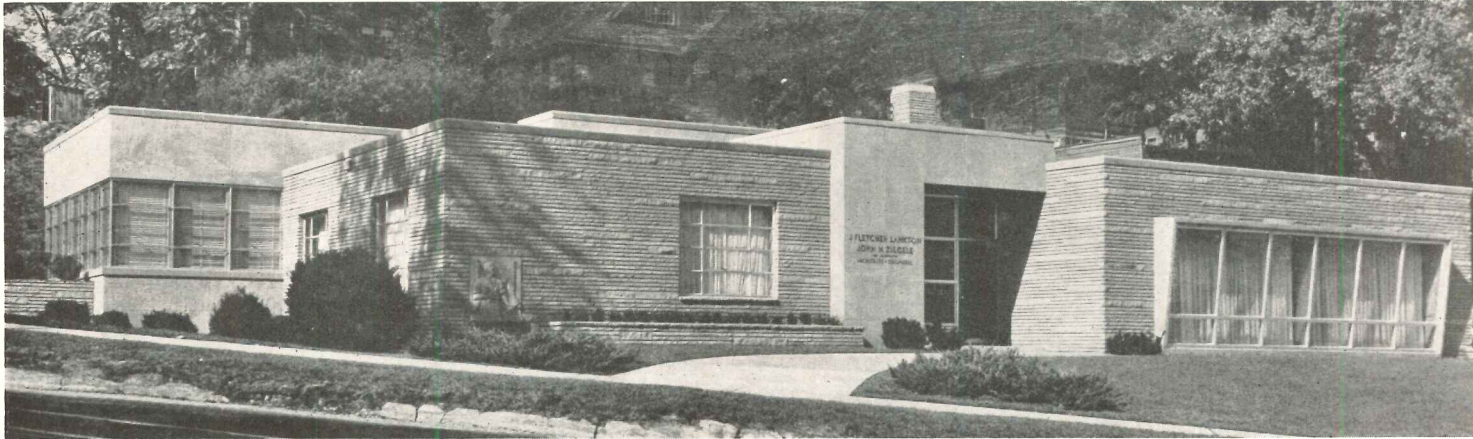
HIDDEN TALENT COMPETITION



HONORABLE MENTION: \$50.00

Mary Ellen Linberger. In 1926 she was born in Youngstown, Ohio. She took the liberal arts course at Rosary College, River Forest, Illinois, 1943-45, before going to Pratt Institute, Brooklyn, where she is now a senior in the department of architecture. She received the Pratt Alumni award, "outstanding junior student", 1948, and received an honorable mention in the New York State Housing Competition 1948





ARCHITECT-ENGINEER OFFICES, PEORIA, ILLINOIS

WHEN this architectural firm expanded to the point of designing its own building, it chose an outlying site, about a mile from the center of the city, on a fairly prominent hillside. The building is placed to be seen from a considerable distance, and is floodlighted at night. The building was designed to provide exceptionally good working conditions for a total personnel of 36; besides 8 architects, there are 5 licensed engineers, 18 draftsmen and superintendents, a delineator and 4 stenographers or accountants, including as a not-unimportant part of the facilities, parking space for the employees' cars. Scruggs and Hammond were the landscape architects. The heating and air conditioning system includes several innovations, some experimental. Heating combines radiant heating with forced warm air, permitting a large volume of ventilating air to be circulated. The duct work is divided into two zones, so that different exposures may be separately heated or cooled. To reduce water consumption in the cooling period, an evaporative condenser was installed with the compressor. Dehumidification is exceptionally important for hot Illinois weather, especially in a drafting room, where humidity hampers drawing. Air handling equipment can supply 100 per cent fresh air, when weather conditions are propitious. A tri-ethylolene vaporizer is installed in the ventilation system on an experimental basis, in the belief that it may cut down absenteeism due to colds. The architects point out that it frequently has had this result. So far, however, no definite conclusions have been reached regarding its effectiveness in this particular office.

Office Building of J. Fletcher Lankton

John N. Ziegele and Associates

Architects and Engineers

Exterior is of Indiana limestone, backed with insulating concrete block. Large pieces of stone are shot sawed: ashlar is of long pieces of two different thicknesses

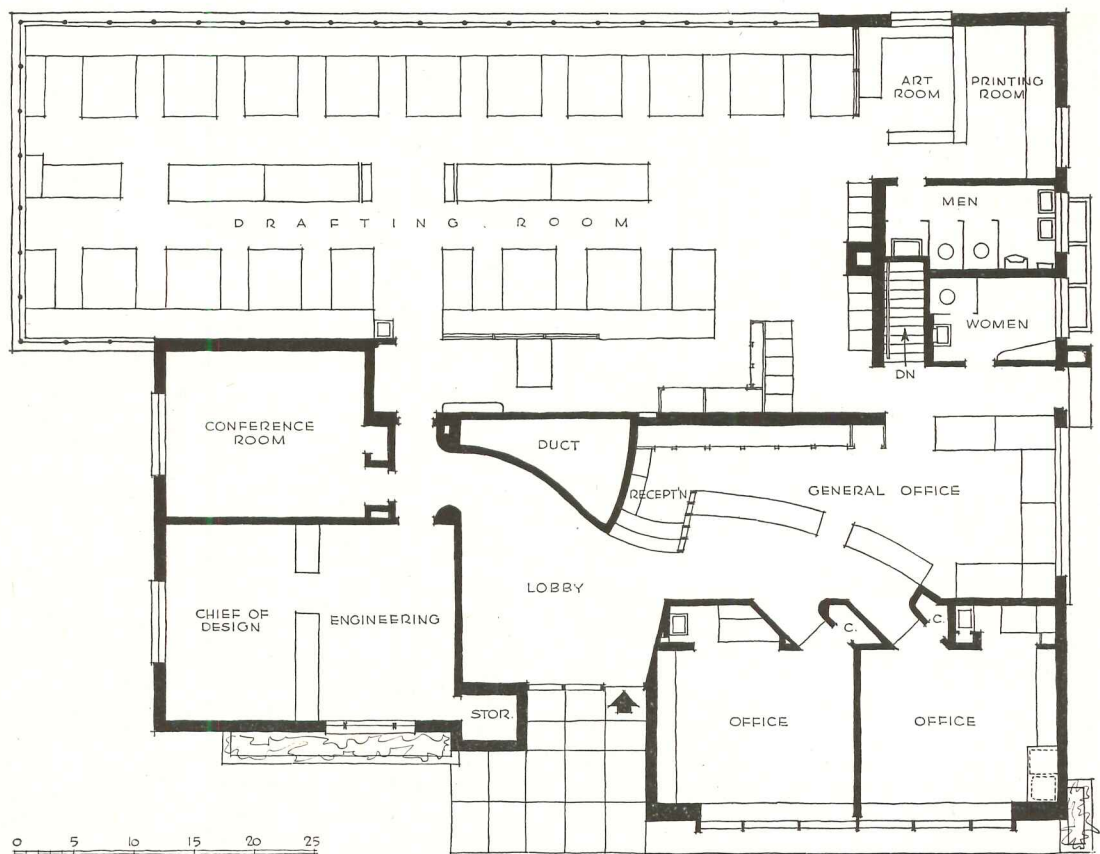
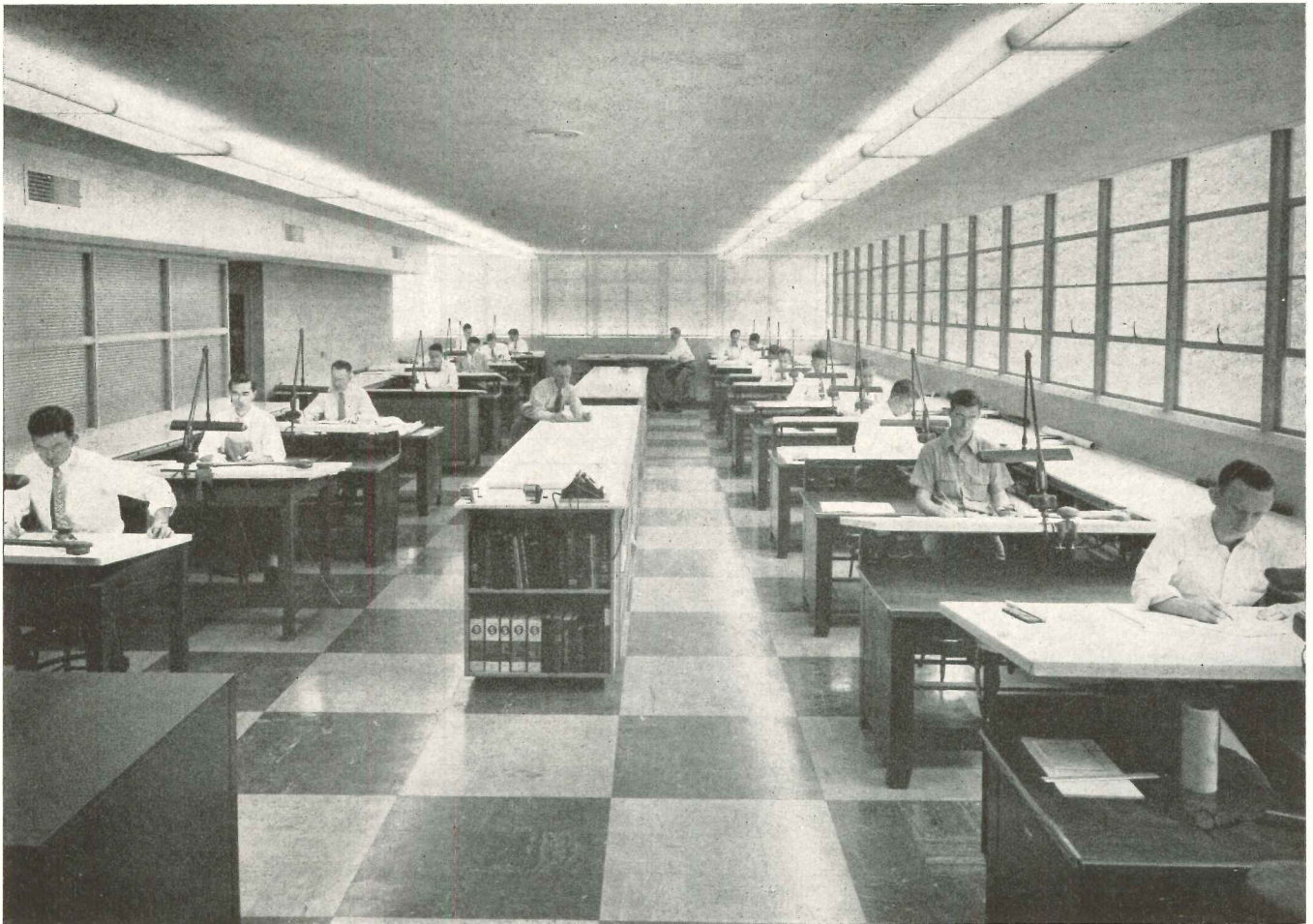




Above: view of reception room, looking toward entrance. Right: conference room. Below: general office, looking toward receptionist's desk and waiting room. Indirect lighting of the display renderings is effectively arranged in connection with the cabinets

Drafting room walls are the concrete blocks, painted with two coats of resin emulsion paint; in other rooms the block is plastered and painted. All ceilings are acoustic tile; floors are rubber tile, except in executive offices where carpet is used. The basement contains, besides air conditioning equipment, a model shop, dead files, and an employees' lunch room, where the coffee making equipment is always much appreciated





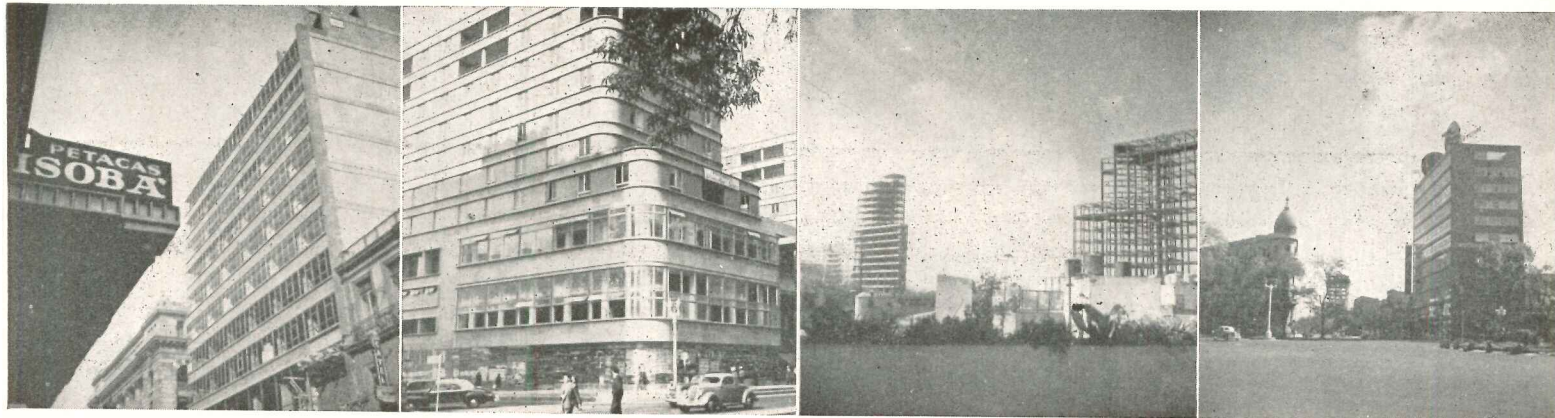
An aerial, black and white photograph of Mexico City, Mexico. The image shows a dense urban landscape with a grid of streets. In the center, a large, ornate cathedral with two prominent spires is visible. To its north is a large, open square with a decorative pattern on the ground. The text "So you're going to" is written in a white, cursive font across the top of the image.

So you're going to

MEXICANA AEROFOTO, S. A.

MEXICO

... or at least Mexico City where much modern architecture has bloomed against the rich background of former periods. So here are a few candid shots of recent buildings and a decorative and useful map (overpage) showing their locations and other points of interest, prepared by Susanne Wasson-Tucker especially for ARCHITECTURAL RECORD and your edification



1
Office Building,
Victor de la Lama, Architect

3
Hotel Prado (opened 1948,
660 rooms), Carlos Obregon
Santacilia, Architect

6 **4**
Left, Office Building, Pani &
del Moral, Architects.
Right, Office Building,
Mario Pani, Architect

5
Office Building for Eastern
Airlines, Juan Sordo Madaleno & Augusto Alvarez,
Architects (1947)

Numbers refer to locations indicated on the map (overpage)



6
Office Building,
Mario Pani and Enrique del
Moral, Architects

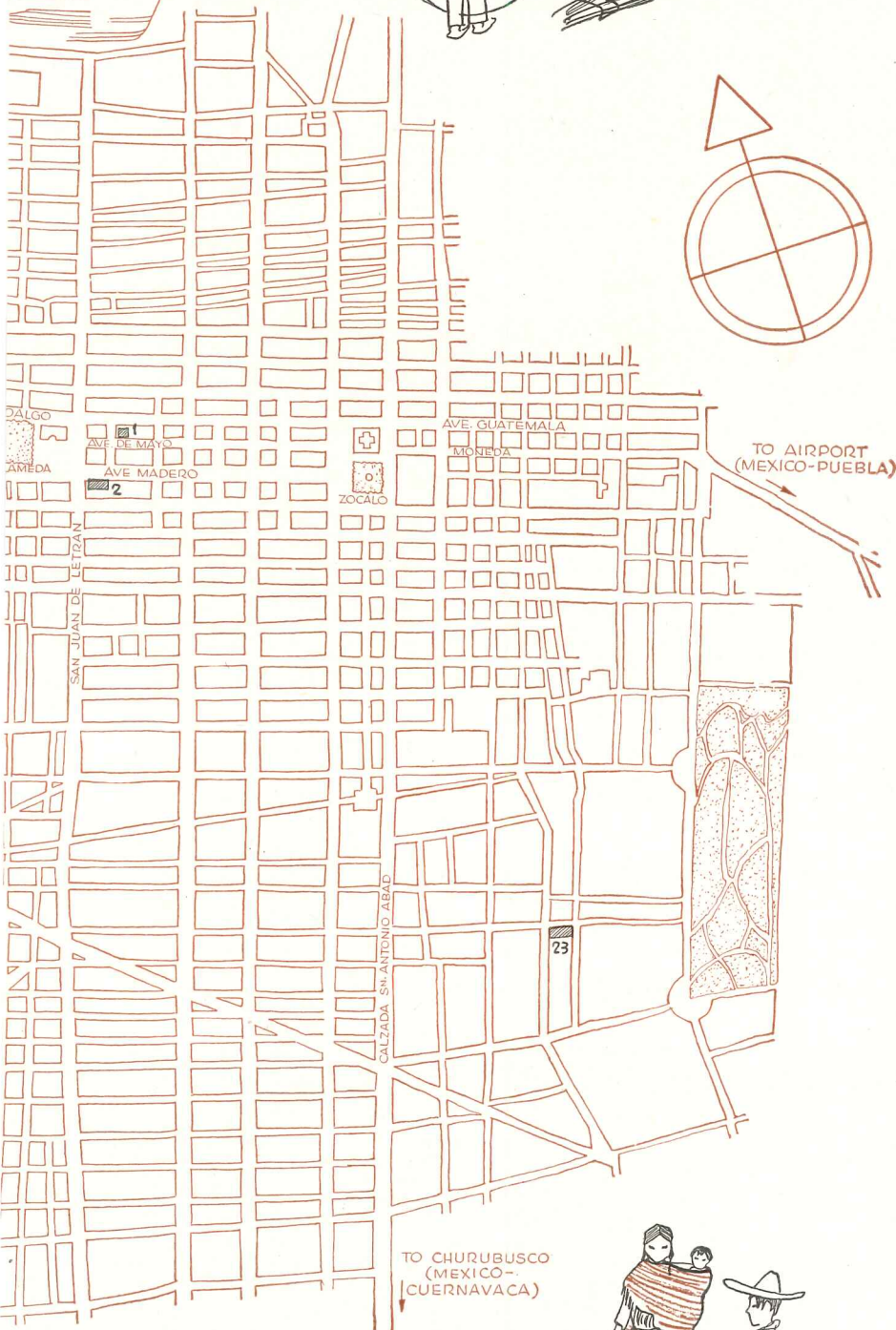
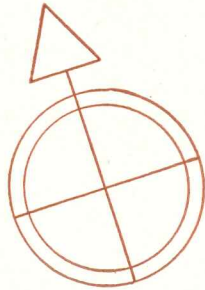
7
Office Building "Edificio Con-
tinental," Carlos Lazo, Archi-
tect (1948)

8
Hotel (partially hidden by
billboards) by Mario Pani,
Architect

9
Apartment House and Shops,
Augusto Alvarez, Architect

See also "Modern Mexico," by Ann Binkley Horn, ARCHITECTURAL RECORD, July 1947, pp. 70-83.

33
↑
TO
GUADALUPE



TO CHURUBUSCO
(MEXICO-CUERNAVACA)

24
25



KEY TO PLAN

LIST OF BUILDINGS

1. * Office Building
Victor de la Lama, Architect
2. * Office Building, 37 stories high
Augusto Alvarez, Architect
3. Hotel Prado (opened 1948)
Carlos Obregon Santacilia, Architect
4. * Office Building
Mario Pani, Architect
5. Office Building, Eastern Airlines
J. S. Madaleno & A. Alvarez, Arch'ts.
6. * Office Building, Mario Pani & Enrique del Moral, Architects
7. Office Building "Edificio Continental"
Carlos Lazo, Architect (1948)
8. Hotel, Mario Pani, Architect (1948)
9. Apartment House and Shops
Augusto Alvarez, Architect (1948)
10. Students Center "San Cosme"
Enrique Yañez, Architect (1947)
11. Normal School for Teachers
Mario Pani, Architect (1947)
12. * Social Security Building
Carlos Obregon Santacilia, Architect
13. * Hotel
Ingenieros Asociates, Architects
14. * Office Building
Ramon Marcos, Architect
15. Apartment House
Juan Sordo Madaleno, Architect
16. Apartment House
Juan Sordo Madaleno, Architect
17. National Conservatory of Music
Mario Pani, Architect (1947)
18. Center for Mothers and Infants
Enrique de la Mora, Architect (1947)
(ARCHITECTURAL RECORD, August 1947)
19. Office Building (1947)
J. S. Madaleno & A. Alvarez, Arch'ts.
20. Office Building (1947)
J. S. Madaleno & A. Alvarez, Arch'ts.
21. Apartment House
Juan de Madariaga, Architect (1947)
22. Medical Center of the City of Mexico:
Childrens Hospital and
Cardiological Institute (1948)
José Villagrán García, Architect
* Emergency Pavilion
Mario Pani, Architect
23. Malt Factory
Fernando Cervantes, Architect
24. Film Studios, Churubusco
Gil Robles, Architect (1946-48)
25. Tuberculosis Sanatorium (1948)
José Villagrán García, Architect
26. * Housing Project, Apartments
Mario Pani, Architect
27. Bull Ring and Stadium
M. Roland, Engineer in charge
28. Garden and Residences, Pedregal
Luis Barragan, Architect
Hill House, Max Cetto & John Mc-Andrew, Architects (1947)
* House of Architect Max Cetto
29. Turf Club, Km 12 Road to Toluca
"Artecnica", Architects (1947)
30. Lomas de Chapultepec, Residence
Carlos Lazo, Architect
31. Military Hospital
Luis MacGregor, Architect
32. Industrial Area, Atzepezalco and Colonia Vallejo, Factory "Crown Cork de Mexico," Gonzalez Reyna & Arozarena, Architect (1949)
* Textile Factories
Gonzalez Reyna & Arozarena, Arch'ts.
33. Industrial Development, Factories, Housing, Recreation
Industria Nacional S.A., Ruiz Galinda
34. Residence of
Augusto Alvarez, Architect

Map and sketches drawn by Susanne Wasson-Tucker

* Under Construction.



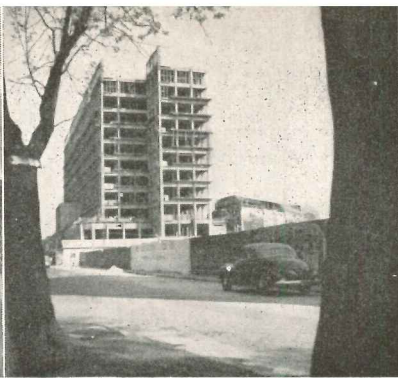
10

Students' Center, "San Cosme," Enrique Yañez, Architect (1947)



11

Normal School for Teachers, Mario Pani, Architect (ARCHITECTURAL RECORD, July 1947)



12

Social Security Building, Carlos Obregon Santacilia, Architect



13

Hotel by Ingeniers Associates, Architects



14

Office Building, Ramón Marcos, Architect



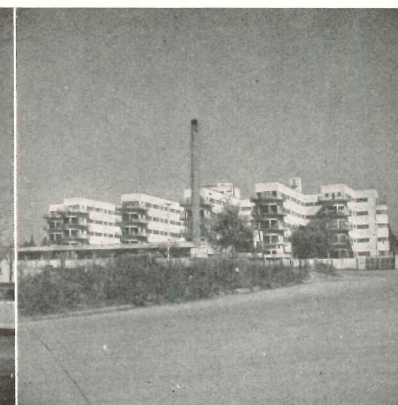
15

Apartment House, Juan Sordo Madaleno, Architect



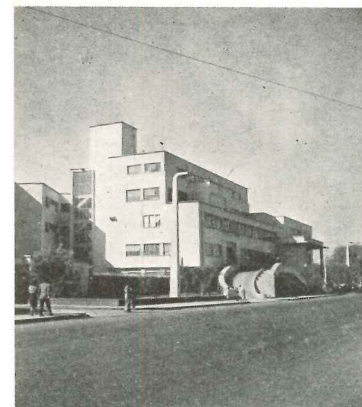
16

Apartment House, Juan Sordo Madaleno, Architect



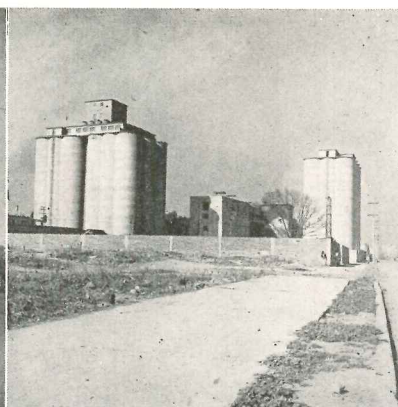
22-A

Medical Center of the City of Mexico: Children's Hospital, José Villagrán García, Architect (ARCHITECTURAL RECORD, October 1944)



22-B

Medical Center of the City of Mexico: Cardiological Institute, José Villagrán García, Architect (1948)



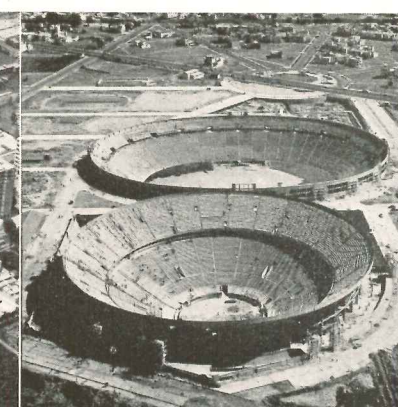
23

Malt Factory, Fernando Cervantes, Architect (1945-48)



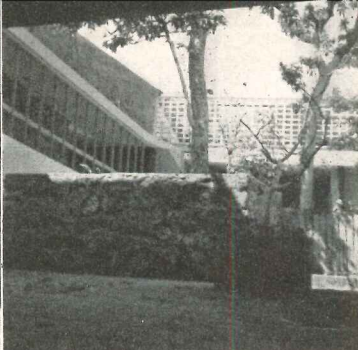
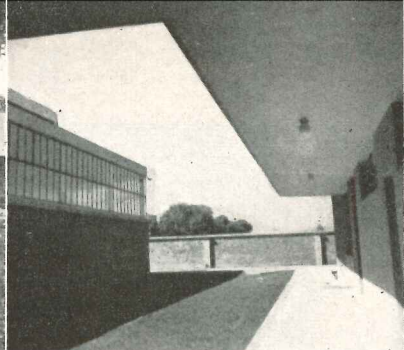
26

Housing Project, Apartment Group, Mario Pani, Architect



27

Bull Ring and Stadium, M. Roland, Engineer in charge



28

Hill House, Max Cetto and John McAndrew, Architects

30

Residence of Carlos Lazo, Architect, Lomas de Chapultepec

32

Factory "Crown Cork de Mexico," Gonzalez Reyna and Arozarena, Architects (1949)

34

Residence, Augusto Alvarez, Architect and owner (1948)

A BRIEF LIST OF SOME OF THE ARCHITECTS

AND NEW BUILDINGS IN MEXICO D. F.

AUGUSTO ALVAREZ

Calle de Mississippi 31

Apartment House
Alfonso Herrera 11

Office Building
Paseo de la Reforma and
Avenida Morelos

Office Building
Avenida de los Insurgentes
and Tonalá

Office Building
Avenida de los Insurgentes
and Monterrey

Office buildings while associated with
Juan Sordo Madaleno

Own Residence, "San Angel,"
Simon Yarto 11

"ARTECNICA"

Avenida Juarez 88

"Turf Club"
18 Kilometers from the City
on the way to Toluca

LUIS BARRAGAN

Paseo de la Reforma 137

Garden on the Pedregal, and De-
velopment of Private Residences
Pedregal

FERNANDO CERVANTES

Avenida Juarez 76

Malt Factory
Calzada de Cuiclahuac and Boturini

MAX CETTO

Avenida Juarez 139
Coyoacan D. F.

Residence
Calle Tornel
Tucubaya

Residence
Guerrero 10
San Angel D. F.
(with John McAndrew)

CARLOS CONTRERAS

Edificio la Nacional 1004
Avenida Juarez No. 4

VICTOR DE LA LAMA

Paseo de la Reforma 1

Office Building
Avenida de Mayo and Condesa

ENRICO DE LA MORA

Avenida Juarez 30

General Hospital,
Medical Center of the City of Mexico
Calzada de la Piedad and Pasteur

Center for Mothers and Infants
Calzada de Madereros and Guer-
navaca Railroad

ENRIQUE DEL MORAL

Paseo de la Reforma 503

Pavilion for Infectious Diseases,

Medical Center of the City of Mexico
Calzada de la Piedad and Pasteur

Office Buildings
(with Mario Pani)

JUAN DE MADARIAGA

Apartment House
Avenida de los Insurgentes and
Chilpancingo

JOSÉ VILLAGRÁN GARCÍA

Calle de Palma 30

Medica Center of the City of Mexico
Calzada de la Piedad and Pasteur

Maternity Pavilion
Children's Pavilion
Cardiological Pavilion

Tuberculosis Sanatorium
Coyoacan

"Costa Rica" School

INDUSTRIA NACIONAL S. A.

Ruiz Galinde

Industrial Development, Housing, Rec-
reation
Guadalupe, Road to Pachuca

CARLOS LAZO

Avenida Sonora 80

Office Building
Paseo de la Reforma, near Paris

Residence
Sierra Leona 374
Lomas de Chapultepec

LUIS MACGREGOR

Military Hospital
Avenida del Castillo
Lomas de Chapultepec

JUAN SORDO MADALENO

Avenida Morelos 110

Apartment House
Paseo de la Reforma and Calzada
Gral Mariano
Office buildings, while associated
with Augusto Alvarez

MARIO PANI

Paseo de la Reforma 503

Normal School for Teachers
Calzada Mexico-Tacuba and Avenida
de los Maestros

National Conservatory of Music
Paseo de la Reforma and Maliere

Emergency Pavilion,
Medical Center of the City of Mexico
Calzada de la Piedad and Pasteur

Hotel
Van Sullivan and Ramón Gutzmán

Office Building
Paseo de la Reforma and Artes

Office Building
Paseo de la Reforma and Francia

Church
Calle de Leibnitz

Housing Project
Avenida Coyoacan and Cuevas

GONZALEZ REYNA and AROZARENA

Avenida Juarez 56

Factory "Crown Cork de Mexico"
Colonia Vallejo

Textile Factories
Atzapozalco

GIL ROBLES

Filmstudios
Calzada de Mexico a Tlalpam
Churubusco

M. ROLAND

Engineer in charge
Bull Ring and Stadium
Avenida de los Insurgentes

CARLOS OBREGON SANTACILIA

Calle Lisboa 22

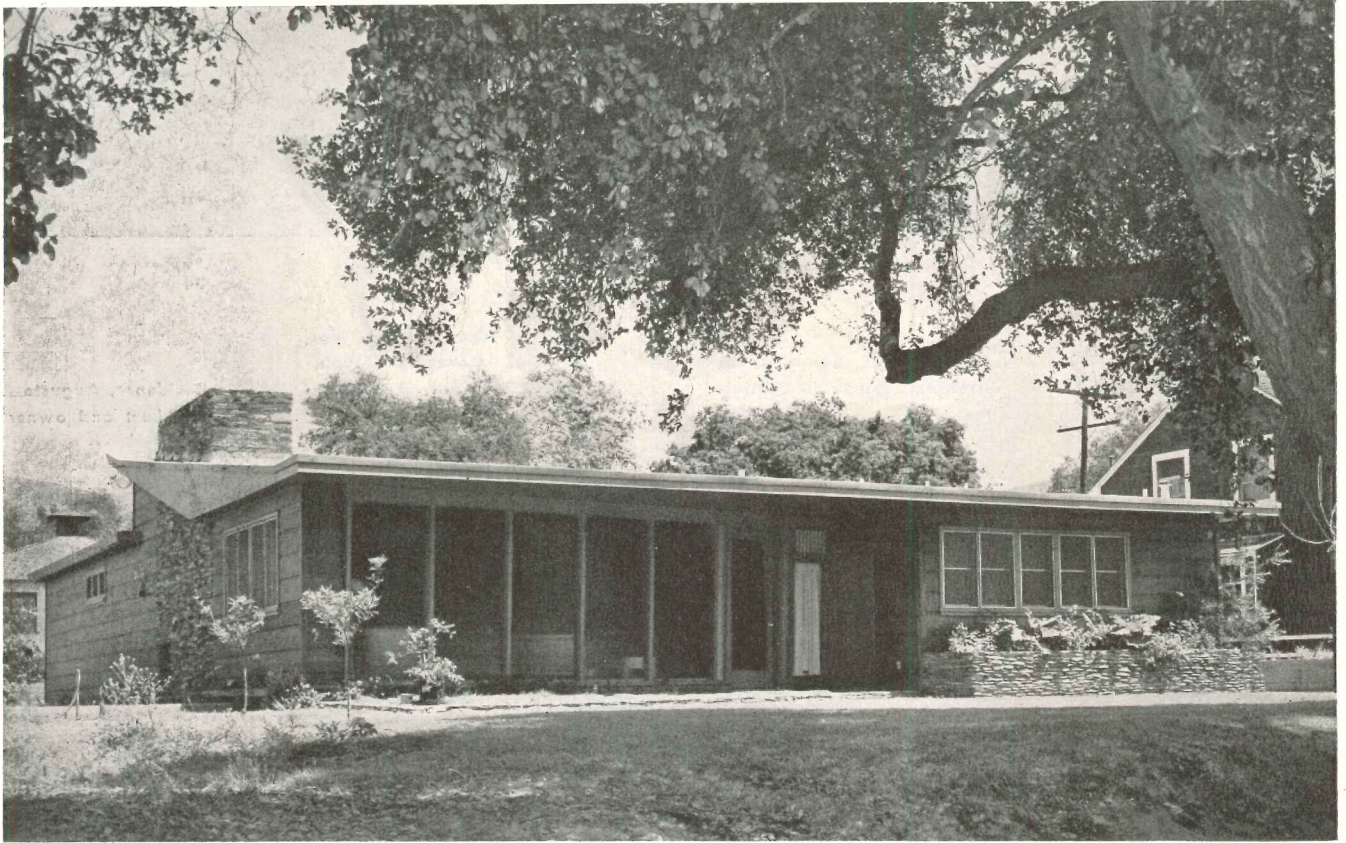
Hotel Prado
Avenida Juarez and Luis Moya

Social Security Building
Paseo de la Reforma and Toledo

ENRIQUE YAÑEZ

Calle de Empan 35

Students Center "San Cosme"
Centro Escolar Ribera de San Cosme
Avenida Ribera de San Cosme and
Fresno



George P. Turner, Designer

“DESIGN FOR LIVING—WITH KIDS”

Residence of Mr. and Mrs. George P. Turner, La Canada, Calif.

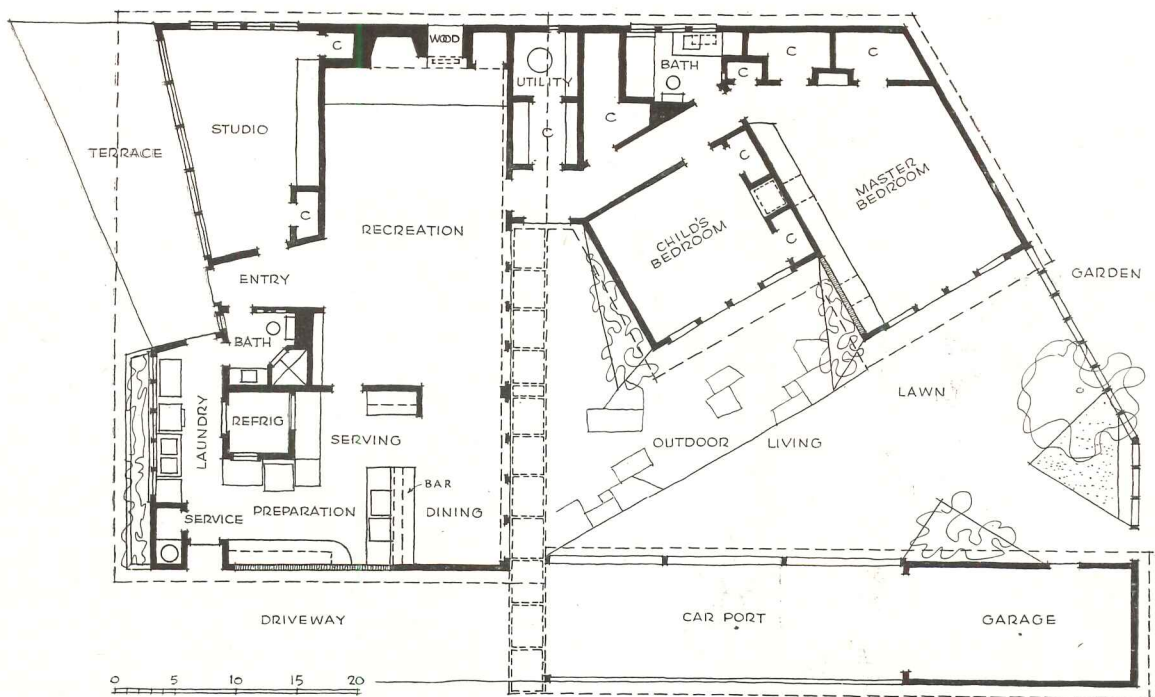


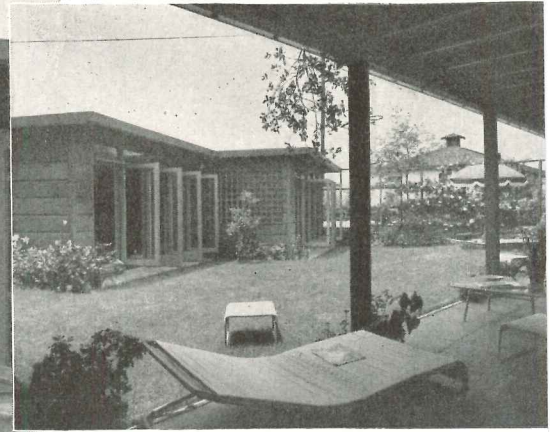
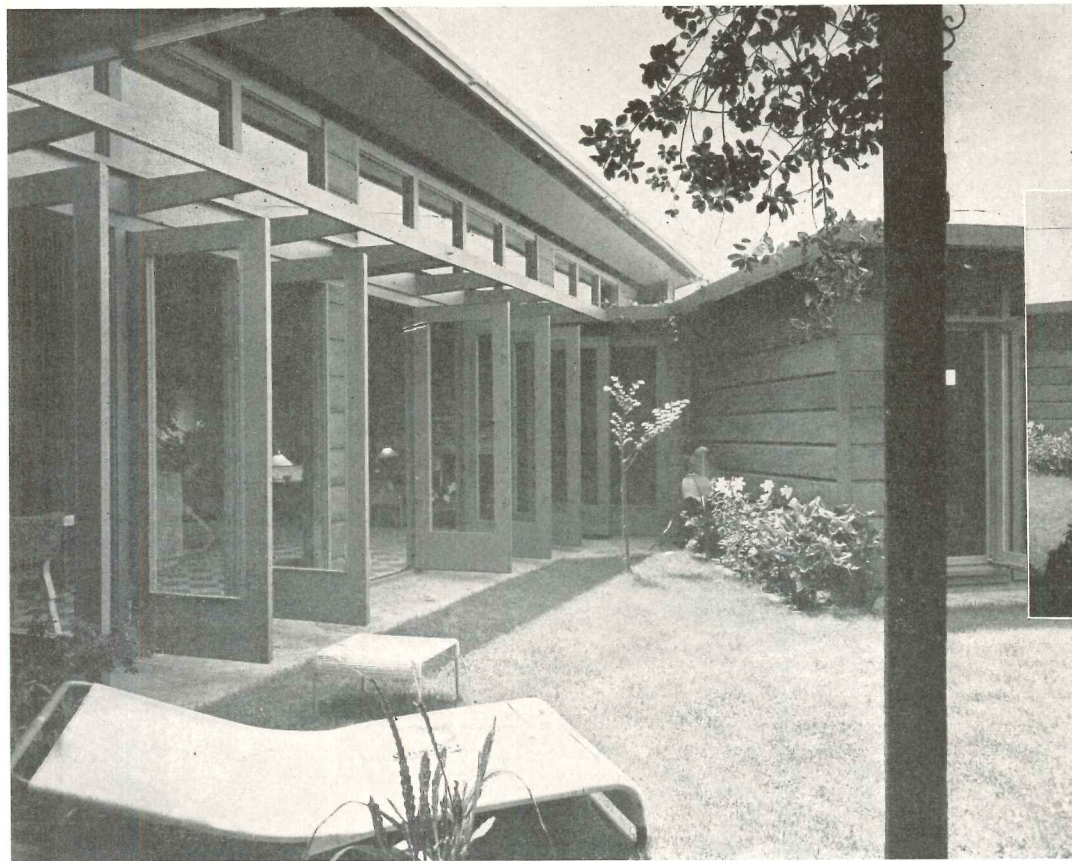
WHEN the Turners decided to design their own house their central idea was what they call a “Design for Living — with Kids.” The youngsters were not to be “pigeonholed,” yet every member of the family was to have his share of privacy. A study of the plan on the opposite page will show how successfully the necessary compromises were worked out.

The house was designed by Mr. Turner himself, a radiant heating engineer, who made every nook and cranny conform exactly to the requirements and preferences of his family. The kitchen, for example (see photos, next page), seems to be unusually workable, organized as it is into zones of preparation, etc., grouped around a special refrigeration unit designed and built by Mr. Turner. A happy feature while the children are young is the clear view of the sand box and play area obtainable from the kitchen.

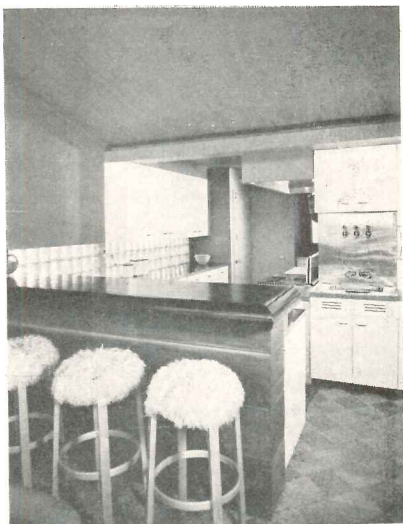


Julius Shulman Photos





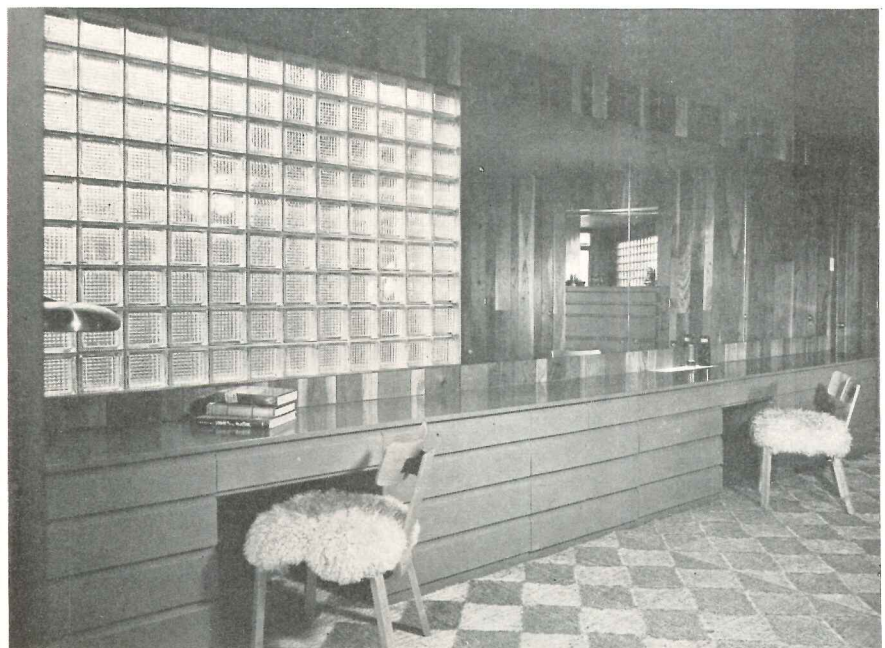
Every room in the house opens to the patio, seen in the two views above (left, the living room; right, the bedroom wing). The carport, a corner of which is shown in the small view above, doubles as a lanai. The kitchen (below) is organized into working areas grouped around a departmentalized refrigeration unit combining all required temperature zones; a breakfast bar separates kitchen and dining area (below, left). Lighting throughout the house is predominantly indirect, and much special equipment is built in





Julius Shulman Photos

The master bedroom (above) looks directly out to the children's sandbox, which will be converted to a reflecting pool when the children have outgrown it. Below: the built-in dressing table and storage unit in the master bedroom. Interior finish is natural redwood and painted or stained plywood; exterior is redwood siding. Windows are aluminum double hung; floor coverings are asphalt tile and hemp matting. Heating, of course, is radiant. Careful orientation shades every room from the hot Southern California afternoon sun



SCHOOL PLANNING AND SCHOOL COSTS

ARCHITECTURAL RECORD'S BUILDING TYPES STUDY NUMBER 147

WHAT about school costs? How are costs affected by school planning? Can a modern "finger-plan" school be built within the same price range as a conventional school, or are its advantages bought at a price premium? How does a single-story school compare in cost with a two-story school?

These and other cost questions are important today. The first half of the century has brought some enormous improvements in school standards. Meanwhile the birth-rate has outrun us, and so have the costs of materials, labor, taxes, and overhead organization. We have to remember: better schools for *all* children!

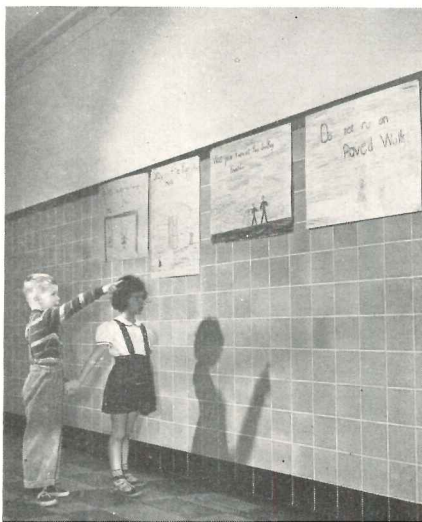
In last year's school study, the RECORD concentrated entirely on standards, chiefly those of the visual environment in school. Mr. Clapp, of the Michigan Department of Public Instruction, expressed the opinion then that such standards could be obtained in the "cold-winter"

eastern states as well as the "warm-winter" west. We now open this question to research.

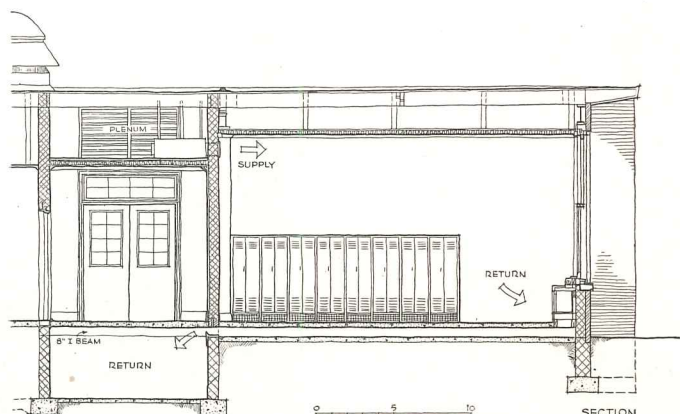
To start things, Alonzo Harriman and Philip Gatz, school architects of the saving state of Maine, have made a thorough study herewith presented. It contains some surprises. One of these is the great effect on cost of *room height* as compared to span. Incidentally, the champion performer among school plans to date, in their calculation, is the one-story plan with double-loaded corridor, and a trussed pitched roof.

Among examples shown are some striking cases of schools built at low cost. But standards have also been advancing. Among executed examples, we show two more "top-lighted" schools — one of them Ernest J. Kump's improvement over last year's model, and another the contribution of Wm. Arild Johnson in the Northwest; also the remarkable "portables," p. 128.

Low maintenance cost of ceramic tile is combined with utility of corkboard nailing strip in Quaker Ridge School, N. Y. by Howard S. Patterson, Architect and Francis Keally, Associate



To eliminate costly crawl space and "slab on grade," the floor of this New Jersey school was made of a concrete slab, on which were laid rows of concrete block, 3 ft. on centers, running from window wall to corridor. On these was stretched steel lath supporting another 2-in. slab, eliminating form work. The hollow space was used as return ducts for air originally supplied from plenum over corridor, by means of univents. This eliminates exterior-wall crawl space, reduces piping, wall boxes, grilles. A finned tube under windows is auxiliary heat source. Alexander Merchant & Sons, Architects



A COST STUDY OF SCHOOL PLAN TYPES

By Alonzo J. Harriman *

EDITORS' NOTE: READ WELL BEFORE USING!

Here at last is a method of testing school plans for comparative structural cost, using real figures. These have been assembled by the partners in an architectural firm that has designed successful schools over a period of 69 years in Maine, the frugal, cold-winter State.

What the authors have done is to collect those unit costs which are significant in establishing the comparative structural cost, per square foot and per classroom, of various accepted plan arrangements. They themselves explain carefully how this has been done.

Authors and editors both wish it clearly understood, however, that figures given do not, in general, represent total building costs and cannot be used to estimate what the final cost of a school building, or part of a building, of any given size or type should be. They are useful only as a basis of comparison among plan arrangements.

We believe that the authors have demonstrated a splendid working method. Although the actual figures would be modified in different localities, the method is one which any reader can set up for himself, filling in with correct figures for his locality, and come to a sound result.

We believe there is a strong presumption in favor of the authors' general conclusions, on a country-wide basis, and there are some interesting surprises among these conclusions. Editorial commentary has been added where the Maine situations seem to be specialized, and we invite the further commentary of our readers.

Further studies will be published by the same authors adding factors of upkeep and maintenance, and of mechanical equipment such as heating and lighting.

The Editors

THROUGH an intimate association with schoolhouse construction over a period of the past 29 years, I am convinced that it is the community, and not the building committee, that determines whether an architect continues doing schools. And no matter how good a completed schoolhouse may be, if it has cost too much, they never forget it.

As we all know, this country's need for new school construction is astronomical, and funds are hard to get. If we can help the community get one or two classrooms more for the same money, by sound engineering planning, we justify the human usefulness of our profession.

My partner, Philip Gatz, has analyzed the contractor's cost sheet for every school that we have built, and the figures which follow are taken directly from the current cost sheets of contractors. Since our purpose is to study the effect of different plan arrangements on structural cost, and not to establish the full final cost of any one school, the figures in the table on the next page cover materials and labor only. They do not include overhead or fees of any kind.

This first installment of our study is in two parts. In the first part, we compare a typical section, composed of a corridor with either one or two adjoining classrooms of standard length (varying the other dimensions), and again the same thing in two stories.

Basis of Cost Comparison of One-Story Types (Non-fireproof)

Floor area of unit considered includes one half corridor for double units shown, and whole corridor for single units.

Construction cost analysis, in general, is based on level of ground floor as the starting point and includes side walls, roof, corridor walls, one end partition in each classroom, wood stud partitions, ceilings strapped with wood strapping, walls and ceiling covered with gypsum board, painted.

The material and labor prices used to arrive at estimated square foot cost are net without overhead or profit.

The square foot prices indicated are to be used only as a basis of comparison between different types of construction.

The assumption has been made that the foundation and ground floor construction will not materially affect the relative costs of the various types so that the cost of these items is not reflected in the square foot comparison.

The assumption has also been made that the cost of heating, plumbing and electrical installations is an independent cost factor of the various types so that the cost of the same is not included in this square foot comparison.

Basis of Cost Comparison of Two-Story Types (Semi-fireproof)

Floor area of unit considered includes adjoining corridor.

Construction cost analysis, in general, is based on level of ground floor as the starting point and includes side walls, upper floor, roof, corridor, lath and plaster ceiling and one end partition in each classroom of semi-fireproof construction.

The square foot prices indicated are to be used only as a basis of comparison between different types of construction.

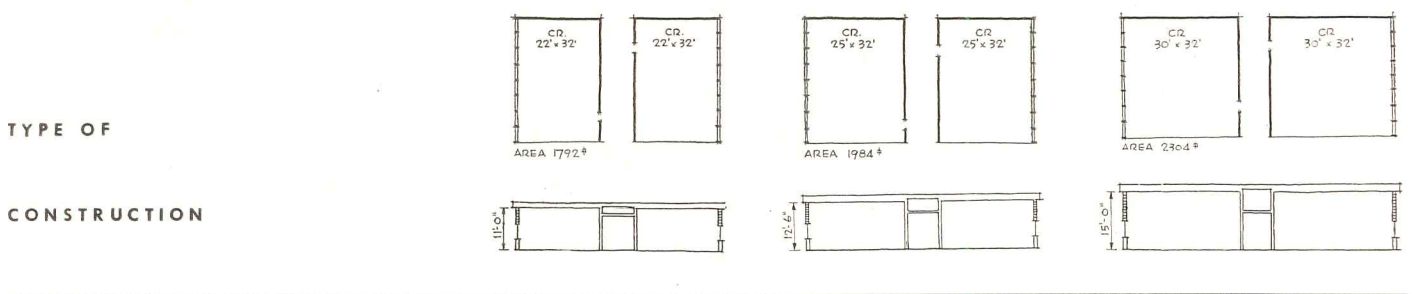
The assumption that foundations, ground floor construction, heating, plumbing and electrical installations will not affect the relative cost of the various types has been made in this comparison, the same as in the case of one-story non-fireproof types. These costs are not included in the square foot comparisons.

* Figures compiled by Philip Gatz, partner of Mr. Harriman, Alonzo J. Harriman, Inc. Architects • Engineers

TABLE 1 COMPARATIVE STRUCTURAL COST, IN SCHOOLHOUSE SEGMENTS OF STANDARD LENGTH

Costs given cover selected structural factors only. What these factors are is fully described on page 111, preceding the table.

GROUP 1. Schools with double-loaded corridor and unilateral daylighting; classrooms facing approximately east and west, in 1-story or 2-story buildings



TYPE 1. Non-fireproof

Roof construction: wood joist, wood-sheathed deck, rigid insulation covered with 20-yr. tar and gravel roofing
Side-wall construction: concrete to window sill, steel frame, directional glass block, metal sash and hopper vents
Corridor walls: bearing wood stud partition

Per sq. ft.*	\$3.52	Per sq. ft.	\$3.59	Per sq. ft.	\$3.63
Per classroom	\$3156	Per classroom	\$3554	Per classroom	\$4182

TYPE 2. Non-fireproof

Roof construction: steel open-web joist with wood nailers, wood-sheathed deck, rigid insulation covered with 20-yr. tar and gravel roofing
Side-wall construction: concrete to window sill, steel frame, directional glass block, metal sash and hopper vents
Corridor walls: steel frame and wood stud partition

Per sq. ft.	\$3.56	With variable clear ceiling height, see sections at top of page			
		Per sq. ft.	\$3.60	Per sq. ft.	\$3.65
Per classroom	\$3190	Per sq. ft.	\$3.44	Per sq. ft.	\$3.26
		Per classroom	\$3416	Per classroom	\$3729

TYPE 3. Semi-fireproof

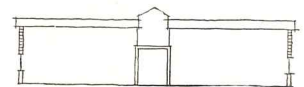
Floor construction (2nd floor): open-web steel joist with 2 1/2-in. concrete slab, with metal-lath and plaster ceiling applied directly to bottom of joist. Corridor reinforced concrete slab exposed on ceiling side
Roof construction: same as floor except roof is insulated with 1-in. rigid insulation covered with 20-yr. tar and gravel roofing
Side-wall construction: concrete to ground-floor window-sill, steel frame, directional glass block, metal sash and hopper vents, spandrel construction corrugated asbestos applied over asbestos-surfaced insulation board
Corridor walls: Load-bearing masonry block, having exposed surfaces painted

Per sq. ft.	\$3.97	With variable clear ceiling height, see sections immediately above			
		Per sq. ft.	\$4.04	Per sq. ft.	\$4.10
Per classroom	\$3560	Per sq. ft.	\$3.85	Per sq. ft.	\$3.65
		Per classroom	\$3815	Per classroom	\$4206

TYPE X

Roof construction: steel open-web joists with wood nailers, wood-sheathed deck, rigid insulation covered with 20-yr. tar and gravel roofing. Continuous metal skylight
Exterior side wall construction: concrete to window sill, steel frame, wood sash glazed with clear glass, no glass block
Corridor walls: steel frame, wood studs under, clear glass over
Corridor ceiling: wood joists, insulation with batts, covered on underside with gypsum board

Per sq. ft.	\$4.16
Per classroom	\$4799



AUTHOR'S CONCLUSIONS FROM ANALYSIS OF PLAN TYPES

(TABLE 1)

1. An analysis of the square foot costs of the constant height building shows that in all cases the square foot cost *decreases* with an increase of the span.

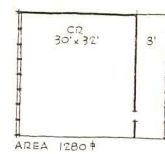
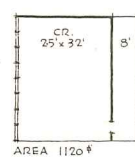
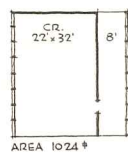
As the span increases, and the height remains constant, the additional roof cost is not sufficient to offset the lower resultant cost per square foot of the total building area.

2. An analysis of the square foot cost of the classroom with a variable height shows an increase in cost as the span increases. The height in this case varies

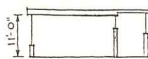
GROUP 2.

Schools with single-loaded corridor and bilateral daylighting; classrooms facing approximately north, in 1-story or 2-story buildings †

TYPE OF



CONSTRUCTION



Type 1. Non-fireproof

Roof construction: wood joist, wood-sheathed deck, rigid insulation covered with 20-yr. tar and gravel roofing
 Classroom exterior side-wall construction: concrete, steel frame, wood sash, single-glazed with clear glass
 Corridor wall of classroom: wood frame, clear glass above, wood stud partition below
 Exterior corridor wall: concrete, wood frame, wood sash above

Per sq. ft.	\$3.62	Per sq. ft.	\$3.50	Per sq. ft.	\$3.63
Per classroom	\$3703	Per classroom	\$3917	Per classroom	\$4648

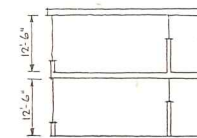
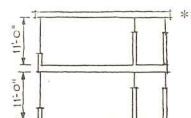
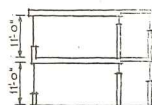
Type 2. Non-fireproof

Roof construction: steel joist with wood nailers, rigid insulation covered with 20-yr. tar and gravel roofing
 Classroom exterior side wall construction: concrete, steel frame, wood sash, single-glazed with clear glass
 Corridor wall of classroom: same as Type 1 above
 Exterior corridor wall construction: same as Type 1 above

Per sq. ft.	\$4.47	Per sq. ft.	\$4.23	Per sq. ft.	\$4.32
Per classroom	\$4588	Per classroom	\$4741	Per classroom	\$5528

Type 3. Semi-fireproof

Floor construction (2nd floor): open web steel joist, with 2½-in. concrete slab, with metal lath and plaster applied directly to the bottom of joist. Corridor, reinforced concrete slab exposed on ceiling side
 Roof construction: same as floor, except that roof is insulated with 1-in. rigid insulation covered with 20-yr. tar and gravel roofing
 Exterior side-wall construction of classrooms: concrete to ground-floor window sill, steel frame, wood sash single-glazed, and hopper vents, spandrel construction corrugated asbestos applied over asbestos-surfaced insulation board
 Exterior side-wall construction of corridors: same as classroom
 Corridor walls of classrooms: wood stud partition with clear glass wood sash over



Per sq. ft.	\$4.69	Per sq. ft.	\$4.60	Per sq. ft.	\$4.58
Per classroom	\$4823	Per classroom	\$5143	Per classroom	\$6065

FOOTNOTES, opposite page and this page.

* Costs per square foot of floor area.

† Schools of Group 2 conform to code in some States but not in others. So far as performance is concerned, in producing a high-quality environment for children, these schools would seem to be at least on a par with Group 1,

and many architects consider them superior (Ed.)

** Some of the roofs on this page were drawn with thinner construction above corridors, some with equal thickness throughout. The discrepancy was inadvertent. Mr. Harriman believes that economy is greater, in his region, in a roof of equal thickness throughout, for this plan type.

in accordance with the recommendation of the National Council or the state law.

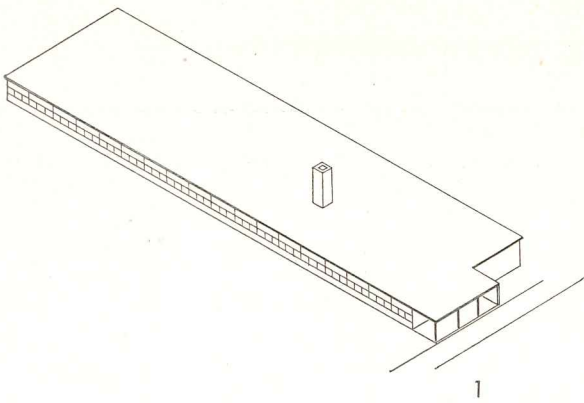
As the height increases in proportion to the span, in accordance with state law and national code, the additional roof and wall cost is great enough to more than offset the lower resultant cost per square foot of the total building area.

3. This would seem to indicate that a typical building similar to Type X, with a pitched roof and bilaterally lighted, and a minimum height at the eaves, would be

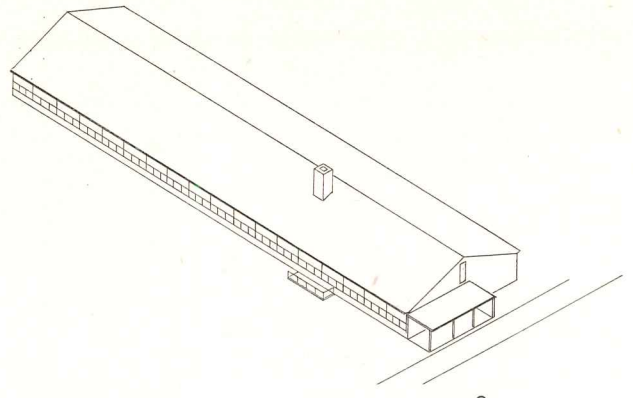
the most economical type of schoolhouse to build.

We would suggest classroom floors 24 ft. by 36 ft. and an eaves' height of 9 or 10 feet, and a height at corridor wall under skylight of 12½ feet to classroom ceiling. This building would have a continuous skylight similar to Type X.

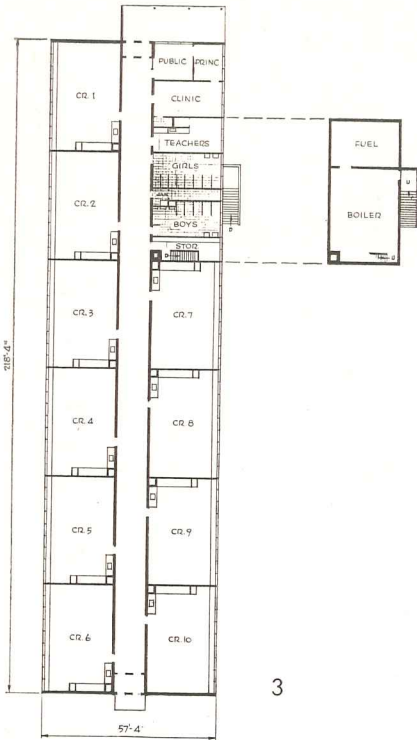
4. In all cases shown here, wood construction is cheaper than steel. It should be noted that over 30-ft. classroom span steel will probably be cheaper than wood.



1



2



3

TABLE 2:
SCHOOL COST COMPARISON

*One-story Semi-fireproof,
One-story Combustible Roof
and Two-story Semi-fireproof*

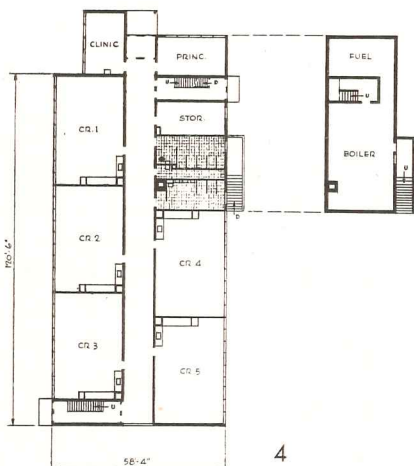
This comparison is based on identical construction in both the one- and two-story semi-fireproof buildings, employing poured concrete to the first floor window sills, steel sash set in the steel building frame with glass block above, and corrugated asbestos cement spandrels over wood studding insulated with batts in the two-story building. The second floor and roof construction are poured concrete slabs over bar joists in classroom areas, with poured concrete slabs spanning between concrete corridor walls for both second floor and roof.

First floor in either building is poured concrete over fill, using framed slabs over the boiler room. Ceilings in semi-fireproof buildings are lath and plaster and in combustible buildings are of acoustic tile. Floors are of asphalt tile. The roof is insulated with fiber board over concrete for semi-fireproof construction. Batt insulation is used in ceiling of combustible building.

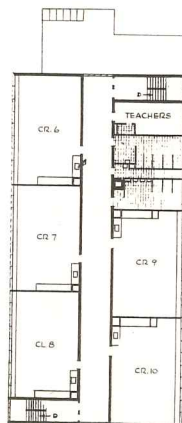
The wood roof used in the one-story combustible roof building is composed of light wood trusses 24 in. o.c., covered with tongue and grooved sheathing and slate surface asphalt shingles. The corridor wall in this type is wood studs covered with 1/2-in. gypsum board on both sides.

Above: 1. Semi-fireproof one-story school;
2. one-story school with combustible roof;
3. plan used in computing both
Below: 4. first-floor plan, and 5. second-floor plan of two-story semi-fireproof school seen in (6)

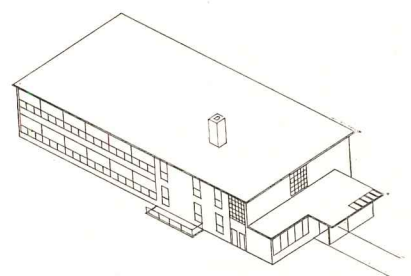
COST ESTIMATES	One-story Semi-fireproof	One-story Combustible Roof	Two-story Semi-fireproof
Total Cost	\$194,564	\$189,142	\$203,437
Total Area	13,660 sq. ft.	13,660 sq. ft.	16,214 sq. ft.
Cost sq. ft.	\$ 14.25	\$ 13.84	\$ 12.54
Cost per classroom	1946	1891	2034



4

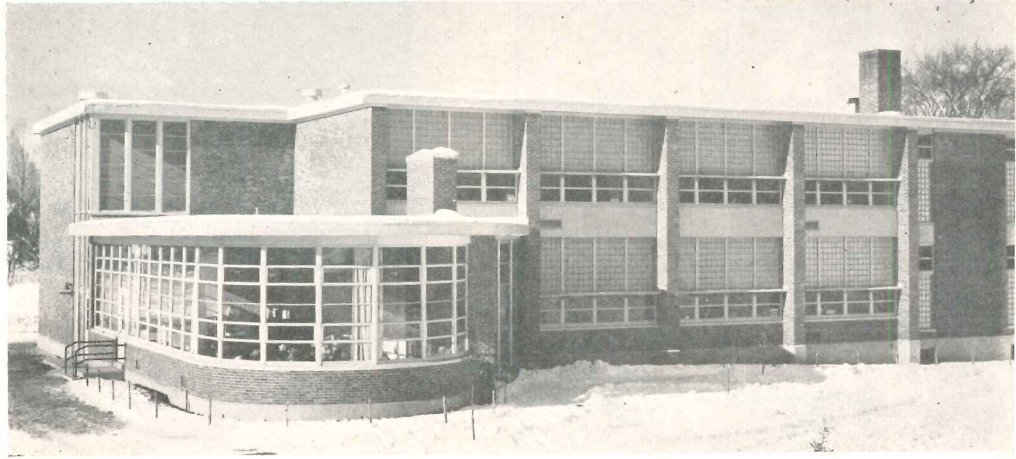
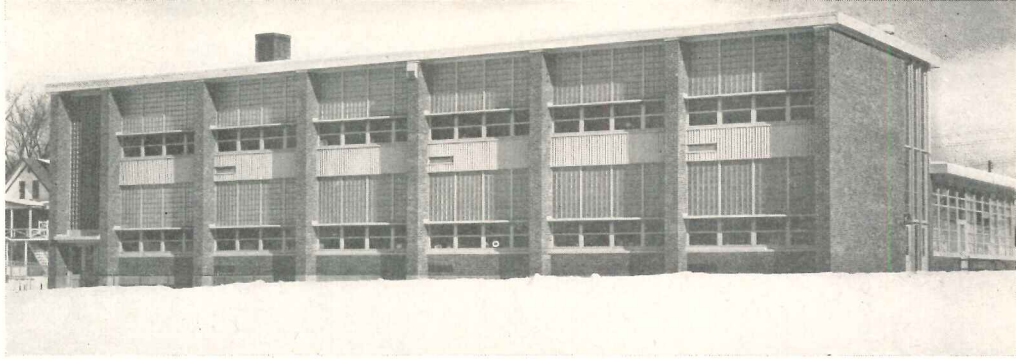


5



6

Brewer School, Maine, by the same architect, is of concrete frame, with exterior facing and brick piers of Canadian brick. Glass block (directional) are in steel frames carried over steel operating windows making up vision strip. Spandrels of corrugated asbestos backed by insulation help to make the wall texture rich and interesting at low cost. Let in 1947 at \$9.91 per sq. ft. Projecting wing houses kindergarten



AUTHOR'S CONCLUSIONS ON COSTS IN TABLE 2

A further breakdown will follow in the April issue

1. An analysis of total cost of two-story semi-fireproof, one-story semi-fireproof and one-story combustible shows a saving of 4.3 per cent in favor of the one-story building.

The same one-story building with combustible roof shows a further saving by use of combustible roof of 2.7 per cent or a *total saving of 7 per cent between the one-story combustible roof and two-story semi-fireproof building.*

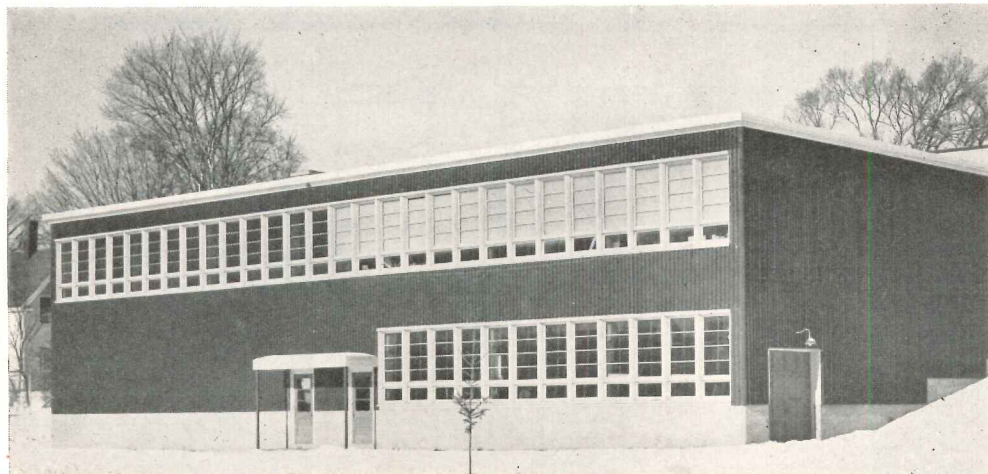
2. In general, the one-story plan shows a saving in the net area due to the omission of stairs.

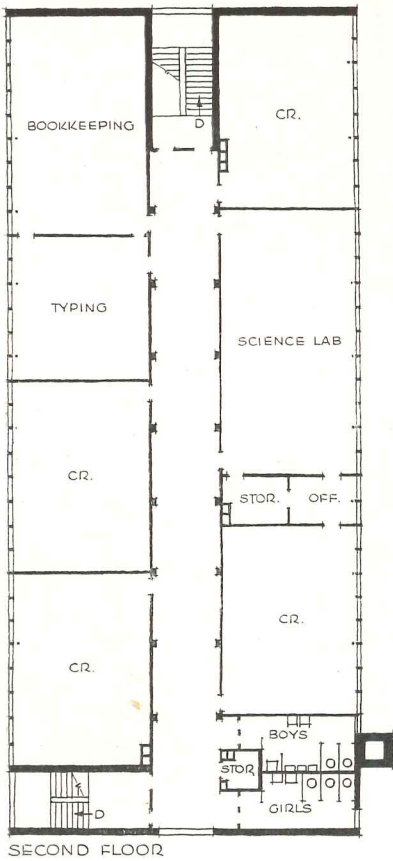
3. The following factors show an increase in construction cost:

A. In the one-story building
 Excavation
 Foundation Walls
 Roofing
 Heating and Ventilating

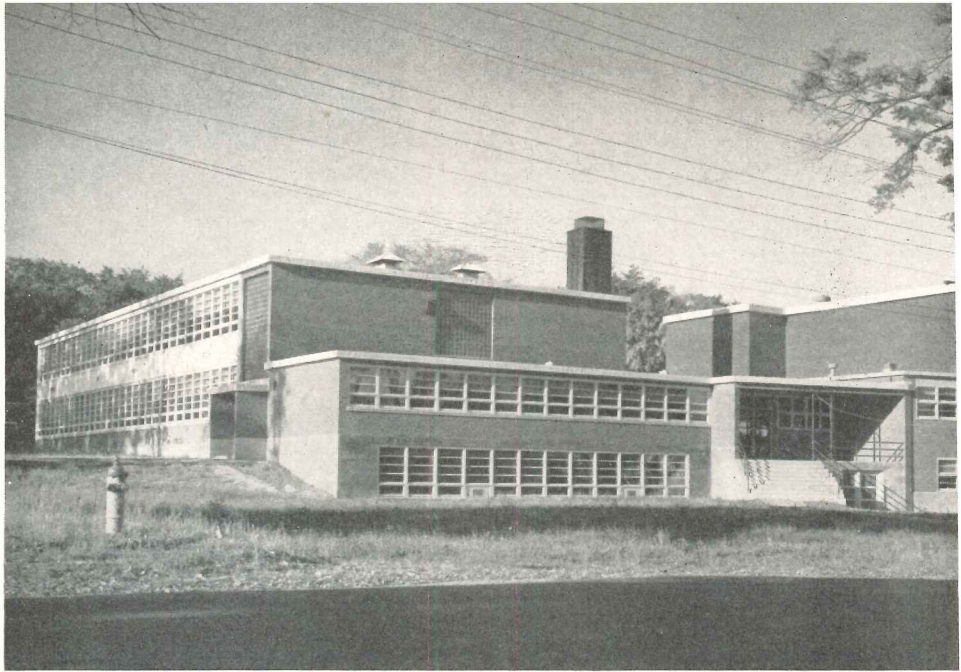
B. In the two-story building
 Concrete floor construction
 Masonry
 Carpentry
 Steel Frame
 Ceramic Tile

Shop of Brewer School, Maine, is on a sloping site. On the sloping site each floor has direct egress, permitting non-fireproof mill construction. Cost \$7.37 per sq. ft.





SECOND FLOOR

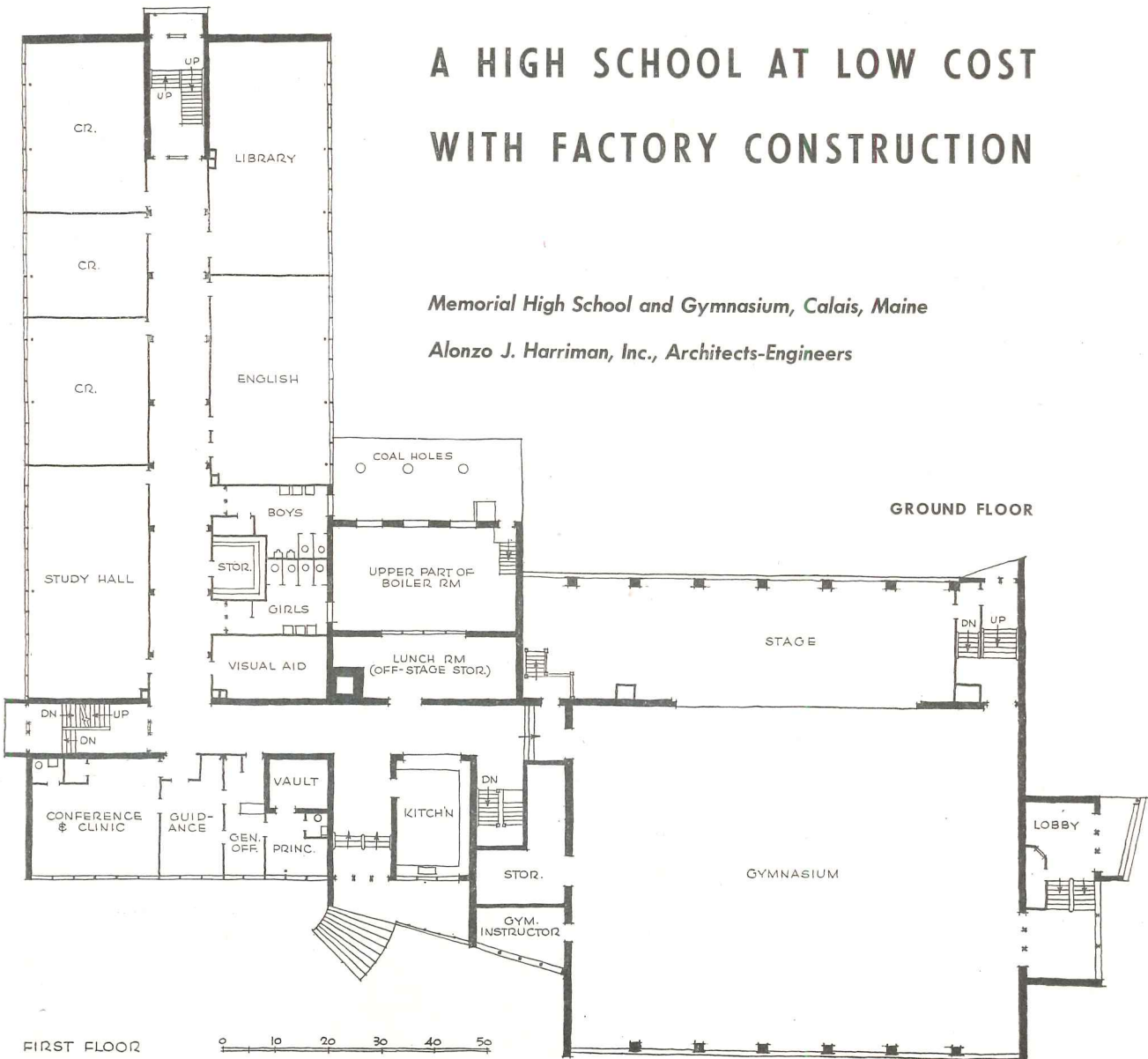


NORTH EAST

A HIGH SCHOOL AT LOW COST WITH FACTORY CONSTRUCTION

Memorial High School and Gymnasium, Calais, Maine

Alonzo J. Harriman, Inc., Architects-Engineers



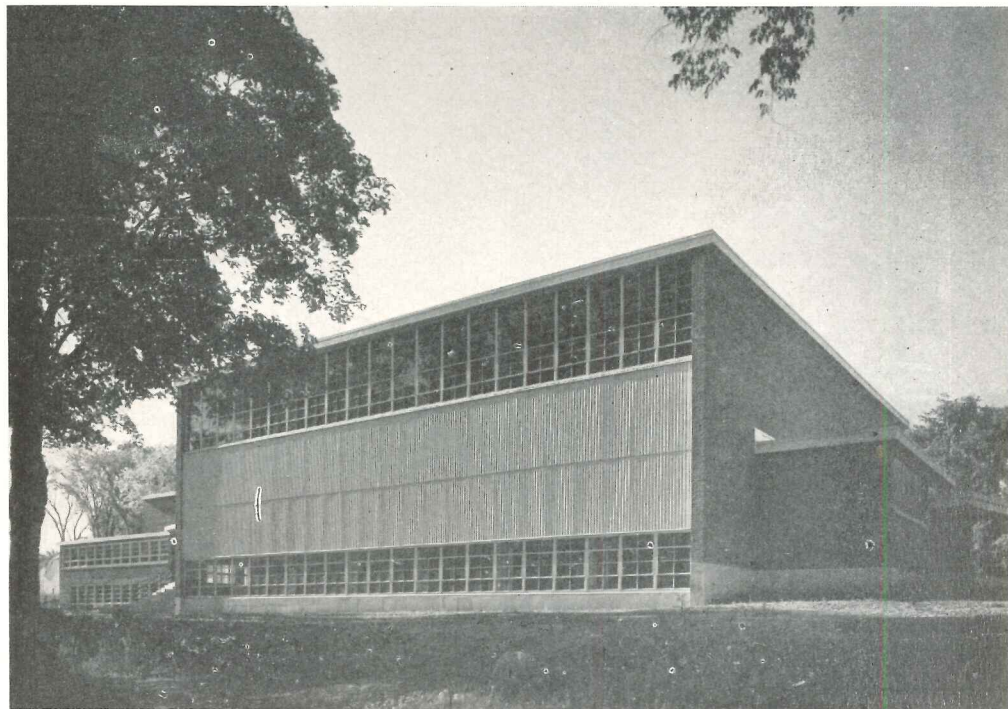
GROUND FLOOR

FIRST FLOOR





Clarence H. White Photos



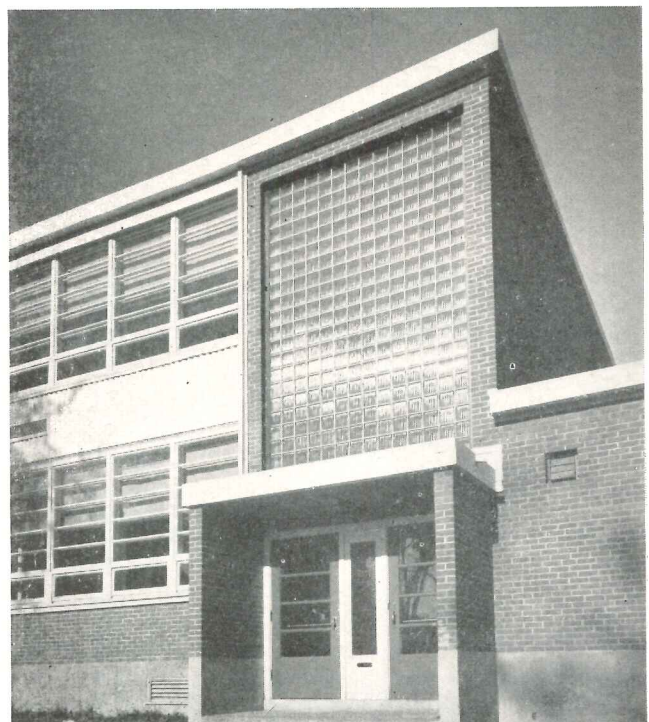
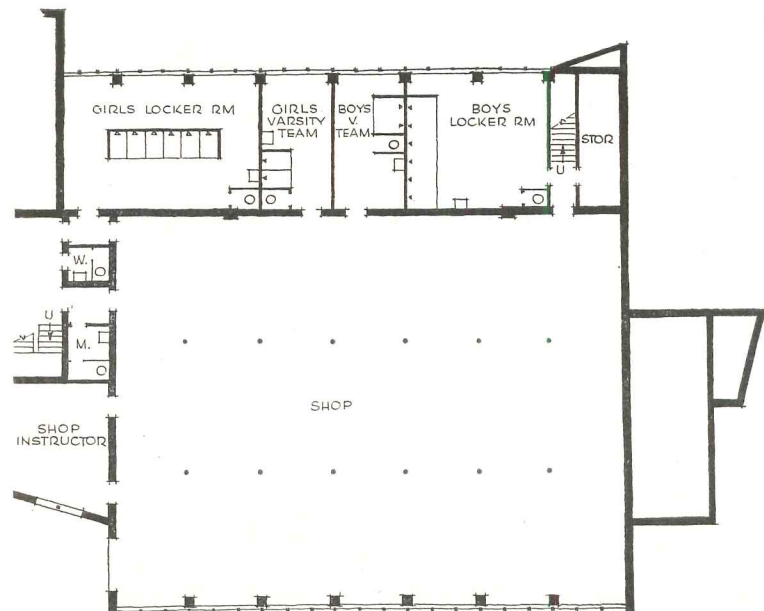
AS IN all of this architect's schools, the academic, administrative, and athletic elements are separated — the athletic so it can be used independently. The conference and clinic room (see plan) is used also as a teachers' room large enough to accommodate the entire staff. The off-stage storage room still remains as cafeteria and lunch room; two sittings take care of all students who remain for lunch. The last-minute demand for an instructor's room between kitchen and gym gave the architect a little trouble with his front.

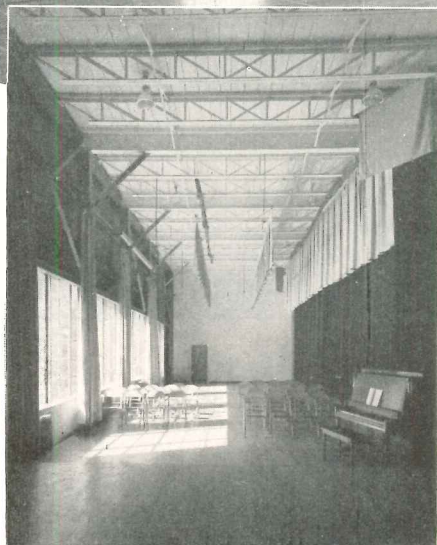
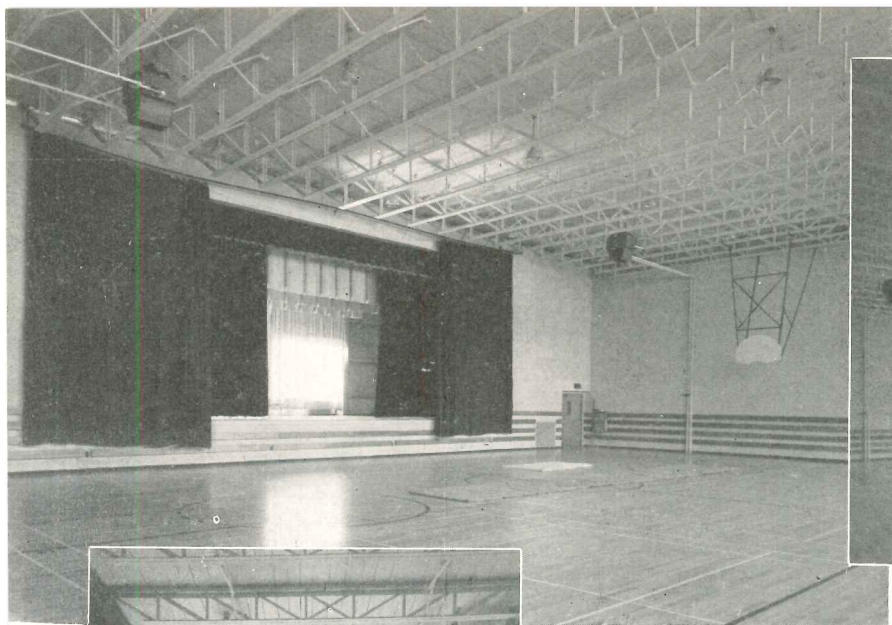
Structure is of concrete frame, using lally columns

at the exterior wall, so that the wall together with the corrugated asbestos spandrels carries no roof load, and windows reach to full ceiling height. Bricks were imported Canadian. There is vapor heating system with unit heaters ventilating out through corridors. Walls between classrooms are a "utility" type of prefab partitions, faced with Transite both sides, and "standing up very well," giving some flexibility.

Built in 1946-47, the total building cost \$9.10 per sq. ft. or 81 cents per cu. ft. including gymnasium. Without gymnasium the figures were \$10.55 and 81 cents.

BASEMENT





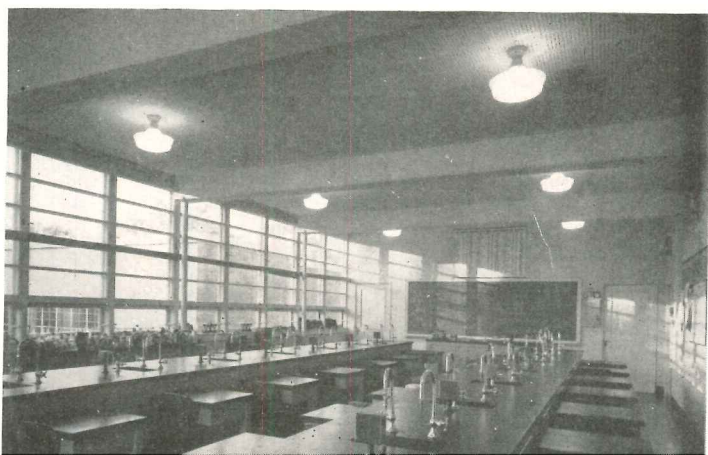
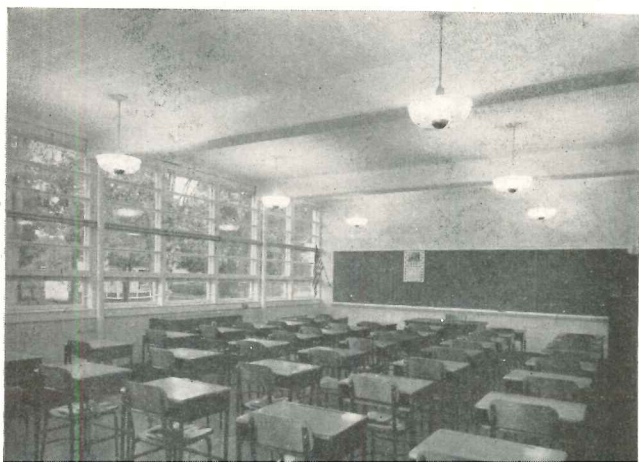
Gymnasium doubles as auditorium, and, as may be seen, the stage is large enough to serve as a practice room for music. The playing floor is 87 by 89 ft. Spectators are accommodated to the number of 600, although it is said that for a big basketball game the capacity comes closer to 1,000

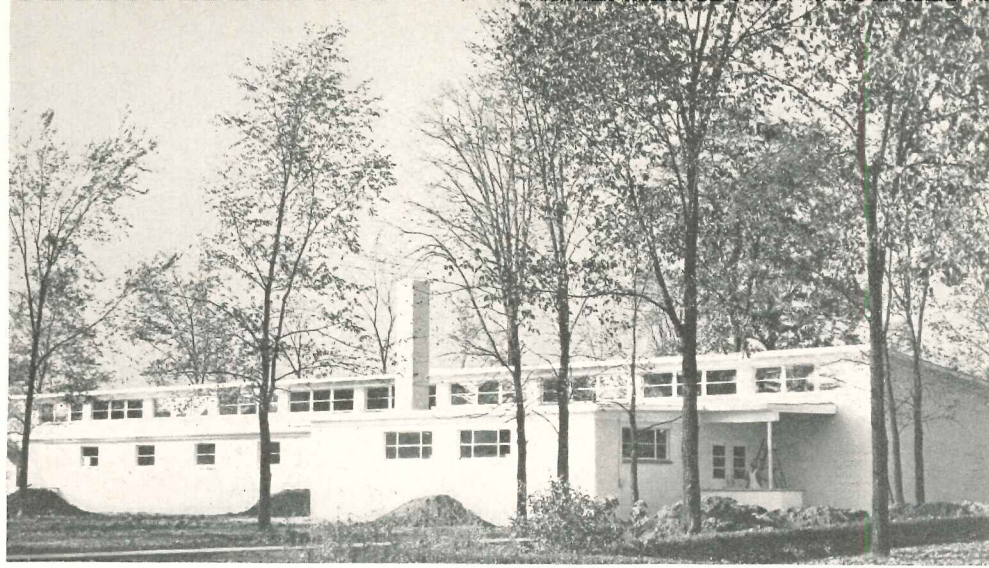
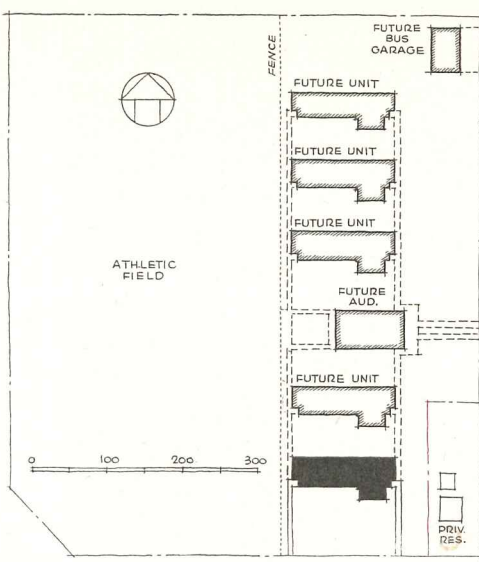
Clarence H. White Photos

A large school shop, seen to the right, occupies the area underneath the gymnasium floor; the other rooms are a typical classroom and science laboratory. In both may be seen the lally-column supports under concrete beams, which permit windows to extend up to the ceiling



Clarence H. White Photos





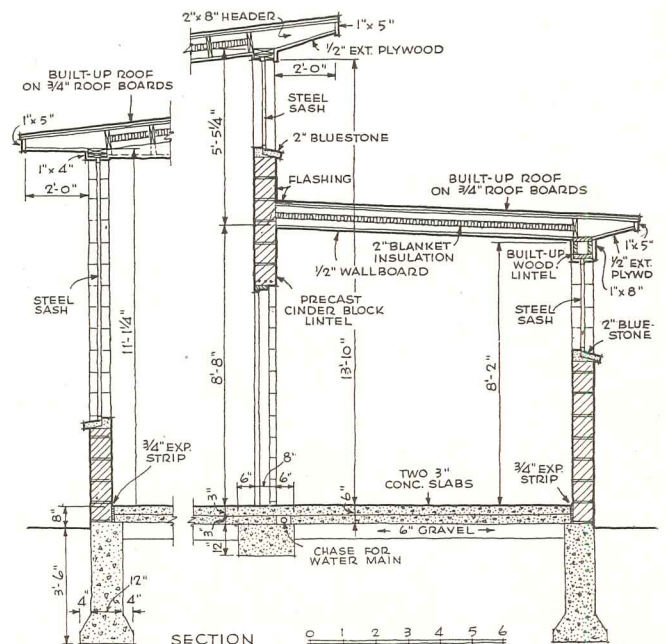
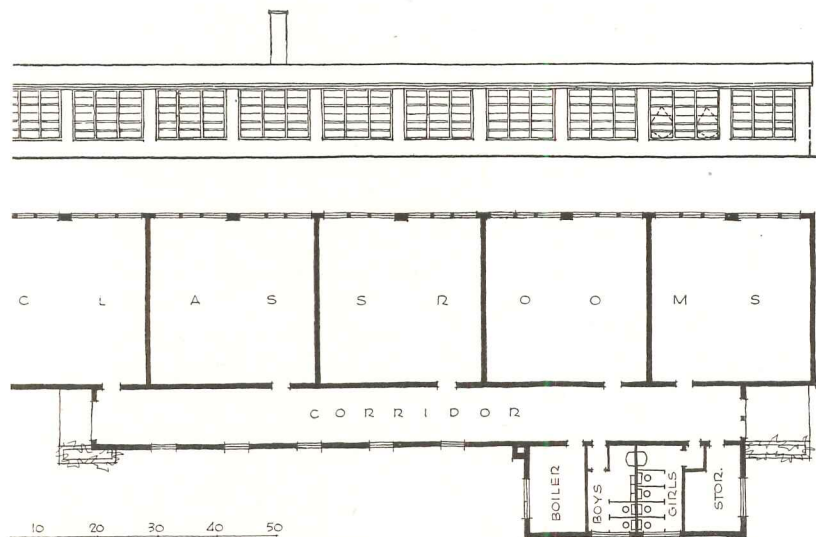
MIDDLE WEST

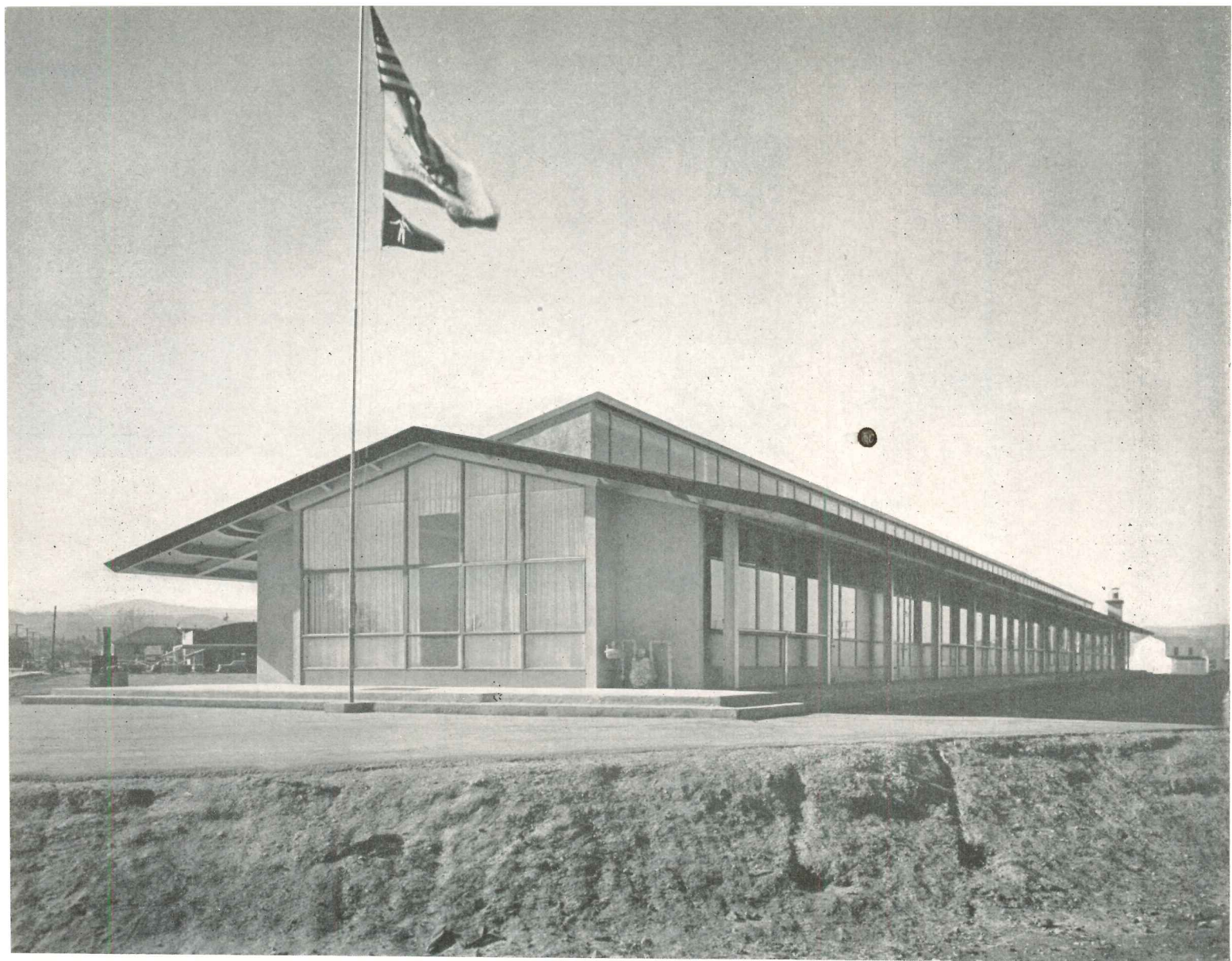
BETTER SCHOOL ENVIRONMENT, LOWER COST

Milan School, Michigan

Walter T. Anicka, Architect

ONE of a group of rural schools, this is reported by the architect as having cost only \$6.34 per sq. ft., 51 cents per cu. ft., or \$7,360 per classroom, "complete with various bookshelves and cases but exclusive of asphalt tile floor." No sacrifice was made in essentials of good environment; on the contrary, classrooms are square, large; have ample bilateral daylight; have radiant heat (wrought iron pipe in floors). Cost-saving methods: (a) cinder block walls entirely on modular grid; (b) "absolutely no cutting of block, wood ceiling joist, or oversize wallboard (finished with cold-water paint)"; (c) low rural labor cost; (d) "well detailed plans, easily interpreted by small rural contractors." Another nearby school, almost complete, by the same architect, shows a contract cost of \$7.86 per sq. ft. with more complete finish — structural tile toilet partitions; lockers; acoustical plastered ceilings; asphalt tile floor. The Milan school has just been completed.





WEST

A CHILD-SCALED SCHOOL IN A FRESH MODEL

Shoreview School, San Mateo, California

By Ernest J. Kump & Mark Falk

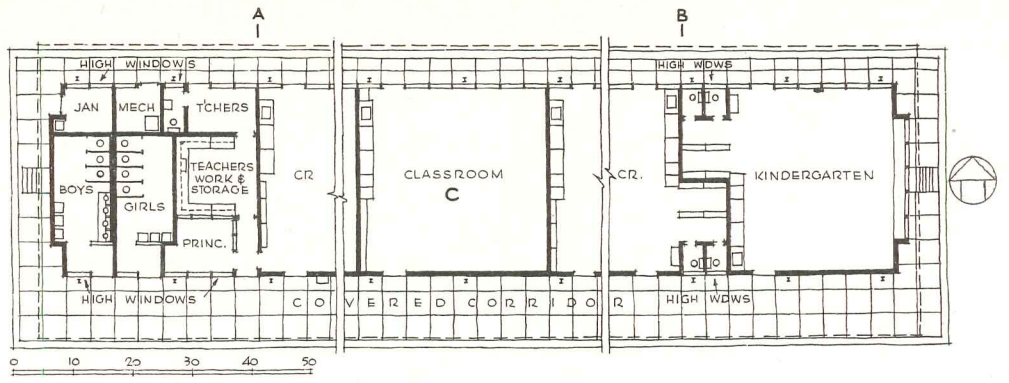
AGAIN this architect has given a vivid expression to the idea of a school as a pleasant place for children.

Like the Laurel School by the same architect (RECORD, Jan., 1948) and the Barstow School (March, 1948), it is toplighted; but instead of a skylight, which might involve maintenance factors, there is a high clerestory. This has been managed with a minimum disturbance to the quiet sheltering roof lines; and the low eaves height brings the

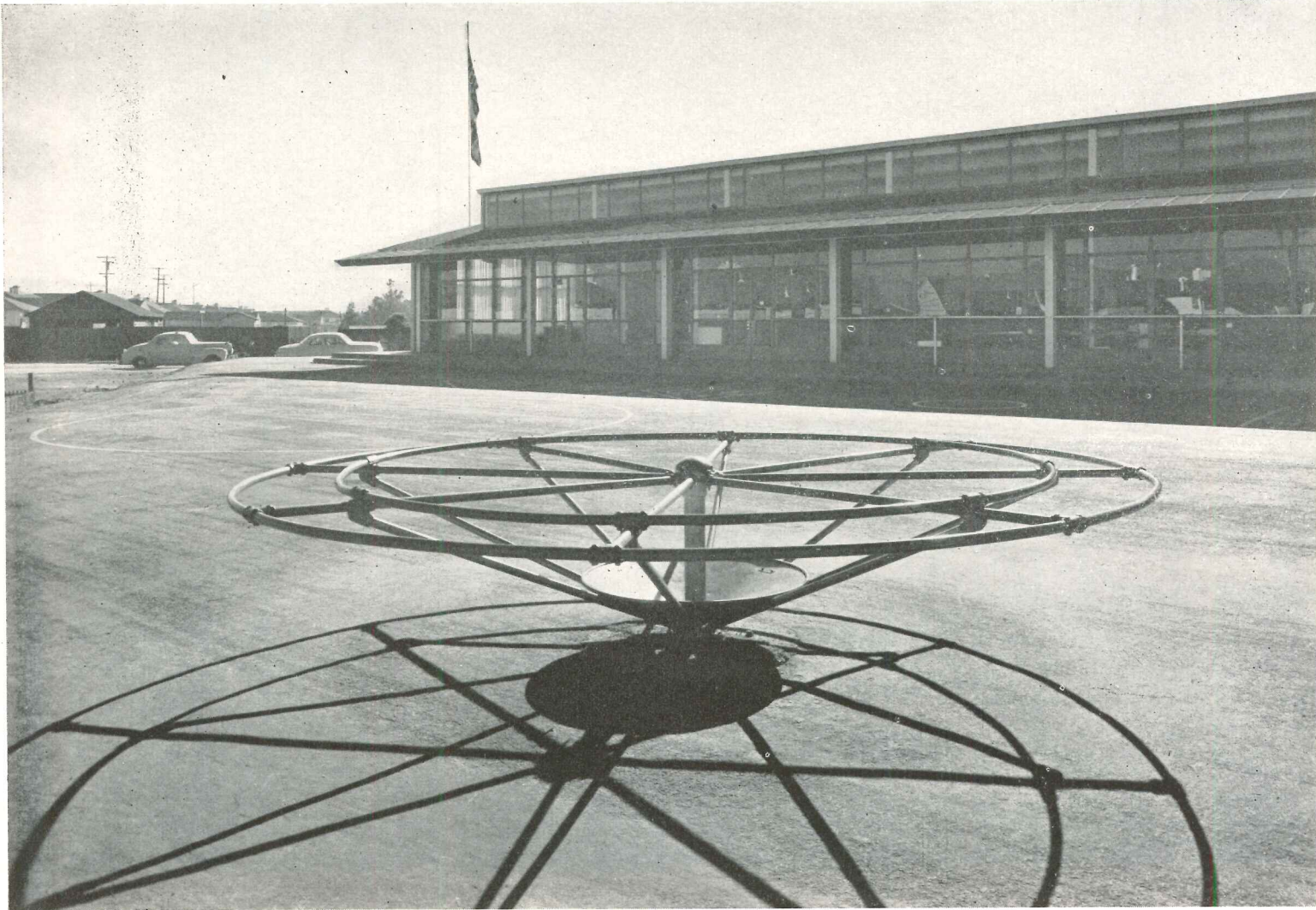
school into nice scale with the surrounding bungalow-type houses (photograph, page 123). (A low eaves height has been found, incidentally, to be a prime factor in holding down school building costs — see page 113.)

On the south side, windows have been eliminated altogether (photograph, opposite page).

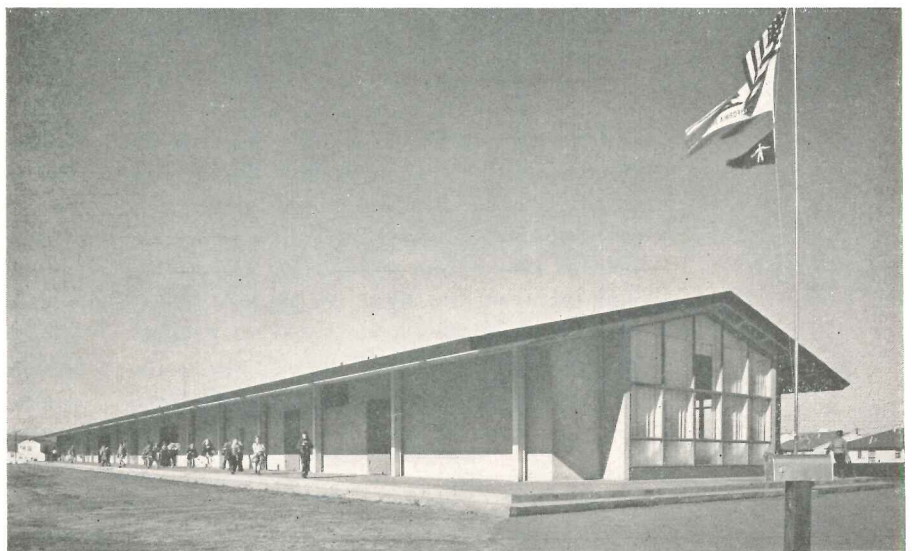
Exterior walls are stucco; roof shows wood and steel, with stainless steel fascia. Olive-green doors set off stone-gray walls, terra cotta red trim.

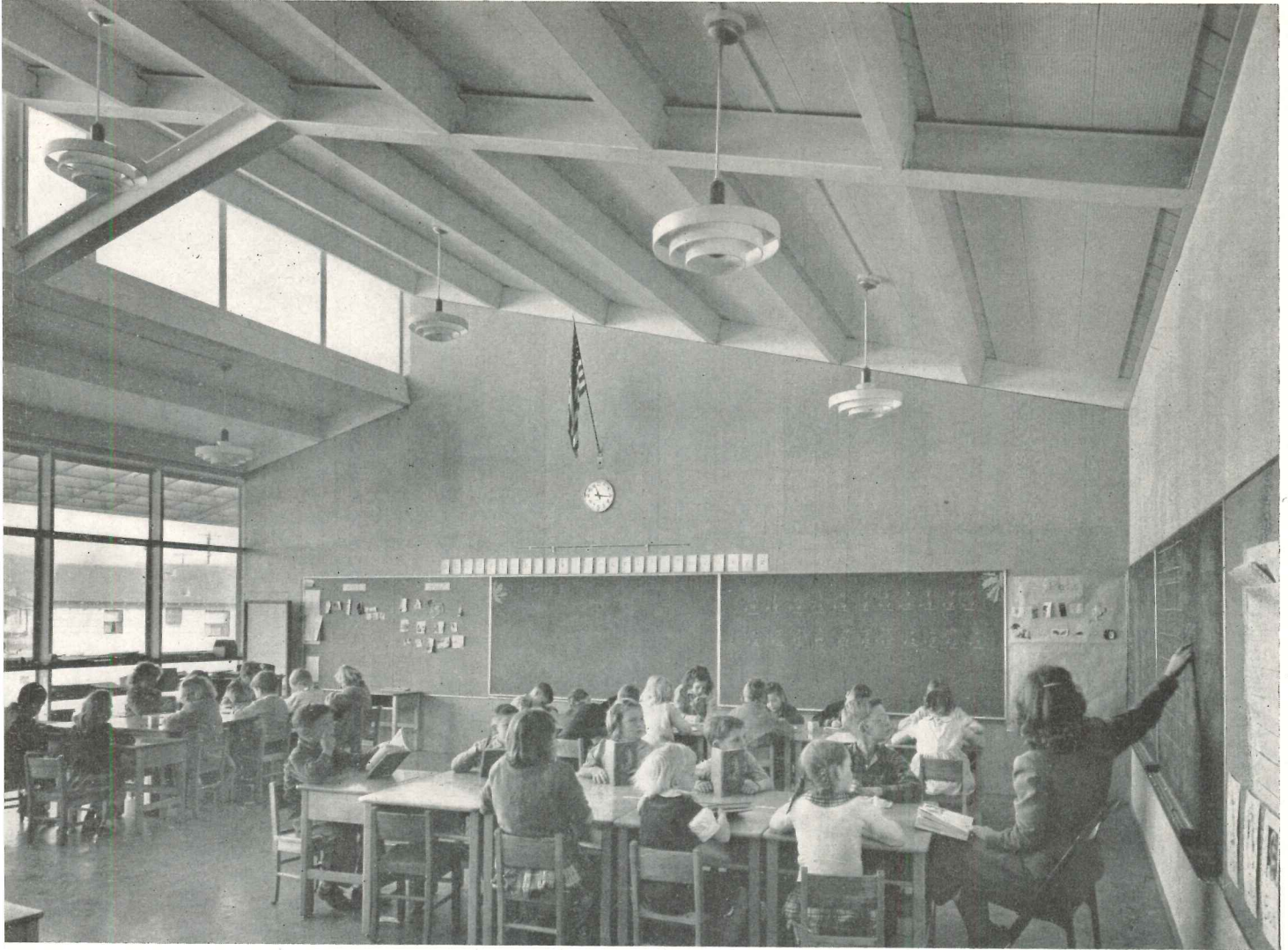


Telescoped plan. Between "A" and "B" there are five classrooms similar to "C"



Roger Sturtevant Photos



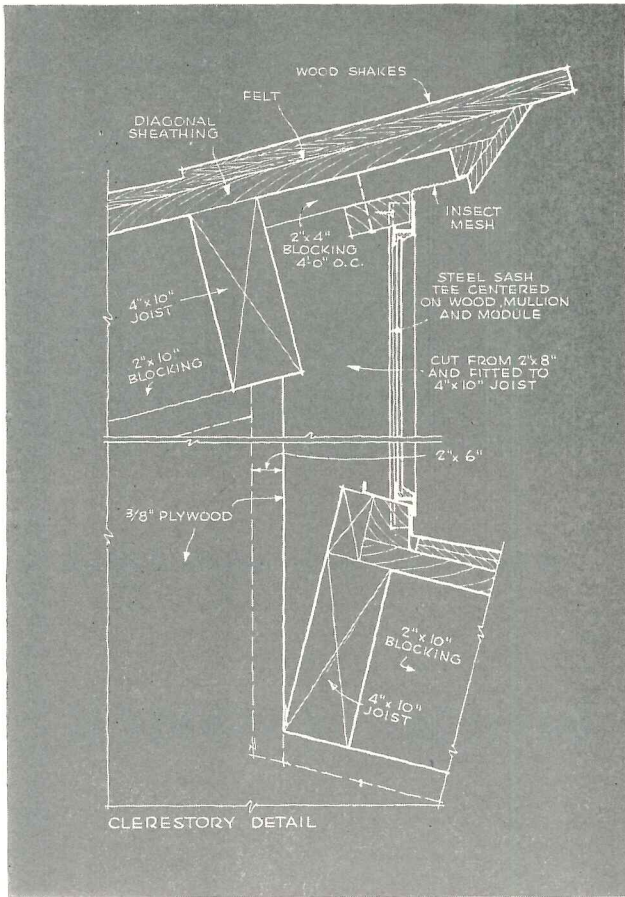


The very excellence of Mr. Sturtevant's photography in conveying how the interior is put together has one disadvantage. The lens subtends a wider angle than the main field of view of the child's eye; the ceiling and the clerestory light are far less prominent in the child's normal way of looking. Because the "top light" is well above the 60° central cone of vision of seated children

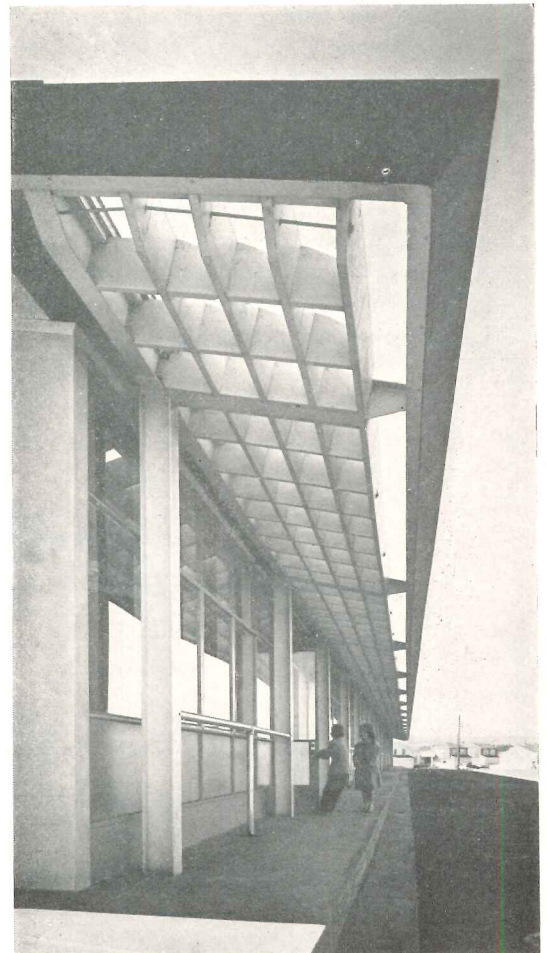
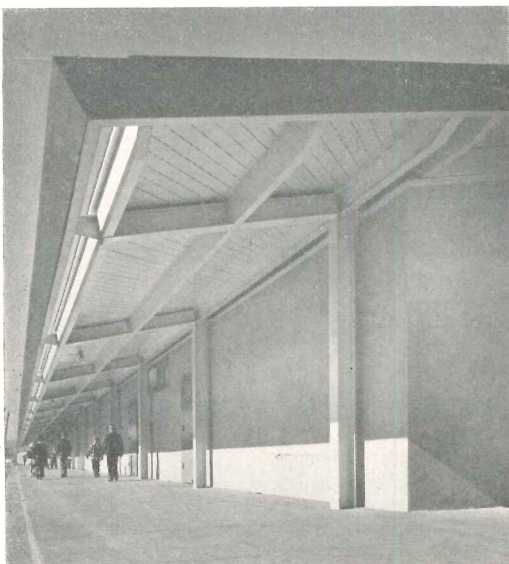
looking straight across the room, the architect has omitted any baffles to screen off the glare of the sky. Such baffles, he contends, add initial cost and maintenance; and he prefers to use the restraining effect of tempered obscure glass up above. In other schools of the same model, now under construction, there has been restored a set of south transom windows.

Opposite page, typical classroom; this page, kindergarten, both looking east. Interior walls are plywood, floor asphalt tile, ceiling acoustic tile. The soft effect of the fireproof curtain suggests that more use might be made in the U.S. of drapes and awnings, as is done in Switzerland and Scandinavian countries. The glare of white houses seen through windows is to be screened by planting

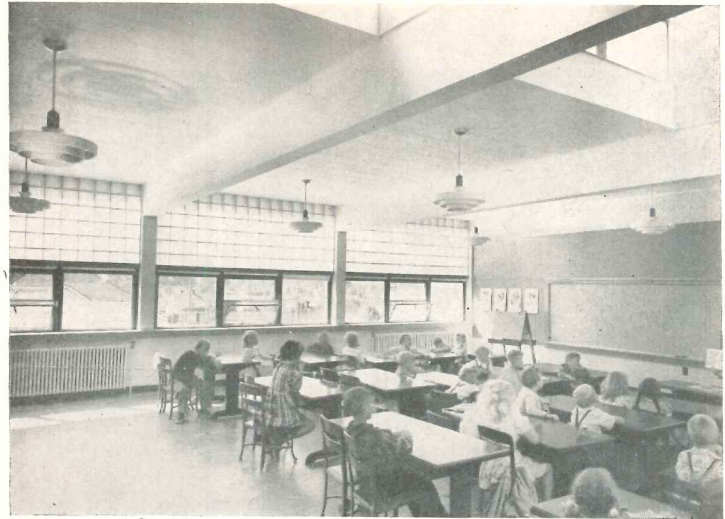
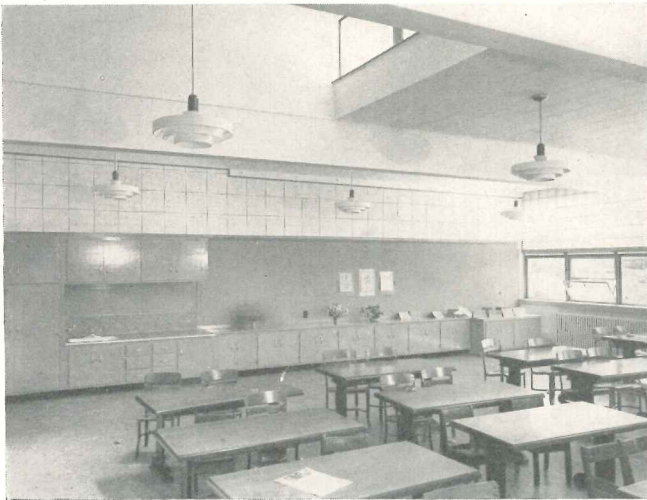




Roger Sturtevant Photos



NORTHWEST



William Arild Johnson & Associates, Architects

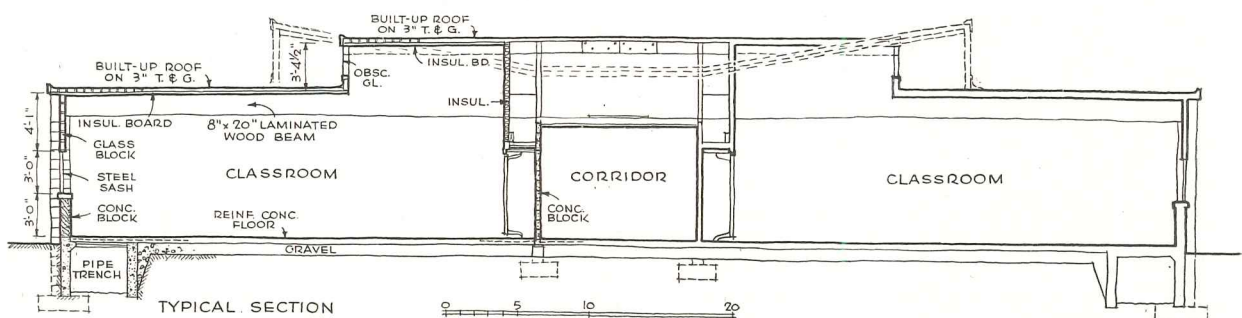
TRANSVERSE FRAMING MAKES TOP DAYLIGHT ECONOMICAL

Schools in Edmonds, Washington

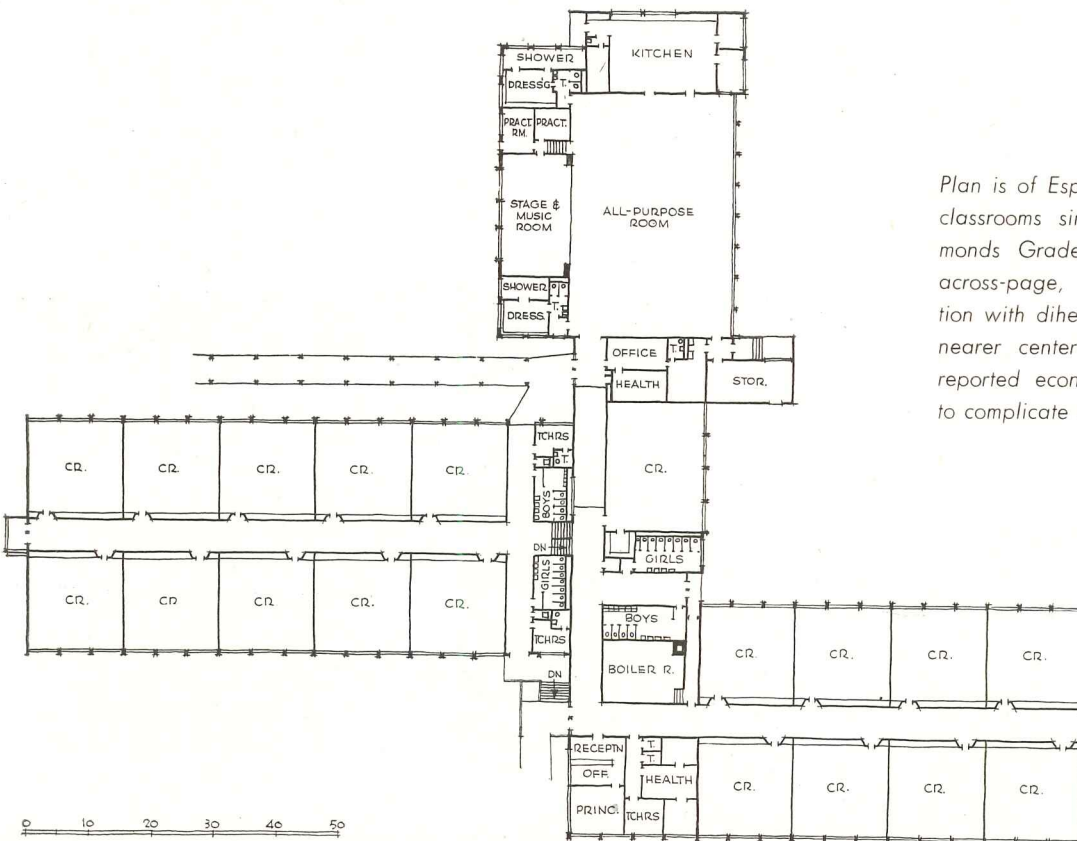
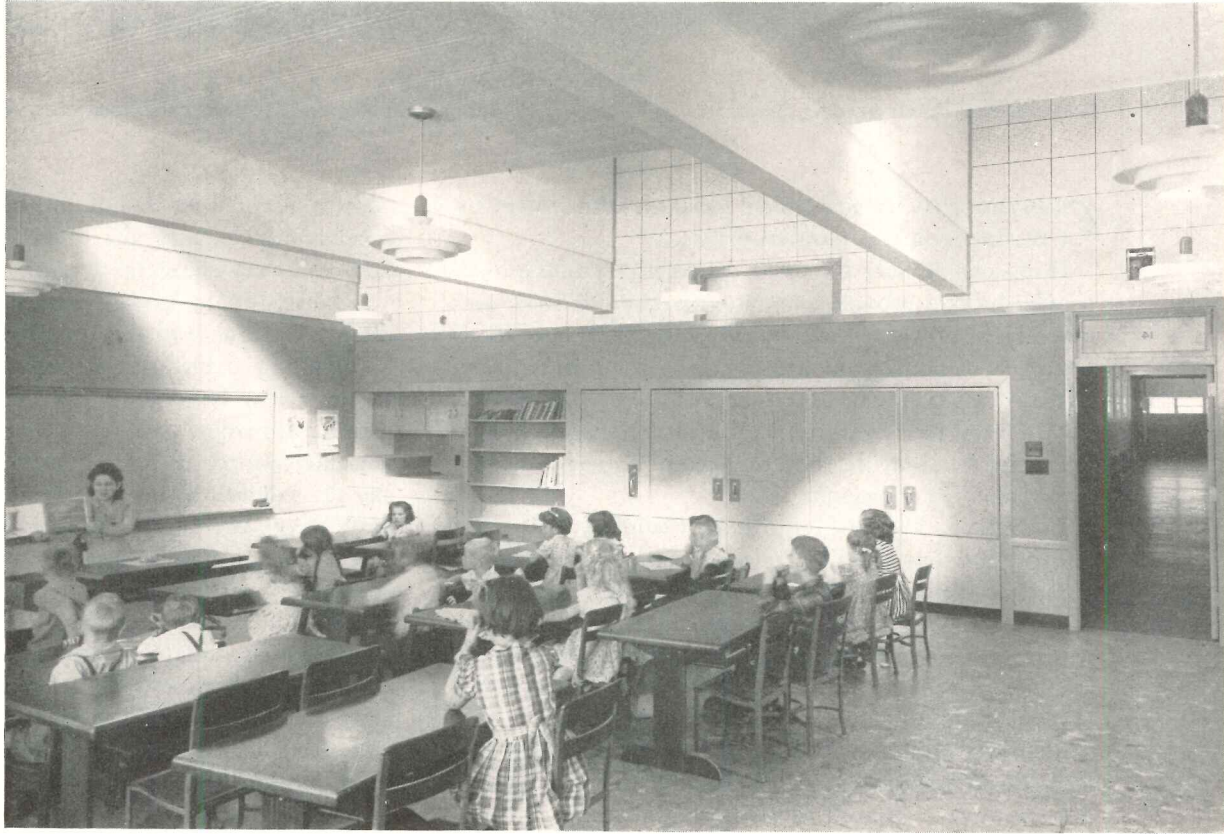
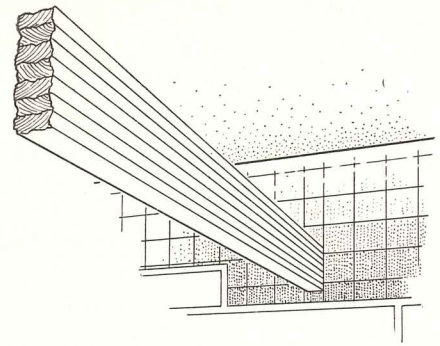
IN the Pacific Northwest, as well as the Bay Region, there has been some desire to bring the open, California, side-corridor in out of the weather, and to "double-load" it for economy. Yet square classrooms are retained for teaching convenience and shortening of the building length. Auxiliary *top-lighting* is then needed for inside areas of the wide-span classroom. In San Francisco, Frank Wynkoop achieved this by a kind of "monitor" system supported on a heavy longitudinal steel girder (RECORD, June, 1945). Here we see, instead, the monitor carried on a series of transverse beams of laminated wood — in some examples with the aid of trussing cased in plywood (see photographs); in other examples by the unaided, uncased beam. The roof deck is of mill construction. The architect contends that the combination, for a room of 30-ft. span, is cheaper than conventional joists for a room of 24-ft. span.

Directional glass block, in the upper part of the outside wall, even out the curve of light intensity toward the middle of the room, where it otherwise tends to dip in a room with this vertical section. Clerestory or monitor windows, being out of view when pupils are at work, are left with obscure glass. Low brightness differences in the visual environment are further controlled by paint of calculated reflection values, furniture and asphalt tile floors of light color. Exterior construction is of concrete block, oil-painted, with natural-finish pumice block interior partitions (all non-bearing); no plaster; acoustic tile above bulletin board height (these being of monk's cloth over cane board); chalk-boards bright green. Wardrobes are heated slightly by electricity, and vented by fan into the attic.

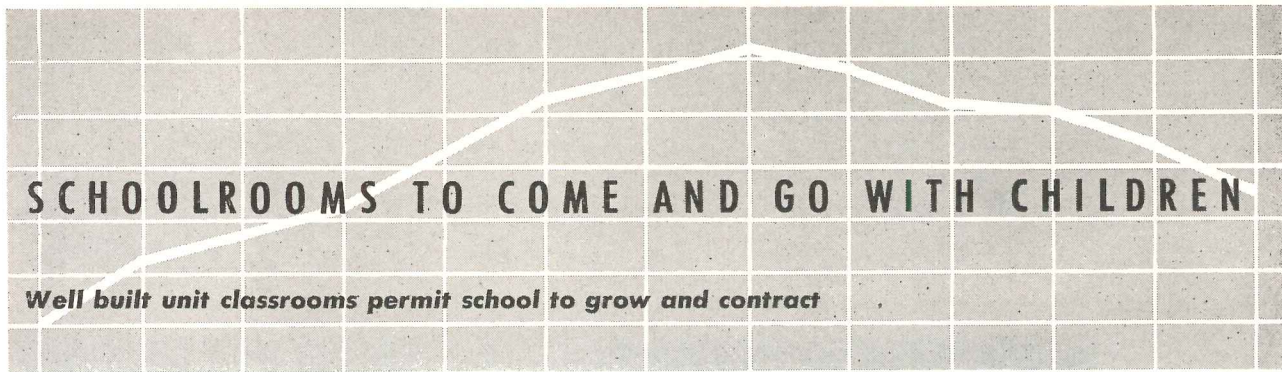
Costs were reported, for erection during 1947, at \$9.23 per sq. ft. for structure only.



In photographs may be seen interiors of the Edmonds Grade School. The corridor side of a classroom 30-ft. deep is daylighted by a high, monitor or clerestory, which is supported on a series of transverse beams of laminated wood. These are aided by trusses and the structure cased in plywood. In other schools the laminated truss does the work alone and is uncased (sketch)



Plan is of Esperance Grade School, with classrooms similar to those of the Edmonds Grade School. Vertical section, across-page, shows alternate construction with dihedral roof and the top-light nearer center of room. The system is reported economical. The scheme tends to complicate the building mass



Briarcliff and Dover Schools, Seattle

George Wellington Stoddard and Associates, Architects and Engineers

CONSTRUCTION is now going forward, after years of research, on this unusual project.

It attacks directly the most vexing problem of school people: how to provide adequate accommodations, not makeshift, and yet without bankrupting the community, for a school population which not only multiplies fast but also *shifts*. Such shifts can result in *local decline* (in the very face of the general growth) leaving heavy school investments derelict, and tempting communities into makeshift solutions.

In Seattle, Director of School Planning Byron B. Smith put before Architect Stoddard the problem of an immediate critical need, in several districts, for classroom space, with foreseeable need for additional space within two to five years, then a gradual reduction in load back to the present need, and perhaps to the point of final elimination. Temporary classrooms were discarded as a solution. There evolved the theory of the first-class transportable school. To make the story short, this meant a minimum of fixed facilities that could be expanded or contracted, and a maximum of facilities that could be moved.

Building codes strongly affected the classroom plan. Since 12-ft. ceilings were required except in one-room schoolhouses, each classroom was designed as a one-room schoolhouse with 10-ft. ceiling. (A 12-ft. height would be totally unnecessary for lighting and ventilation in this type of room; also, the unit must pass under trolley wires and bridges.) Next, the one-room schoolhouse had to be spaced 10 ft. or more from its fellows; hence the intermediate courts (see plan). Central heat-

ing was adopted instead of unit heating. Corridors were needed only as a means of distributing children and services, every classroom having direct outdoor egress.

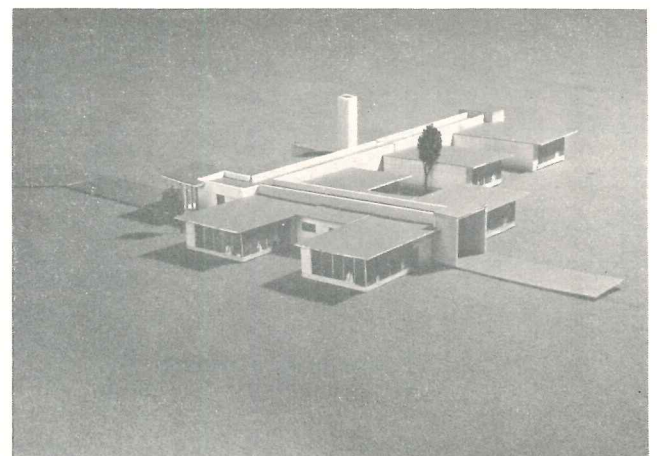
A basic 4-room school is the starting point. A boiler room has been erected with a boiler installed capable of handling 8 classrooms, and with provision for a second boiler handling 4 classrooms more, plus auditorium. Corridors with 3-ft. crawl space come next. Heating connection to classrooms is by 2 unions which can be connected and disconnected in a matter of minutes. (Classroom heating is by a split system of convectors plus unit heater-ventilators.) One flexible connection serves for electricity. Toilet rooms are provided between classrooms; the initial program also includes a combination office and teachers' room, book room, janitor's closet. The second step is to add 2 to 4 more classrooms with additional corridor; also the main office and health room. The third step adds the combined auditorium, playroom, and cafeteria, big enough for a gymnasium, to remain as a community facility if the remainder of the school is dismantled.

Upon the decline of the local school load, the school will be removed room by room, either to a new site or, where need develops, to replace obsolete types.

Promising high economy, the saving of this scheme

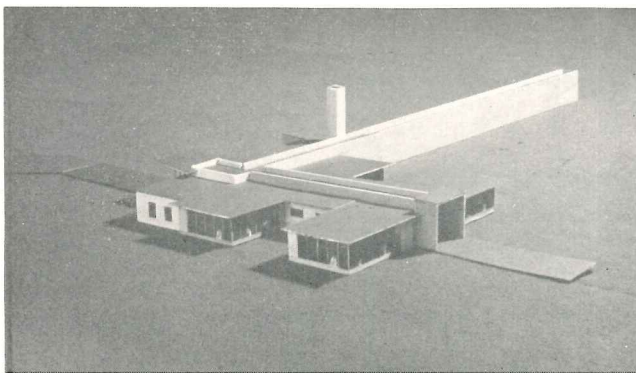
1950—210

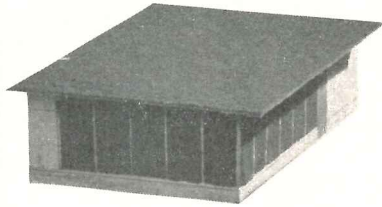
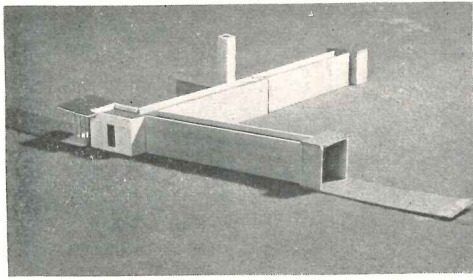
1949—175



1948—140

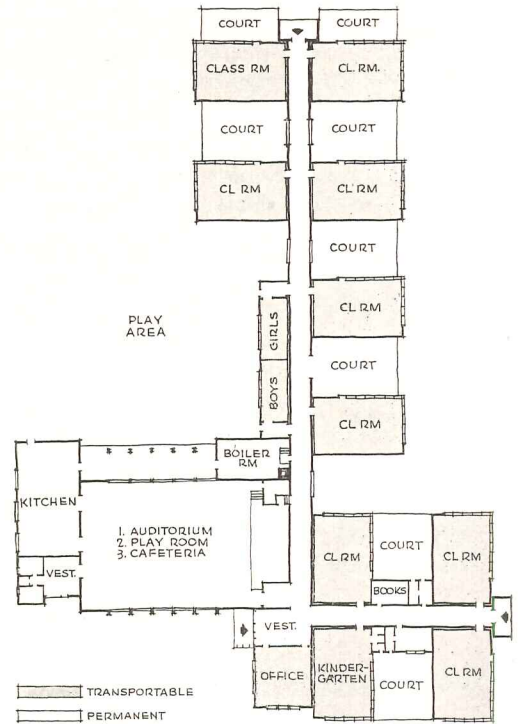
1947—75





Component parts of transportable school, and plan of "Dover School"

is not so much in initial cost (only slightly under conventional types) but in replacement. Fully equipped, these rooms can be moved and relocated for at least 50 per cent less than a relocated portable, say the architects, while full amenities are provided. "As a result we have a permanent school but the equivalent of a movable site."



1954—400

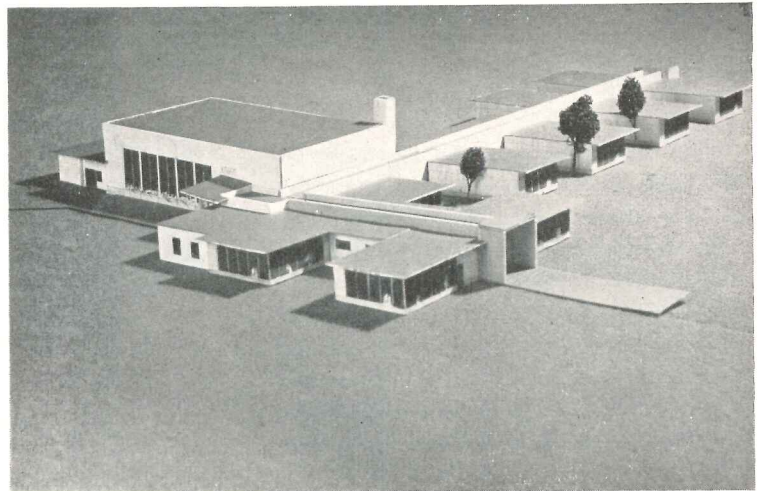
1955—380

1953—380

1956—340

1952—350

1951—180



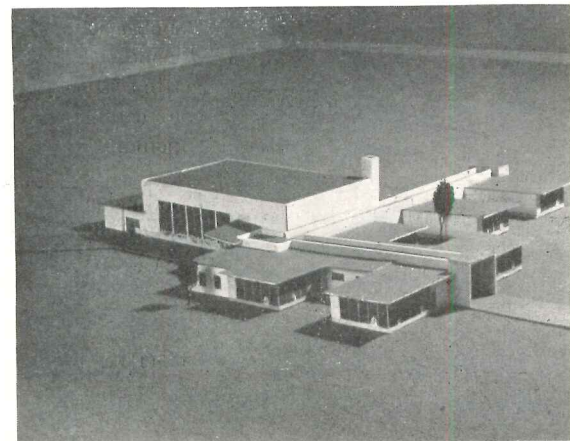
1957—320

1958—280

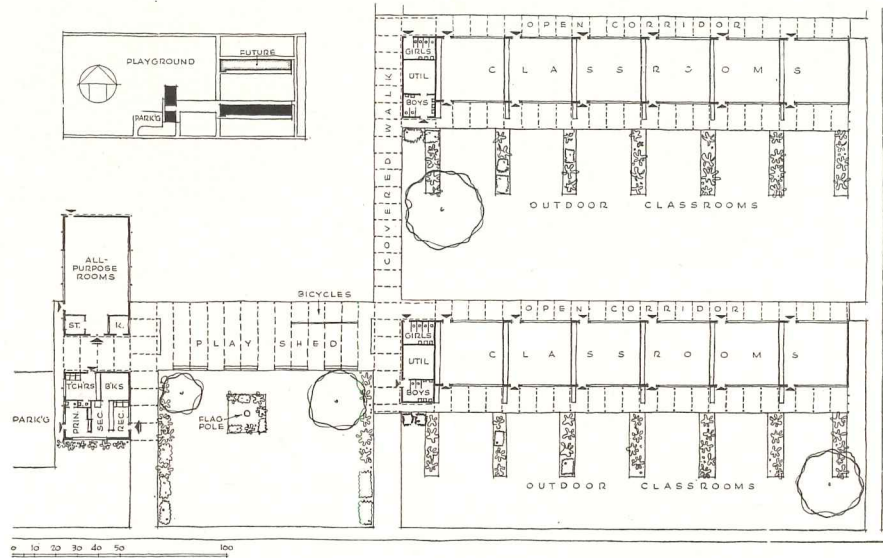
1959—230

Models were used to demonstrate the progressive growth and the subsequent dismantling which is possible in two schools under construction in Seattle. (Figures show the anticipated school population during the years of use.) The final school ends with the same capacity as the initial one, except that a permanent gym-cafeteria-auditorium is left behind, as a community facility, even though the school may later be totally removed.

Although the mobility is like that of "temporaries," the equipment and environment are up to the firstclass standard



SCHOOL architects should all be familiar with the studies of school building problems by W. W. Caudill, classics in their field (*Space for Teaching*, published by The Texas Engineering Experiment Station, College Station, Texas, and the film *Building for Learning* issued from the same source). Those who have studied these essays are aware of the importance which the author, working in the Southwest, attaches to *natural ventilation* by prevailing breezes. In a pair of schools for Blackwell, Oklahoma, of which the first is under construction, the author and his partners have seized the opportunity to practice what they have been preaching.



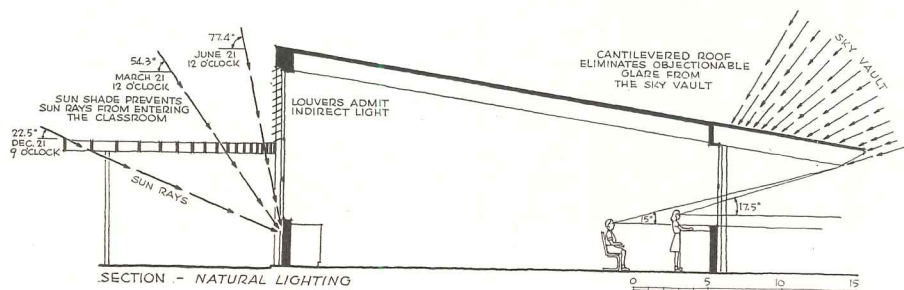
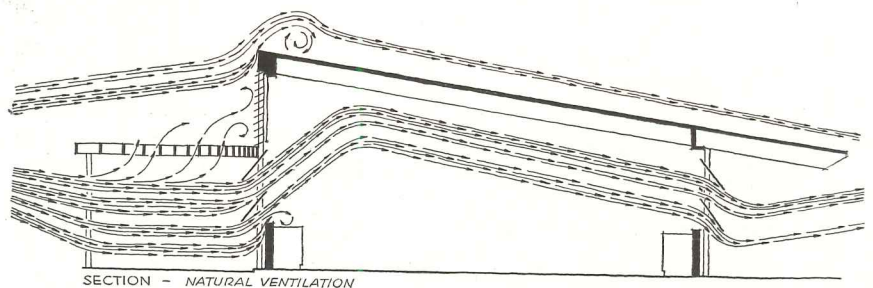
SOUTHWEST

SCHOOLS THAT UTILIZE THE PREVAILING BREEZE

First Unit for Blackwell, Oklahoma

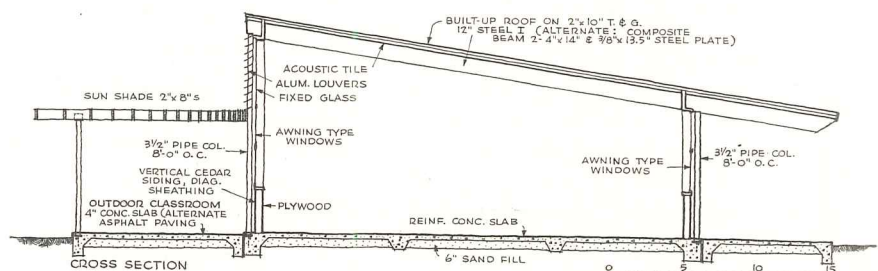
Caudill, Rowlett, Scott, Architects

The preliminary plans, reproduced herewith, show classroom wings placed in accordance with the dictum that "the distance between groups should be no less than five times the height of the classroom." The first of the vertical sections shows graphically how an air stream has been found to travel by actual tests made at College Station with smoke candles. The result is different from that which is too often found drawn in on the diagrams of the unknowing. Thus a projecting member, such as a canopy or porch roof, seems to deflect the air stream in such a manner as to make a window opening directly above it almost useless as a device of ventilation; and air must be drawn through underneath.



In general, the Blackwell scheme bears a resemblance to the Fairfax school by Bamberger & Reid (*Record*, Jan. 1949). Corridors and outdoor classrooms are both to the south.

Plans call for steel frame, cavity brick wall construction, steel sash, concrete floor slabs with radiant heating.



WATER-REPELLENT PRESERVATIVES FOR WOOD

By F. L. Browne, Chemist

Forest Products Laboratory*, Forest Service, U. S. Department of Agriculture

ALTHOUGH water-repellent preservatives and their related products are popularly regarded as recent developments, they have been in use for many years. Wood window sash have been treated with them for a decade and a half. During the wartime a number of new applications were found that stimulated wider interest in them.

Products of the kind are sold under various trade names; until recently there have been no recognized collective names for them. In 1948, however, the National Door Manufacturers' Association published suitable names and definitions for five kinds of products as follows: NSP water repellent for wood, NSP preservative for wood, NSP water-repellent preservative for wood, wood sealer, and preservative wood sealer. The letters NSP stand for "nonswelling, paintable," meaning the wood does not swell when the product is applied and can subsequently be coated with ordinary paints and varnishes.

All of these products are designed for treating wood quickly and with equipment that is simple, inexpensive, and readily available. The preferred method of treatment is by dipping, which requires dip tanks, but other methods of application also are used, such as brushing, spraying, mopping, and roller coating. Wood treated by such superficial methods takes up only limited amounts of the material applied, which penetrates only a short distance into the wood. Into the end-grain of pine sapwood, which is relatively easy to penetrate, the water repellents, NSP preservatives, and water-repellent preservatives may go as much as 2 or 3 in. but into the heartwood they seldom go as far as $\frac{1}{4}$ in. Into the side-grain even of

sapwood the penetration rarely attains as much as $\frac{1}{16}$ in. Wood sealers penetrate even less deeply.

With such limited penetration and absorption the superficial treatments cannot give wood the degree of protection or preservative obtainable by slower, more costly, but more thorough methods. These newer products, therefore, do not compete with the long established methods of wood preservation or with the more effective procedures for stabilizing the dimensions of wood. For severe conditions of service the more thorough methods remain more economical in the long run despite greater initial cost and inconvenience.

The newer products find their proper use where the conditions of service are not severe enough or the chance of adverse conditions arising are not great enough to justify the more thorough methods of treatment. A vast amount of wood falls in this category. In the past it has commonly gone untreated. Too often it has given poor service or has had to be repaired or replaced when a moderate degree of treatment would have kept it in satisfactory condition. The availability of the water-repellent preservatives and related products makes neglect of such treatment less easily excusable in the future.

General Considerations

The shallow penetration obtainable by superficial application makes it necessary to do all or practically all of the surfacing, cutting, and fitting of the wood before it is treated. After treatment little or no wood can be removed from any of the surfaces without laying bare untreated wood. If some cutting must be done subsequently, as in fitting windows or doors at the site or cutting pieces to length, the cut surfaces should be retreated before the parts are fastened in place. Delaying treatment until the carpenter work has been done

may sometimes inconvenience closely scheduled production lines, but it has the advantage of saving waste in treating wood that eventually turns up as sawdust, shavings, cuttings, or rejections.

The best point for applying treatment in a production schedule comes after all cutting, fitting, and boring out before assembling the wood parts. Surfaces that will be concealed after assembly are then freely accessible to the treating solution. The water repellents, NSP preservatives, and water-repellent preservatives, however, have the property of penetrating well into even well fitting joints, especially if the application is by dipping. When desired, therefore, woodwork to be treated with these products may be assembled but not glazed before they are dipped. Sealers do not penetrate joints so well; they are best applied before assembling unless they are used chiefly for decoration rather than for protection.

Gluing should be done before any of these products, except the NSP preservatives, is applied. Water repellents and sealers tend to interfere with gluing by impairing the strength of the glued joints. On the other hand the preservatives that contain neither water repellents nor sealers cause little if any interference with gluing providing the wood has been dried long enough after treatment for all of the solvent in the preservative to escape.

Thorough drying to remove solvent is likewise necessary before the treated wood is painted. Sealers dry rapidly because they do not penetrate far into the wood and because they are often made with solvents that evaporate quickly. Even after the wood has been thoroughly dried, however, water repellents and water-repellent preservatives retard the drying of most coatings slightly and some of them seriously. The delay in the drying of finishes is

* Maintained at Madison, Wisconsin, in cooperation with the University of Wisconsin. Part of the work on which this article is based was done in cooperation with the Federal Housing and Home Finance Agency and another part in cooperation with the Office of Production Research and Development of the War Production Board.

troublesome in operations in factories with closely planned production schedules, especially if the finishes are lacquers. For ordinary painting of buildings the drying is not retarded enough to delay the painters unless dark-colored enamels, such as trim and trellis, porch and deck, or quick-drying enamels are applied directly on the treated wood. No such trouble should be experienced if the enamels are applied over priming paint or enamel undercoater, as they properly should be in any case.

Water Repellents for Wood

The nature of the essential ingredients in the commercial water repellents for wood is usually kept as a trade secret. Products having all of their important properties, however, might be made by dissolving 2 or 3 per cent by weight of paraffin wax and 5 or 10 per cent of resin in mineral spirits of suitable solvent power. The wax imparts the water repellency but it tends to interfere with subsequent painting or gluing of the treated wood. The resin largely overcomes the interference with painting but is not so successful in the matter of gluing. Almost any resin that is soluble in mineral spirits will serve. A drying oil such as linseed or tung oil may be used in place of part or all of the resin, but oil and resin are not first cooked together as in varnish making, because that would reduce the extent to which the product penetrates into wood. Mineral spirits is the volatile thinner commonly used in paints and varnishes; the grade needed for water repellents is

one having good solvent power and a flash-point not less than 100° F. by the Tagliabue closed-cup method.

Water repellents retard changes in moisture content and in dimensions of wood. They furnish the maximum protection yet obtainable by superficial methods of application that leave the wood practically unchanged in appearance and susceptible to almost any of the decorative finishes generally used on wood. The treated wood may be varnished, stained and varnished, painted or enameled as may be decided upon later. Water stains, however, may not spread readily on wood treated with water repellent nor color it evenly.

Water repellents afford a practicable means of protecting wood against changes while it is being shipped from factory to place of erection or while it is held in storage. Such protection, however, should not be taken as an excuse for omitting the precautions that should normally be taken in handling fine wood-work.

Neither water repellents nor other protective coatings make wood waterproof. They do not alter the capacity of the wood to take up moisture or to swell proportionately. They merely delay the changes by making it harder for moisture to pass in or out through the surfaces. For wood exposed to even changing conditions of dampness and dryness such delay serves to hold the wood closer to an average moisture content and dimension than would be the case without protection. Protection is most effective when the conditions of ex-

posure fluctuate rapidly; it becomes useless for prolonged exposure to a steady extreme of dampness or of dryness.

Water repellents afford wood better protection than can be assuredly obtained with a single application of other coating materials such as sealers, varnishes, paints, enamels, and lacquers. On the other hand water repellents give much less protection than can be obtained with two or more applications of surface coatings. But considerations of cost and the practicalities of fabrication usually limit the surface coatings to the surfaces exposed to view and leave the concealed surfaces entirely unprotected even though they may be accessible to moisture. Moreover, surface coatings do not last long on surfaces subject to mechanical wear and are unsuitable for nicely fitted, sliding joints such as between window sash and frame.

Water repellents, therefore, are particularly valuable for furnishing protection to those parts of woodwork that otherwise are generally left entirely unprotected. They effectively supplement but are not good substitutes for the older types of protective coatings.

NSP Preservatives

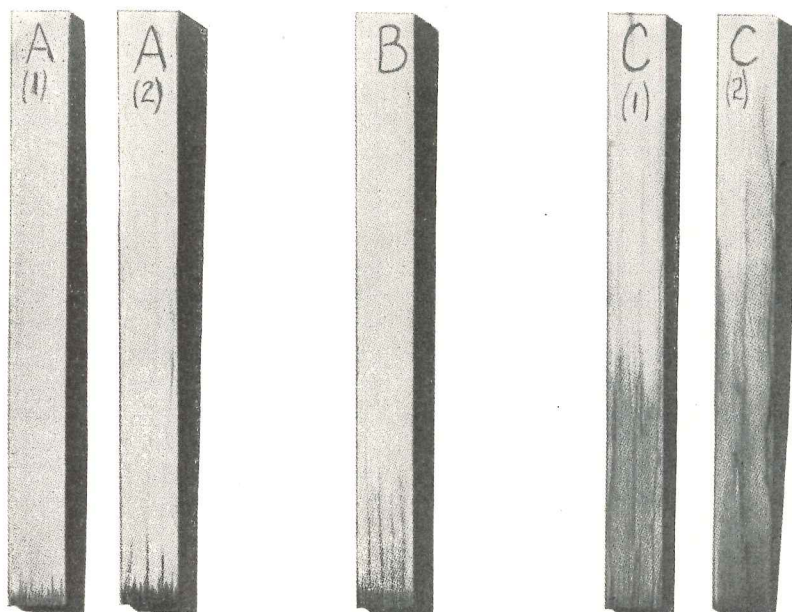
The NSP preservatives for wood are solutions of fungicides or fungicides and insecticides in volatile solvents, such as mineral spirits, that do not swell wood. The reliable commercial products disclose the kind and amount of fungicide that they contain. For treating window sash and millwork the National Door Manufacturers' Association accepts preservatives that contain not less than 5 per cent by weight of pentachlorophenol, tetrachlorophenol, chloro-2-phenylphenol, or their mixtures. Commercial preservatives also are made with other fungicides such as zinc naphthenate and, when its green color is acceptable, copper naphthenate.

NSP preservatives made with pentachlorophenol may contain a small amount of resin or nonvolatile oil to prevent blooming. Blooming is a deposition of crystals of pentachlorophenol on the surface of wood as it dries after treatment. It mars the appearance and may irritate the skin and mucous membranes of workers.

When applied by superficial methods the NSP preservatives guard wood ade-

(Continued on page 174)

Water-repellent preservatives (C1, C2) penetrate farther than sealers (A1, A2)



SECOND THOUGHTS ON RADIANT HEATING

Some do's and don'ts to insure good performance

By W. P. Chapman* and R. E. Fischer†

UNLIKE most innovations in the building industry, radiant heating had quick public acceptance. People wanted such a heating system — one that would “provide added comfort, reduce operating costs, be invisible and save space, and have the advantage of cleanliness.” Yet while there is admittedly laboratory and field investigation to be done, the theory is far advanced and there are a great many facts known which, if utilized, will go a long way toward insuring good performance from a radiant heating system.

Most occupants of radiant heated structures are enthusiastic about their heating systems. Performance may not come up to expectations, however, if special considerations in the design of radiant heating systems are overlooked.

MEETING THE HEATING LOAD

The first requisite of a radiant heating system is that the heat from the available panel area be sufficient to meet the loss through the structure and to ventilation. In most cases, structures are insulated well enough for economy reasons to keep conduction losses low. High ventilation rates, whether due to infiltration or to forced air circulation con-

sistent with fresh air requirements, can cause such excessive losses that discomfort results.

A common misconception is that since a large portion of the heat transfer from a panel into a room is radiation (ceilings 70 per cent radiation, 30 per cent convection; walls 56 per cent r., 44 per cent c.; floors 50 per cent r., 50 per cent c.), the occupant will be kept comfortable by radiation although a large amount of heat is removed by ventilation. All heat losses still have to be made up by the panel, and when excessive quantities of heat are taken from the air, the panel area required to make up the heat — in the percentages listed — may be either unavailable or impractical.

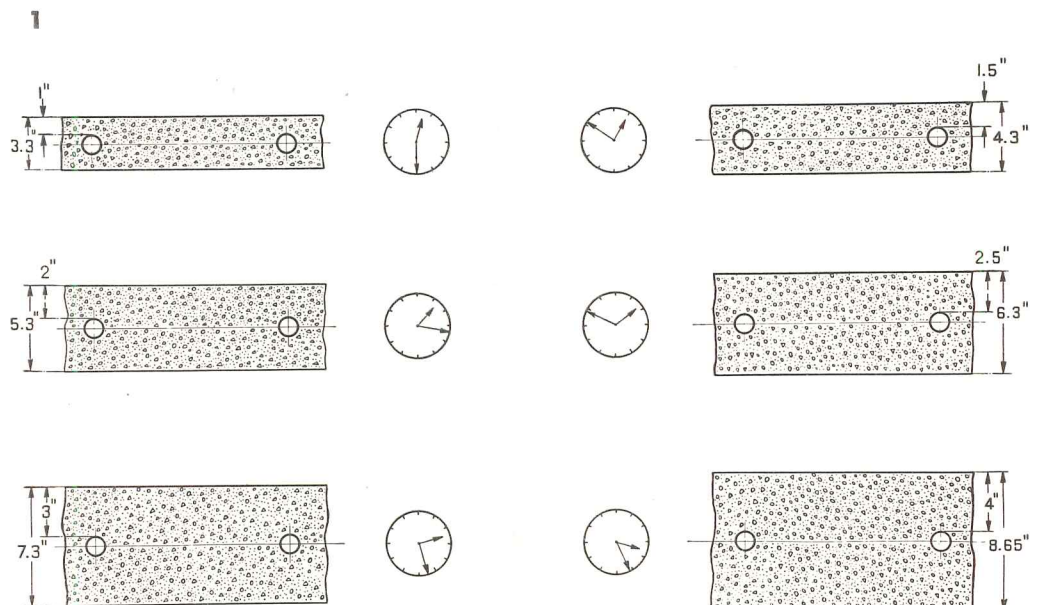
When the ventilation rate is likely to exceed three air changes an hour, the design should be checked carefully to make certain that the heat from the panel is sufficient to take care of the total loss. A low rate of heat output is characteristic of radiant heating panels because of the limitation on panel surface temperatures¹ — to keep them within a comfortable range — and due to the lack of much air movement across the panel. Standard ratings are approxi-

Panel Location	Surface Temp., F	Heat Output, Btu/hr./sq. ft.	
		High	Average
Ceiling	120	84	80
Wall	100	65	60
Floor	85	40	36

The problem of not having enough panel area is hardly ever encountered in houses, where ventilation rate is about one air change an hour, but may occur frequently in garages, warehouses and offices. Oftentimes in buildings like garages, methods must be devised to prevent infiltration — for instance, locating doors away from prevailing winds or in shielded spots. If this is not possible, then convectors may have to be installed so as to form a curtain of warm air across doorways that are frequently left open. In installations such as offices where people are located close together and forced ventilation is employed to remove stale air, it is advisable to temper the air when there are more than three air changes per hour.

The effect of excessive ventilation is best demonstrated by the following

* Product Engineering Dept., National Tube Co. (U. S. Steel Corp. subsidiary), Pittsburgh, Pa.
 † Associate Editor, ARCHITECTURAL RECORD.
¹ Recommended surface temperatures: floor 85 F, wall 100 F, ceiling 110 F at 8 ft., 120 F at 9 ft. and over.



Effect of varying pipe depth in floor slabs is shown here. Heat output was assumed to equal the heat input at 12 o'clock; then the temperature was increased in pipe. Clocks indicate time when slab surfaces come up to a higher, constant temperature

Surface temperature of an actual radiant heating panel varies, as shown here, both parallel to and in between the pipe coils

tiveness of different arrangements should be examined. Under conditions of ideal comfort in radiant heating, the inside air temperature decreases as the outside air temperature decreases. This is because the additional heat loss is made up in great part by radiation, instead of the mass of air alone being heated. This suggests the need for a thermostat that would be reset in accordance with outside temperatures. It can be shown, however,² that the inside temperature variation would rarely be more than two degrees during a daily heating period, which is really inconsequential; therefore, a control device set at a constant inside air temperature will suffice for most installations.

Modulating and on-off controls used with hot water radiant systems operate just as their names imply. With the modulating control, either the supply and return lines are mixed in a proportion so as to meet the heating demand or else the fuel supply is modulated, for instance operating one or several burners according to the heating load.

With an on-off system (assuming continuous pump operation), the additional heat required is supplied at full capacity. The only difference between the two systems is that the panel surface temperature would fluctuate to a lesser degree with the modulating system than with the on-off control. As can be seen from Fig. 2,³ the panel temperature variation with the on-off control is quite small; so it is a question of whether the improved performance is worth the added cost. The modulating system chosen for comparison with the on-off control sets the boiler water temperature according to the outside air temperature and then resets the temperature of the water going to the panels by means of a modulating inside air thermostat.

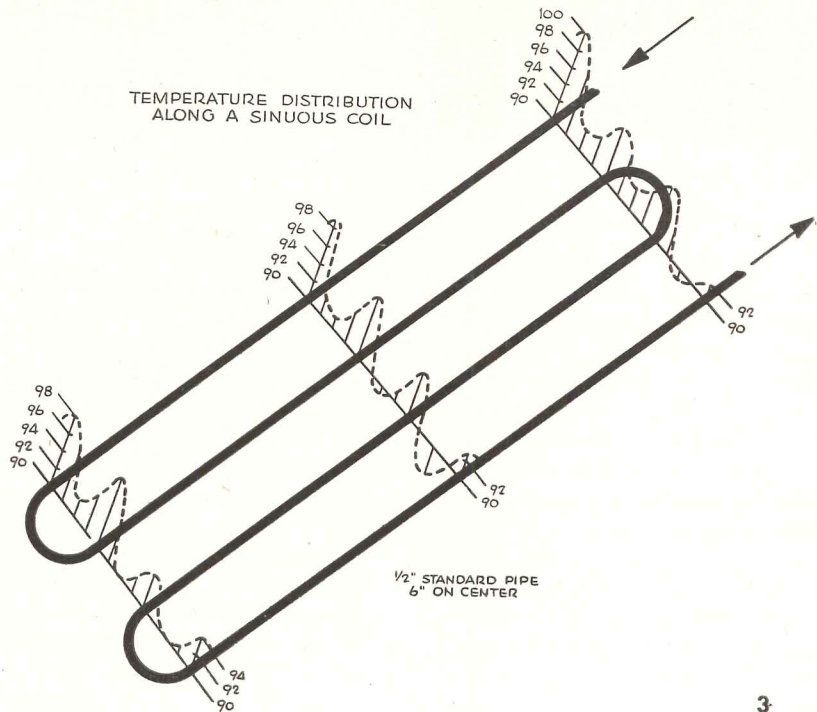
Pump Operation

It is recommended that the pump operate continuously. If it operates periodically, there will be added difficulties in the control of the system. For example, when the inside air thermostat responds to a drop in temperature and

² "Simplifying Comfort Control for Radiant Heating," W. P. Chapman and R. E. Fischer, Heating and Ventilating, June, 1948.

³ Fig. 2 is from "Response and Lag in the Control of Panel Heating Systems" by F. W. Hutchinson, Heating, Piping and Air Conditioning, Feb., 1947.

TEMPERATURE DISTRIBUTION ALONG A SINUOUS COIL



3

actuates the pump, heat is supplied until the air temperature is brought back to the value set by the thermostat, and then, in addition, stored heat in the panel pushes the air temperature and panel surface temperature beyond that desired. If the pump operates continuously there is never a period of sudden temperature change to hinder response of the system.

Uniformity of Panel Surface Temperature

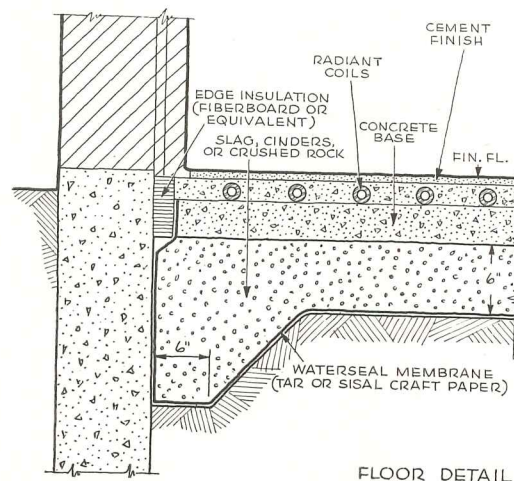
The degree of panel surface temperature uniformity that is possible is governed by allowable expense and the rate at which a panel has to respond to changing heating load. A hot water

panel as is shown in Fig. 3 will be taken, as an example in illustrating the variations that exist. It is evident that there is a temperature variation in a direction parallel to the pipe and in between (or at right angles) to the pipe, the latter variation being by far the greatest.

The parallel variation can only be reduced by increasing the flow rate; and then the flow rate must be doubled to reduce the variation by one half, and this is usually prohibitive. The most important variation, that in between the pipes, can be reduced by (1) increasing the "cover" (plaster or concrete) over the coil or (2) decreasing the pipe spacing. Of these two means, the second is the best since the response of the panel

(Continued on page 176)

Detail of floor slab radiant heating designed to minimize back-side heat losses



FLOOR DETAIL

4

TEST HOUSE HEATED ONLY BY SOLAR HEAT

Dr. Maria Telkes Residence, Dover, Mass.; Eleanor Raymond, Architect

FROM time immemorial man has tried to find new ways to utilize the heat energy of the sun directly, without waiting a few thousand years for it to be transformed into burnable fuel. This house, in the Boston area, represents one of the most recent solar experiments. It incorporates the ideas of Dr. Maria Telkes of the Department of Metallurgy of M.I.T., but is sponsored by Miss Amelia Peabody as a private project.

It is not a solar house as the term has been used commonly in recent years to describe a house with large windows. It is the genuine article — a house depending entirely on the sun for space heating. As such it is bound to be watched closely, not only to see how man's efforts in this general direction are coming, but also to see whether the particular method of heat storage which is used will win out.

The heating system consists of a huge solar heat collector, air ducts to convey the heat, and "heat bins" filled with chemical for storing the heat, from which it is distributed to the rooms as needed.

The heat collector, running the full length of the house, consists of double sheets of glass 10 ft. high with air spaces between, backed by a thin metal sheet to trap the heat. Behind the sheet, enclosed with a well-insulated wall, is an air space forming a duct. The air heated by the metal sheet is circulated by fans to the heat bins located on the first floor.

Each heat bin serves to heat the two rooms which adjoin it, except one which heats only the living room. There is a

wall register in every room with a thermostatically controlled fan to convey warm air into the room. The cold air is drawn back into the heat bin through a return-air register. A small amount of heat is freely transmitted into the rooms from the walls of the heat bins as radiant heat, enough to keep the rooms warm on milder days. Thus convected and radiant heat are combined.

The test feature of this system is the method of storing the heat. Each heat bin is simply a small warehouse filled with metal drums of a sodium compound whose properties for absorbing and giving off heat are under test. The warm air circulated between the metal drums melts the chemical, which enables it to store heat at a constant temperature. When the heat is drawn out, the chemical re-crystalizes, returning the absorbed heat to the air. This is the "heat of fusion" method of storing solar heat.

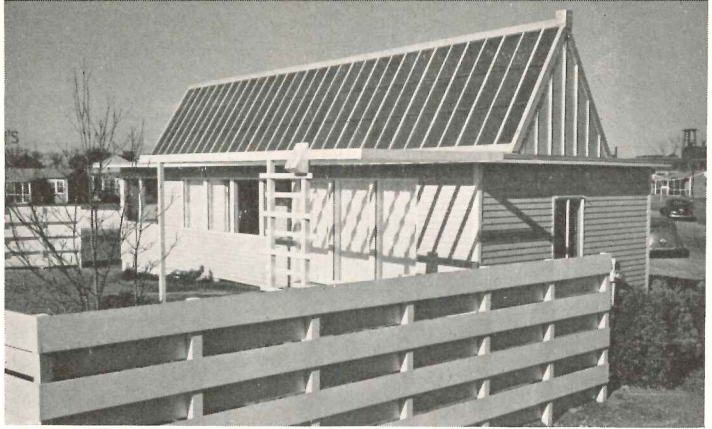
The heating system is so designed that the heat it obtains from the sun in December, January and February is equal to the heat needed during these months



Paul Davis Photos

Progress pictures here show heat collector installed across attic front. Double glass panels, 10 ft. high, with an air space between, invite the sun to heat a thin metal panel behind the glass. Within the limits of black and white photography the photographer has tried to show that the glass reflects the tones and colors of the sky; thus the house does not appear as top-heavy as might be supposed

Right. Massachusetts Institute of Technology has just announced the completion of its own sun-heated house as part of its continuing research in this field. The heating system, using water as the medium, consists of roof collectors, attic storage tank, radiant ceiling, panel units, pumps and controls. Further details will appear in the April issue



to maintain the standard 70 degrees F. inside the house even if the temperature is zero outside. Naturally allowance has to be made for a succession of sunless days. An analysis of the sunshine records of the nearby Blue Hills Observatory shows that a heat storage capacity for ten average winter days will be sufficient to assure an adequate supply of heat for any number of consecutive sunless days statistics have shown to be probable.

The heat collected by the heating system in this sun-heated house on an average winter day is equal to the heat obtained by burning 70 pounds of coal; on a clear winter day it may equal 140 pounds of coal. The house is naturally well insulated to diminish heat losses. Boston, or places of similar sunshine and temperature conditions, appears to be the northern limit for the practical working of this system. In less severe climates the size of the collector and the heat storage bins can be made smaller, with fewer restrictions on the size of the house.

The method of solar heating used in this house was developed by Dr. Maria

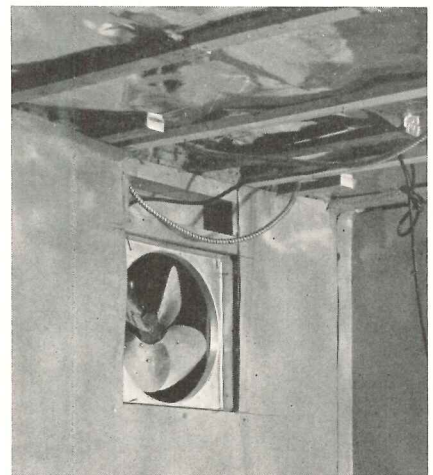
Telkes. Dr. Telkes will live in the house this winter and will continue the tests and the collection of data on solar heating which she has been conducting for some time.

The house was designed by Eleanor Raymond, a Boston architect. Miss Raymond had to meet the problem of designing a liveable house within the restrictions imposed by the heating system. The heat collector had to face south and had to be large enough to collect the required heat for this particular house in this climate. This meant that an area equal to the entire south wall had to be given over to the heat collector. But as there must also be sunlight in the living space, that is, windows, the problem was solved by moving the collector up to become the south wall of an attic. The space in this attic story can not be heated but serves the purposes of both attic and cellar (the house is built on an insulated concrete slab). Farther south, where a smaller collector could be used, greater flexibility in the design of the house would be possible. Affecting the design of the house too was

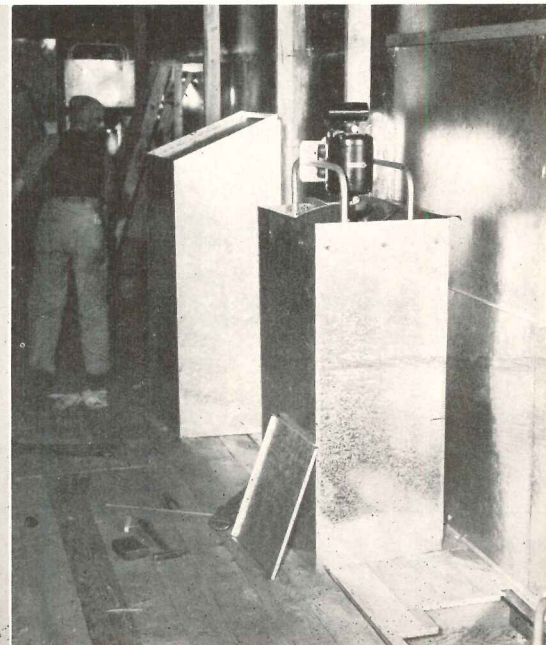
the fact that for the Boston climate 4 linear ft. of the collecting glass will produce only enough heat to serve a space 4 ft. wide by about 17 ft. deep. This meant that the house could be only one room deep. Although the house has a fireplace, this is solely an aesthetic feature and is not depended on for the production of heat.

Exact accounts of the costs of this solar system are being kept so that comparison may be made with the cost of conventional fuel-burning systems.

A fan in the wall between a bedroom and the heat bin supplied heat to the room under the dictates of a thermostat. Note that the bedroom ceiling has aluminum reflective insulation



This closet full of "insecticide" (it says on the cans) becomes the "heater room". It is one of three "heat bins" in which solar heat is stored by the heat-of-fusion method in a sodium compound. The metal plate is a baffle to guide heated air in a longer route. Right-hand picture shows duct work behind the heat collector plate



MODULAR DESIGN DATA FOR WOOD WINDOWS

(Continued on page 143)

MODULAR wood window sizes listed on the Time-Saver pages that follow are those adopted as industry standard by the National Door Manufacturers Association. The standardization of these sizes substitutes one national-wide standard for ten different market practices — allowances of wood over glass; Ponderosa Pine stock windows are widely produced in accordance with the sizes. The window opening sizes established were designed to meet the basic requirements of the American Standards Association Project A62*.

The basis for coordination of the window sizes with other building products is the 4 in. module or increment. The window sizes are coordinated by determining, through

*Project A62 for Coordination of Dimensions of Building Materials and Equipment, jointly sponsored by AIA and The Producers Council, Inc.

a study of modular installation details, one size that works well for a certain type. Other sizes for that type must then be equal in width and height to the first size plus or minus some 4 in. multiple. This does not necessarily mean that the window dimensions have to be in 4 in. multiples. The window sizes listed herewith have widths in multiples of 4 in. and heights in multiples of 4 in. plus 2 in. These sizes were selected because they included a maximum number of present stock windows.

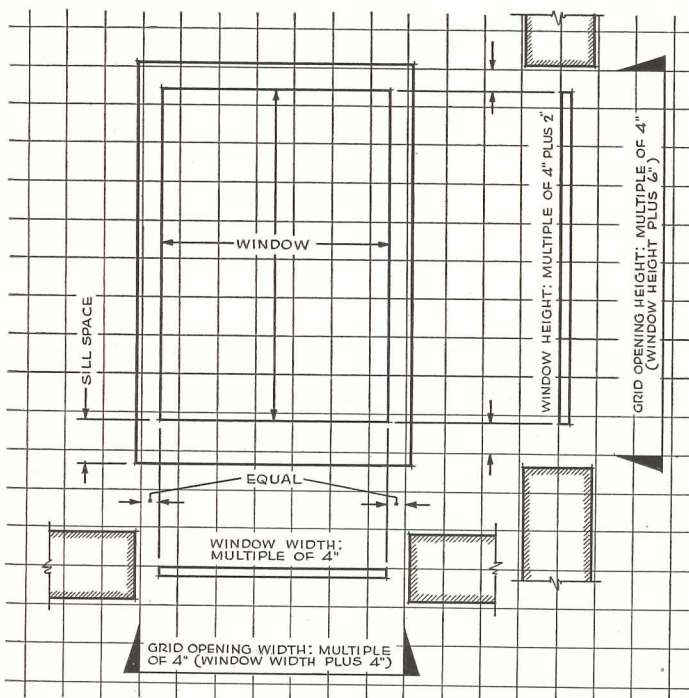
Coordination of windows is simplified a great deal by consistent referencing to grid openings. The position on the grid for the edges of wall openings may differ considerably for various types of construction. Thus it is useful to identify the lines which are used for layout and referencing on

the grid as the *grid opening*. As a result of referencing modular wall and window details to the same grid opening, many combinations are indicated by a small number of drawings.

Windows are placed in a symmetrical grid position horizontally so that modular details are the same at each jamb. This does not apply vertically because the head and sill details are essentially different. The usual space between the window and grid opening is 2 in. at the jamb and $2\frac{1}{16}$ in. at the head. The sill space varies, depending on whether the construction is modular masonry, custom masonry, wood frame, etc.; 4 in. is sufficient to include all wood sill details. It is desirable to have a size of grid opening for each window size that will apply to any sill. A symmetrical grid position for walls simplifies dimensioning, estimating, quantity take-offs and the determination of actual dimensions when needed. It also reduces the variety of lengths for frame members and other parts.

The only inconsistency with the modular program arises in the case of multiple window openings in masonry walls. If all mullions were made 4 in. wide, there would be no complication in any case. But mullions are 6 in. wide for conventional weight-type balances and need be no more than 2 in. for the streamlined mullions used with patent balances. Thus when 2 or 6 in. mullions are used, there have to be an even number, or else a 2 in. masonry offset will be required at one jamb. In brick walls this is done by either cutting the brick at one jamb or providing three-quarter length brick. In cement block walls built with standard 16 in. nominal length units, the offset cannot be produced, so either an even number of mullions must be used, or for patent balances a 4 in. auxiliary mullion can be employed.

Adaptation of modular wood window to the grid layout



WELDING GUN ATTACHES CORRUGATED ASBESTOS TO STRUCTURE

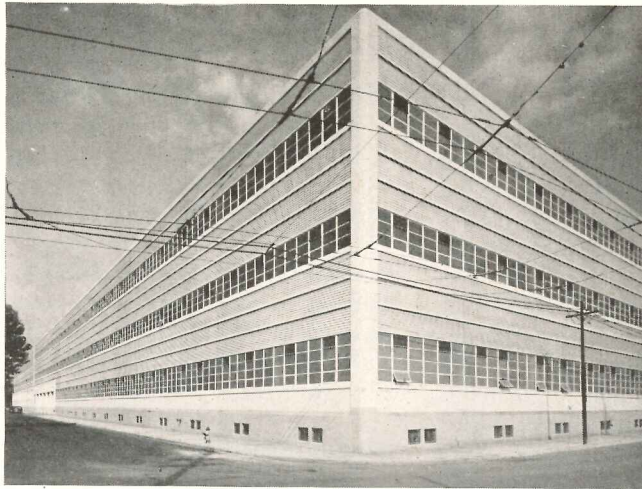
Application of corrugated sheet asbestos (Transite) with the lightweight, automatic *Nelson stud welding gun* is reported to have achieved a distinctive streamlined effect for the exterior of the new two-story carton plant with basement and three-story factory addition to the Sunshine Biscuit bakery at Dayton, Ohio.

Studs end-welded to the Z-bars with the Nelson gun secured the siding to the struts, making it possible for installation of all sidewall materials to be handled from the outside and eliminating exposed fasteners or clips on the inside.

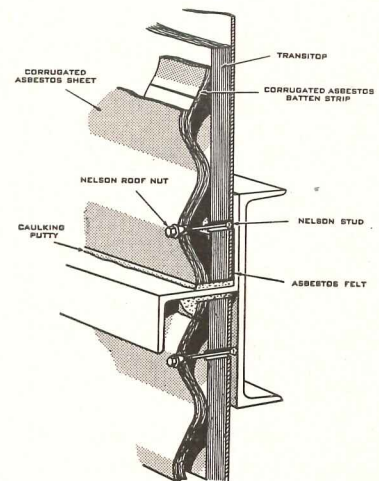
One-inch panels of insulating board (Transitop) surfaced on the inside with $\frac{1}{8}$ -in. veneer (Flexboard) were used for insulation. Around the inside, the outside and the bottom of these insulating panels, where they were set into a layer of caulking putty, were wrapped sheets of 15-lb. asbestos felt in a U-shape.

On the outside, in the same bed of putty, the corrugated asbestos sheets were then placed, and holes were drilled at regular intervals to facilitate installation of the Nelson studs, which extend through the siding and insulating board to the structural supports.

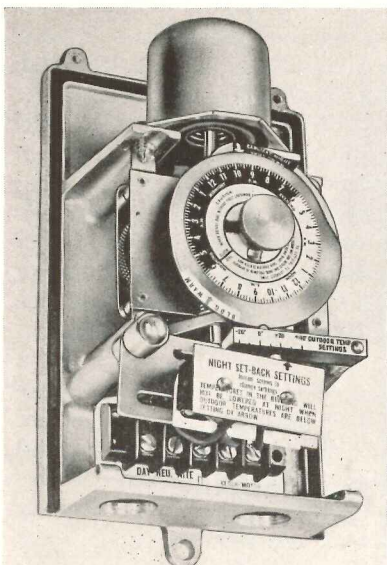
To provide uniform weather protection and an even surface overall, corrugated back batten strips were installed at joints. Nelson Stud-Welding Division, Morton-Gregory Corp., Lorain, Ohio.



Corrugated sheet asbestos, achieving a streamlined effect on the exterior of the factory addition to Sunshine Biscuit bakery, Dayton, Ohio (above), was secured to steel members through use of the Nelson stud and automatic welding gun. Detail (right) shows how siding was secured, making possible installation of all side-wall materials from the outside



HEATING CONTROL SET AT TIME BUILDING IS TO BE WARM



Now in production is a weather-actuated regulator for building heating designed to set back inside temperatures at night and still insure adequate warmth in the morning, regardless of outside temperature change.

The *Weather-Chron*, wired into the regular room thermostat circuit like any other clock switch, is set, not for the time heating is to start, but to the

Weather-actuated regulator starts heating system so that building will be warm at a certain time in the morning regardless of change in outside air temperature

time the building is to be warm every morning.

According to the manufacturer, *Weather-Chron* automatically changes the time heating starts with the changes in weather. On the coldest nights, when outdoor temperatures drop below a pre-selected level, the device is reported to hold building temperatures at daytime level throughout the night. When outdoor temperatures rise above 65 F., heating is eliminated.

Daytime building temperatures are maintained by the regular room thermostat at comfort level. Automatic Devices Co., 53 W. Jackson Blvd., Chicago 4, Ill.

(Continued on page 180)

MANUFACTURERS' LITERATURE

Insulation

Silvercote's Handbook of "U" Values. Lists large number of heat transmission coefficients ("U" values) for various types of wall, floor and ceiling construction, including the coefficients for constructions using six different types of reflective insulation made by Silvercote.

A unique feature of the booklet, according to the manufacturer, is that it lists both winter and summer insulation values. The coefficients are reported to have been calculated in accordance with FHA procedure. The manufacturer's reflective insulations are described; three of these are thin sheet types and three others are of the blanket type. 108 pp., illus. Silvercote Products, Inc., 161 E. Erie St., Chicago, Ill.

Heating System Controls

Sarcotherm Weather Control for Hot Water and Radiant Heating (Technical Bulletin No. 1). This is the first in a series of bulletins designed to assist architects and engineers in the selection of appropriate controls for radiant heating systems. Includes descriptions and wiring diagrams of new thermostats developed especially for radiant heating. 8 pp., illus. Sarcotherm Controls, Inc., Empire State Bldg., New York 1, N. Y.

(1) *Electronic Moduflow*; (2) *Zone Control and Individual Room Control.* The first booklet describes a "super-sensitive" electronic control system designed to vary the length of the "on" and "off" periods of the burner in direct proportion to the heating load. Components of the system and typical applications are illustrated and described. Diagrams are included for gravity and forced warm air and warm water, steam and radiant panel systems. The second booklet tells how zone or individual room control is accomplished for forced warm air and hot water and radiant panel applications. 8 pp. each, illus. Minneapolis Honeywell, Minneapolis 8, Minn.

Carpet Anchoring Device

Smoothedge Carpet Gripper. Describes method for installing wall-to-wall carpeting without the use of tacks. Narrow

strips of plywood containing two rows of pins set at a 60° angle are installed level with the padding at the edge of the carpet. The pins penetrate the warp of the carpet to hold it rigidly in place. Sketches show how the strips are installed for both rolled and sealed edge finishes, and how they can be used for both wood and concrete floors. 4 pp., illus. The Roberts Co., 1536 N. Indiana St., Los Angeles 33, Calif.*

Incinerators

Incinerators: The Proper Type for Each Purpose. Covers complete line of flue-fed incinerators for residential, industrial and municipal use. Models are shown for installation in basements of residences and for multiple floor installation in apartments, hospitals, hotels and schools. The heavy-duty types are available in capacities ranging from 50 lb. per hr. to 100 tons per day. Specifications and detailed drawings are included. 8 pp., illus. Morse Boulger Destructor Co., 205-A E. 42nd St., New York 17, N. Y.*

Wood-Plastic Material

Weldwood Catalogue. Newly issued catalogue on *Weldwood* products lists and illustrates new items in the line such as fire-resistant doors, *Plankweld*, *Weldwood* mouldings, several new wood species — Korina, American Elm and Vertical Grain Cedar, and two new finishing materials. 32 pp., illus. United States Plywood Corp., Weldwood Bldg., 55 W. 44th St., New York 18, N. Y.*

Plaster

Ohio Autoclaved Finishing Hydrated Lime. Pamphlet points out special features of autoclaved hydrated lime which is reported to need no soaking and to have greater yield than ordinary hydrated limes. Preparation instructions are given. 4 pp. The Ohio Hydrate and Supply Co., Woodville, Ohio.

Toilet Compartments

Sanymetal Toilet Compartments. (Catalog No. 68.) Five types of toilet compartments are illustrated — overhead braced, ceiling hung, floor supported, standard flush type and standard panel type. A color chart shows the 21 different shades

available for porcelain and baked-on enamel over steel. Other products catalogued are hospital cubicles, shower cabinets, dressing room compartments and hardware. Advantages are listed and extensive construction details and specifications are given. 20 pp., illus. The Sanymetal Products Co., Inc., 1701 Urbana Rd., Cleveland 12, Ohio.*

Hospital Communication

Auth Hospital Bulletin No. 170. Typical specifications and wiring diagrams on such hospital and institutional equipment as call systems, paging systems, emergency alarms, and intercommunicating telephone systems. Two pages are devoted to architects' symbols. 18 pp., illus. Auth Electric Co., 34-20 45th St., Long Island City 1, N. Y.

Wall, Ceiling Panels

New Interiors for Old. A collection of 79 repair and remodeling ideas using *Upson* wall and ceiling panels. Besides containing suggestions on how to cover cracked plaster with *Upson* materials, the booklet is profusely illustrated with pictures showing color schemes in rooms where *Upson* wall and ceiling panels have been applied. Color suggestions are given for predominant, secondary and accent colors. The various types of panels available are described and dimensions given. Diagrams show a variety of ceiling and sidewall panel designs. Accessories such as fasteners, mouldings and ornaments are included. 32 pp., illus. The Upson Co., Lockport, N. Y. 25 cents.

Wood

Douglas Fir of the Western Pine Region. Booklet on properties, uses and grades of Douglas Fir. General information provided covers appearance, weight, working stresses, shrinkage, nail holding power, ease of working, ability to take finishes, preservation and gluing. Other sections describe and picture various residential, commercial and heavy construction uses. The different grades available are shown with full page pictures accompanied by a description of the material and a general outline of grading rules. 52 pp., illus. Western Pine Assn., Yeon Bldg., Portland 4, Ore.*

Typical Designs of Timber Structures. This book, prepared especially for use by architects and engineers, contains 88 new, typical designs and valuable technical information. Modern methods of timber construction using *Teco*

(Continued on page 198)

*Other product information in Sweet's File, 1949.



Here is

FISSURETONE

TRADE MARK

FISSURED MINERAL FIBRE TILE

• Developed and produced by the world's largest manufacturer of Sound Conditioning products, FISSURETONE brings architects and designers an entirely new acoustical medium, perfectly suited for any type of public or private, commercial or domestic building.

Highly sound absorbent, this completely and totally new mineral fibre tile is both smart and dignified in appearance. The beautiful fissured surface rivals the finest travertine and is factory-finished in a soft, flat white of high light-reflection rating. FISSURETONE has the paintability and cleanability inherent to products of this type.

Fissuretone is lightweight, rigid and incombustible. Its safety, effectiveness and unusual beauty make FISSURETONE equally suitable for both traditional and modern interiors.

Now—architects who want something really "different" can design dignified quiet into any room, right along with attractive style and perfect taste. Both functional and decorative, FISSURETONE again marks the consistent leadership of Celotex, creator and producer of the most wanted, needed and widely accepted line of Sound Conditioning products.

ACOUSTI-CELOTEX

REGISTERED U. S. PAT. OFF.

Sound Conditioning

PRODUCTS FOR
EVERY SOUND CONDITIONING PROBLEM

Sales Distributors Throughout the World
In Canada: Dominion Sound Equipments, Ltd.

THE CELOTEX CORPORATION
120 South La Salle Street
Chicago 3, Illinois



FISSURETONE'S new and "different" random-fissured surface gives a beautiful new pattern and style to Sound Conditioned ceilings.



G-E flight test hangar at Schenectady, N. Y., used for maintenance, testing and development. Marcus T. Reynolds, architect; Heating Maintenance Corp., heating contractors.

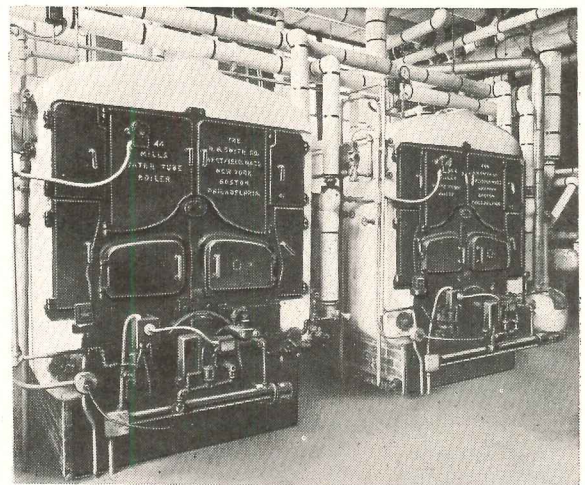
**How to heat
almost an acre
of hangar**

Heating the mammoth General Electric flight test hangar at Schenectady, N. Y., presented — as it always does in buildings of this type — the serious problem of how to maintain reasonably uniform temperatures despite very high ceilings and frequent air changes due to the opening and closing of hangar doors.

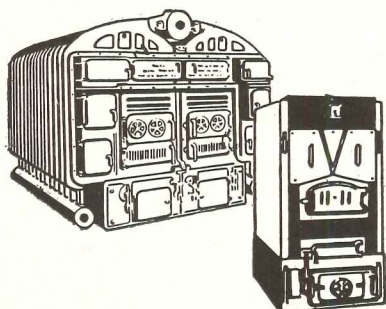
Consulting Engineer J. L. Ottenheimer solved the problem by specifying a radiant heating system installed in the concrete floor to maintain a comfortable temperature which is recovered unusually fast after hangar doors have been open. In spite of the 45-foot ceiling, a breathline temperature of only 60° has proved comfortable, and ceiling temperature is actually 2° lower, representing a considerable saving in fuel.

Two H. B. Smith No. 440 cast-iron sectional boilers heat the radiant floor panels in a manner which engineers have come to expect from these proved and tested Smith products. Their efficiency with heavy-oil, flexibility, and economy contribute much to any heating system. Their negligible maintenance costs, easy installation, and long-life expectancy should be considered no matter what the size of the job.

H. B. Smith boilers are being selected more and more for the difficult heating jobs where only the *best* equipment will do.



Two H. B. Smith No. 440 Mills water tube boilers, fired by heavy-oil burners, furnish steam for the heat exchanger from which water is circulated to the panels.



H.B. *Smith*

CAST-IRON BOILERS

THE H. B. SMITH CO., INC., 62 Main St., Westfield, Mass., Offices and Representatives in Principal Cities

MODULAR DESIGN DATA FOR WOOD WINDOWS

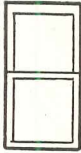


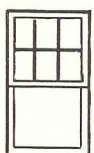

(Continued from page 138)

(Continued on page 145)

CHECK RAIL WINDOWS, 1 3/8"

Window opening sizes are in bold face type

Glass sizes are in ordinary type.

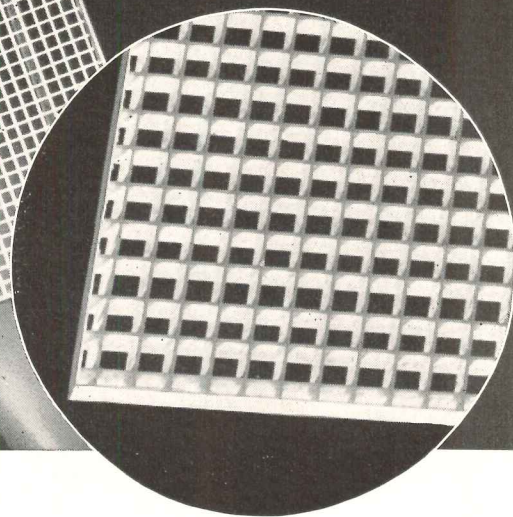
WINDOW OPENINGS	 2 Lt.	 Top 3 Lt. W.	 4 Lt. H.	 Top 6 Lt.	 12 Lt.																																				
1-8 x 3- 2 3-10 4- 6	16 x 16 20 24		16 x 7 3/4 9 3/4 11 3/4																																						
2-0 x 2-10 3- 2 3- 6 3-10 4- 2 4- 6 4-10 5- 2	20 x 14 16 18 20 22 24 26 28	6 1/2 x 14 16 18 20 22 24 26 28	20 x 6 3/4 7 3/4 8 3/4 9 3/4 10 3/4 11 3/4 12 3/4 13 3/4	6 1/2 x 7 8 9 10 11 12 13 14	6 21/32 x 8 9 10 11 12 13 14																																				
2-4 x 2-10 3- 2 3- 6 3-10 4- 2 4- 6 4-10 5- 2	24 x 14 16 18 20 22 24 26 28	7 27/32 x 14 16 18 20 22 24 26 28	24 x 6 3/4 7 3/4 8 3/4 9 3/4 10 3/4 11 3/4 12 3/4 13 3/4	7 27/32 x 7 8 9 10 11 12 13 14	8 x 8 9 10 11 12 13 14																																				
2-8 x 2-10 3- 2 3- 6 3-10 4- 2 4- 6 4-10 5- 2	28 x 14 16 18 20 22 24 26 28	9 5/32 x 14 16 18 20 22 24 26 28	28 x 6 3/4 7 3/4 8 3/4 9 3/4 10 3/4 11 3/4 12 3/4 13 3/4	9 5/32 x 7 8 9 10 11 12 13 14	9 11/32 x 10 12 13 14																																				
3-0 x 2-10 3-10 4- 6 4-10 5- 2	32 x 14 20 24 26 28	Top 4 Lt. W. 7 13/16 x 14 20 24 26 28	32 x 6 3/4 9 3/4 11 3/4 12 3/4 13 3/4	Top 8 Lt. 7 13/16 x 7 10 12 13 14	16 Lt. 7 13/16 x 10 12 14																																				
3-4 x 4- 6 4-10 5- 2	36 x 24 26 28	8 13/16 x 24 26 28	36 x 11 3/4 12 3/4 13 3/4	8 13/16 x 12 13 14	8 13/16 x 12 13 14																																				
3-8 x 4- 6 5- 2	40 x 24 28	9 13/16 x 24 28	40 x 11 3/4 13 3/4	9 13/16 x 12 14	9 13/16 x 12 14																																				
Note: The windows on this page are made 1/8 in. narrower and 1/16 in. shorter than window opening sizes listed. Dimensions for wood parts such as stiles, muntins, etc. are face measurements.	<table border="0"> <tr> <td>Stiles.....</td> <td>1 29/32"</td> <td>St.....</td> <td>1 29/32"</td> <td>St.*.....</td> <td>1 21/32"</td> </tr> <tr> <td>Top Rail.....</td> <td>1 29/32"</td> <td>T.R.....</td> <td>1 21/32"</td> <td>T.R.....</td> <td>1 21/32"</td> </tr> <tr> <td>Bottom Rail.....</td> <td>3 "</td> <td>B.R.....</td> <td>3 "</td> <td>B.R.....</td> <td>2 3/4 "</td> </tr> <tr> <td>Vertical Bar.....</td> <td>3/16 "</td> <td>V.B.....</td> <td>3/16 "</td> <td>V.B.....</td> <td>3/16 "</td> </tr> <tr> <td>Horizontal Bar.....</td> <td>7/16 "</td> <td>Mun.....</td> <td>3/16 "</td> <td>Mun.....</td> <td>3/16 "</td> </tr> <tr> <td>Check Rail.....</td> <td>1 3/32"</td> <td>C.R.....</td> <td>1 3/32"</td> <td>C.R.....</td> <td>1 3/32"</td> </tr> </table>					Stiles.....	1 29/32"	St.....	1 29/32"	St.*.....	1 21/32"	Top Rail.....	1 29/32"	T.R.....	1 21/32"	T.R.....	1 21/32"	Bottom Rail.....	3 "	B.R.....	3 "	B.R.....	2 3/4 "	Vertical Bar.....	3/16 "	V.B.....	3/16 "	V.B.....	3/16 "	Horizontal Bar.....	7/16 "	Mun.....	3/16 "	Mun.....	3/16 "	Check Rail.....	1 3/32"	C.R.....	1 3/32"	C.R.....	1 3/32"
Stiles.....	1 29/32"	St.....	1 29/32"	St.*.....	1 21/32"																																				
Top Rail.....	1 29/32"	T.R.....	1 21/32"	T.R.....	1 21/32"																																				
Bottom Rail.....	3 "	B.R.....	3 "	B.R.....	2 3/4 "																																				
Vertical Bar.....	3/16 "	V.B.....	3/16 "	V.B.....	3/16 "																																				
Horizontal Bar.....	7/16 "	Mun.....	3/16 "	Mun.....	3/16 "																																				
Check Rail.....	1 3/32"	C.R.....	1 3/32"	C.R.....	1 3/32"																																				

* Stiles for 16 Lt. sash are 1 29/32 in. Other window parts are the same.

Something *Really* NEW in lightingware

CORNING "FOTA-LITE"

*The glass with
sealed-in louvers*



Now you can get "egg crate" fluorescent lighting effect *without the egg crate!* Corning "Fota-Lite" is a new glass in which vertical louvers are photographically transferred to the full thickness of the glass.

EASY TO CLEAN. "Fota-Lite" presents a smooth surface which you can wipe clean quickly—something that is impossible with ordinary exposed louvers. Since you can completely enclose the fixture, both tubes and reflectors also remain clean. Thus, you never lose original efficiency through the accumulation of grime and dust.

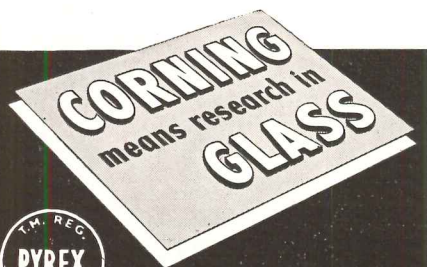
HIGH EFFICIENCY. Brightness at high angles is low. Yet, the transparent area is comparable to the finest crystal. Light directed vertically is almost unrestricted but a slight surface diffusion obscures tubes and reflectors. The 45° cut off is obtained within the thickness of the glass ($\frac{1}{8}$ ") instead of bulky and costly louvering materials.

NO COLOR CHANGE. The opalescent louvers are non-selective in color transmission and as they are sealed within the glass surface, discoloration is impossible. This is important in maintaining original color values.

▶ **SEE** this sensational new development at the Corning Exhibit, International Lighting Exposition, Booth No. 13, Hotel Stevens, Chicago, March 29 to April 1, or write for further information.

LIGHTINGWARE

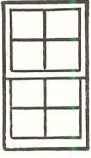
CORNING GLASS WORKS, CORNING, NEW YORK




MODULAR DESIGN DATA FOR WOOD WINDOWS



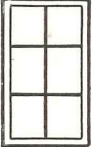
(Continued from page 143)

Window or sash opening sizes are in bold face type; glass sizes are in ordinary type.

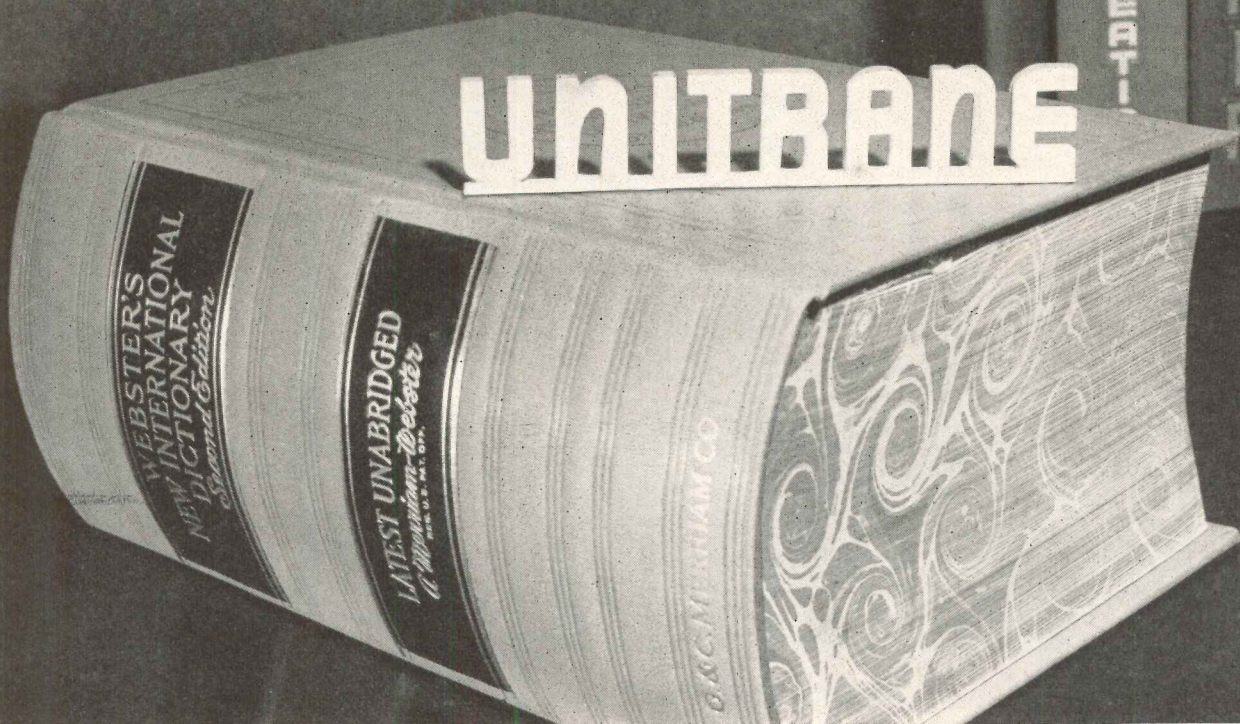
PLAIN RAIL WINDOWS 1 1/8"	
St. 1 21/32" T.R. 2 3/16" B.R. 2 3/16" M.R. 1 3/32" V.B. 7/16" Mun. 3/16"	 8 Lt.
1-8 x 3-10 2-0 x 4- 6 2-4 x 5- 2	8 x 10 10 x 12 12 x 14
St. 1 21/32" T.R. 2 3/16" B.R. 2 3/16" M.R. 1 3/32" V.B. 3/16" Mun. 3/16"	12 Lights 3 Wide
2-4 x 3-10 4- 6 2-8 x 4- 6 3-0 x 4- 6	8 x 10 12 9 11/32 x 12 10 21/32 x 12
Note: Windows are made 1/8" narrower and 1/16" shorter than opening sizes given above.	

STORM SASH AND SCREENS 1 1/8"	
Storm Sash St. 1 29/32" T.R. 1 29/32" B.R. 4 1/16" C.R. 7/8"	Screens St. 1 27/32" T.R. 1 27/32" B.R. 3" C.R. 5/8"
Storm Sash and Screens are made 1/8" narrower and 1" longer than window opening sizes.	

CELLAR SASH 1 1/8" AND 1 3/8"	
St. 1 21/32" T.R. 1 29/32" B.R. 1 29/32" V.B. 7/16"	 2 Lt.
2-0 x 1-4 2-4 x 1-4 1-8 2-0	10 x 12 12 x 12 16 20
St. 1 21/32" T.R. 1 29/32" B.R. 1 29/32" V.B. 3/16"	3 Lights Wide
2-4 x 1-4 2-8 x 1-0 1-4 1-8 3-0 x 1-4 1-8 3-4 x 1-8	8 x 12 9 11/32 x 8 12 16 10 21/32 x 12 16 12 x 16
St. 1 29/32" T.R. 1 29/32" B.R. 1 29/32" V.B. 3/16"	4 Lights Wide
3-8 x 1-4 1-8 4-4 x 1-4 1-8	9 13/16 x 12 16 11 13/16 x 12 16
Note: Sash are made 1/8" narrower and 1/8" shorter than opening sizes given above.	

CASEMENT SASH, 1 3/8"					
SASH OPENING	 1 Lt.	 3 Lt. H.	4 Lights High	 6 Lt. 2 W.	8 Lights 2 Wide
1-3 1/2 x 3- 2 3-10 4- 6	12 x 33 41 49	12 x 10 13/16 13 1/2	12 x 10 1/16 12 1/16	5 7/8 x 10 13/16 13 1/2	5 7/8 x 10 1/16 12 1/16
1-7 1/2 x 3- 2 3-10 4- 6	16 x 33 41 49	16 x 10 13/16 13 1/2	16 x 10 1/16 12 1/16	7 7/8 x 10 13/16 13 1/2	7 7/8 x 10 1/16 12 1/16
Stiles 1 21/32" Bottom Rail 3" Muntin 3/16" Top Rail 1 29/32" Vertical Bar 3/16"					
Note: Sash are made 1/8" narrower and 1/32" shorter than opening sizes given above.					

TRANE



Air Conditioning – Unabridged

The new name for air conditioning is UniTrane. It's too new for the dictionary—but it does have one important feature in common with the big Merriam-Webster book: both are complete—*unabridged*.

UniTrane is not merely a new system. It is a new kind of air conditioning. And it deserves a new name: It is a *Unit* system. It is a *Trane* system. It is a *UniTrane* system.

UniTrane air conditioning has individual room temperature control, moisture control, ventilation control. Filtered air. All *without* ducts.

It is designed for big buildings with small rooms. Office buildings. Hotels. Hospitals.

Type MC UniTrane units have *two* circuits in one cabinet. One circuit controls ventilation and moisture. The other circuit controls

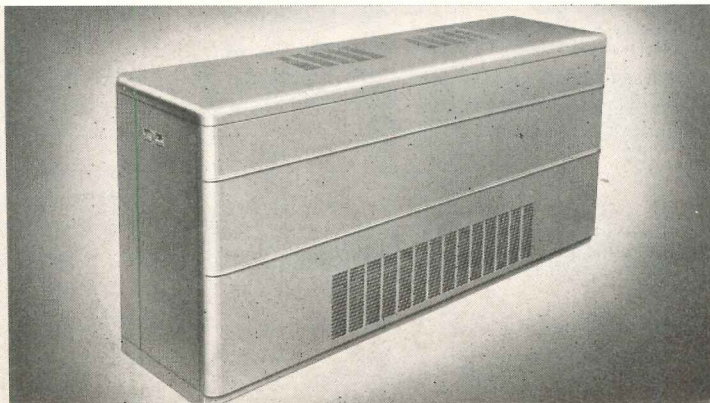
room temperature. The two circuits work together, but they are independently adjustable. There is no other system like it.

And no ducts! Just simple piping, like a hot water heating system. You circulate hot water in winter, chilled water in the summer. It's as simple as that.

Read "Merely a Matter of Air" for non-technical information about UniTrane. See Bulletin DS-420 for professional data. The Trane sales office in your area is ready to tell you many interesting things about UniTrane—Air Conditioning, unabridged.

THE TRANE COMPANY...LA CROSSE, WISCONSIN
Manufacturing Engineers of Heating, Ventilating and Air Conditioning Equipment—Unit Heaters, Convector-radiators, Heating and Cooling Coils, Fans, Compressors, Air Conditioners, Unit Ventilators, Special Heat Exchange Equipment, Steam and Hot Water Heating Specialties. IN CANADA, TRANE COMPANY OF CANADA, LTD., TORONTO.

This Type MC UniTrane Room Unit is beautifully styled for underwindow installation in offices, hotels, hospitals, and other multi-room buildings. Each room has its own temperature, moisture, and ventilation control... Data bulletin DS-420 is for architects and engineers... "Merely a Matter of Air" is an interesting non-technical discussion of multi-room air conditioning.



NEWS FROM CANADA

(Continued from page 146)

Nott and Merrill Photo



New York Architect Louis Skidmore (left) is presented with an inscribed monel metal memento by L. E. Shore, president of the Ontario Association of Architects, on behalf of the Association at its Toronto meeting. Mr. Skidmore received the honor in recognition of his part in planning important international projects such as the United Nations Center and the Atomic Energy Commission's Oak Ridge

Skidmore, Owings and Merrill, who extended fraternal greetings from architects in the U.S.

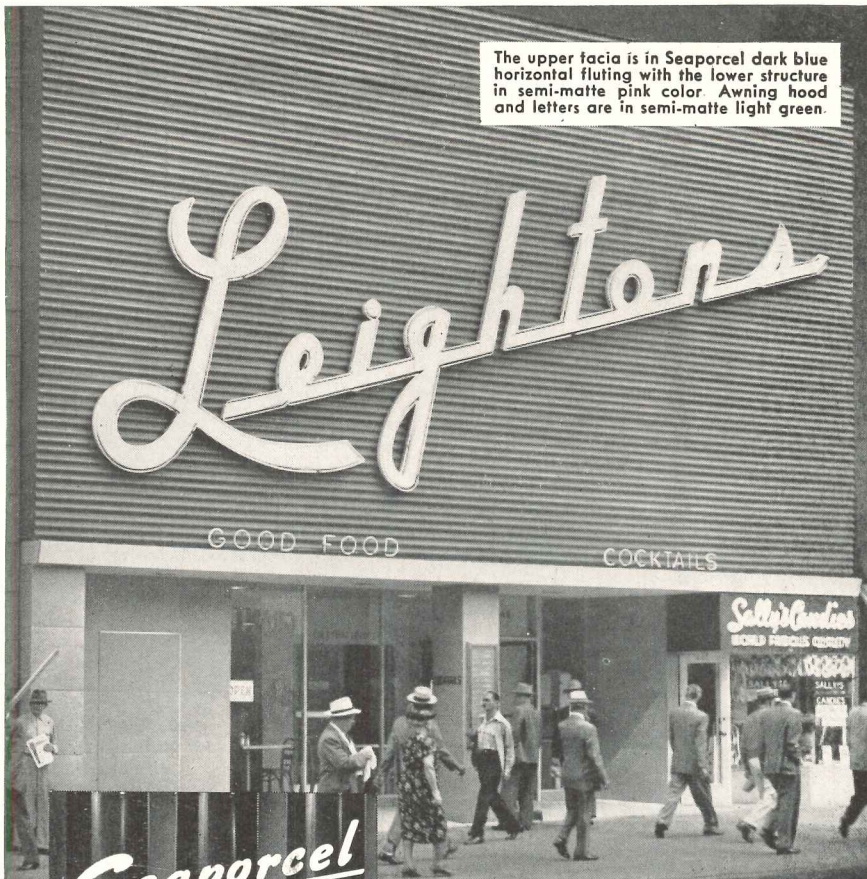
First Home Show Scheduled

Canada's first National Home Show will be staged in the Canadian National Exhibition's Horticultural Building, Toronto, May 20-28. It will feature demonstrations of new methods, materials and equipment calculated to produce better, cheaper building. Co-sponsors are the National House Builders' Association and the Toronto Metropolitan Home Builders' Association.

New P.M. Says Subsidies Out

Pressure for subsidized housing has been mounting. It is favored by the Canadian Federation of Mayors and Municipalities, the Canadian Construction Association, the Royal Architectural Institute of Canada, the Canadian Welfare Council and many other organizations. However, the Dominion Government appears to have a low estimate of the political potency of

(Continued on page 150)



The upper fascia is in Seaporcel dark blue horizontal fluting with the lower structure in semi-matte pink color. Awning hood and letters are in semi-matte light green.

Seaporcel
PORCELAIN ENAMEL

One of many stock dies

Architectural SHAPED Parts are

PRACTICAL

LIGHTWEIGHT • DURABLE • ECONOMICAL
FIRE PROOF • EASILY CLEANED

The entire facade of Leighton's new building in Los Angeles, California shows how one of a variety of Seaporcel* "shaped" parts has been applied for esthetic as well as practical value.

BEARING IN MIND the ease of installation, the negligible maintenance cost, its strength, long life and beauty of fadeless color (which is almost limitless) and you have the reasons for architects' preference for Seaporcel architectural material in designing store fronts, entire build-

ing facades and even interiors.

EXTRUDED OR REVERSE, Seaporcel "shaped" or custom fabricated parts are obtainable in such versatile surface textures as "terra cotta," "limestone," "granite," in semi-matte, matte or gloss finishes.

Write today for catalog showing applications and current jobs.

SEAPORCEL METALS, INC.

Formerly Porcelain Metals, Inc.

28-02 Borden Ave., Long Island City 1, N. Y.
Complete A. F. of L.-Metal Fabricating & Enameling Shop

Also manufactured on the West Coast

SEAPORCEL CORPORATION OF CALIFORNIA

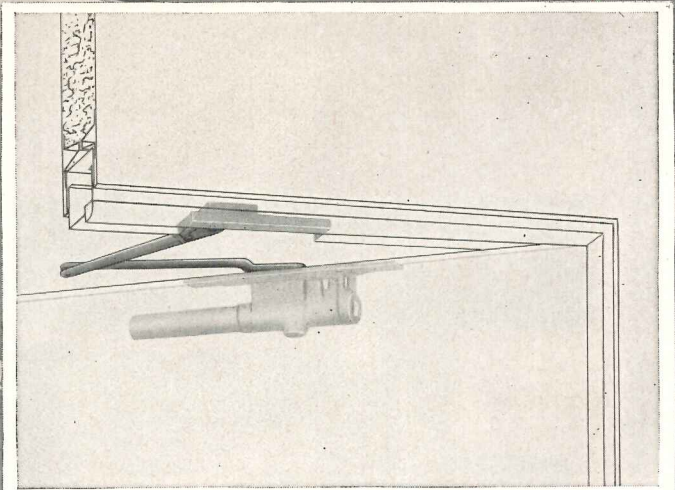
Represented by Douglas McFarland & Co., 1491 Canal St., Long Beach, Cal.



*Reg. U.S. Pat. Off.

Seaporcel

Member Porcelain Enamel Institute, Inc.



● Designed especially for use in metal door and frame construction, the LCN No. 304 Closer is concealed within the door. Requiring only $1\frac{5}{16}$ " in width, it fits easily into a $1\frac{3}{4}$ " door prepared by the fabricator, and is secured by machine screws. The arm connects with a soffit plate in the head frame, where a three-point mounting allows for adjustment to local conditions.

In This "Lab" Everything Has to be Right

So the Steel Partition Doors Have LCN Concealed Closers

● Modern from top to bottom is the new Whiting Research Laboratory, designed for Standard Oil Company of Indiana by Holabird & Root & Burgee, Architects.

The movable steel walls, fabricated by The E. F. Hauserman Co., have hollow metal doors equipped with LCN No. 304 Closers Concealed-in-door. The powerful mechanism of this closer is entirely hidden in the door itself, and with its unobtrusive lever arm will handle easily any metal interior swing door up to $3'6"$ x $7'$ x $1\frac{3}{4}"$ in size, and will operate efficiently under common conditions of in-

ternal draft and heavy traffic for which a simple adjustment is provided.

A hold-open feature is available where desired, as an integral part of the closer. Back-check action (to protect walls and fixtures on the opening swing) is always included.

This is but one of LCN's eleven types of concealed door control based on over twenty years of engineering and manufacture in this special field. LCN Catalog 11-a, almost a manual on the subject, promptly sent on request. LCN Closers, Inc., 466 West Superior Street, Chicago 10, Illinois.

OVERHEAD AND FLOOR CONCEALED



AND EXPOSED TYPE DOOR CLOSERS

(Continued from page 148)

these groups. Beyond providing a concealed grant to the veterans' housing program carried on by Central Mortgage and Housing Corporation, it has disregarded the subsidy plea.

Public housers were not hopeful of a change in attitude when Louis St. Laurent sat down in the chair so long warmed by Mr. William Lyon Mackenzie King. (Mr. St. Laurent once declared that no government of which he was a member would ever subsidize housing.) It turns out they were right. At a recent press conference, the new Prime Minister expressed belief that lack of money was not holding back building. Since all possible manpower and material was going into it, government subsidies were not needed to sustain housing construction.

This, of course, is not the housers' argument at all. They don't say subsidies are needed to sustain housing construction. They say they are needed to enable low-income families to occupy a percentage of the housing built. Misinterpretation of their object, though perhaps unintentional, drives them to distraction. One protests, "It seems obvious that the concept of subsidized low-rental housing is not well understood . . . on the part of the new Prime Minister."

Building Costs Level Off

"The most encouraging sign in the construction cost field in 1948 is the leveling off of the marked price increases of 1946 and 1947," Central Mortgage and Housing Corporation reports in the latest issue of *Housing in Canada*, a quarterly review of major trends in the shelter field.

Attributed to a more moderate rise of material prices in 1948 as compared with the very rapid increase of the previous year, the combined index of building material wholesale prices and wage rates in construction trades increased only 7 per cent from January to September of 1948 as compared to a 17 per cent increase in the first nine months of 1947. The 1948 increase is made up of a 6 per cent rise in the composite index of building material wholesale prices and a 9 per cent gain in the index of average hourly wage rates (including holiday pay allowances) paid to building workers.

(Continued on page 152)

AND DISPLAYS

send for your copy *today!*

Special sizes in any style require title

MICHAELS PRODUCTS

STOREFRONTS · DOORS
· THRESHOLDS ·
LETTERING · ASTRAGALS
· BRONZE PLAQUES ·

THE MICHAELS ART BRONZE CO., INC. COVINGTON, KENTUCKY

Every architect and builder should have a copy of this brochure. It contains much information on Michaels building products . . . products that are well known for their unusually high quality. And architects have found that Michaels has the men, the machines, and the know-how to faithfully reproduce in metal their most exacting specifications. A partial list of Michaels stainless steel, aluminum and bronze products is shown below. If your plans call for something special, send us the blueprints. We'll be glad to submit quotations. It will be to your advantage to talk over your requirements with Michaels.

MICHAELS PRODUCTS

- | | |
|---|---|
| <ul style="list-style-type: none"> Bank Screens and Partitions Welded Bronze Doors Elevator Doors Store Fronts Lettering Check Desks (standing and wall) Lamp Standards Marqueses Tablets and Signs Name Plates | <ul style="list-style-type: none"> Astragals (adjustable) Stair Railings (cast and wrought) Wrought and Cast Radiator Grilles Grilles and Wickets Kick and Push Plates Push Bars Cast Thresholds Extruded Thresholds MI-CO Parking Meters Museum Trophy Cases |
|---|---|

The MICHAELS ART BRONZE Co., Inc., 234 Scott St., Covington, Ky.
Representatives Wanted



FREE!

New Booklet to help
you sell
more (and better)

SCHOOL LIGHTING

16 pages of
facts and photos

FREE . . . all the
copies you need

Here's a real selling tool . . . an easy-to-understand booklet that points out the need for better school lighting—then *shows what steps can be taken to get a school lighting program started.*

Put this booklet to work for you. Send it to educators, parents, PTA members—all the many hard-to-reach people who must support a school lighting program. *Not fixture advertising!* This is an understandable, objective case history of a planned school lighting program that will help overcome that "What can we do about it" public indifference. Let it help you **SELL** school lighting . . . the need for it . . . how to get it.

159



IT'S EASY TO SEE WHEN IT'S

DAY-BRITE
Lighting

Day-Brite fluorescent fixtures are engineered for every seeing task. Distributed nationally by leading electrical suppliers.



Authoritative because it's an actual account of how the citizens of Denver, Colorado, completely relighted their Public School buildings.

Fact-filled—step-by-step through the Denver story—answers such questions as:

- What's a good way to get started?
 - Who can help?
 - What is the best lighting layout?
 - How does color of paint affect lighting?
 - What about new wiring?
 - What about maintenance?
- ... and many, many others.

... as many copies as you need . . . courtesy
of **Day-Brite! Clip and mail coupon—TODAY!**

To: DAY-BRITE LIGHTING

5465 Bulwer Avenue, St. Louis 7, Missouri

In Canada: Amalgamated Electric Corp., Ltd., Toronto, 6, Ont.

Please send me, free and postage prepaid, _____ copies of your new booklet, "It Happened in Denver's Schools." I understand there's no obligation.

Name (Please Print) _____

Address _____

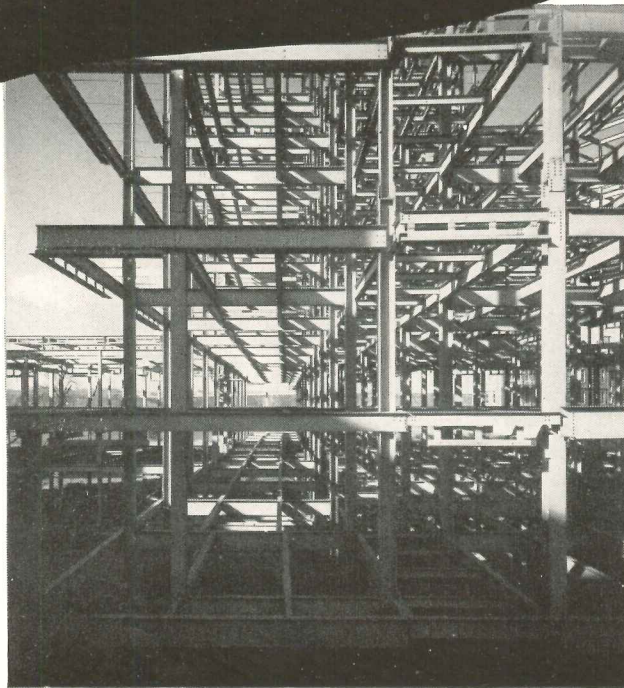
City _____

State _____

Stop Hidden RUST

with

RUST-OLEUM



Tough, elastic, enduring—Rust-Oleum defies rust-producing conditions years longer—protects the structural strength of steel.

Industry-proved Coating Rustproofs Metal Against Moisture Damage in Sealed Spaces

For structural protection, specify the use of Rust-Oleum on all iron and steel — particularly in inaccessible areas where condensation causes rust. Rust-Oleum positively stops rust and adds years of life to structural members, pipes, sheet metal, etc. which are difficult or impossible to reach in normal maintenance.

Indoors or out — Rust-Oleum seals metal with a tough, pliable, destruction-proof coating. Originally developed to resist the highly corrosive effects of salt water and salt air, under tough sea-faring conditions, Rust-Oleum gives lasting protection where ordinary materials fail. It's *your* best answer to all rust problems.

We will gladly offer specific recommendations on Rust-Oleum application and uses, if you will give us full information as to technical requirements. See the complete Rust-Oleum catalog in Sweet's, or write for a copy.



PERSONAL—Do you have a rust problem? We'll be glad to send a free sample for a test application on your car or at home. Be sure to state color preference.

RUST-OLEUM CORPORATION

2479 Oakton Street

Evanston, Illinois

NEWS FROM CANADA

(Continued from page 150)

Planners Hear Detroit Expert

That able fledgling, the Institute of Professional Town Planners, held its annual meeting on January 28 in Toronto. Two principal subjects were dealt with: the planning accomplishments of the past five years and the methods to be employed in solving problems that remain.

George F. Emery, Director of the Detroit Planning Commission, was guest speaker at the luncheon session. He told delegates how the one and one third billion dollar Detroit plan would be implemented. The plan provides for a new civic center, riverfront development, improved cultural, educational and recreational facilities, more efficient transportation, slum clearance and public housing. "The citizens can have all this," Mr. Emery declared, "without adding more to their tax bills than they annually spend on movies."

Completion Time Stands Still

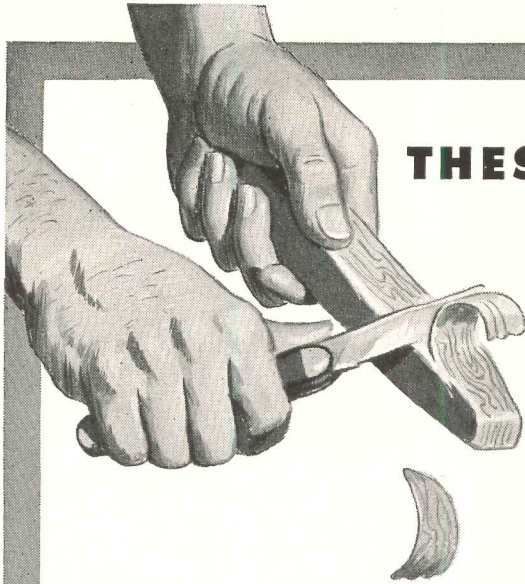
The Dominion Bureau of Statistics reports that 68,103 dwelling units were completed in Canada in the first 11 months of 1948. Those finished in November took an average of 6.0 months to build, a figure showing practically no change from October's 6.1 months.

Report on Building Research

A year-end summary of the work of the National Research Council pays tribute to the Division of Building Research. The Division has, it appears, continued its close cooperation with Central Mortgage and Housing Corporation. Joint studies have been made of such problems as paint deterioration and basementless houses, and a long-term study of mortar deterioration is about to be launched. The first of a series of technical reports — a directory of commercial testing laboratories — has been prepared and published.

The construction industry is particularly interested in the work done by the section of the Division dealing with codes and specifications. Worthwhile results are expected from a meeting of municipal officials held in Ottawa, February 28–March 1. The meeting aimed at full discussion of existing building codes with reference to the start of further work on the National Building Code. The Code, which appeared in

(Continued on page 154)



THESE CURTIS "READY-MADES"
help you whittle down
BUILDING COSTS

When stock design woodwork achieves custom-built distinction—at lower cost—that's news for today's home planners and home builders! And that's why Curtis Woodwork is used so extensively in giving home-owners "more for their money." For Curtis Woodwork makes excellent design and quality construction available for any size or type of home. Here are a few reasons why:



You can give any room the proper focus without expensive special millwork. This Curtis mantel, for example—Design C-6040—has a pleasing simplicity which gives it dignity and beauty. Designed for Curtis by Cameron Clark, Architect.



You can see the sure touch of a master designer in this charming Curtis entrance—Design C-1730. H. Roy Kelley, Architect. Curtis entrances assure lasting value and beauty.



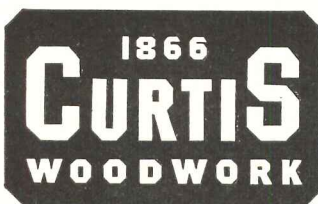
A fine cabinet for the home owner who wants something out of the ordinary—Curtis Design C-6515. The Architect was Russell F. Whitehead. Curtis offers 18 styles of cabinets.

**A NEW Curtis Development—
 PRESPINE**

Developed after years of research and testing, Curtis Prespine is a new wood material for use in panels in Curtis doors and as an integral part of other Curtis Woodwork. Prespine has a hard, satin-smooth surface that takes paint and other finishes beautifully. Tough and durable, Prespine will not warp, check or splinter. It is 93% wood—and resembles in color the species wood from which it is made. Picture on right shows the beauty of Curtis doors with Prespine panels.



When in New York, visit the Curtis Woodwork Display at Architects' Samples Corporation, 101 Park Avenue.



MAIL COUPON for complete information

CURTIS COMPANIES SERVICE BUREAU
 AR-3W Curtis Building, Clinton, Iowa

Gentlemen:

Please send me your book on Curtis Stock Architectural Woodwork.

Name.....

Address.....

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

I am () Architect, () Contractor, () Prospective Home Builder, () Student. Please check.



Only Wing Revolving Heaters Circulate the Heated Air Around Obstructions

AS the air from roof or ceiling areas is passed through the heating element of a Wing Revolving Unit Heater and projected downward through discharge outlets that slowly revolve, the heated air is not delivered to the working area in single-direction blasts, but

in moving air-streams that sweep slowly through 360 degrees, covering successively every direction. The heated air moves around and under obstructions reaching to walls and remote corners. Every part of the plant is thus kept at an invigorating comfortable temperature.

L.J. Wing Mfg. Co. 151 W. 14th St., New York 11, N. Y.

Factories: Newark, N. J. and Montreal, Canada



Wing

Revolving UNIT HEATERS

NEWS FROM CANADA

(Continued from page 152)

1941, has not had the recognition and application originally hoped for.

\$670 Million since 1927

In an introduction to the 1949 edition of the *Book of Homes*, a MacLean-Hunter publication, D. B. Mansur, president of Central Mortgage and Housing Corporation, states that the outlay of federal funds and guarantees for housing has reached a figure in the neighborhood of \$670 million. Since the Canadian Farm Loans Act was passed in 1927, the Dominion Government has contributed financial assistance or taken a direct part in the construction of more than 150,000 dwelling units. The greatest volume of government assistance was funneled through the Dominion Housing Act and the two National Housing Acts which superseded this legislation.

The figure of \$670 million may seem to be a staggering amount. Actually, it is little more than the anticipated budgetary surplus rolled up by Canadian taxpayers for the Dominion Government in 1948.

Growing Pains in Edmonton

Edmonton, Alberta, faces one of the most serious housing crises in its history. The population has mushroomed, largely because of the sensational oil discoveries in the province.

The house production target for 1949 is 3000 units, 1000 more than was aimed at previously. It is proposed that 400 of these be built according to a plan for small, basementless houses developed by the Edmonton House Builders' Association. Available in three sizes — one, two and three bedrooms — and seven different exterior designs, these dwellings would meet local and national minimum building standards and require a down payment of only \$700 or \$800. The plan has been submitted to Central Mortgage and Housing Corporation for approval under the National Housing Act. Ways of restricting sales to Edmontonians with monthly incomes of less than \$200 are being reviewed.

Rental Ceiling Gets Boost

Central Mortgage and Housing Corporation announces that the ceiling on rentals for completely serviced dwelling units covered by rental insurance

(Continued on page 156)

Close-up of the Empire Savings facade shows effective use of bronze against background of black Italian marble. Heavy outer doors are made of cast panels framed in Anaconda Extruded Bronze. Grille above is fabricated from red brass sheet, rod and tubes. The street windows, presenting dioramas of the Old West, are also framed in Anaconda Bronze.

Private office partitions at Empire Savings are formed of glass panels supported by Architectural Bronze frames.



PHOTOS BY SOUNDSTILLS, DENVER.



THE OLD WEST GOES MODERN ... IN TIMELESS Bronze

SCENES OF THE WEST in its wild and wooly days provide the motif for the ultra modern decor of Denver's new Empire Savings Building.

Architect for the new home of the Empire Savings Building and Loan Association is Roger J. Musick, of Denver. Architectural bronze work was fabricated by the William G. Zimmerman Ornamental Iron Works, also of Denver.

Except for the bronze castings and other materials for color contrast, Mr. Zimmerman employed Anaconda Alloys exclusively — extruded architectural bronze shapes, red brass rod, sheet and tube.

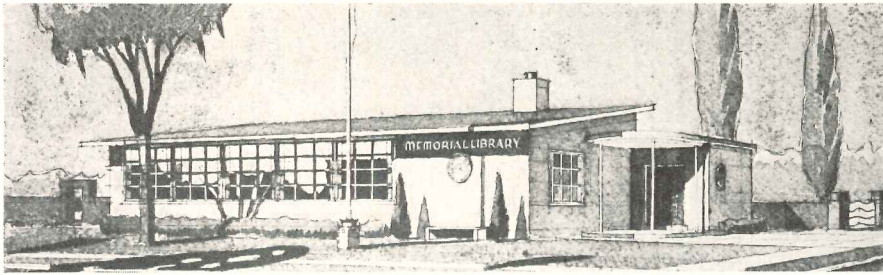
In adding this work to his long list of artistic achievements, Mr. Zimmerman reaffirms his confidence in the uniformity of Anaconda Architectural Bronze in color, texture and physical properties.

4901



Anaconda
ARCHITECTURAL BRONZE
THE AMERICAN BRASS COMPANY

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



Long Branch, Ont., war memorial: a public library. Murray Brown & Elton, Architects

KENILWORTH HOTEL
MIAMI BEACH, FLORIDA
Roy F. France & Son
Architects

Designed for exterior beauty as well as for indoor comfort, Gate City Awning Windows lend interest to the architectural design of this well known hotel. From the strictly formal pattern made by the closed sash to the distinctive lacy effect of the open tiers, the result is always pleasing. Even when the sash are opened their widest, the window space does not resemble a "hole in the wall".



"TAILORED" COMFORT
for Apartment Houses and Hotels

Gate City Awning Windows permit both the apartment dweller and the hotel guest to "tailor" the ventilation to their needs. These windows have twice the ventilating area of ordinary windows. A few easy turns of a handle open them to the exact degree desired.

When open, the sash draw in the fresh outdoor air . . . keep it gently moving at the ceiling . . . cool off stuffy rooms on hot days . . . prevent rain from damaging floors and decoration. Made of wood, these windows

are rigid . . . sturdy. They cannot squeak, slam, flutter or rattle—important features which add still further to the comfort of the guest.

Nation-wide installations prove that Gate City Awning Windows meet the requirements of Northern climates as well as those of the South. Vertical weatherstripping is standard; horizontal weatherstripping on order. For further information, see Sweet's, or write to Gate City Sash & Door Co., Dept. R-3, Fort Lauderdale, Fla.

AWNING WINDOWS BY
Gate City

Offices and Factory: Fort Lauderdale, Florida • Export Sales Representative: Frazar & Company, 50 Church Street, New York 7, U.S.A. • Cable Address: Frazar, N. Y. • Agents in principal cities throughout the world.

has been raised from \$80 to \$84 per month. This maximum rental has been established for living units comprising 800 sq. ft. and provided with heat, hot and cold water, stove, refrigerator and janitor.

The insurance program, introduced last year, guarantees builders of approved rental housing projects sufficient income to look after taxes, debt service, operating expenses, repairs, renewals and replacements. Rental insurance may be purchased for 10, 20 or 30 year periods, with annual premiums of $1\frac{3}{4}$, 2 and $2\frac{1}{4}$ per cent of the insured rentals.

Loans on insured rental housing projects are made directly by recognized mortgage institutions, and are authorized up to 85 per cent of present costs, as estimated by Central Mortgage. The mortgage repayment period is 20 years, with principal repayments at $2\frac{1}{2}$ per cent per annum. The maximum interest rate is $4\frac{1}{4}$ per cent per annum, calculated semi-annually.

Rental insurance, to quote D. B. Mansur, president of the Corporation, "virtually assures that . . . an investor will never lose his property to a mortgagee, no matter what happens to rental levels." The worst that could happen would be that the owner's equity would bear interest at 2 per cent, with amortization of the mortgage continuing at $2\frac{1}{2}$ per cent.

Despite its advantages, the response of investors and builders to the rental insurance program has been luke-warm. The \$4 boost in the rental ceiling may induce more enthusiasm on their part.

Construction Association Meets

Allan C. Ross of Ottawa and Robert Drummond of Toronto were re-elected president and vice president respectively of the Canadian Construction Association at its annual convention in Toronto, January 23-26. T. N. Carter of Toronto was elected honorary secretary and P. G. Wilmot of Montreal honorary treasurer.

The C. C. A. is Canada's leading building organization and its convention deliberations always are of general interest. This year's program proved no exception. Highlights of some of the addresses follow:

1. *End of Cost Rise in Sight.* "While it would be improper to forecast any substantial drop in costs in 1949, there is reason to hope that, if we continue to make progress in restraining inflationary factors, the cost rise may be halted by the end of the year." — Allan

(Continued on page 158)



New AMERICAN STATE BANK,
LUBBOCK, TEXAS, FEATURES

H · H · M DRIVE-IN DEPOSITORY

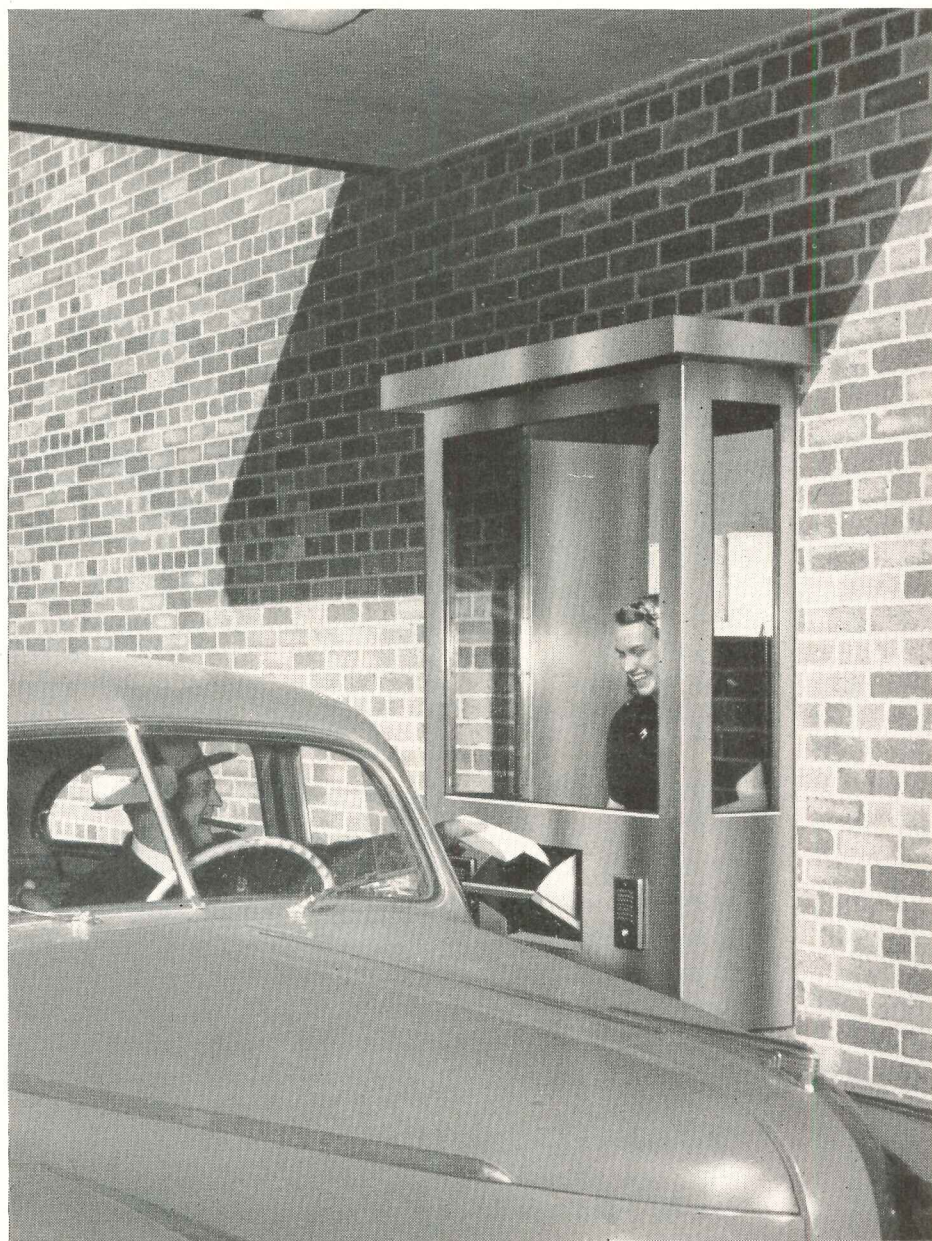
GIVE YOUR BANK JOBS THE MODERN CUSTOMER APPEAL OF H-H-M PROTECTIVE EQUIPMENT

The new H-H-M Drive-In Depository is a good example of why bankers and their architects in ever increasing numbers specify Herring-Hall-Marvin protective equipment.

For the banker, this new feature combines faster deposit service (no customer parking problems) with up-to-the-minute protection . . . bullet-resisting glass, two-way speaking system that permits conversation without exposing the attendant, etc. The specially designed work counter inside puts everything ordinarily needed right at the attendant's fingertips. All weather-exposed metal is stainless steel for lasting beauty with minimum upkeep.

For the architect, it offers greater freedom of design with a choice of installation, flush-to-wall—or projected as shown. It is a compact, complete unit, quickly and easily installed. You simply designate wall opening and a small floor area in your plans; no other provisions are necessary.

We're ready to send specifications and design data on request... *today!*



HERRING · HALL · MARVIN SAFE CO.

See our big, *new* 8-page
catalogue 22a in
8
SWEET'S FILE!

GENERAL OFFICES & FACTORY—HAMILTON, OHIO
BRANCH OFFICES: In New York, Chicago, Boston, Wash-
ington, St. Louis, Atlanta, Houston, Philadelphia, San Francisco,
Los Angeles, Detroit, Pittsburgh, Omaha, Minneapolis,
Charlotte. OTHER AGENCIES ALL OVER THE WORLD.

C. Ross, President, Canadian Construction Association.

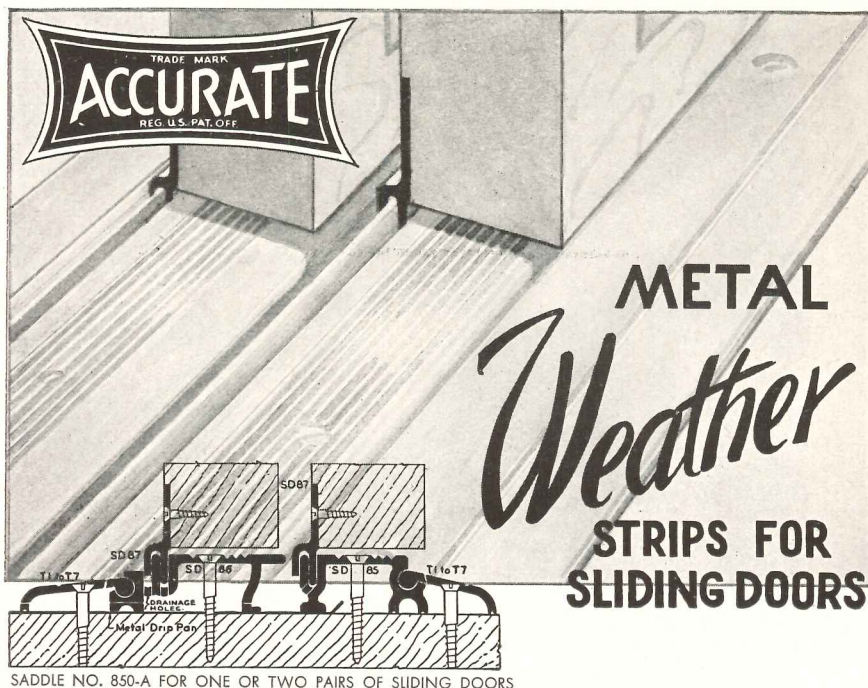
Figures presented to support this prediction showed that the pace at which costs had increased was slowed from 20 per cent in 1947 to approximately 10 per cent in 1948.

2. *Industry to Go Underground.* "I think that it is in this sphere of activity (the decentralization of war plants) that the construction industry

will be called upon to play a major part."

— H. J. Carmichael, Chairman, Canadian Industrial Defence Board.

The Board is working on plans to put the Dominion's vital factories underground to protect them against atomic attack. Two sites have already been selected and surveyed for certain plants which are "of such strategic importance that their destruction would be disastrous."



HERE we have a close-up showing how "Accurate" metal saddles provide smooth gliding movement for sliding doors. Combined with metal track hangers at top of doors, this patented weatherproof arrangement is unequalled for sliding doors leading to porches and terraces. Saddles and track hangers are of finest architectural bronze, precision made for enduring performance. We shall be glad to supply details as to the arrangement best suited to your specific needs.

"Accurate" is a pioneer manufacturer of metal weather strips for all types of buildings. No window, no door, can be better protected against drafts, moisture, termites and heat losses than with "Accurate" Metal Weather Strips.

Write for Illustrated Catalog

ACCURATE METAL WEATHER STRIP CO., Inc.

215 EAST 26th STREET, NEW YORK 10, N. Y.

3. *Shelter Lack Still Apparent.* Effective demand as calculated by the number of completed but unsold houses in the major communities of Canada shows little indication that the country faces . . . a lessening of the need for additional housing. — D. B. Mansur, President, Central Mortgage and Housing Corporation.

Net family formation, including immigration, has kept up with the volume of house building. We have just managed to look after current needs without making much progress on the backlog of demand which accumulated during the war years.

4. *Public Works Shelf Exists.* "In the years beyond 1949 . . . public investment may have to play a more important part than it did in the last four years." — Hon. R. H. Winters, Minister of Reconstruction and Supply.

A public works shelf consisting of fully-planned projects exceeding \$100 million in value has been built up "but much remains to be done. We would like to have a shelf of at least three hundred millions of worthwhile federal projects. If provinces and municipalities would build up a proportionate shelf, this would mean a total of potential public projects of about one billion dollars."

5. *Canada Needs More Apprentices.* "We have to find ways and means of drawing into the ranks of our workers five times as many boys as we have now. And, after we get them, we have to find ways of training them to be good mechanics more quickly and efficiently than is presently the fashion." — J. M. Pigott, Chairman, C.C.A. Apprenticeship Committee.

An early meeting between employers, representatives of organized labor and appropriate departments of government was advocated to face the problem created by apathy to apprenticeship training. Need for an entirely new approach was indicated.

6. *More Steel Unlikely in '49.* Our production of steel ingot in 1949 should increase at least 100,000 net tons over 1948's 3,075,000 total, providing scrap steel continues to flow and there are no major mill breakdowns or strikes. — F. K. Ashbaugh, Dominion Steel Controller.

Canada can hope to import about 800,000 tons of U.S. steel in 1949, about 119,000 less than last year. The deficit will be offset partially by increased imports from Europe. Total steel supply should be about equal to that of last year.

Welded Steel Framework Cuts Cost 50%

By Francis J. Schroedel, President

Schroedel Construction Company, Milwaukee, Wisconsin

DIRECT savings of 50% over masonry and fire resistive construction are being realized in the erection of four 12-family apartment units, eight 16-family units and one 24-family apartment for the Estabrook project in Shorewood, Wisconsin. These savings result from greatly simplified construction methods using steel members for wall frame and floor joists and are made possible by arc welding.

A modular design using 2-foot increments enables mass production arc welding techniques for fast, low-cost shop fabrication of wall panel members for the first and second floors. Bethlehem open-web expanded-steel studs are welded between a channel cap or girt and a sill plate for both the first and second floor panels. Three-quarter inch channel is added between the studs for horizontal bracing.

During field erection, the wall panels are raised into position, held in place with a simple clamp (Fig. 1) and arc welded with $\frac{5}{32}$ " diameter "Fleetweld 5" electrode, using 200-amp. engine-driven Lincoln "Shield-Arc" welders. The first floor framing is welded into an integral unit, and a finished concrete floor is later poured to cover the sill plates thus anchoring the building frame in position.

An "I" beam, supported by two outside



Fig. 1. Arc welding steel panels to form the side walls. Panels are made from 4" Bethlehem expanded steel studs.

walls and the center utility room walls, forms the center support for the expanded steel second floor framework. The erection of the second floor panels is then done without the need for any scaffolding.

Exterior walls are finished with

masonry, and interior plastering is applied to metal lath. In addition to direct cost savings in the building erection, additional benefits are easier, less costly installation of plumbing, wiring and insulation. The structure is both shrink-proof and verminproof.

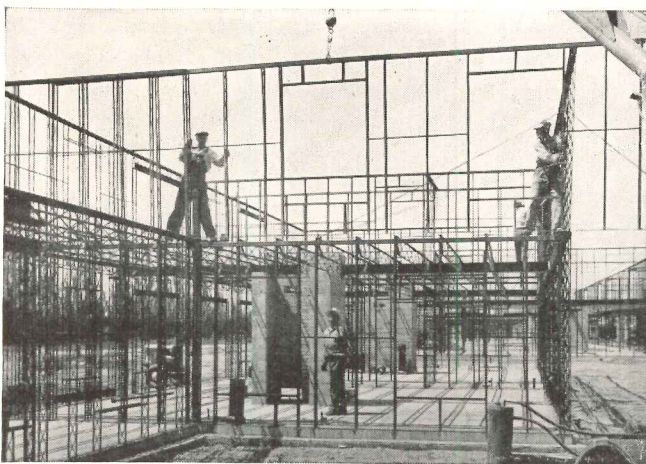


Fig. 2. Placing second floor prefabricated steel wall panels in position. Panels are hoisted and welded in place without use of any scaffolding.

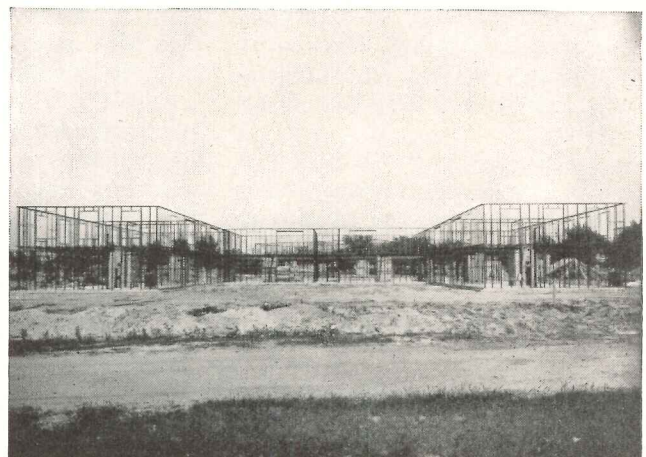


Fig. 3. Framework for one of many multiple family apartments built with all-welded steel construction. The Estabrook Homes project is located in Shorewood, Milwaukee, Wisconsin.

The above is published by **THE LINCOLN ELECTRIC COMPANY** in the interests of progress.
Architects and engineers are invited to write on their letterheads to be placed on mailing list for Structural Welding Studies.
The Lincoln Electric Company, Dept. 151, Cleveland 1, Ohio.

THE RECORD REPORTS (Continued from page 22)

funds can be generated to implement school construction on a heavy scale. This increase is expected to become evident as soon as costs actually start to drop.

The FWA Office said this about the progress of school construction over the past 30 years: "If the rate of public school building in the decade of the 1920's had been continued from 1932 through 1947, we would have today an

additional \$5.5 billion (in terms of 1947 costs) worth of public school plant. The average annual rate of public school construction in recent years, 1940 through 1947, was little more than a fourth of the average annual accomplishment of the 1920's."

Summarized in terms of physical space, the present requirements call for construction of some 200,000 additional new elementary and secondary

classrooms. This takes into account an anticipated enrollment increase of 6.2 million children seven years from now. This can be worked out with fair accuracy on the basis of known birth rate totals.

Public and private sources are concerned over the problems presented in the education picture. They see competing needs for other types of public works (sewer and water facilities, roads, hospitals and other community building types) taking a highly competitive position in the overall building programs. Intensive home construction activity, commercial and industrial building eat up large amounts of building materials, manpower and contracting and engineering potential.

Value of public school construction put in place in 1948 is measured at \$550 million. In terms of physical volume, however, this proves out to be well below the yearly average of the 1920's and not much more than half the volume of public school plant added in 1939.

Many perfectly adequate school structures were found to be "geographically obsolete" due to extensive migration of workers and their families to new production areas during the war. Still another factor in this has been the re-shifting of population accompanying reconversion to a peacetime economy. The shifting pupil loads are creating need for new schools far faster than it can be satisfied.



ON THE CALENDAR

Through March 19: "Piranesi Drawings," exhibition of 79 drawings by Giovanni Battista Piranesi, 18th century Italian architect and etcher. The Pierpont Morgan Library, 29 E. 36th St., New York City.

Through March 20: "American Paintings from the Museum Collection," exhibition at the Museum of Modern Art, New York City.

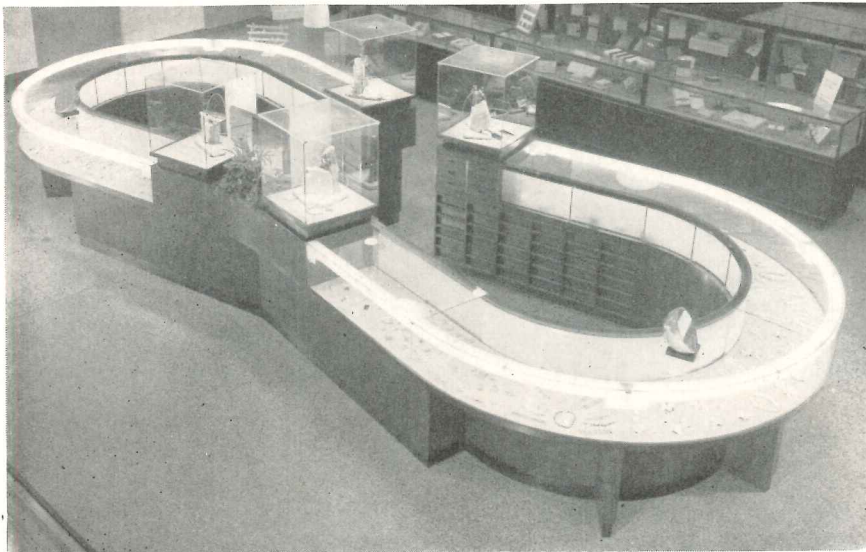
March 4-April 2: Whole-House Architectural Exhibition, The Art Alliance, 251 S. 18th St., Philadelphia, Pa.

March 4-indefinite: "Ancient Art of the Near and Middle East," exhibition at the Metropolitan Museum of Art, New York City.

March 6-31: Survey of 200 Years of Print-Making, exhibition by Kennedy and Company, The Akron Art Institute, Akron, Ohio.

March 14-17: Chicago Technical So-

(Continued on page 162)



Not All Pioneers Used Covered Wagons . . .

SOME, like Bergen Cabinet, used plastics, cold cathode lighting and wood. The picture above shows a recently finished product combining these materials.

Pioneering of this kind (or any other kind) is always a challenge to our skill and know-how in the art of wood fabricating.

So, pitch your best curve on

the drawing board — and we'll catch it! We'll catch your design idea and translate it into tangible, enduring form.

For years, in fact, Bergen Cabinet has been doing just that for many of America's best known architects and biggest firms. "Let's call in Bergen Cabinet," is a decision occurring with ever greater frequency these days.

Write for our Portfolio of "Jobs Well Done." It's worth seeing

Bergen—sure the success of your modernization program with

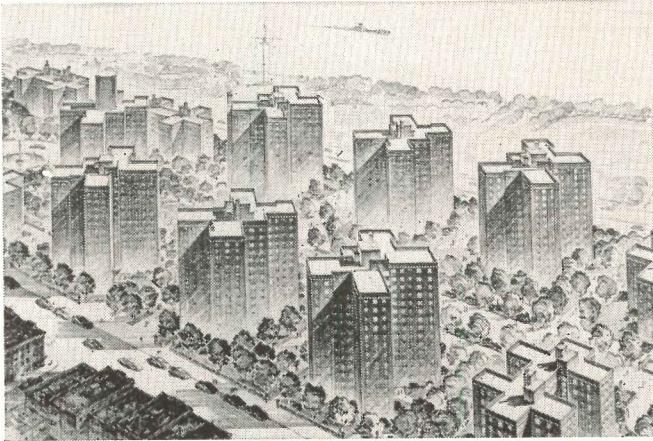


Architectural woodwork that makes the designer's plan an enduring reality

1552-56 BERGEN STREET, BROOKLYN, N. Y.

Phone: PResident 2-3121

For modern housing...



MASS—1768 new apartments in the Jacob Riis Houses in New York City . . . that's mass housing. It is estimated that the Gold Bond Solid Partition System, used throughout, provided over 100 *extra* apartments.

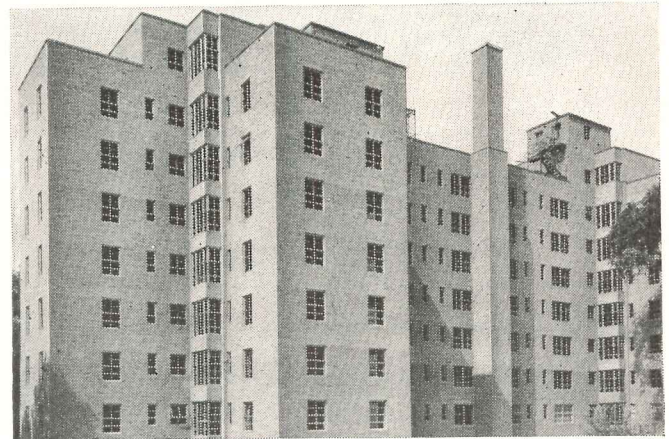


CLASS—One of New York's finest penthouse apartments at 90th Street and Central Park West, where Emery Roth & Sons specified and used the Gold Bond Solid Partition System. Met every exacting requirement. Added 7% rentable space.

mass or class...



LOW COST—The Gold Bond Solid Partition System, approved by New York City's Housing Authority, helped the successful bidder figure his costs down to a minimum. These are the Amsterdam Houses in New York—1084 apartments.



QUALITY—The number one requirement for Tudor Plaza, Buffalo's newest deluxe cooperative apartment building, was "the very best of materials and construction." Gold Bond Solid Partition System met *every* requirement!

Gold Bond Solid Partition System SAVES...

Trying to save every possible nickel on a low cost housing project? Or planning the most up-to-date deluxe apartment? In any case, the Gold Bond Solid Partition System *saves!* Provides about 7% more income-producing, livable *space* than old type walls (about 4 inches per wall) . . . *and at no extra cost!* And the reduction in dead-load saves *additional money!*

Combine this system with the Gold Bond Hollow Wall System to provide space for pipes, ducts, etc. The two separate units may be spaced any distance apart to meet specifications . . . with no ties or bridging. For your next job, check up on Gold Bond Partition Systems. Read about them in Sweet's, or drop us a card for a 15 minute demonstration—without obligation!

You'll build or
remodel better with
Gold Bond

NATIONAL GYPSUM COMPANY
BUFFALO 2, NEW YORK

Over 150 Gold Bond Products including gypsum lath, plaster, lime, wallboards, gypsum sheathing, rock wool insulation, metal lath products and partition systems, wall paint and acoustical materials.

THE RECORD REPORTS (Continued from page 160)

cieties Conference and 7th Chicago Production Show, Stevens Hotel, Chicago.

March 15-18: 81st Annual Convention of the American Institute of Architects, Rice Hotel, Houston, Texas.

March 29-April 1: 3rd National Lighting Exposition, Chicago.

April 11-15: 6th Western Metal Congress and Exposition, Shrine Auditorium, Los Angeles.

April 19-21: South West District Meeting, American Institute of Electrical Engineers, Baker Hotel, Dallas, Texas.

April 20-23: Spring Meeting, American Society of Civil Engineers, Oklahoma City, Okla.

May 1-27: Inaugural Exhibitions in the new building, and 26th Annual May Show of works by local artists, The Akron Art Institute, Akron, Ohio.

THE Sedgwick ROTO-WAITER

...a new kind of fully automatic electric dumb waiter that never overtravels

FOR TWO-STOP INSTALLATIONS... the new Sedgwick Roto-Waiter, with its unique endless chain drive principle of operation, embodies those features of safety, dependability and economy that make it the ideal dumb waiter for stores, hospitals, hotels, restaurants, libraries, clubs, schools, banks, factories, residences and other commercial, institutional and industrial buildings.

The single direction motor helps cut costs by eliminating the need for special control equipment normally required when reversing motors are used—and, by reducing starting torque, it cuts current consumption.

Furthermore, Sedgwick Roto-Waiters . . .

1. Never overtravel
2. Are completely factory assembled and tested
3. Require only minimum clearances
4. Have an overload safety device for safe operation
5. Require no heavy load-bearing supports, except at bottom
6. Are easy to install

The table of dimensions, shown below, lists three standard counter-weighted Roto-Waiters. A Sedgwick uncounterweighted Roto-Waiter (with car size 24" x 24" x 36", 150 lbs. capacity) is also available when the dumb waiter is to be installed in limited space, as for undercounter use.

STANDARD ROTO-WAITER DIMENSIONS			
Size No.	2C	3C	5C
Capacity, lbs.	200	300	500
Car width, in.	24"	30"	36"
Car depth, in.	24"	30"	36"
Hoistway width, in.	33"	39"	45"
Hoistway depth, clear in.	27"	33"	39"
Hoistway depth, including doors, in.	29"	35"	41"

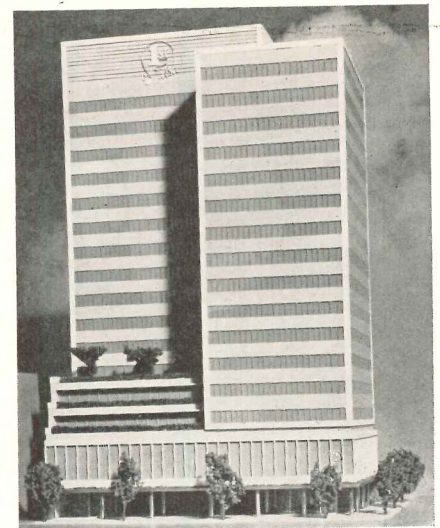
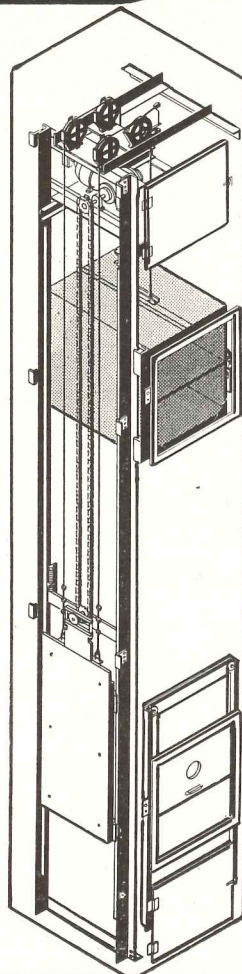
In addition to the Sedgwick Roto-Waiter, Sedgwick also builds Multi-Stop Electric Traction Dumb Waiters, designed for installations where there are three or more landings to be served. Both are of all-steel construction. Specify, too, Sedgwick Steel Dumb Waiter Doors for complete satisfaction.

Whatever your vertical transportation problem may be, it is probable that we have case histories on parallel applications in our files. We'll be glad to supply you with such information, prices or any other data you may require.

Sedgwick MACHINE WORKS

142 West 15th Street, New York 11, N. Y.
ELEVATORS • DUMB WAITERS • RESIDENCE ELEVATORS • STAIR-TRAVELORS
ROTO-WAITERS • SIDEWALK ELEVATORS • FREIGHT ELEVATORS • DUMB WAITER DOORS

BUILDERS OF VERTICAL TRANSPORTATION SINCE 1893



Model of office building for busy corner in Tulsa. Carson & Lundin, Architects

OFFICE BUILDING

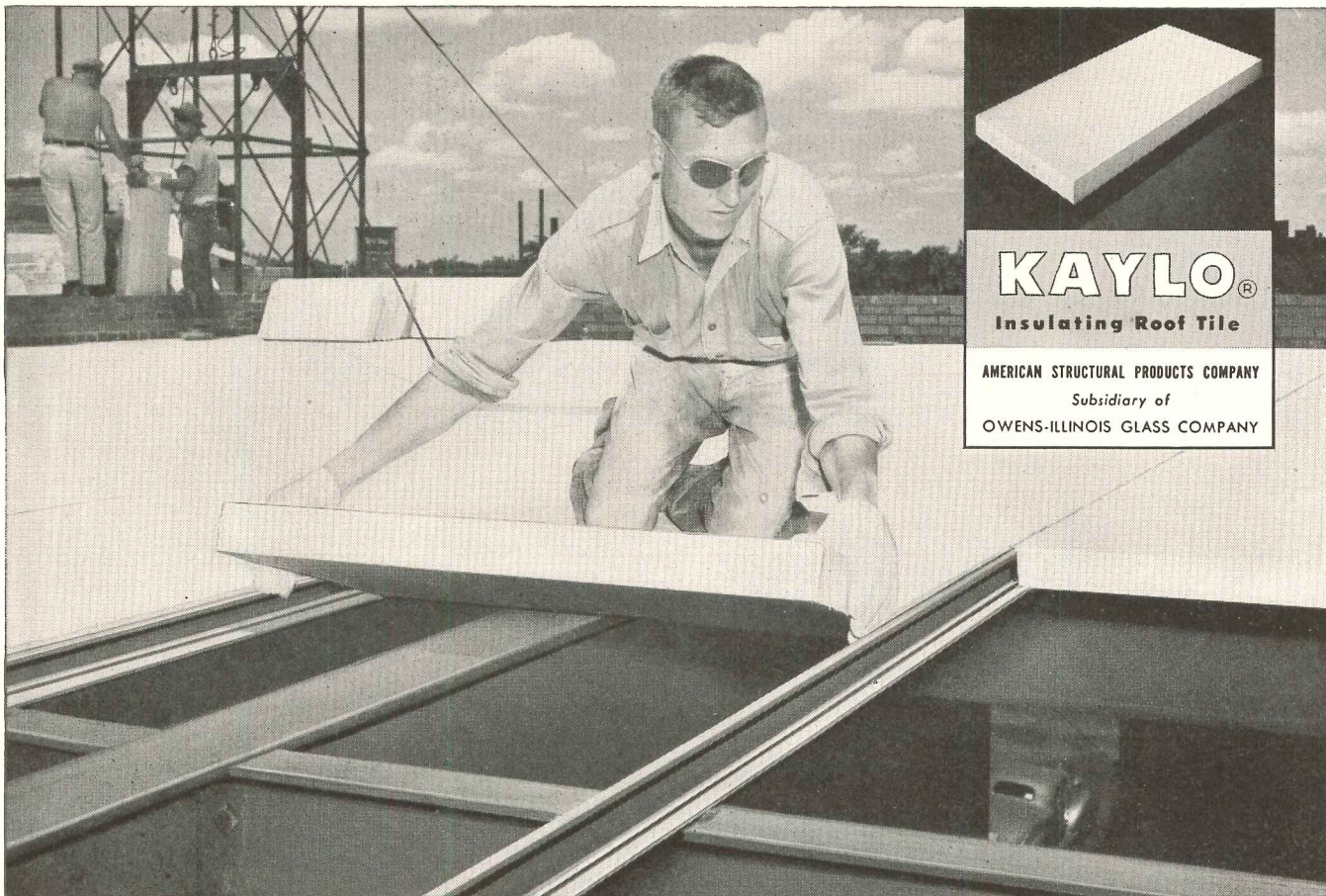
Now under construction in Tulsa, Okla., is a 20-story office building which will house the First National Bank & Trust Company of Tulsa and the main offices of the Sun Ray Oil Corp. To cost approximately \$5,500,000, the building was designed by Carson & Lundin, New York architects. It will have exterior walls of gray brick, with lighter colored marble. Windows will be continuous, arranged in 5-ft. units to facilitate installation of office partitions with a wide degree of latitude. An unusual feature will be an open arcade on the ground floor. The First National's main banking floor will be located on the second floor of the building, and will be reached from the street level by moving stairways. Other bank services will be housed in the first sub-basement and on the third, fourth and fifth floors.

COMPETITION WINNERS NAMED Low-Cost Furniture

Nearly 3000 entries from 31 countries were submitted in the Competition for Low-Cost Furniture sponsored by the Museum of Modern Art, New York City, and the Museum Design Project, Inc., results of which were announced in mid-January.

The \$5000 first prize for seating units was divided between Don R. Knorr of Chicago and Professor Georg Leowald of Berlin, Germany. Mr. Knorr, an architect, is a graduate of the University of Chicago and is currently working in both architecture and furniture in the office of Eero Saarinen in Bloomfield Hills, Mich. Prof. Leowald is a designer

(Continued on page 164)



In a Kaylo roof deck
you get:

INSULATION STRENGTH LIGHT WEIGHT

in one material

Advantages never before combined in one roof deck material are yours with Kaylo Insulating Roof Tile.

Kaylo Roof Tile:

Is lightweight. This reduces dead load on buildings and saves steel. Weighing only about 5 to 6 pounds per square foot, Kaylo Roof Tiles are easy to handle.

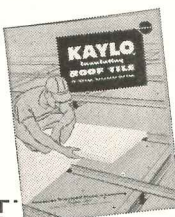
Is strong. Kaylo Roof Tile is a reinforced structural unit designed for a total load of 50 pounds per square foot with an adequate safety factor.

Insulates. Special operation of applying insulation over the roof deck is eliminated. Kaylo Roof Tile has insulation value equal to an inch and a half of standard insulating board.

Kaylo Insulating Roof Tile can be specified for any standard structural roof. For special contour problems, Kaylo Roof Tile can be cut to fit, on the job.



Easy to handle. Two men here carry 8 Kaylo Roof Tiles, walking on roof deck already laid.



SEND COUPON FOR DATA

AMERICAN STRUCTURAL PRODUCTS COMPANY
Dept. F-402, P.O. Box 1035
Toledo 1, Ohio

Gentlemen: Please send free 12-page illustrated booklet.

Request for sample is enclosed on company letterhead.

Name _____

Address _____

City _____ County _____ State _____



Left, winners and officials of the Low-Cost Furniture Competition: seated, Robert E. Lewis, Davis J. Pratt, Don R. Knorr, Ralph W. Fox, Clive Latimer; standing, James L. Prestini, John O. Merrill, Rene d'Harnoncourt (farthest back), Harry Fish, John B. McMorrان, Nelson A. Rockefeller, Dean L. M. K. Boelter, Alexey Brodovitch, Ira A. Hirschmann, Robin Day, Edgar Kaufmann, Jr., Charles Eames, Prof. Georg Leowald. Above, the Competition Jury: front row, Rene d'Harnoncourt, Catherine Bauer, Luis de Florez, Mies van der Rohe; second row, Hugh Lawson, Alfred Auerbach, Gordon Russell; standing, Edgar Kaufmann, Jr., Director

"Head of the class" in science labs



Kewaunee Laboratory Furniture

• There are two reasons why Kewaunee Laboratory Furniture rates top honors in so many of America's finest schools. First, because Kewaunee units are custom-engineered to fit science laboratory requirements. Second, they are mass-produced to fit school budgets!

Specially designed to stand up under hard school use, Kewaunee Furniture provides maximum working efficiency and time-saving convenience. And the new Kewaunee Laboratory Furniture is more rugged than ever! Door and drawer suspensions are extra strong. Metal parts are Bonderized for maximum resistance to chipping, rusting and corrosion. KemROCK working surfaces are not affected by the action of acids, alkalis and solvents . . . will not fracture under ordinary physical shock.

Put Kewaunee Laboratory Furniture to work in *your* labs! You, too, will give it credit for easing *your* teaching load. Meantime, write for your free copy of Kewaunee's catalog of Laboratory Furniture. Address:—

EDUCATIONAL DIVISION
Kewaunee Mfg. Co.
 C. G. Campbell, President
 5046 S. Center St. Adrian, Michigan

hitherto unknown in this country.

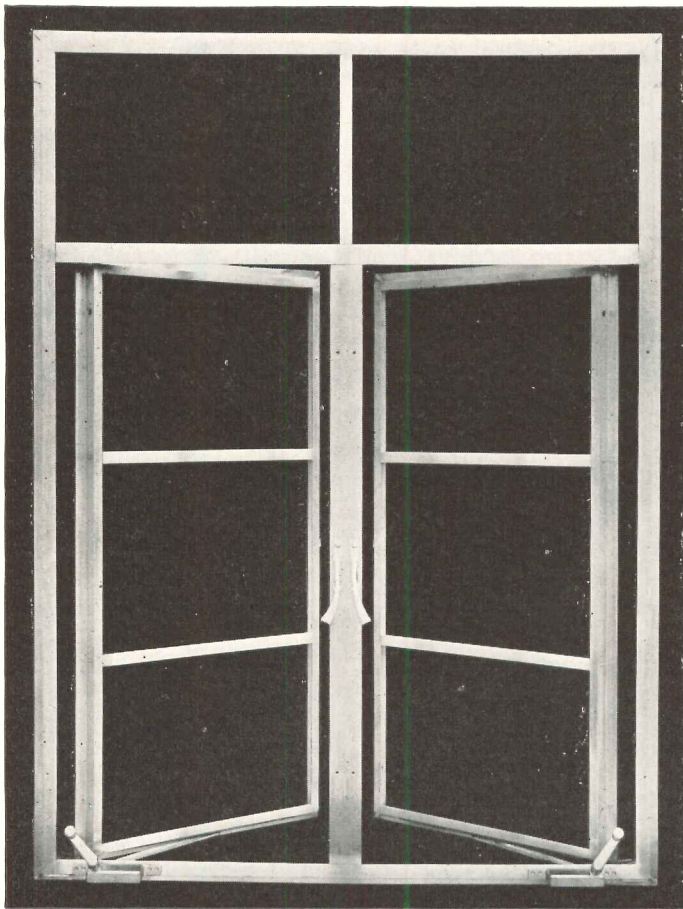
The \$2500 second prize for seating units was divided between Charles Eames and the University of California, Los Angeles Campus, group with which he was working, and Davis J. Pratt of Chicago. The third prize of \$1250 for seating units went to Alexey Brodovitch, art director of *Harper's Bazaar* since 1934.

Only the \$5000 first prize for storage units was awarded, the recipients being Robin Day and Clive Latimer, well-known British designers. The \$2500 prize for the best research report was awarded to James L. Prestini and the Armour Research Foundation of the Illinois Institute of Technology, where Mr. Prestini is now working.

The Simmons Prize, offered for a sleeping unit convertible for daytime use, was not awarded as no designs submitted were considered superior to those already in use.

Honorable Mentions, carrying no reward, were given for a seating unit design to John O. Merrill and John B. McMorrان of Massachusetts Institute of Technology, and for a storage unit design to Ernest Race, an English designer.

(Continued on page 166)



WARE

Aluminum

WINDOWS

LIGHT YET STURDY

CHEERFUL SILVERY
APPEARANCE

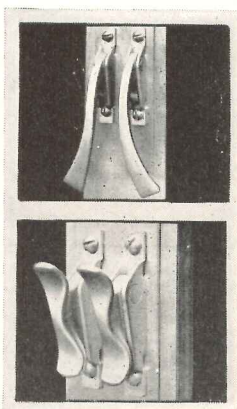
NO PAINTING·NO RUST

EASILY OPERATED
FROM THE INSIDE

STORM-TIGHT

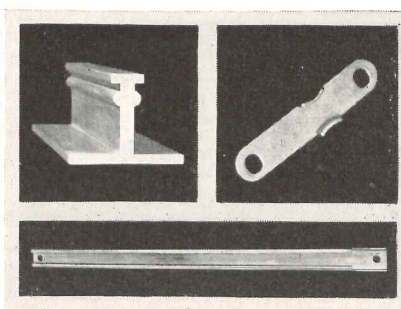
HEAVIER VENT SECTIONS • FLASH WELDED CORNERS
EXTENSION OR BUTT HINGES • STAINLESS STEEL PINS & WASHERS
CHOICE OF BUTTERFLY OR CAM LOCKING HANDLES

Manufactured by WARE LABORATORIES, INC. in Miami, Florida
GENERAL OFFICES AND SALES OFFICES: 1827 Delaware Parkway, Miami 35, Fla. • NEW YORK OFFICE: 21 West Street



CHOICE OF BUTTERFLY OR CAM LOCKING HANDLES

The optional choice of butterfly type for use with venetian blinds or the standard cam locking handles gives you a freedom of choice.

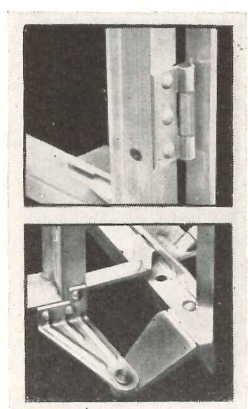


The Ware Mullion with self-aligning fit, bulb weathering and $\frac{3}{16}$ inch web is exclusive with Ware.

The Ware Channel and Strike are of Stainless Steel, assuring long wear and freedom from rust and corrosion.

CHOICE OF BUTT OR EXTENSION TYPE HINGES

The sturdy Ware butt hinge with stainless steel bushings, pin and washers or the convenient Ware extension hinge with stainless steel pins and washers are optional.



THE RECORD REPORTS (Continued from page 164)

Tile Flooring

Winners in the \$10,000 Kentile-Architectural Forum design competition have been announced as follows:

First prize of \$1500, to New York Architect George Cooper Rudolph for his design of a modern candy shop;

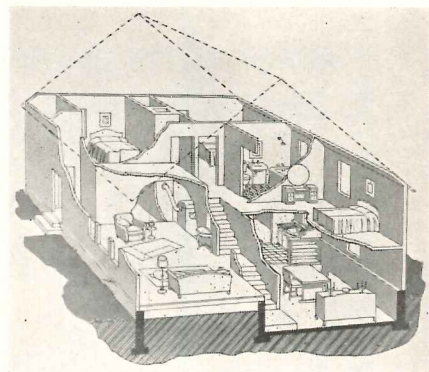
First prize of \$1500 to G. Russello and B. Johnson of Detroit for their design of a suburban home's kitchen and breakfast area;

First prize of \$1500 to A. Albert Cooling of Los Angeles, for his design of a living room;

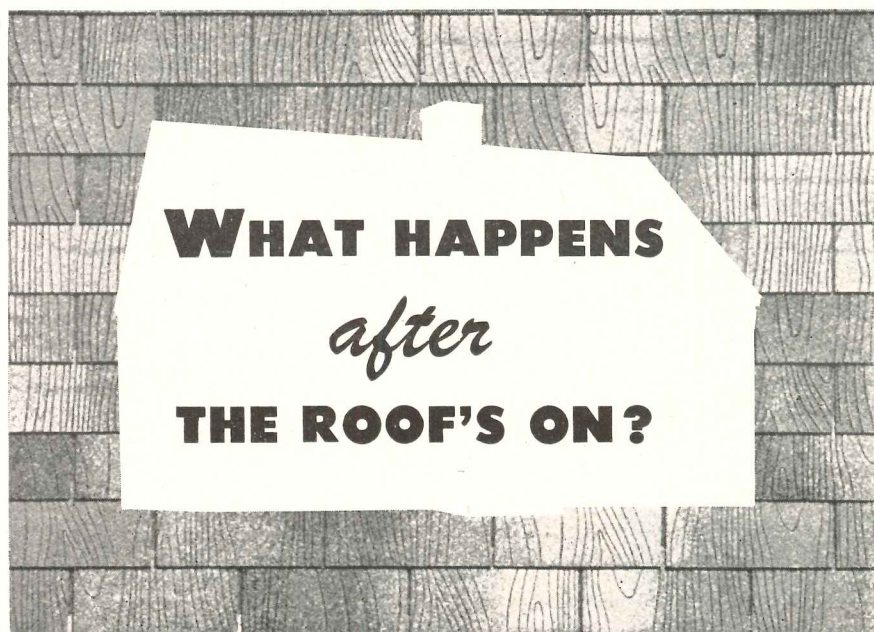
Second prizes of \$750 each to George Cooper Rudolph of New York (kitchen), Robert Pattison of Elyria, Ohio (living and dining room), and Mrs. Barbara Upshaw Siegel of Chicago (candy shop);

Third prizes of \$500 each to Harlan E. McClure of Minneapolis (kitchen),

Mary Royer of Los Angeles (living and dining room), and Thomas Weatherwax of Philadelphia (candy shop).



Tri-Level Home is for mass production



A roof is no better than its shingle . . . and unless it's a *good* shingle, the effort and skill you put into your building is wasted.

Bird Masterbilt Thick Butt Shingles stand the test of time . . . a Bird roof is a better roof. *Extra* layers of asphalt and deeply embedded mineral granules give tough lasting protection *where it counts* . . . on exposed tabs. The rugged surface defies weather . . . and fire resistance is greatly increased for the long life of the shingle. Narrower cut-outs and heavier shadow-lines give added massive beauty . . . and a wide range of handsome lasting colors and blends is available.

Test Bird Masterbilt Shingles yourself . . . compare them. They are your assurance of years of extra wear, of lasting beauty.

★ ★ ★

Bird helps you build better homes in many ways. Neponset Black Vapor Barrier guards against costly damaging in-wall condensation, yet costs approximately \$20 for a \$10,000 house. Investigate it today.



East Walpole, Mass. • New York • Chicago • Shreveport, La.

HOME BUILDERS SHOW

TRI-LEVEL HOME

A special scale model of the Tri-Level Home — a three-bedroom house ready for factory mass production by Lumber Fabricators, Inc., of Detroit — was displayed at the Annual Convention and Exposition of the National Association of Home Builders in Chicago last month.

Designed especially to meet the needs of low-income bracket families, the Tri-Level Home meets FHA National Minimum Construction Standards. Within the interior dimensions of 26 by 30 ft., it includes three bedrooms and bath on the upper level, living room on grade level, and dining room, kitchen and recreation-utility room on the lower level. It minimizes excavating to a maximum of 3½ ft., providing large recreation and utility space without basement cost.

APPRENTICESHIP EXHIBITS

A traveling exhibition of stained glass panels executed by apprentices in the stained-glass industry has been shown recently in Philadelphia, Cincinnati and Milwaukee, and is opening on March 29th at the Delaware Art Center in Wilmington. It will be shown in New York City, at the Cooper Union, from May 23 to June 8 and later will be taken to St. Louis and Boston. The tour was arranged by the Stained Glass Association of America.

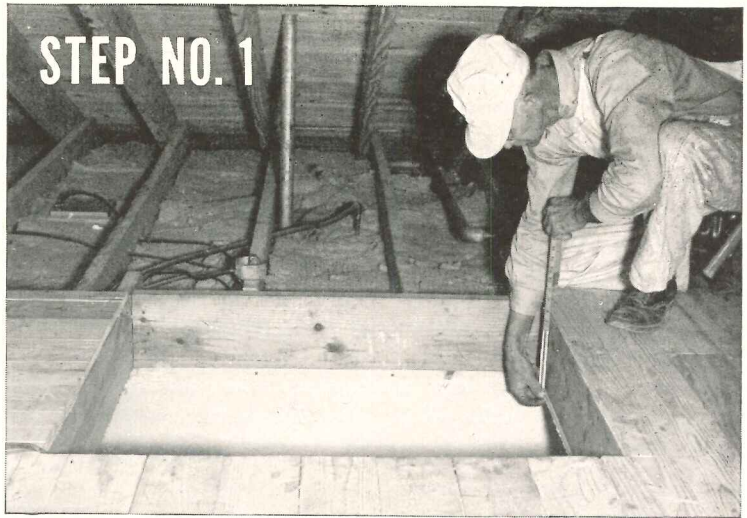
AT THE COLLEGES

Fellowships Announced

The annual competition for the Traveling Fellowship in Architecture offered by Rice Institute will be held in the Department of Architecture begin-

(Continued on page 168)

**Home Cooling
In 2 Easy Steps
with the new Hunter
Package Attic Fan**



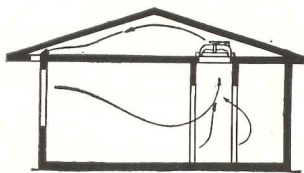
Provide this 38" x 40" ceiling opening



Install the Hunter Package Fan in the Attic (Fan, shutter and switch in one compact unit)



**RESULT: cool comfort
throughout entire house**



A Complete Unit: No expensive, space-consuming suction-box is required for installation . . . just a simple ceiling opening for the Package Fan, plus attic exhaust vent. Shutter and switch are built-in. No ceiling grille or other accessories needed.

Performance Guaranteed: Certified air delivery rating: 9500 CFM, with shutter operating. Fan guaranteed for five years, motor for 1 year. Basic design features have been proved in thousands of homes. Highest quality construction assures quiet, trouble-free operation. See our Section in Sweet's. Or write for Architect's Data File.

HUNTER FAN & VENTILATING CO., INC.
396 S. Front St., Memphis, Tenn. • Exclusive Fan Makers Since 1886

Hunter Package Attic Fan

All Patent Rights Reserved

THE RECORD REPORTS (Continued from page 166)

ning April 12 and ending May 16. The Fellowship provides a sum of \$1200 to be used for foreign travel and study, with a minimum of five months' residence in the foreign country chosen. It is open only to graduates of the Rice Institute Department of Architecture. For further information address The Department of Architecture, The Rice Institute, Houston 1, Texas.

The University of Illinois has an-

nounced the 18th annual consideration of candidates for the Kate Neal Kinley Memorial Fellowship. The Fellowship offers \$1000 toward defraying the expenses of advanced study of Fine Arts in America or abroad. It is open to graduates of the College of Fine and Applied Arts of the University of Illinois and to graduates of similar institutions of equal educational standing whose principal studies have been in Music,

Art, or Architecture. Applicants should not exceed 24 years of age on June 1, 1949. Requests for application blanks and instructions should be addressed to Dean Rexford Newcomb, College of Fine and Applied Arts, Room 110, Architecture Building, University of Illinois, Urbana, Ill. Applications should reach the Committee by May 1st.

Florida School Reorganized

The University of Florida has announced that its School of Architecture and Allied Arts has been redesignated as the College of Architecture and Allied Arts. The College is composed of the Department of Architecture, the Department of Art, and the Bureau of Architectural and Community Research.

William T. Arnett, a member of the faculty since 1929 and director of the School since 1946, has been named dean of the College and director of the Bureau of Architectural and Community Research. John L. R. Grand, a member of the faculty since 1937, has been named head of the Department of Architecture.

Appointments

Henry S. Churchill, town planner and architect of the firm of Churchill-Fulmer Associates, has been named an Associate in Planning at Columbia University. Mr. Churchill, who has been a special lecturer and advisor on town planning at the University, will act as a critic during the spring session.

Robert B. O'Connor, of the New York architectural firm of O'Connor and Kilham, has been appointed supervising architect of Princeton University.

Athelstan F. Spilhaus has been named Dean of the Institute of Technology of the University of Minnesota.

Carnegie Tech's Building Program

Carnegie Institute of Technology has announced the reopening of a \$4 million campus building and renovation program, which will include a million-dollar wing for Engineering Hall, a power plant and a steam and electricity distribution system expected to cost over \$1 million, and extensive revamping and renovation of available space in existing buildings of the colleges of Engineering and Science, Fine Arts and Margaret Morrison Carnegie College. The program originally was decided upon in March, 1947, but was not put into effect because of the high building costs. The plans have been revised somewhat to permit available funds to cover as much as possible of the original program.

(Continued on page 170)

AMERICA'S LEADING ARCHITECTS CHOOSE
Amtico RUBBER FLOORING

- DURABILITY** • Amtico floors thirty years old are still in service with no appreciable signs of wear.
- QUALITY** • Backed by over thirty years experience in making rubber to walk on.
- APPEARANCE** • Outstanding beauty through eighteen style-tested marbled colors.
- QUIETNESS** • Sound absorbing—hushes surface noise.
- RESILIENCY** • Cushions footsteps—reduces fatigue.
- EASY MAINTENANCE** • Dirt can't penetrate dense, close-grained Amtico—unharmful even by burning cigarettes.
- CUSTOM FEATURES** • Insignia, trademarks, special inserts are easily incorporated into the floor.
- ADAPTABILITY** • At home with any decorative scheme or architectural treatment.
- MODERATE PRICE** • Luxury look at moderate price—first cost is last cost—no expensive refinishing.

Your FREE samples and complete information about AMTICO are ready for you—no obligation, just send in the coupon.

Amtico
RUBBER FLOORING
Makers of Quality Rubber Flooring
for over 30 years

American Tile and Rubber Company
Perrine Avenue, Trenton 2, New Jersey
Please send me free of charge, samples and complete information about Amtico Rubber Flooring.

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



... a Moulding Kit

in Pittco Premier Store Front Metal

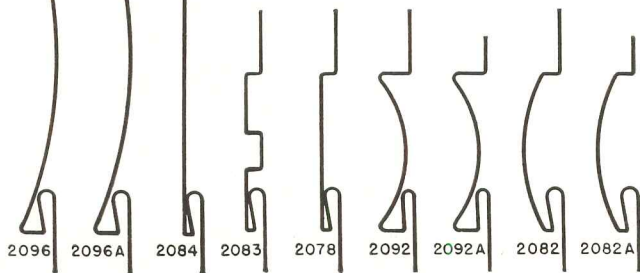
● The new basic mouldings in the Premier line of Pittco Store Front Metal may be truly called a Moulding Kit. They may be combined in a wide variety of attractive patterns, giving the architect fresh style and beauty, and great variety in design to help in the creation of distinctive, sales-winning store fronts.

Shown here with the same head and drip members are three of the many designs which may be formed with these new shapes. Cross sections of some of the new mouldings are shown at left.

Most of the shapes in the Premier Moulding Kit are interchangeable and may be used both horizontally and vertically. They make it easy to design several adjacent store fronts, giving each a distinctively different appearance through the proper selection and arrangement of mouldings.

This convenient Moulding Kit of Pittco Premier Store Front Metal, is another result of "Pittsburgh's" constant research, aimed at helping you solve architectural and building problems encountered in the field.

BASIC SHAPES OF MOULDING KIT (1/2 SIZE)



PITTCO STORE FRONT METAL

PAINTS · GLASS · CHEMICALS · BRUSHES · PLASTICS



PITTSBURGH PLATE GLASS COMPANY

New Engineering Building

Construction of a million-dollar engineering building has been begun at Wayne University in Detroit, as the first step in the developing of engineering facilities for 1382 students now enrolled in its Engineering College. Engineering students heretofore have been using facilities developed under emergency conditions in old and temporary structures.

The first unit to be built under the program will be three stories high, and will contain the essential power and supply equipment for the additional structures to be built later. The building will be of reinforced concrete construction, the exterior faced with brick. Interior partitions will be cinder block, and the flooring will be colored Masterplate finish over concrete. Architects are Pilafian and Montana of Detroit.

OFFICE NOTES

Offices Opened, Reopened

The H. K. Ferguson Co., Industrial Engineers and Builders, has established a new Western district office in Los Angeles. The office, at 712 Curson St., will be managed by Henry Maag, a member of the Ferguson organization for the past 22 years.

Myron F. Nelle, Structural Engineer, has opened his own office at 707 Cottage Grove Ave., South Bend 16, Ind. His past experience has been with residential, commercial, industrial and public utilities structures.

John T. Simpson, A.I.A., Architect and Engineer, has opened an office at 12 Broad St., Red Bank, N. J. Formerly of Newark, Mr. Simpson has been doing special work for the War Department for the past six years.

Max J. Wolfson, Architect, has opened his own office at 3845 Alta Vista Terrace, Chicago 13, Ill.

New Addresses

The following new addresses have been announced:

John Hancock Callender, Architect, 280 Madison Ave., New York 16, N. Y.

Paul Kang, Consulting Engineer, 260 Kearny St., San Francisco, Calif.

George E. McIntyre, Architect and Engineer, 528 Dwight Bldg., Kansas City, Mo.

Thomas L. Shepherd, Architect, 7466 Girard Ave., La Jolla, Calif.

New Firms, Firm Changes

Othmar H. Ammann and Charles S. Whitney have announced the reorganization of the firm of Ammann & Whitney, Consulting Engineers, with the following staff members as Associate Partners: Milton Brumer, Werner Ammann, Boyd G. Anderson, and James S. Whitney. Offices are maintained at 76 Ninth Ave., New York 11, and at 724 E. Mason, Milwaukee 2, Wis.

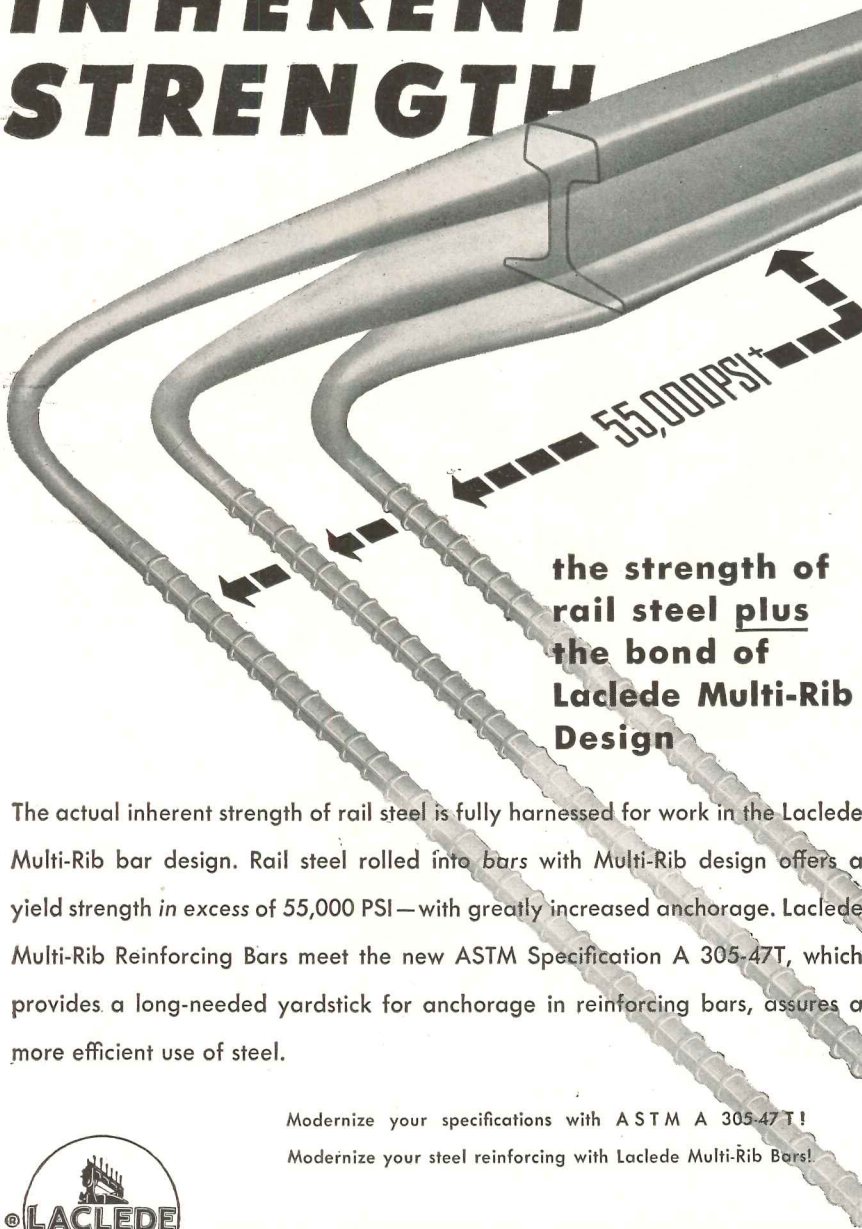
A new firm, Architectural & Engineering Enterprises, Inc., of 1806 Hillcrest Dr., Bartlesville, Okla., has been organized to serve the architect whose volume of work has been limited by lack of drafting help. The new firm will take the architect's preliminary drawings and produce from them complete working drawings and specifications, bound and ready for the contractor. All mechanical and structural engineering is furnished.

Ford, Bacon & Davis, Inc., Engineers, of New York, Philadelphia, Chicago and

(Continued on page 172)

The fourth of a series in the interest of more efficient use of steel . . . a vital American resource.

INHERENT STRENGTH



The actual inherent strength of rail steel is fully harnessed for work in the Laclede Multi-Rib bar design. Rail steel rolled into bars with Multi-Rib design offers a yield strength in excess of 55,000 PSI—with greatly increased anchorage. Laclede Multi-Rib Reinforcing Bars meet the new ASTM Specification A 305-47T, which provides a long-needed yardstick for anchorage in reinforcing bars, assures a more efficient use of steel.

Modernize your specifications with ASTM A 305-47T!

Modernize your steel reinforcing with Laclede Multi-Rib Bars!



LACLEDE STEEL COMPANY

St. Louis, Mo.



Some Houses Leak Like a Sieve . . .

INSULATING ROCKLATH*

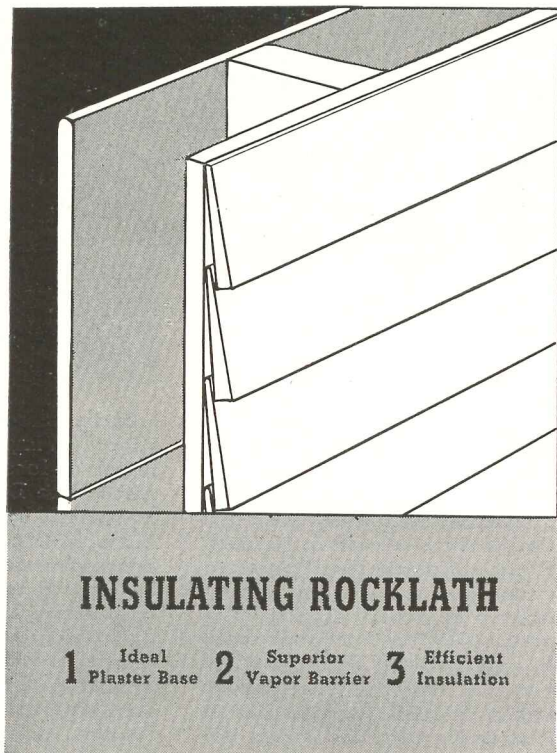
Is the Vapor Barrier That Controls Condensation

Some houses leak like a sieve—from the inside out. For example, consider a house of normal construction but without a vapor barrier. During periods of low winter temperature, up to 2½ gallons of water vapor a day may condense in each 1,000 square feet of unprotected exterior wall.

Insulating ROCKLATH prevents up to 95% of this moisture condensation. In winter, a sheet of aluminum foil laminated to ROCKLATH plaster base at the mill prevents the entrance into the walls of dangerous quantities of water vapor. In summer, this aluminum foil reflects the sun's radiant heat . . . helps keep the house cool and comfortable.

Insulating ROCKLATH, the ideal plaster base, performs three services for little more than the cost of one—and at no extra application cost! Its bright aluminum foil is a very efficient heat reflector and vapor barrier for use in residential construction.

In most states FHA requires certain minimum insulating and vapor barrier values. Insulating ROCKLATH and plaster in residential wall construction will usually provide the FHA values, as well as an ideal plaster base.



*T. M. Reg. U. S. Pat. Off. It distinguishes the United States Gypsum Company's plaster base.



United States Gypsum

For Building • For Industry

Gypsum • Lime • Steel • Insulation • Roofing • Paint

THE RECORD REPORTS (Continued from page 170)

Los Angeles, have announced the election of E. S. Coldwell as president, succeeding James F. Towers, who will actively continue as chairman of the Board of Directors.

The Kuljian Corp., Engineers and Constructors, of Philadelphia, has announced the appointment of Edwin Lundgren as their Washington, D. C. representative, with offices at 1415 K St., N. W.

Abraham Levy and Edwin H. Silverman have announced the establishment of individual offices for the practice of architecture in their present quarters at 1411 Walnut St., Philadelphia 2, Pa. The firm of Silverman & Levy was dissolved on December 31.

E. B. Van Keuren, Chas. F. Davis, Jr., Paul M. Speake and J. Marion Thrasher have announced the formation of a partnership for the general practice

KINNEAR "AKBAR" ROLLING FIRE DOORS

automatically block spread of flames



Outstanding structures here and abroad rely on Kinnear "Akbar" Rolling Fire Doors for *automatic* fire protection. These all-steel, fire-proof doors set up a "road block" against flame-spreading drafts. They *coil overhead* when not in use, but *promptly* seal off doorways, windows, and corridors at the threatening approach of fire. Positive closure is certain because Kinnear Rolling Fire Doors are *pushed* downward automatically by a strong auxiliary spring. They are *controlled* in downward speed by a special safety device, to avoid personal injury and to lessen floor impact. If raised after closure as an emergency exit, the doors are closed again automatically by the counterbalance spring.

◀ These dependable, positive-action doors combine modern styling and fire protection at this entrance to Penney's in the smart, new Terrace Plaza Hotel Building in Cincinnati.

Lack of fire-door protection has proved an important contributing factor to losses in major fires. Akbar Fire Doors are approved and labeled by Underwriters' Laboratories. In many cases these doors save enough in lower insurance rates to repay their cost in two or three years. Built to fit building openings of any size, they can be equipped for daily service use, with or without motor operation. When extra fire protection is not required, regular (non-labeled) Kinnear Rolling Doors are preferred for service use. Write for details.

THE KINNEAR MANUFACTURING COMPANY

FACTORIES
1860-80 Fields Ave., Columbus, Ohio
1742 Yosemite Ave., San Francisco, Calif.

Offices and Agents in Principal Cities

KINNEAR
ROLLING DOORS

SAVING WAYS
in
DOORWAYS



New \$5,000,000 Saxony Hotel, Miami Beach, features broad balcony terraces. Roy F. France & Sons, Architects

of architecture and related engineering under the firm name of Van Keuren, Davis and Company, Architects & Engineers. Address: American Life Bldg., Birmingham, Ala.

The name of the firm of Merrill & Wigen, Architects, has been changed to Frederick E. Wigen, Architect. Address: 132 S. Washington Ave., Saginaw, Mich.

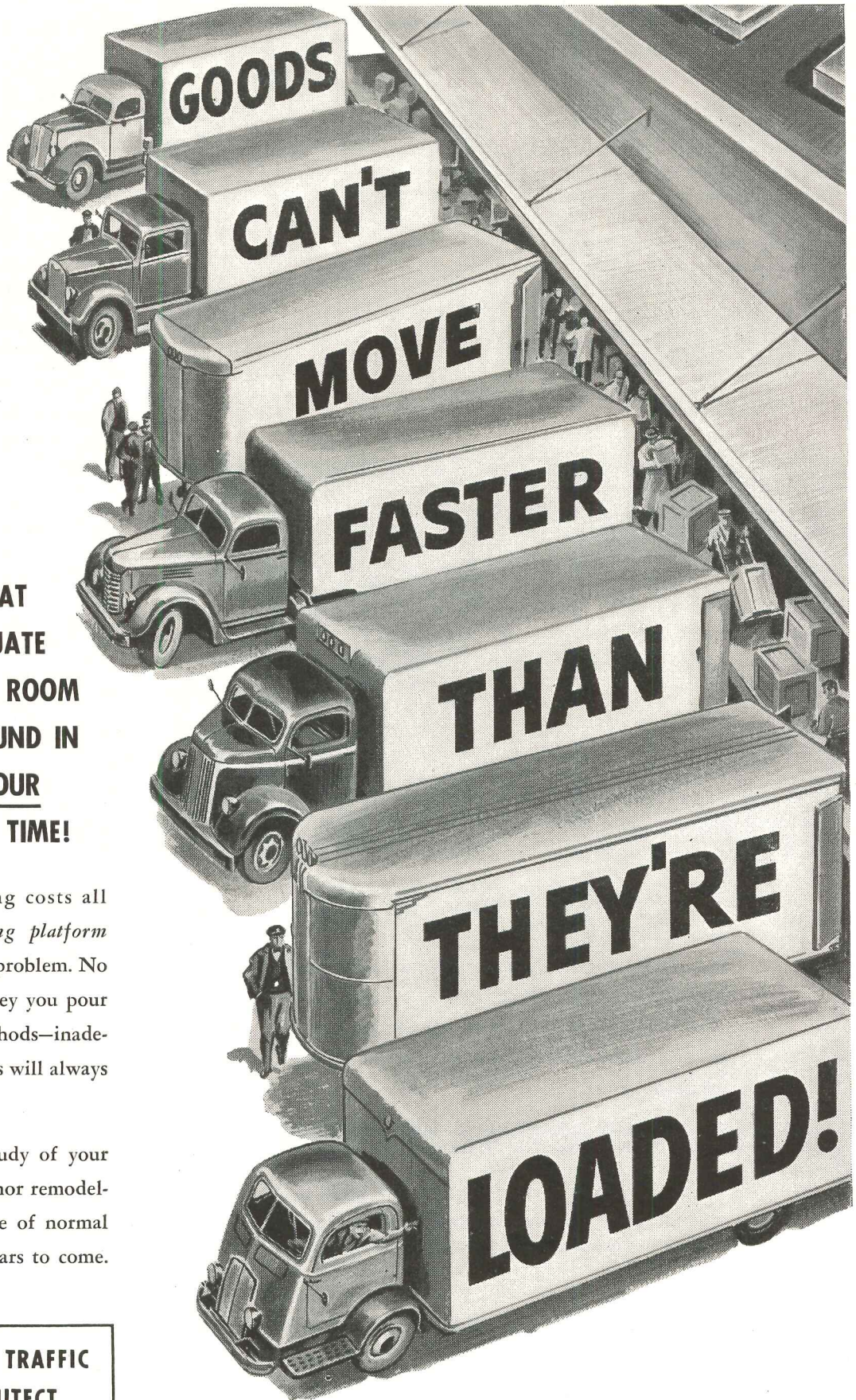
ELECTIONS, APPOINTMENTS

Edmund N. Bacon has been appointed executive director of the Philadelphia City Planning Commission. A graduate of Cornell University College of Architecture, Mr. Bacon has worked with architects Oskar Stonorov and W. Pope Barney of Philadelphia, and in 1938 was awarded a graduate fellowship to study under Eliel Saarinen at Cranbrook Academy.

John M. Ducey, formerly economic adviser and director of planning for the Chicago Housing Authority, has been appointed executive director of the National Association of Housing Officials.

Richard J. Seltzer, Philadelphia realtor, has been reelected president of the Urban Land Institute. Reelected to serve with him were: Foster Winter, Detroit, vice president; Herbert U. Nelson, Chicago, secretary; and L. D. McKendry, Chicago, treasurer.

Franklin Thomas, Professor of Civil Engineering and Dean of Students at California Institute of Technology, has been elected president of the American Society of Civil Engineers.



**TRUCKS THAT
HAVE ADEQUATE
PLATFORMS . . . ROOM
TO MOVE AROUND IN
. . . SAVE YOUR
DOLLARS AND TIME!**

Today, with mounting costs all along the line, *loading platform congestion* is a serious problem. No matter how much money you pour into new tools and methods—inadequate shipping facilities will always eat into your profits.

Right now, make a study of your “bottleneck” areas. Minor remodeling can often take care of normal plant expansion for years to come.

**CONSULT YOUR TRAFFIC
MANAGER, ARCHITECT
AND ENGINEER**



THE *AMERICAN TRUCKING* INDUSTRY

AMERICAN TRUCKING ASSOCIATIONS, WASHINGTON 6, D. C.

(Continued from page 132)

quately against the fungi of bluestain and decay only where a little extra assistance suffices to discourage the organisms. As a rule these are places where the wood is dry most of the time but occasionally becomes damp enough for the fungi to grow. A well established example is the window sash in houses, which normally stay too dry for attack but in cold weather when moisture condenses on the glass, may give trouble

unless they are treated. On the other hand, superficially applied preservative does not furnish adequate treatment for wood that remains damp much or all of the time, such as wood in contact with the soil.

Water-Repellent Preservatives

Water-repellent preservatives, which contain the ingredients needed for both water repellency and preservation in

the same mineral spirits solution, make it possible to impart moderate resistance to moisture changes and to fungi in a single treatment of wood. They are products of dual purpose. The water repellency is not impaired by incorporation of the preservative and the resistance to bluestain and decay is not sacrificed, in fact it may be enhanced, by the combination with water repellents.

Wood Sealers

Wood sealers are forms of varnish or lacquer made to sink into wood surfaces but not to penetrate much beyond the pores close to the surface. They are themselves decorative finishes of a kind that cannot chip or wear off as surface coatings do. They may also serve to seal or prime the wood in preparation for surface coatings of wax, varnish, lacquer, or enamel. A single application of wood sealer gives wood much less protection against change in moisture content than can be obtained with a water repellent, but two applications of wood sealer may prove equal to or, with the best sealers, somewhat superior to a water repellent in protection.

Preservative wood sealers contain fungicides. The water-repellent preservatives, because they penetrate farther into wood, are considered superior to preservative wood sealers for keeping wood free from bluestain and decay. Sealers, however, are now used fairly frequently for woodwork exposed to the weather when a natural finish is desired. In such uses the preservative is often needed to resist mildew, which is a growth of fungi on the surface of the finish. A good plan is to apply a water-repellent preservative first, to preserve the wood, and then to apply the preservative wood sealer to give the desired appearance.

The water-repellent preservatives and related products enjoy a wide field of usefulness in which they can improve the service or prolong the life of wood that has usually had to struggle along without treatment of any kind. Sapwood and other kinds of wood that absorb moisture quickly and rot easily can be particularly benefited. Structures in which there are joints through which rainwater gains access to unprotected parts of the wood can be improved at their most vulnerable points. On the other hand the limitations of these products by reason of the superficial way in which they are applied should be kept constantly in mind; they should not be used where more thoroughgoing treatments are needed.



3 GYMS IN ONE

From Coast to Coast the HORN FOLDING BLEACHERS AND HORN FOLDING PARTITIONS are making one Gym do the job of three. With emphasis on careful planning Horn offers a "tested" solution to gym problems.

HORN FOLDING BLEACHERS-HORN FOLDING PARTITIONS

HORN, with years of experience and skill, offers to every school planner the services of the Horn Engineering Department. Horn installations are guaranteed.

FREE:



Write for the HORN BOOK. *Modern* SCHOOL PLANNING
A complete book with photographs, plans and specifications.

HORN BROTHERS CO.

A DIVISION OF HORN INDUSTRIES

FORT DODGE, IOWA



ESTABLISHED 1909



Maurice L. Rothschild & Company, Evanston, Illinois, • Taussig-Flesch Associates, Chicago, Designers

WOOD... Stimulant to Sales

Where discriminating people shop, the atmosphere of quality that beautiful
 woodwork imparts is a potent stimulant to sales. That is why wood, beautifully formed
 and finished, is a basic element of any interior designed for selling. It is well to
 remember that two generations of outstanding architects and store
 designers have looked to the craftsmen of Woodwork Corporation for
 faithful reproduction of their ideas. Creative men have always appreciated the
 Woodwork policy of adhering precisely to details. Discriminating people have
 approved the results, not only in retail establishments, but in a long list
 of hotels, clubs, dining rooms, office suites and churches noted for
 their beautiful wood interiors. Whether your plans involve a complete interior,
 or a single display case Woodwork craftsmen and executives are prepared to meet
 your needs. Your inquiry will receive immediate attention and a prompt reply.



WOODWORK CORPORATION OF AMERICA
 1426 WEST TWENTY-FIRST STREET • CHICAGO 8, ILLINOIS

is decreased when more "cover" is added. Naturally the uniformity could be made almost perfect if the pipe were placed with negligible clearance between the coils, but the cost would be prohibitive. Optimum comfort, when considering uniformity, can be taken as the best that can be afforded. Generally the maximum pipe spacings are taken as 12 in. for a concrete slab and 9 in. for plaster construction.

PANEL CONSTRUCTION

The three points of panel construction are (1) controllability, (2) uniformity and (3) availability. Controllability means that a panel must be able to respond to changing heating requirements with sufficient speed to permit the control devices to maintain the desired air and panel temperatures. The effect of conductivity of the material over pipe

coils and depth of the coils has already been discussed. But it might be well to point out that there is no space for variation of pipe coil depth for wall or ceiling panels as normally fastened to metal lath and covered with plaster. For floor slabs there is the possibility of a compromise between a deep coil with good uniformity and poor control with a shallow coil having poor uniformity and good control. The latter is favored, however (see Fig. 4) because good control is more important than uniformity.

Availability of panel area means that the portion of heated surface that has been considered effective by the designer should not be made ineffective by changing furniture, rugs, tapestries, or other objects that will reduce or in other words "hide" the radiating surface. For example, if a designer requires 1000 sq. ft. of wall panel area in an office and it is necessary to place filing cabinets against all but 500 sq. ft. of the wall area, then the availability of panel is insufficient.

REVERSE SIDE HEAT LOSSES

Floor Panels

During the fall when the heating system is just starting to operate, the ground beneath the slab is at its minimum temperature — about 60 F. Then losses from the back of panel to the ground are at a maximum; however, total heat load on the system is very low because of the higher outside air temperatures. The boiler, therefore, has sufficient reserve to carry the back losses during the peak periods. During coldest weather, when the boiler is operating at full capacity, the ground has been warmed and back losses are at a minimum. It is for this condition that back losses should be computed in determining the size of the boiler. Floor panel construction to minimize back losses is illustrated in Fig. 4. (See also *Time-Saver Standards*, ARCHITECTURAL RECORD, Jan., 1948.)

Wall and Ceiling Panels

When wall or ceiling panels are used adjacent to warm rooms there is, of course, no back loss. When the reverse side of the panel is exposed to unheated spaces (outdoors, attics, etc.), insulation to prevent back losses must be determined from an economic standpoint. Back losses add slightly to the boiler size and fuel bill, but insulation adds to the initial cost. The proper amount of insulation, therefore, depends upon initial costs, fuel costs, and interest rates.

(Continued on page 178)



Today's modern methods of caring for babies are typified by this sanitary, well regulated hospital nursery.



Back in 1847 when Van was established, these old-fashioned incubators were kept warm by adding hot water to warming tanks.

Bettman Archive

Progress in Van's Century

- 1847-1948 not only marked a century of almost fabulous progress in medical science. The same years showed similar advancement in the science of kitchen engineering and the art of kitchen equipment fabrication . . . the century in which Van has pioneered for the industry.
- Hospital administrators and their architects regularly ask Van for suggestions when planning new projects, revisions or expansions.

The John Van Range Co.

EQUIPMENT FOR THE PREPARATION AND SERVING OF FOOD

DIVISION OF THE EDWARDS MANUFACTURING CO.

Branches in Principal Cities

429 CULVERT STREET

CINCINNATI 2, OHIO

For Low Cost Homes...

Why not USE PART OF
THE ATTIC FOR THE
"FURNACE ROOM"
WITH A GAS-FIRED

Janitrol
THERM-O-ATTIC
FORCED AIR FURNACE

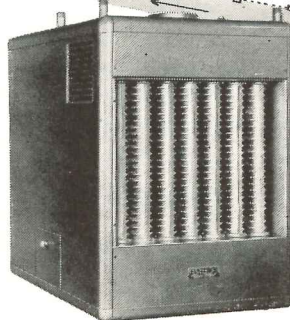
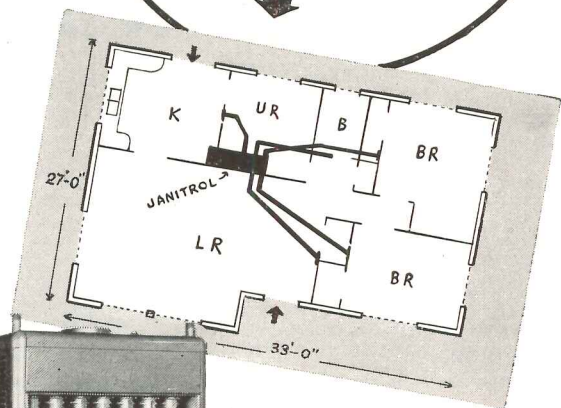
Put the heating in the attic? Yes, it's entirely practical with a Janitrol Therm-O-Attic—the installation works like a charm—we have testimonials to prove it. Now, think of the advantages for low-cost homes, where you want to merchandise all that's modern, but you've got to trim costs without seriously sacrificing quality.

- 1 No basement is needed for the heating plant.
- 2 You don't use up scarce closet space.
- 3 Short simple duct systems cut down installation costs.
- 4 Grills at floor levels lead into return air ducts.
- 5 Heat is comparable to a more expensive installation of a winter air conditioner.
- 6 A merchandising plus—the Janitrol Unit can be operated in summer for attic ventilation to exhaust hot air from rooms.
- 7 Janitrol Therm-O-Attic furnaces are complete, factory-assembled and tested packages to further simplify installation.

So, here's the way to put more sales appeal into your smaller homes—provide all the advantages of clean, automatic and economical gas heat with the famous Janitrol name, and at the same time cut your costs. Write today for complete specifications and operating data.



IT'S PRACTICAL!
SAVES INSTALLATION
COSTS! PROVIDES
MORE USABLE
LIVING SPACE



Compact Janitrol Therm-O-Attic Forced Warm Air Furnaces are available in 4 sizes to meet practically every Btu requirement and are equipped for operation with natural, manufactured or LP-Gases.

SURFACE COMBUSTION CORPORATION • TOLEDO 1, OHIO

Janitrol Winter Air Conditioners, Gravity Furnaces, Conversion Burners, Unit Heaters, Boilers and Triple Service Systems

(Continued from page 176)

PREVENTING DAMAGE TO PANELS

Where floor or wall panels are contemplated, adequate protection should be provided to prevent damage to pipe coils or warm air ducts.

Floor Panels: a substantial cover of concrete will prevent damage that might be incurred due to excessive concentrated loads such as narrow wheel trucks or sharp objects. Such damage could

also occur during the moving of heavy furniture or in garages and warehouses. Another hazard to floor coils exists if there is any probability of renovation such as cutting in new drains for a garage floor. Although not an injury to floor panels, the placing of large crates, stock piles or low furniture will "hide" the panel and prevent effective radiation.

Wall Panels: where heavy vehicles are

likely to be used near wall panels, the panels should be protected with a bumper placed on the floor similar to those used to protect a fence. It is seldom wise to use an inside wall for panels in commercial buildings since they are often altered. In residences, wall panels of thin tubing are apt to be punctured when tapestries or pictures are hung. If the panels are not injured, they are at least made less effective as radiant areas.

VENTING

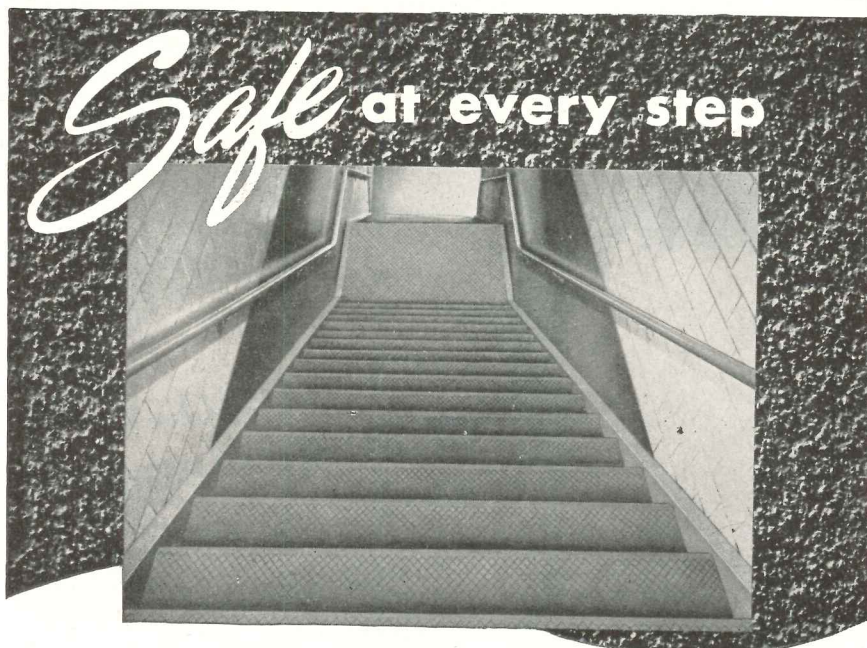
The venting problem for radiant heating coils is just the same as for any other forced hot water system; however, some points should still be stressed. When the system is being filled, petcocks at the end of the coils must be opened to release the air. After the system has been completely filled, any air that gets into the system must either leak in or be released by the air at the boiler. If a positive pressure of 2 or 3 psi is maintained in the coils, no air will leak into the system, so the only remaining source is the boiler. There are vents made for the purpose of venting the boiler; these vents should be located preferably at the boiler or at the high point by the expansion tank. The use of automatic air vents at high points is unnecessary; they frequently rust and become useless. The air that remains after filling the system will be carried along by the high velocity of the water and eventually expelled at the vent or collected in the expansion tank.

APPEARANCE OF RADIANT PANELS

The appearance of a radiant heating panel should remain unimpaired until it has been decided to redecorate the panel. This means that streaking and cracking must be considered in selecting the material and in constructing the panel.

It is generally accepted that present construction practices allowing $\frac{3}{8}$ in. cover of plaster will prevent cracking and streaking of the panel. In addition to having an acceptable appearance, the material should have a high conductivity. If low conductivity materials are used, the required boiler water temperature will be increased and the controllability will be decreased.

The material should also withstand the operating temperature that is to be used. For example, some asphalt products tend to soften at temperatures of 100 F; therefore, these materials would be inadequate for coverings in halls where panel temperatures of 100 F are expected.



WITH FERALUN SAFETY TREADS

Workmen at the Curtiss Wright Plant, Propeller Division, Caldwell, N. J., go up and down these stairs . . . safe at every step.

Their shoe soles come to grips with non-slip Feralun Safety Stair Treads, cast iron, with wear-resistant abrasive embedded right in the walking surface.

Heavy traffic day in, day out — but Feralun Safety Treads, built to take hard use, stay non-slip . . . last and last.

And that means low maintenance . . . and high safety.

4 TYPES:

Cast iron base FERALUN
Bronze base BRONZALUN
Aluminum base ALUMALUN
Nickel bronze base NICALUN

3 SURFACE STYLES:

hatched . . . plain . . . fluted

Use coupon below to get our free, illustrated catalog. Also consult Sweet's File, Architectural, 13 a-8.

AMERICAN ABRASIVE METALS CO.
460 Coit Street Irvington, N. J.

(AR 3-49)

Please send me your catalog on non-slip stair treads, floor plates, thresholds, elevator sills, and safety tile.

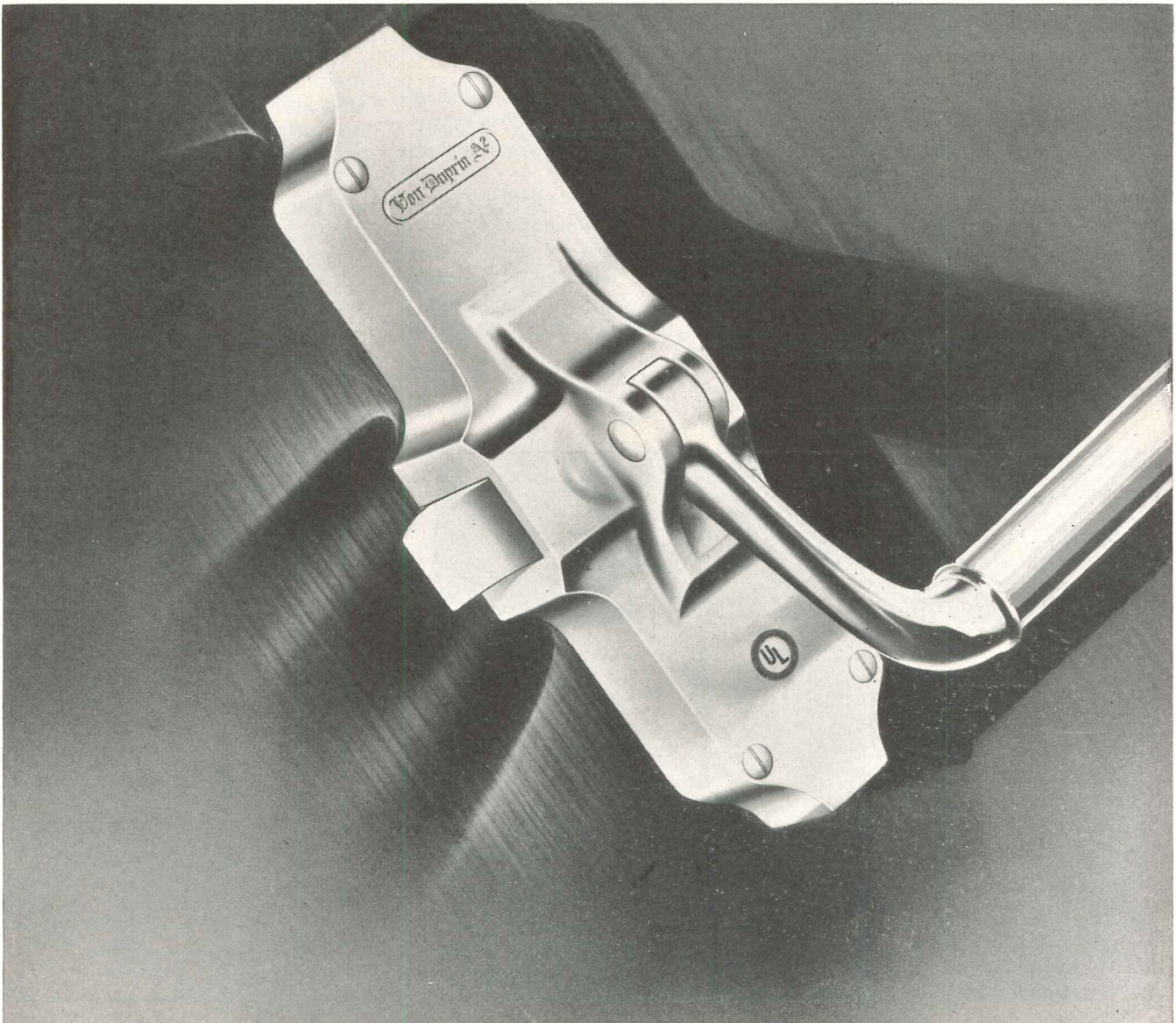
Please have one of your safety engineers contact me.

Name.....Title.....

Company.....

Street.....

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



WHEN THE FINEST COSTS THE LEAST YOU WANT IT!

Drop-forged Von Duprins are the highest quality exit devices made. They have longer life and far greater strength. They add the precision, beauty and character of drop-forged metals to the doors on which you put them.

Yet, in the end, all this extra quality, this added dependability and fine workmanship cost nothing. The higher first cost is soon absorbed by the freedom from maintenance expense and the perfection of their trouble-free, attention-free, care-free operation. Drop-forged Von Duprins provide exit . . . safe and sure beyond comparison . . . at the lowest cost per year.

Isn't that just what you want?

VON DUPRIN DIVISION
VONNEGUT HARDWARE CO., INDIANAPOLIS 9, IND.



(Continued from page 139)

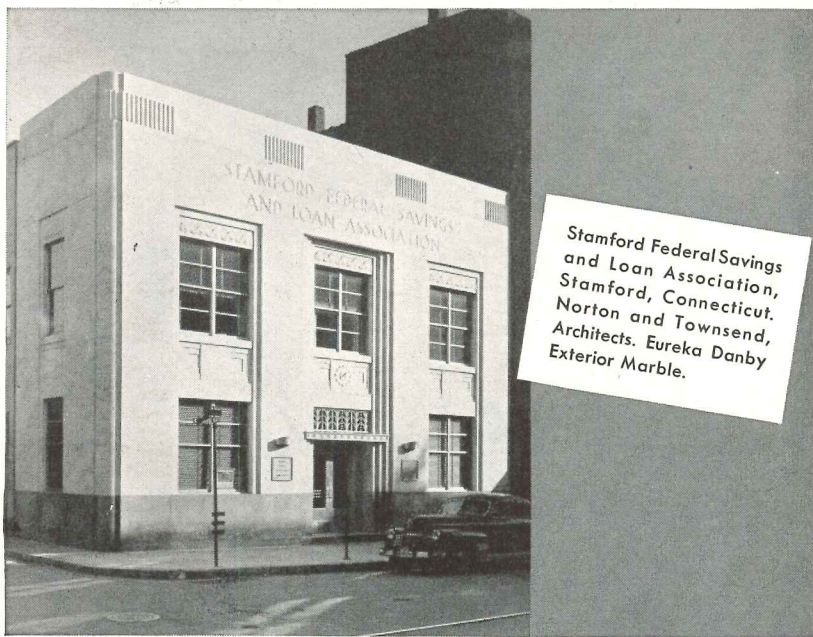
WOOD PRESERVATIVE

Insurance against premature replacement of millwork is among the benefits claimed by the manufacturer for *Tremco Wood Preservative*, a double-action treatment which is said to keep moisture out — reducing warping, shrinking, swelling — as well as preventing wood from rotting.

Usable for treatment of wood either

during fabrication or at the time of installation, Tremco Wood Preservative is applied by impregnation, dipping, brushing or painting.

Strips of wood treated with Tremco and buried in the ground for test purposes were reported by the manufacturer to have remained in excellent condition. The Tremco Manufacturing Company, 8701 Kinsman Rd., Cleveland, Ohio.



Stamford Federal Savings and Loan Association, Stamford, Connecticut. Norton and Townsend, Architects. Eureka Danby Exterior Marble.

The architect has not only himself to please, but also the building owner and the public. He therefore chooses wisely when he specifies Vermont Marble. Proof of this is shown in this statement made by the owner of the above building in Stamford:

"We have never properly expressed our appreciation of the marvelously accurate work and the beautiful appearance of the front you furnished for our new building. Without doubt it is the finest business building front in Stamford. We have received a great many compliments." (Signed)

Charles G. Talbott, Executive Secretary.

Whether for building exteriors or interiors, or for Memorials, the correct variety of marble is now available, produced by the most modern plant equipment. Choose Vermont Marble for:

COLOR • CHARACTER • PERMANENCE • LOW MAINTENANCE

crystalline VERMONT MARBLE

VERMONT MARBLE COMPANY • PROCTOR, VERMONT



Branch Offices:

Boston • Chicago • Cleveland • Dallas • Houston • Philadelphia • Los Angeles • New York • San Francisco

In Canada: Ontario Marble Company, Ltd., Peterboro, Ontario and Toronto, Ontario
Brooks Marble & Tile Company, Ltd., Toronto, Ontario

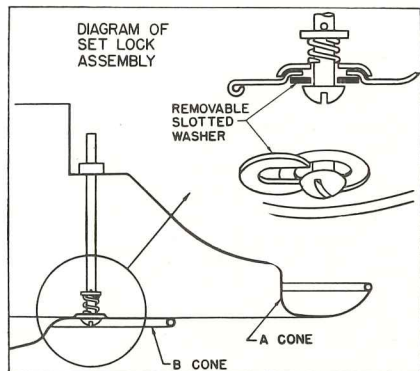
AIR DIFFUSERS MODIFIED

A modification in the design of the *Kno-Draft* adjustable air diffusers, a new, quick-opening set-lock assembly, is reported to reduce installation time and simplify cleaning and inspection by allowing the whole inner element of the unit to be removed or replaced in a few seconds.

The diffuser is comprised of an outer, stationary cone and an inner, remov-



Slight upward pressure on inner cone of the air diffuser releases it for inspection



able cone. A slight upward pressure on the inner cone releases slotted washers which control springloaded catches (see diagram). With washers removed the holes in the inner cone slip over the heads of the bolts which secure the inner cone to the rest of the diffuser, and the element is removed. W. B. Connor Engineering Corp., 114 East 32nd St., New York 16, N. Y.

IMPROVED ELECTRIC DRYER

Addition of a new and improved heating element in the *Sani-Dri* electric face and hand dryer is reported by the manufacturer to cut drying time by 25 per cent without increasing consumption of current.

Replacement of present units by the new element can be accomplished by any maintenance man in a few minutes, according to the manufacturer. Chicago Hardware Foundry Company, North Chicago, Ill.

(Continued on page 182)

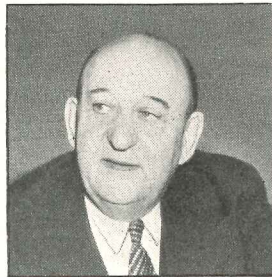
These Experiences are Proof



"Increased dollar volume and better employee efficiency have resulted from my decision to install Frigidaire Air Conditioning in my jewelry store," says Robert S. Cohen, Winchester, Ky. C. Ratcliff Henry, Winchester, handled the installation of these Frigidaire Store Conditioners.



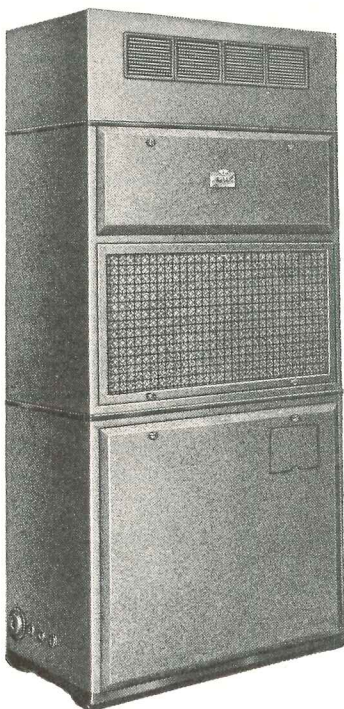
"Frigidaire's high quality was well known to us," says B. F. Spitzig, vice-president of Sleepack-Helman Printing Co., Chicago. "That's why we picked two Frigidaire Room Conditioners for relief from heat and grime." North Town Refrigeration Co., Chicago, sold the equipment.



"One of our best investments—both from the standpoint of employee efficiency and operating costs—is our Frigidaire Air Conditioning System," says Harold Star, executive vice-president of the Dallas Title & Guarantee Co., Dallas, Texas. The dealer was Joe Hoppe & Co., Dallas.

Frigidaire Air Conditioning

makes a good business better!



Frigidaire SC-501 Store Type Conditioner. Two-tone brown finish; welded steel construction; delivers up to 2,000 cu. ft. of conditioned air per minute; 12" centrifugal fan powered by ¾ H.P. motor, 230 V., 60-50 cycle, single phase AC; water-cooled compressor powered by 5 H.P. motor, 220 V., 60-50 cycle, 3-phase standard AC.



Frigidaire Air Conditioning

Over 400 Frigidaire commercial refrigeration and air conditioning products—most complete line in the industry.

Frigidaire Packaged Air Conditioners for Stores, Offices and Homes

Yes, Frigidaire Packaged Air Conditioners can do big things for dollar volume—at mighty little cost. They are responsible for increases of up to 35% in many businesses. Yet they cost so little to install, operate and maintain that they often pay for themselves in a single summer!

The handsome, compact "package" shown at left contains everything necessary to cool, filter, dehumidify and circulate air. It can be installed right in the space to be air conditioned, with no interruption of building routine and no expensive building alterations. It can be used singly or in multiples, with or without a simple duct system. And a heating coil can be added for all-year operation!

Compressor, cooling unit and controls are precision-matched to work together like a championship team. That's why Frigidaire Air Conditioners operate at lowest cost, provide year after year of trouble-free service.

For a full line of products you can depend on, and a name you can depend on, call your dependable Frigidaire dealer. Or write Frigidaire Division of General Motors, Dayton 1, O. (In Canada, Leaside 12, Ont.)

Frigidaire Central Systems

Capacities, types and sizes to meet almost any air conditioning requirements.

Frigidaire Room Air Conditioners

Self-contained window and remote floor types. Easily installed. For rooms up to 750 sq. ft.

For fast facts about Frigidaire Products—fill in and mail coupon today

Frigidaire Air Conditioning

Room size air conditioners. Store size air conditioners. Central systems.



Frigidaire Water Coolers

Pressure, bottle and industrial types; central systems. Variety of sizes and capacities.



Frigidaire Reach-In Refrigerators

Self-contained or remote types up to 60 cu. ft. Forced air or ice-making cooling units.



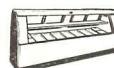
Frigidaire Ice Cream Cabinets

Remote and self-contained models. 4-hole to 10-hole sizes.



Frigidaire Display Cases

Self-service and standard types. Normal and low temperature models.



Frigidaire Beverage Coolers

Both wet and dry models available in several sizes.



Frigidaire Compressors

Sealed rotary and reciprocating types. Sizes up to 25 H.P.



Frigidaire Cooling Units

Forced air, wet and dry expansion evaporative and ice-making types.



Frigidaire Home Appliances

- Household Refrigerators
- Home Freezers
- Electric Ranges
- Kitchen Cabinets and Sinks
- Automatic Washer, Ironer, Dryer
- Electric Water Heaters
- Electric Dehumidifier

Name.....

Firm Name.....

Address.....

City.....

County..... State.....

(Continued from page 180)

METAL ENTRANCE DOORS

Fenestra stock, hollow-metal entrance doors are now available for use in offices, apartments, stores, schools, etc.

Furnished in one standardized size, 3 by 7 ft., the doors may be used in single or double openings and are supplied with a standard cylinder lock. Bronze push and pull bars and bronze ball bearing hinges are supplied if desired. The doors

may be hinged right or left to swing in or out.

These doors come complete with frames and hardware machined, fitted and ready to assemble. Detroit Steel Products Co., 3113 Griffin St., Detroit 11, Mich.

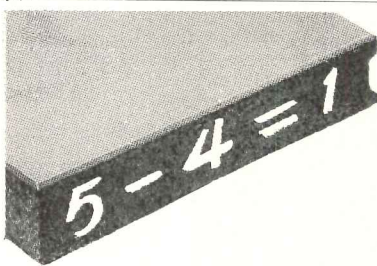
"QUILTED" PLASTIC MATERIAL

Quilting without stitching is the feature of a new plastic material developed

for use in upholstery and wall covering.

Sealluft, which the manufacturer reports is resistant to scuffing, abrasion, alcohol, grease and dirt, is made by using electronic heat to seal Vinylite plastic sheeting, a layer of fire-resistant filler material, and a backing of Vinylite plastic film.

Available in a wide range of colors, the material may be had with front surface either plain or embossed in patterns resembling leather, sharkskin, moire or taffeta. Jason Corp., Hoboken, N. J.



Save \$1

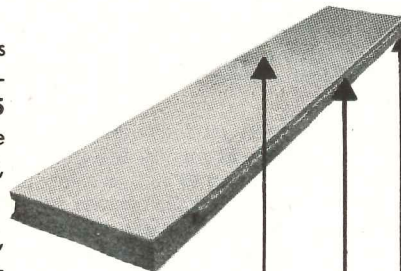
OUT OF EVERY \$5

by using

the Durisol Insulated Roof Plank

This roof plank combines so many functions in one material...all at one low installation cost...that \$4 does the work of \$5 as compared with other materials. Note the 3-in-1 advantages of this light-weight, precast, factory-coated plank:

- 1 Fireproof, reinforced, cement-surfaced, and ready for application of the built-up roofing.
- 2 Because Durisol itself is such an effective barrier against heat losses, no additional insulation is required.
- 3 Noise-deadening ceiling at no extra cost...distinctive and pleasing in appearance, with a sound absorption coefficient of 0.87 at 512 cycles.



THE ROOF DECK

THERMAL INSULATION

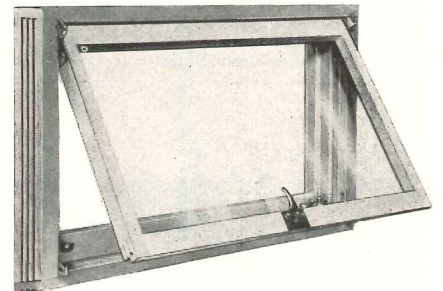
ACOUSTICAL CEILING

DURISOL is made from chemically mineralized wood fibres bonded with Portland cement and moulded under pressure. It is unaffected by moisture and is proof against rot, mould, vermin, termites—proved incombustible by laboratory tests.

Thickness	Width	Maximum Span	Weight per sq. ft.	Long Edge	Load
3 1/4"	16"	6'8"	15 lbs.	Tongue and Groove	40 lbs. per sq. ft. live load with high safety factor.
4 1/4"		8'	18 lbs.		

For complete information, write for folder (A.I.A. File Number 4-K). Also see catalog 3c/13a, Sweet's File Architectural, 1949.

DURISOL, INC. 420 Lexington Avenue, N. Y. 17, N. Y.



Prefab window comes in modular sizes

BASEMENT-UTILITY WINDOW

A completely prefabricated window for basements, cottages, tourist homes and similar applications is now being marketed.

Designed for sash reversibility (sash can be swung at top or bottom), the unit includes frame, glazed sash, hardware, chemical treatment of all wood parts, weatherstripping and (optional) screen and storm sash.

Modular sizing makes for easy installation in standard 8 by 8 by 16 in. concrete block walls—the window is two blocks high and 2, 2 1/2 and 3 blocks wide. The sash can be reversed without tools and can also be combined in ribbon or stack fashion for additional fenestration. Andersen Corp., 1370 Northwestern Bank Bldg., Minneapolis, Minn.

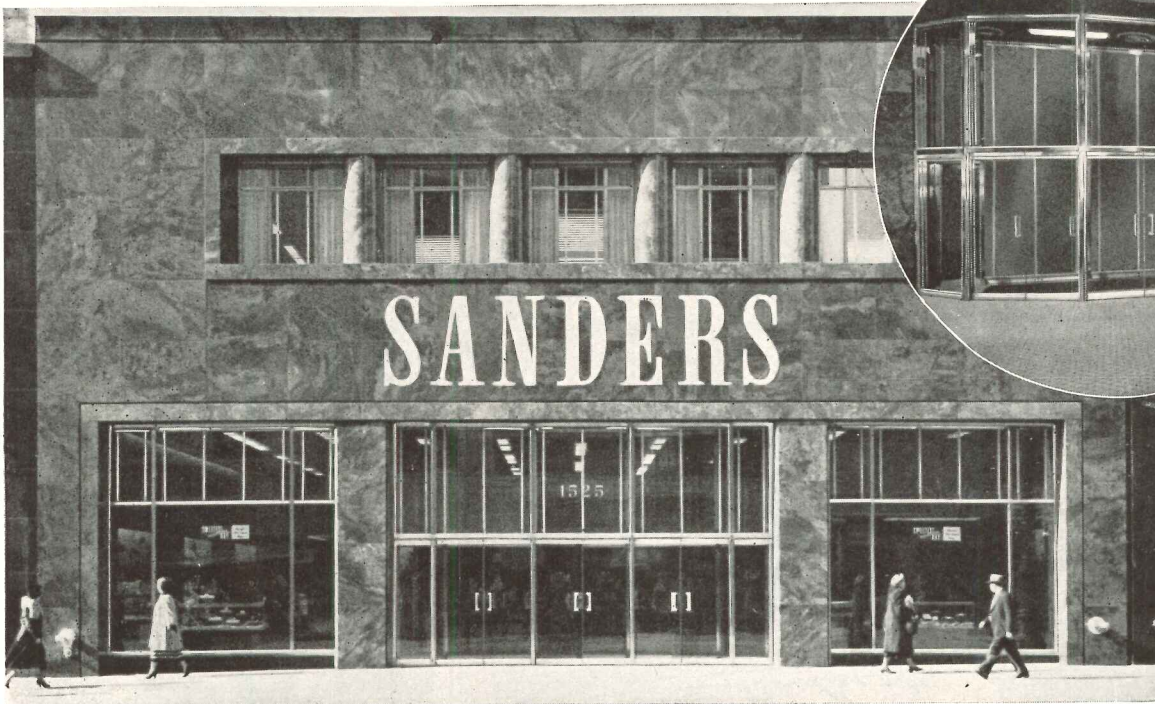
CAST ALUMINUM SOIL PIPE

Gasco aluminum soil pipes and fittings for above-ground plumbing installations such as venting, waste, drainage, stacks and downspouts are distinctive for the lightweight feature, according to the manufacturer, who reports the components to be 75 per cent lighter than extra heavy cast iron pipe.

Other assets claimed for the soil pipe are resistance to corrosion, good appearance and immediate availability, and it is said also to have greater impact

(Continued on page 184)

Sanders, Woodward Avenue, Detroit.
Thermopane installed in Brasco Stainless Steel Settings.
Architects & Engineers: Pollmar, Ropes and Lundy.



More SELLEVISION* *per front foot*

THE emphasis on *Sellelevision* in advanced store front design is increasingly evident. *Sellelevision* permits the shopper to see deeply into the store interior and to preview its alluring attractions. With the reduced height of Safety-Set metal sections, greater *Sellelevision* is actually provided.

The largest plates of glass are held securely in the deeper grip which characterizes all Brasco sash. Heavy-duty bars, substantially reinforced, supply extra protection for enlarged and heightened areas. The complete line is expertly fabricated and handsomely finished in both stainless steel and anodized aluminum of heavy gauge.

Many additional features contribute to Safety-Set's superiority. For nearly four decades we have worked in close collaboration with the country's leading architects and store designers. Safety-Set Construction embodies *their* ideas as well as our own. That's why Safety-Set offers the utmost in practical construction and distinguished appearance, for wisely spent store front dollars. *©

★ ★ A COMPLETE LINE FOR EVERY DESIGN ★ ★

Brasco
SAFETY-SET
STORE FRONTS

BRASCO MANUFACTURING CO.
HARVEY • (Chicago Suburb) • ILLINOIS

Specialists in Metal Store Front Construction for more than 35 Years

(Continued from page 182)

strength than cast iron while being far less brittle. The pipe and fittings are furnished in 2, 3 and 4 in. sizes. General Aluminum Supply Corp., Rialto Bldg., Kansas City 6, Mo.

TRIGGER-ACTION TACKER

A trigger-action stapler especially designed to work in places where there is not room enough to swing a hammer is now available.

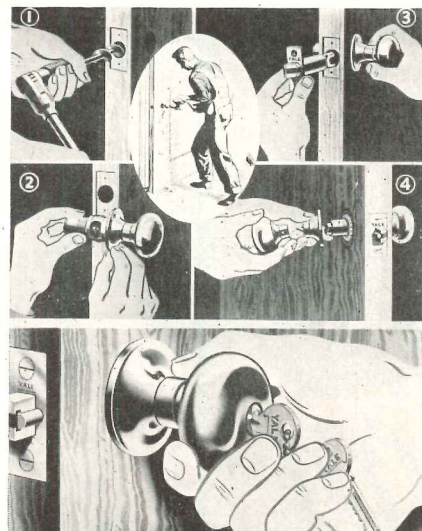
Bostitch Model T-5, for driving staples into wood and similar materials, has a short, narrow base that gets into small places and is said to drive the staple within $\frac{1}{16}$ in. of inside corners, moldings, etc.

Three models are available, using light, medium, and heavy wire staples of varying lengths. The machine weighs only 3 lb. Bostitch, 651 Mechanic St., Westerly, R. I.

HEAVY DUTY TUBULAR LOCKS

Yale Heavy Duty Tubular Locks, made to be assembled in 30 seconds, have been developed in an effort to cut building costs by reducing installation time.

Only two small holes bored in the door are necessary for installation; the entire mechanism of the new locks has been put into two cylindrical housings. The knob and cylinder axis



Only two small holes in door are needed for installation of new tubular locks

fit into a hole bored through the door and the bolt goes into another hole bored into the edge of the door.

Five basic locksets, four of them with the optional deadlocking bolt, to make a total of nine different models, comprise the new line. The Yale & Towne Mfg. Co., Chrysler Bldg., New York 17, N. Y.

GAS FLOOR FURNACE

An automatic gas floor furnace which requires no basement or utility room is reported by the manufacturer to provide the advantages of "big home" automatic heating at a fraction of the cost.

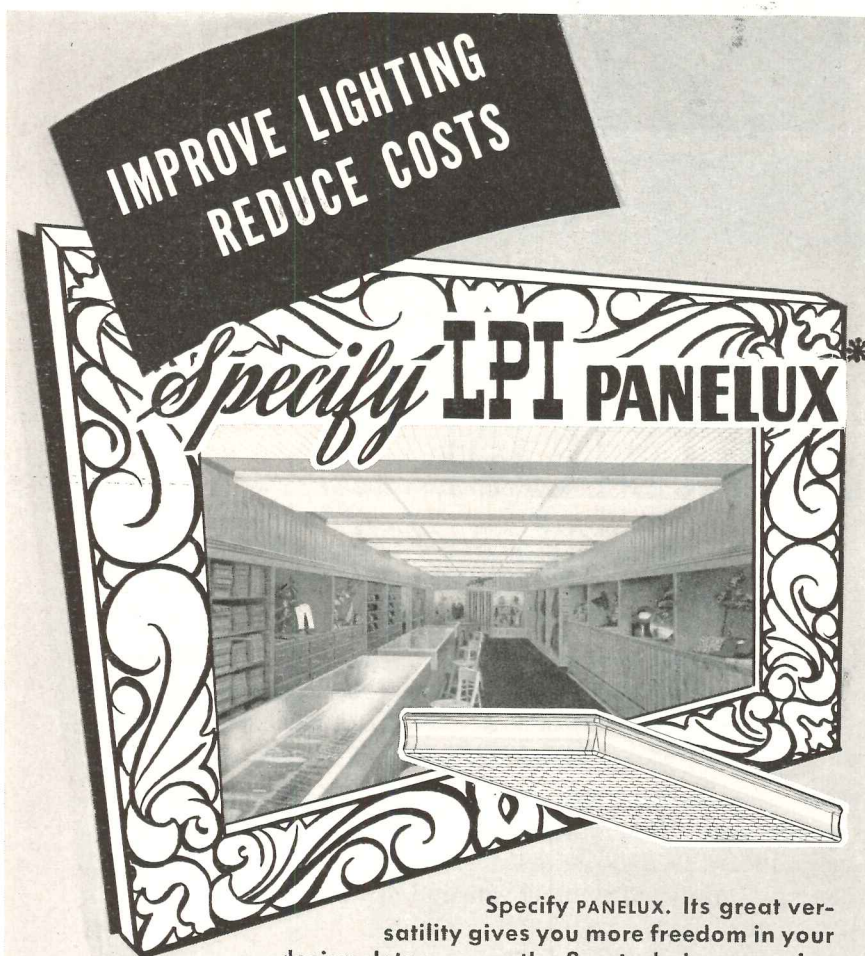
The unit, which is $25\frac{1}{2}$ in. deep, is installed directly beneath the floor. Only the floor-level grill through which the heat flows is visible from the room.

Desired temperature is maintained by a wall thermostat, which automatically turns the gas supply off and on. Tennessee Enamel Mfg. Co., Nashville, Tenn.

ACOUSTICAL TILE

Development of a new acoustical tile composed of compressed glass fibers has

(Continued on page 186)



Specify PANELUX. Its great versatility gives you more freedom in your design, lets you use the fine techniques you've developed. PANELUX provides the most light for the least cost, and it achieves lighting harmony in size, shape and color. LPI's new PANELUX is the only fluorescent luminaire with all these important features:

1. **UNLIMITED APPLICATIONS**—installed individually, end-to-end or side-by-side. With four sizes to choose from, there's no limit to the number of lighting layouts you can achieve.
2. **A COMPLETE FIXTURE**—it combines chassis and louvers and requires only one installation operation.
3. **NO LOUVER MAINTENANCE**—with *Fi-bord** Louvers. You don't clean *Fi-bord*, you replace it— at much less cost and in less time than it takes to clean ordinary louvers.
4. **FIVE COLORS**— *Fi-bord* Louvers available in white and in pastel shades of blue, pink, green and yellow.

Write today for the new PANELUX Bulletin No. 420.

All LPI fixtures are union made, U-L approved and sold through leading electrical wholesalers.

Lighting PRODUCTS, INC.
HIGHLAND PARK, ILLINOIS

* Trade Marks —
Patents Pending

Here's Why It Pays To Specify

Pittsburgh Steeltex Lath For Plaster

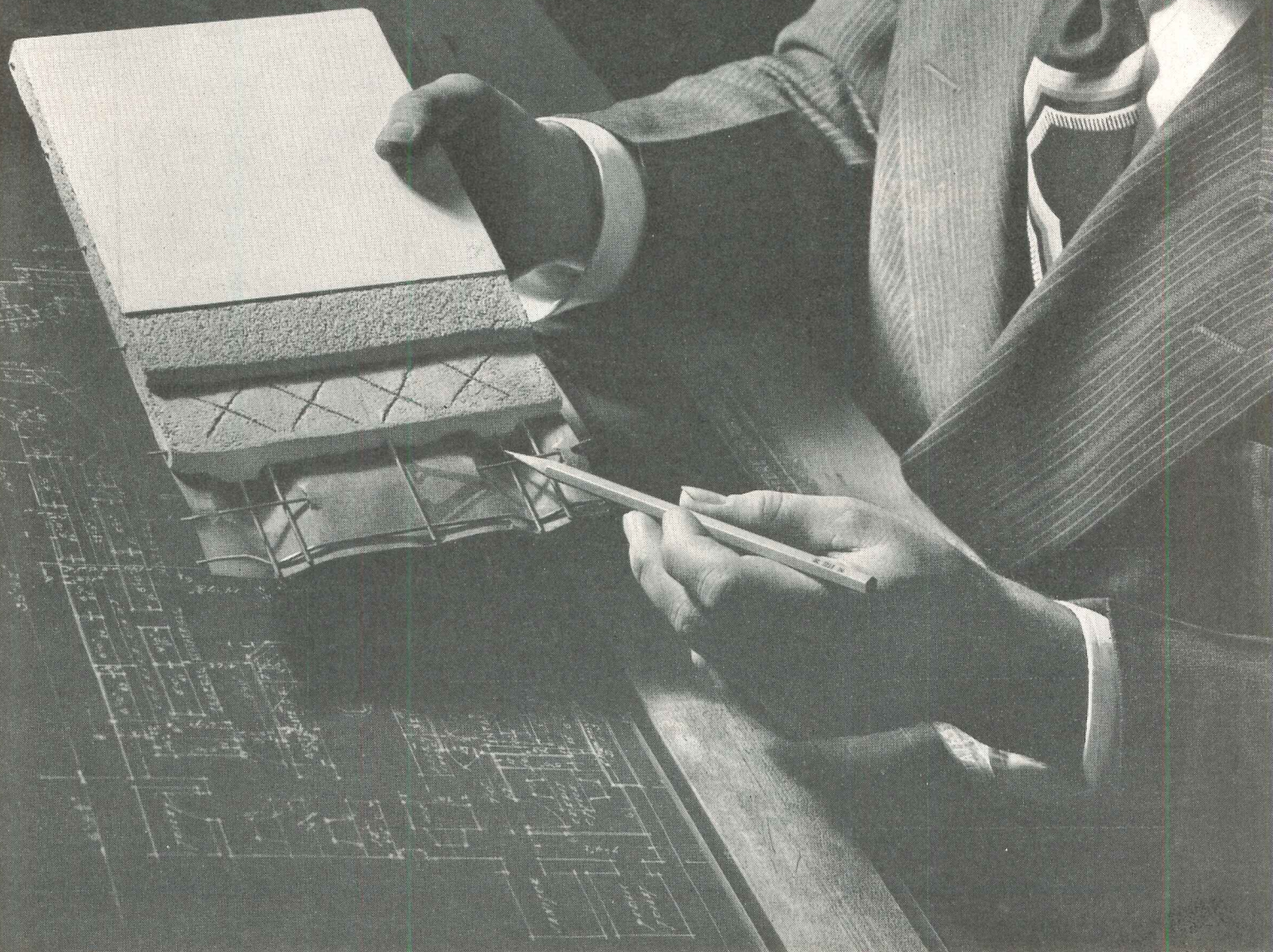
You get low maintenance and high fire protection in your buildings with Pittsburgh Steeltex Lath for Plaster. This combination of galvanized welded wire mesh and absorbent backing makes possible positive embedment of the wire mesh and provides maximum *reinforcement* and protection against plaster cracks. Also this reinforcement has earned high fire ratings for

Steeltex including Underwriters' Laboratories, Inc. test R-2258.

In addition Steeltex provides a rigid troweling surface which speeds its application and saves plaster. For better plaster construction see our catalog in Sweet's or write for Catalog D.S. 130 to Dept. AR, Pittsburgh Steel Products Company, Grant Building, Pittsburgh 30, Pennsylvania.

PITTSBURGH STEEL PRODUCTS COMPANY

A Subsidiary of Pittsburgh Steel Company
Pittsburgh, Pa.



(Continued from page 184)

been announced by the manufacturer.

The lightweight, perforated tile is described as non-combustible, and the manufacturer reports that its high sound-absorbing properties are supplemented by excellent thermal insulation value.

Weighing 0.7 lb. per sq. ft., the tile comes in two sizes, 12 by 12 in. and 12 by 24 in., both $\frac{3}{4}$ in. thick.

The tile is said to be unaffected by

humidity conditions and claimed not to warp, buckle, expand or contract. Owens-Corning Fiberglass Corp., Toledo 1, Ohio.

HOUSE NUMBERS

Metal numbers permanently cemented to a 12 by 12 in. glass block create a new house number said by the maker to be clearly visible by day or night.

A weatherproof lacquer is used to coat

the numbers after they are cemented in place. The block, which is 4 in. thick, is installed in the frame or masonry of a new house during construction.

The *Silhouette* house number utilizes the light from inside to illuminate the figures and is reported to give a soft general illumination to the entrance porch as well. Paul M. Burroway, P.O. Box 3592, Phoenix, Ariz.



House numbers are cemented to glass block



Specify Bradley Sanitary Washfountains

Schools educate students to cleanliness when modern, sanitary wash facilities are provided.

One Bradley DUO-Washfountain with health-protecting foot-control serves two persons simultaneously and takes the place of two ordinary wash bowls thus saving on maintenance and piping. Install DUOS in washrooms, cafeterias, laboratories, workrooms.

The large 54" Bradley (below) with self-flushing bowl, foot-control, and single sprayhead, serves 8 to 10 persons simultaneously, each with a clean spray of running water.

Recent installations of Bradley Washfountains and Multi-Stall Showers include: University of Wyoming, Fremont School (Calipatria, Calif.), Tennessee College, Roanoke City School, Simmons School (Oak Lawn, Ill.), St. Joseph Glenbrook Academy (Clinton, Mich.), Univ. of Massachusetts, Pendleton (Ore.) School, West Phoenix High School, Lebanon (Ore.) Grade School, Brookward School (Kansas City, Mo.), Cedar Grove School (Shreveport, La.), St. Joseph (Mich.) School, Booker T. Washington School (Phoenix).

For suggestions on washroom layouts, write for illustrated Catalog 4701.

BRADLEY WASHFOUNTAIN CO.,
2227 W. Michigan St., Milwaukee 1, Wis.

Below: Sanitary foot-controlled Bradley circular Washfountain protects students' health.



Modern foot-controlled sanitary DUO-Washfountain installation serves two simultaneously.

ASBESTOS CEMENT SIDING

Ceramo Asbestos Cement Siding is back on the market after a seven-year absence due to difficulty of obtaining necessary high-quality raw materials, according to an announcement from the manufacturer.

Available in the standard 12 by 24 in. shingle size in a wave line, straight line or thatch butt pattern, Ceramo has a base of portland cement and asbestos fibers said to be rotproof, wear-resistant, and firesafe.

Fused on at high temperatures, the ceramic-coated surface is smooth and hard, and its density prevents infiltration of moisture or dirt. The Philip Carey Mfg. Co., Cincinnati 15, Ohio.

FLUORESCENT FIXTURE

A new, slimline fluorescent lighting fixture has been designed particularly for stores, banks, institutional and public buildings having moderately high ceilings. The new fixture, *CSL-496*, is an unshielded unit utilizing four fluorescent lamps having a total power of 204 watts. It can be installed either surface or pendant mounted, individually or in continuous rows. To eliminate shadows in end-to-end installation, the 98 in. long unit is designed with a blunt end chassis. Both the chassis and the reflector, which is removable for installation

(Continued on page 188)

BRADLEY Washfountains

WORTHINGTON

Air Conditioning and Refrigeration Report

Worthington Pump & Machinery Corporation, Harrison, New Jersey

NEW EVAPORATIVE CONDENSER SAVES MANY COSTS

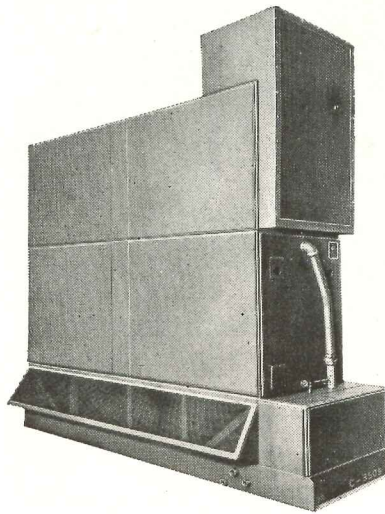
Where water for use in refrigerating condensers is expensive, high in temperature or difficult to secure and dispose of, the Worthington ECZ Evaporative Condenser saves water, equipment, space and money.

Water consumption is reduced 90% or more—only enough new water is added to make up for evaporation and keep the circulated water sweet and clean. No long line losses; and pumping costs are reduced proportionately.

Equipment such as cooling towers, water service and disposal facilities is not needed, saving investment cost, maintenance cost and space.

Prime surface coils are staggered to permit air deflection and wetting of the entire surface. Smooth surface makes washing easy and helps prevent scale accumulation.

Installation of this compact unit can be made inside or outside, in basement or on roof. Two types—Freon and Ammonia. Other features: Worthington Monobloc



Worthington ECZ Evaporative Condenser. Unit contains condenser coils, water spray nozzles, integral refrigerant piping, pump, eliminator, fan, drive, etc.

Pump, anti-corrosion fans (at slight extra cost), receivers available for Freon unit.

Write us for new Bulletin C-1100-B28, giving complete information. Worthington Pump and Machinery Corporation, Harrison, N. J. *Specialists in air conditioning and refrigeration for more than 50 years.*

AB-33

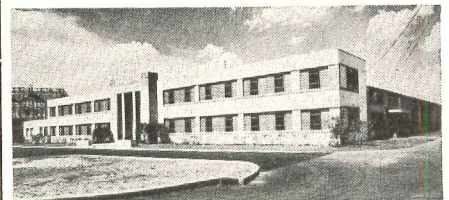


Higbee Is Ahead On Air Conditioning, Too

One of the country's greatest department stores, considered throughout the retail business as a pace-setter, is Higbee's in Cleveland.

17 years ago, a Worthington 1,000-ton carbon dioxide refrigeration plant was installed to provide air conditioning. When it recently became necessary to enlarge the installation, the success of the original equipment suggested having Worthington provide the new machinery.

The new installation provides for 2,000 tons of Worthington centrifugal refrigeration. *J. Gordon Turnbull, Inc., Consulting Engineers.*



North American Mfg. Co. plant, Cleveland, Ohio.

Another Modern Plant Selects Modern Air Conditioning

When North American Manufacturing Company—manufacturer of oil and gas-fired furnaces—built its new plant in Cuyahoga Heights, Cleveland, it decided first, to install air conditioning in its offices and, second, to install the most modern air conditioning equipment.

These decisions led to the selection of a 30-ton Worthington 4-HF-6 air conditioning unit. This is the 6-cylinder W type, operating on Freon-12, with water-cooled condenser and full force-feed lubrication.

Vincent Eaton, Consulting Engineer.

Why "Balanced Air"? Why Worthington?

The ideal air conditioning or refrigeration system consists of machinery all manufactured—not just assembled—by one company. This makes more possible a perfect balance among all interrelated machinery.

Worthington is the company that manufactures all the vital "innards"—compressors, condensers, engines, turbines, pumps. The result is a completely integrated system—for more efficient, more economical operation.

That's why there's more worth in Worthington. See your nearby Worthington distributor—in the Classified Telephone Book.

WORTHINGTON



Air
Conditioning
and
Refrigeration

(Continued from page 186)

and inspection, are finished in white. The end caps, which do not have to be removed or disturbed for servicing, are aluminum finished. Sylvania Electric Products, Inc., 500 Fifth Ave., New York, N. Y.

UNDERGROUND DAM

Shellperm, a new method of controlling subsurface seepage which may cause loss or pollution of water, consists of a

subterranean barrier built without excavating by injecting an asphalt emulsion into the earth through a pipe.

In addition to its function in water conservation, the originator claims it can also be used to check seepage around tunnels, road beds or other subsurface structures, without the use of such relatively expensive techniques as sheet piling.

Pumped under low pressure through

a metal pipe driven into the ground, the asphalt emulsion spreads out and then coalesces, producing a mass impermeable to water. After repeated injections at progressively higher levels have produced a vertical asphalt column, the pipe is moved and the process repeated until overlapping columns form an underground dam.

Special importance is attached to the development because at depths of more than a few feet, control of underground movement of water has heretofore been costly and difficult. Shell Oil Company, Inc., 50 West 50th St., New York 20, N. Y.

ATF Educational Planning Service . . .

for School Architects and Administrators

The following ideal room layouts complete with item specifications are available on request. Other special room layouts will be prepared when local conditions do not permit the use of these standard plans.

Junior High	Square Feet
6-J 6-10 pupils...	528
12-J 12-15 pupils...	840
15-J 15-19 pupils...	960
20-J 20-24 pupils...	1030

Senior High	Square Feet
6-S 6-10 pupils...	598
11-S 12-15 pupils...	910
15-S 15-20 pupils...	1040
20-S 20-25 pupils...	1248

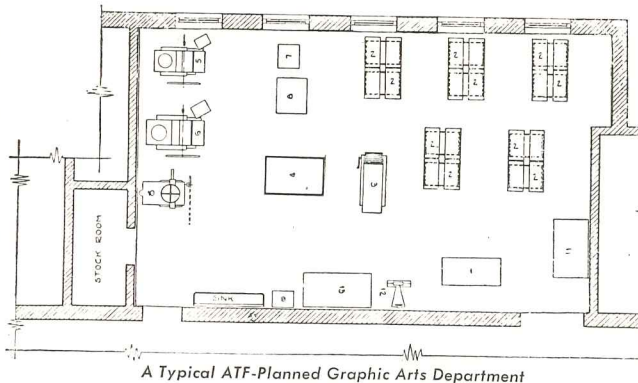
Vocational	Square Feet
10-V 10-20 pupils...	2240
10-VO 10 pupils...	1152
(Complete Offset Dept.)	
20-V 20-25 pupils...	2968

Teachers College	Square Feet
20-TC 15-25 students...	1430

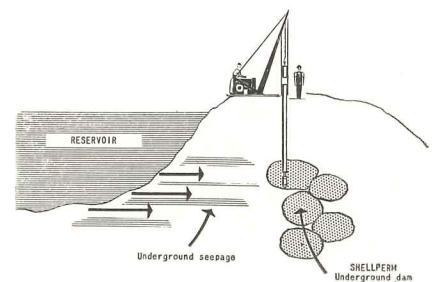


A Typical Planning Committee at Work

The ATF Department of Education has assisted School Architects and Administrators for over 30 years in the planning of Graphic Arts Departments. This specialized engineering service is available without obligation to school officials and architects who are preparing new school building plans. • In the preparation of all layouts, due consideration is given to the correct location of the equipment to provide for maximum operating efficiency, correct lighting and pupil safety.



A Typical ATF-Planned Graphic Arts Department



Asphalt pumped under ground forms barrier to prevent loss or pollution of water

NEW SHADE IN STRUCTURAL GLASS

Vitrolite structural glass now comes in a tenth shade, Sky Blue, the first new color to be added to the line in 1949.

Sky blue is described as a more subdued shade, deeper and richer, than the prewar Princess Blue, which it replaces. It is being produced in $1\frac{1}{2}$ in. thickness with a fire-polished surface.

Vitrolite is considered especially suitable for bathroom and kitchen in the home and for rest rooms in public buildings because its color is permanent, being inherent in the glass itself. Libbey-Owens-Ford Glass Co., Nicholas Bldg., Toledo 3, Ohio.

CONVECTOR RADIATORS

Designed for household, institutional and commercial installations, a new line of *Type F Convector-Radiators* is said to combine attractive appearance with high heating efficiency.

Cabinets designed for either free standing or semi-recessed installations are made of formed steel with removable front panel. Stamped louvers integral with the front panel give directional circulation of air into the room.

(Continued on page 190)

American Type Founders Sales Corporation

Department of Education

200 Elmora Avenue, Elizabeth B, New Jersey



NEO-RAY ML-2448
LOUVRED CEILING

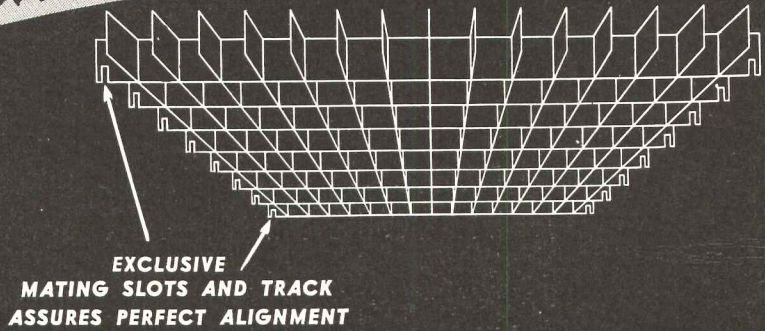
ADAPTABILITY UNLIMITED

ARCHITECTS and UTILITIES Specify NEO-RAY Products!

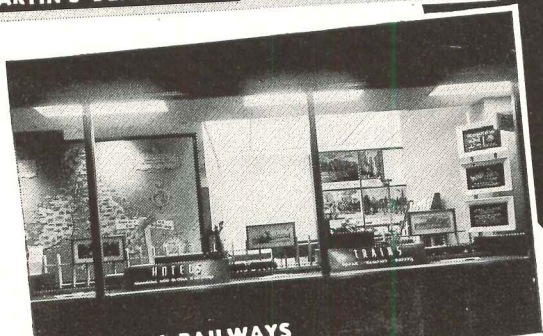
Score with these Features



MARTIN'S DEPT. STORE



EXCLUSIVE
MATING SLOTS AND TRACK
ASSURES PERFECT ALIGNMENT



BRITISH-IRISH RAILWAYS



NEO-RAY EXCLUSIVE
PREFABRICATED PERFECT ALIGNMENT

Exclusive NEO-RAY ML-2448 is made in stock sections 24" and 48". They can be cut on the job to fit all types of job conditions such as: projections from wall, curved areas and center columns and yet maintain rigid and perfect alignment, no corkscrew effect.

SKYLLETTE RECESSED FIXTURE

- ✓ Converts to hinged louvred or hinged glass bottom.
- ✓ Hinged wiring channel.
- ✓ All parts packaged for continuous mounting at no extra cost.



R. H. MACY 34th St.



PARIS DECORATORS

SOLD THROUGH
ELECTRICAL WHOLESALE
JOBBER

VISIT NEO-RAY'S BOOTH 147-148
AT THE 3rd INTERNATIONAL SHOW,
HOTEL STEVENS, CHICAGO

Let us show you simplicity of NEO-RAY'S layout.
Use coupon below to write for free booklet
TODAY.

NEO-RAY PRODUCTS, INC. AR3
313 East 22nd Street
New York City 10
Gentlemen:
Without cost or obligation please send me your
booklet on Neo-Ray Louvred Ceiling.
Name
Address
City..... Zone..... State.....

Neo-Ray
PRODUCTS, INC.
NEW YORK 10, N. Y.
DEVELOPERS AND PRODUCERS OF THE LATEST IN LIGHTING

WATCH FOR
NEO-RAY'S NEW
SLIMLINE
FIXTURES!

(Continued from page 188)

Copper tubes and aluminum fins of the heating elements are intended to insure prompt response to heat control devices, and die-formed collars on fin-holes give large heat transfer contact between tube and fin instead of the line contact afforded by mere punching of fin holes.

Heating elements are available without convector cabinet for use in buildings where specially designed concealed

radiation is specified. They come in standard 4, 6, or 8 in. widths and lengths up to 64 in. Fedders-Quigan Corp., Buffalo 7, N. Y.

EXPLOSION-PROOF HEATER

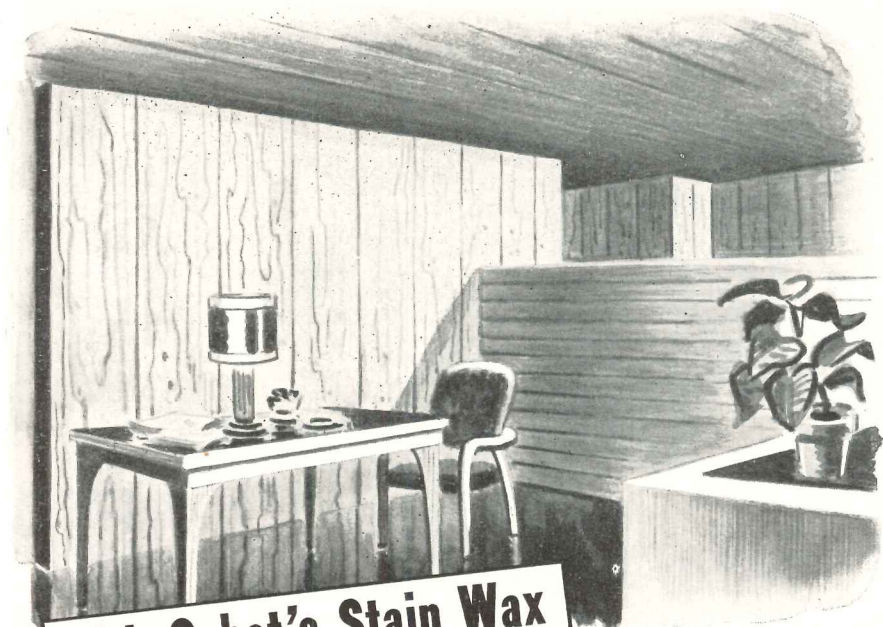
The new *Electromode All-Electric Explosion-Proof Heater* is expressly designed for use where inflammable gases, mixtures, or other highly flammable substances are manufactured, used,

handled or stored, all locations specified by Underwriters' Laboratories in Class 1, Group D.

Fire, shock and burn hazards are said to be eliminated by the Safety-Grid, the patented, cast aluminum, natural convection feature of the heating element. The element consists of a nickel chromium resistor wire, insulated and sheathed in seamless metal tubing, and imbedded in a one-piece finned aluminum casting.

The Electromode Explosion-Proof Heater has been approved by the Underwriters' Laboratories, Inc. Electromode Corp., 45 Crouch St., Rochester 3, N. Y.

Unique Interior Effects



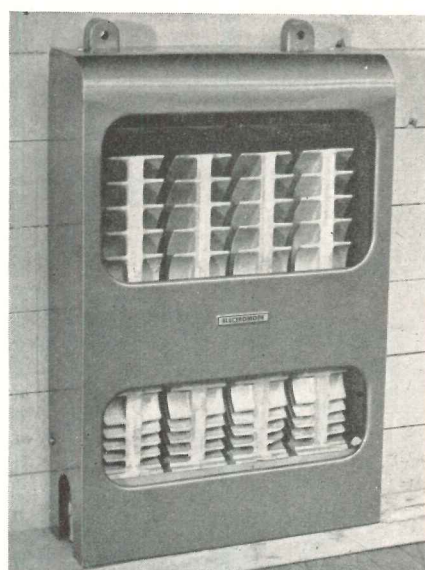
with Cabot's Stain Wax

Cabot's Stain Wax makes possible a variety of striking effects for interior woodwork. With a single application, Cabot's Stain Wax produces the color of a penetrating stain and the lustre of a soft wax finish. Available in many unique light shades including white and gray. The transparent wax surface is long lasting and easy-to-clean.

Write today for **FREE SAMPLE** and **COLOR CARD**. See for yourself what Cabot's new Stain Wax can do.

SAMUEL CABOT, INC.

322 Oliver Building, Boston 9, Massachusetts



Electric heater specially designed for use where flammable vapors are present

TILE FLOORING

A chemically reacted combination of plastics makes *Corlon Tile*, a new luxury flooring recently put on the market.

Reported to offer very high resistance to wear, Corlon is said by the maker to have the depth of color, beautiful graining and plate finish of rubber tile.

The tile is available in 10 colors and comes in four sizes, 6 in. square, 9 in. square, 12 in. square, and 18 in. by 36 in., all 1/8 in. thick. Armstrong Cork Co., Lancaster, Pa.

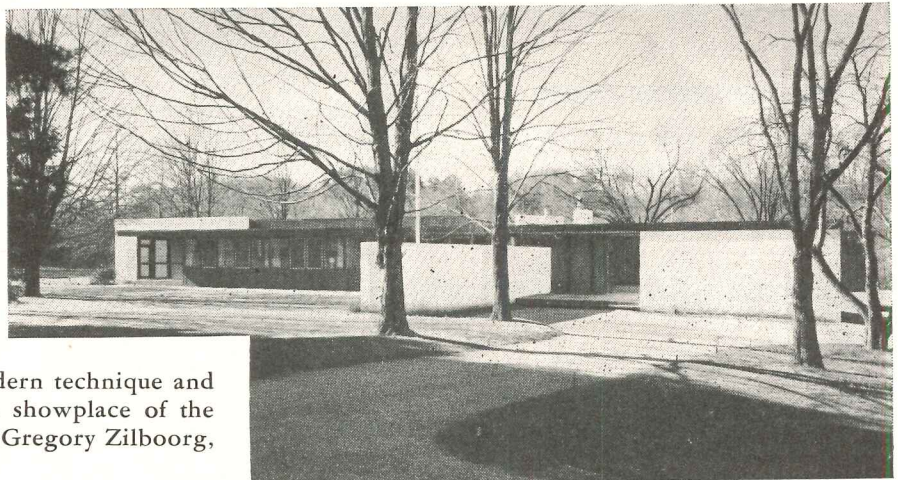
MASTIC GLAZING COMPOUND

An aluminum colored, mastic glazing compound has been developed for aluminum windows which requires no painting because the necessary coloring and protection are incorporated within the mastic itself. According to the manufacturer, *Tremglaze* is applied just like putty, sets firm, bonding tightly to aluminum mun-

(Continued on page 192)

WELDWOOD PANELING . . . one basic reason for the architectural excellence of THE ZILBOORG HOUSE

This interesting Dri-Built home was designed on a 4' module . . . to make most efficient use of Standard Weldwood Panels



ARCHITECT Percival Goodman's modern technique and use of modern materials make a showplace of the recently completed home of Dr. & Mrs. Gregory Zilboorg, Bedford Village, New York.

Almost every room is paneled in Weldwood, using either birch, maple, cedar or oak. And . . . taking advantage of the ease with which "built-ins" can be planned into Weldwood walls . . . Mr. Goodman provided extensive cabinet and storage wall accommodations in the bedrooms, kitchen, dining room and living room . . . all executed in matching Weldwood.

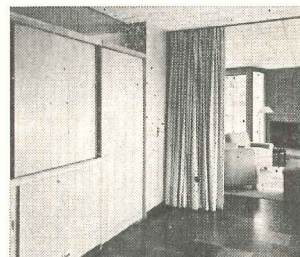
Other features include ceilings of acoustical tile . . . brick-paved flooring in the entrance foyer, with most of the other floors in cork tile . . . and a dead-flat built-up roof which is flooded with two inches of water throughout the summer for cooling purposes.

Another interesting detail is the use, in most rooms, of Keyhole Standards and Brackets extending from floor to ceiling between each Weldwood panel. This makes possible *easily moveable*, random width shelving almost anywhere in the house. In addition, the metal strips contribute an interesting decorative effect to the Weldwood-paneled walls.

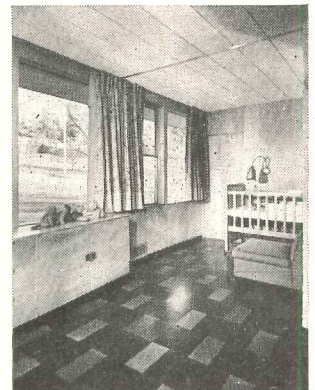
Add other advantages of dri-wall construction, such as tight, rigid sheathing and sub-floors . . . fast, economical construction . . . and you can see why this particular design gives a client a house he will be proud of.

But don't limit your thinking of Weldwood just to the "modern" designs. Dri-wall construction and, especially, Weldwood-paneled interiors fit *any* architectural style.

So plan now to add extra appeal and convenience to your designs with Weldwood. There are many fine hardwoods, both domestic and imported, to fit right in with any motif. Write for complete information.



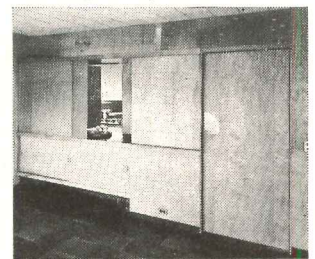
Looking from the dining room into the living room. Notice the commodious cabinets in dining room wall.



Maple Weldwood paneling and large windows make the nursery light and airy. Built-ins under the windows conserve floor space.



Again built-ins are accented in the birch-paneled living room and sliding-door closets in vestibule. Keyhole bracket, one of many used, is illustrated.



This Weldwood-paneled service wall saves many steps between the kitchen and dining room.

WELDWOOD Plywood

Weldwood Plywood and Mengel Flush Doors are products of

UNITED STATES PLYWOOD CORPORATION
New York 18, N. Y.

THE MENGEL COMPANY
Louisville 1, Ky.

Distributing units in Baltimore, Boston, Brooklyn, Buffalo, Chicago, Cincinnati, Cleveland, Detroit, Fresno, High Point, Los Angeles, Milwaukee, Newark, New York, Oakland, Philadelphia, Pittsburgh, Portland, Ore., Richmond, Rochester, San Francisco, Seattle. Also U. S.-Mengel Plywoods, Inc. distributing units in Atlanta, Birmingham, Dallas, Houston, Jacksonville, Kansas City, Kans., Louisville, New Orleans, San Antonio, St. Louis, Tampa. In Canada: United States Plywood of Canada, Limited, Toronto. Send inquiries to nearest point.

Weldwood* Hardwood Plywood
Douglas Fir Weldwood
California Pine Weldwood
Mengel Flush Doors
Weldwood Fire Doors
Weldwood Flush Doors
Douglas Fir Doors
Overhead Garage Doors

Tekwood* (paper-faced plywood)
Protekwood
Weldwood Glue* and other adhesives
Weldtex* (striated plywood)
Decorative Micarta*
Flexwood*
Flexglass*
Firzite* and Satinlac*
*Reg. U. S. Pat. Off.



Plastics and Wood
Welded for Good

Weldwood Plywood is made in both Interior and Exterior types, the former bonded with extended urea resins and other approved bonding agents; the latter with phenol formaldehyde synthetic resin.

(Continued from page 190)

tins, remains resilient and is water- and weatherproof to insure leak-proof windows without maintenance costs of painting. Tremco Mfg. Co., 8701 Kinsman Rd., Cleveland, Ohio.

FOLDING LUNCHROOM TABLES

All-steel, folding table and bench units designed to convert gymnasiums, auditoriums and similar areas into lunch rooms are now being offered with mar-

belized as well as solid color linoleum tops.

These folding tables are available in two types — against-the-wall and in-the-wall units. The first type folds into a cabinet that extends 7 in. from the wall, and can be installed in existing buildings without remodeling. The second type is built into the wall in new construction. Schieber Mfg. Co., 12720 Burt Rd., Detroit, Mich.

STAINLESS STEEL SHOWER CABINET

The *Bathe-Rite* Stainless Steel Shower Cabinet is available especially for application where maintenance is a big factor such as hotels, hospitals, institutions and industrial plants.

Every item in the construction of the new shower cabinet is said to be corrosion resistant — from the porcelain enameled reinforced receptor to walls, fastenings, shower head, valves and curtain rings.

This shower cabinet, 36 in. in size, is said to be particularly easy to install. Milwaukee Stamping Co., Bathe-Rite Div., 865 S. 72nd St., Milwaukee 14, Wis.

CELLULAR CEILING

A new type of louvered ceiling for diffused lighting has been developed which consists of thin, corrugated, steel strips prefabricated into honey-combed panels. The panels fit together into a single continuous ceiling when hung below lighting fixtures.

The panels come in 24- or 30-in. widths and in lengths varying by 6 in. steps from 96 down to 12 in. The light weight of *Cell-Ceil*, 12 ounces per sq. ft., is said to eliminate cumbersome, expensive hanging equipment.

The Cell-Ceil panels are galvanized, bonderized and finished in pastel shades of baked enamel. Federal Enterprises, Inc., 8700 S. State St., Chicago 19, Ill.

MODULAR FURNACE

With the *Mueller Climatrol Modular Furnace*, the home owner can buy a complete winter and summer air conditioning system in installments.

The basic unit is a gravity furnace with oil or gas automatic firing. A forced circulation blower and a summer cooling unit can be added later.

Standardization and interchangeability of the units allows the system to be expanded without making the original equipment obsolete. L. J. Mueller Furnace Co., 2005 W. Oklahoma Ave., Milwaukee 7, Wis.

AUTOMATIC HOT WATER AIR VALVE

Complete elimination of air from convectors, radiators, mains, baseboard radiators and panel heating units is claimed for the new *Dole No. 20 Automatic Hot Water Air Valve*.

It is announced as "the first fully automatic hot water air valve." A coin or screw driver sets the selector screw

(Continued on page 194)

WANT HELP with TOUGH DRAINAGE PROBLEMS? ASK WADE OF ELGIN

Constant engineering development and research, backed by 84 years manufacturing "know-how" make Wade a popular source among leading architects for help with tough drainage problems. Take advantage of Wade's technical cooperation on any job that's bothering you. It's a way to save time and there's no obligation—write us, today!

WADE FLOOR DRAINS—366 types meet nearly every drainage requirement.

WADE ROOF DRAINS—118 types to choose from in the Wade catalog.

WADE HYDRA FILTERS—double acting Grease Interceptors available in a number of models.

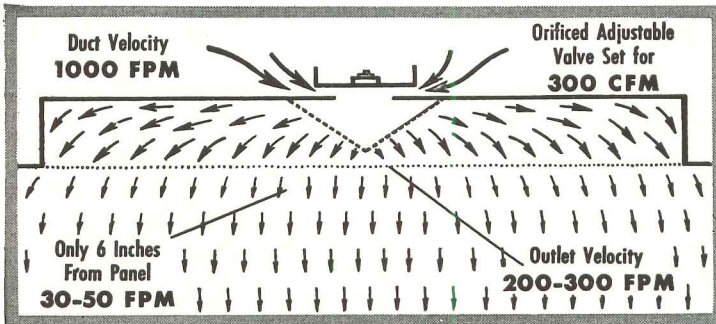
SEND for your copy of the new Wade catalog—it's full of technical and practical information to help solve many drainage problems.



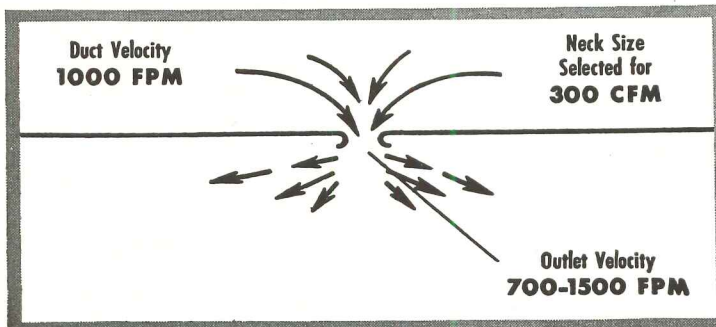
WADE MANUFACTURING CO.
ELGIN, ILLINOIS

6-Exclusive Advantages of Low Velocity Air Diffusion!

MULTI-VENT=LOW VELOCITY



ALL OTHER DIFFUSERS=HIGH VELOCITY

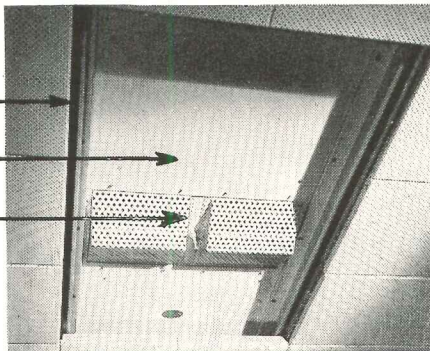


Concealed Multi-Vent Panel exposed by removal of six squares of metal acoustical ceiling.

Panel Frame . . . installed in the bottom of air supply duct.

Control Plate . . . supporting one or more valves per panel, is hinged in panel frame providing ready access to duct above for cleaning.

Pressure Displacement Air Valve . . . single adjusting screw raises, and lowers a valve plate above opening in control plate to regulate volume of air flow from duct into dual V-shaped, primary distribution sections, the design of which insures a perfectly even distribution of air over the entire perforated area below panel.



P Y L E - N A T I O N A L

MULTI-VENT

LOW VELOCITY AIR DIFFUSION

*Reg. U. S. Pat. Off. by the Pyle-National Co.

*Pyle-National Multi-Vent's unique principle of low velocity, pressure displacement air diffusion through perforated metal is fully protected by U.S. and foreign patents. Only with Multi-Vent can you enjoy its benefits.

- 1 **No Strong Air Streams to Direct!** Only with Multi-Vent are duct velocities so radically reduced (within the diffuser itself) . . . diffusion so rapid, thorough and widespread . . . that no air movement in excess of ASHVE comfort zone requirements exists more than six inches away from the perforated distribution plate.
- 2 **No Deflection Problems to Restrict Location or Capacity of Outlet Panel!** Only with Multi-Vent can the location and the capacity of the diffuser be determined solely by load considerations assuring maximum effectiveness and efficiency. The proximity of seating locations or the relative positions of partitions and lighting fixtures—which must be a major consideration in locating high velocity diffusers to avoid drafts—need not be considered with Multi-Vent regardless of ceiling heights.
- 3 **No Change in Air Diffusion Patterns When Desired Volume of Air Delivered is Varied!** Only Multi-Vent has an adjustable pressure displacement valve which can be easily set for delivery of various amounts of air without disturbing the balance of the overall system. Neither single panel adjustments to suit occupants special requirements nor substantial reduction or increase of air capacity at source to meet seasonal demands will in any way affect the desired air flow pattern.
- 4 **40% Higher DTD Will Meet Comfort Zone Requirements!** Only Multi-Vent will permit raising the usual 15° Diffusion Temperature Differential to as high as 25° (with an eight foot ceiling for example). Thus 40% less air need be used to handle a given load making possible substantial economies in ducts, fans, filters and coils.
- 5 **No Protruding Outlet Fixtures to Mar the Beauty of Modern Interiors!** Only Multi-Vent can be completely concealed above the square perforated pans in a metal acoustical ceiling. Multi-Vent installed flush in all other type ceilings is less conspicuous than diffusers of any other make.
- 6 **Incomparable Uniformity of Room Temperature and Humidity!** Multi-Vent can achieve a temperature differential of as little as 1 degree within the comfort zone in all seasons . . . and 2 degrees is guaranteed! This insures true air conditioning comfort and will meet the most exacting air conditioning requirements for scientific research and industrial processing.

Write for complete specifications and selection data to THE PYLE-NATIONAL COMPANY, Multi-Vent Division, 1375 W. 37th St., Chicago 9, Illinois. Sales engineers and agents in the principal cities of the United States and Canada.

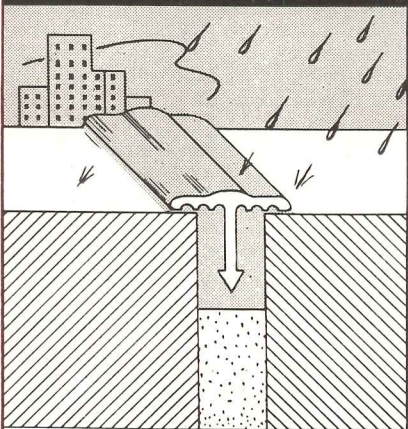
TO STOP LEAKS

BEFORE THEY START-

Specify



WEATHERCAP for masonry joints!



- Seals joints in copings, cornices, wash and belt courses, once and for all! For sample and specification data, mail coupon.

SEND FOR YOUR SAMPLE

Minwax Company, Inc.
11 West 42nd St., New York 18, N.Y.

Please send me free sample of Weathercap with descriptive folder and specification data.

Name

Address

City

State

AR-3-49

ARCHITECTURAL ENGINEERING

TECHNICAL NEWS AND RESEARCH

(Continued from page 192)

for one of the three functions: fully automatic air eliminator, manual shut-off, manual venting. The Dole Valve Co., 1933 Carroll Ave., Chicago 12, Ill.

LAWN HOSE HOLDERS

An answer to the problem of hose storage is offered in the *Guardian Lawn Hose Holder*, said to be simple to manipulate and a contribution to fire protection.

A wire basket attached to the basement ceiling receives the hose, which will coil itself into the receptacle after it



Wire basket attached to basement ceiling stores garden hose until ready for use

is pushed with a very slight twist through a pipe leading from the exterior wall, according to the manufacturer's description.

The hose is always connected for immediate use with the water supply. Guardian Mfg. Co., P. O. Box 302, Minneapolis, Minn.

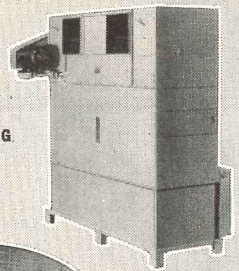
INTERCOMMUNICATION SYSTEM

An intercommunication system has been designed recently to enable workers to answer paged messages clearly and intelligibly from high noise level areas. The new circuit coordinates the operation of a "trumpet-type" reproducer and a two-way "staff station."

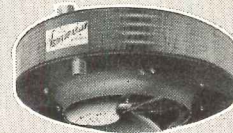
When the system is used to page a person in one of the high noise level areas, the message is reproduced at high volume through the trumpet station. To reply, the paged person depresses a lever on the nearest staff station. The trumpet is automatically cut out, and two-way

(Continued on page 196)

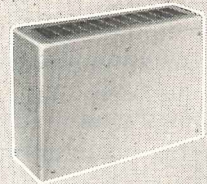
AIR
CONDITIONING
UNITS



VERTICAL TYPE
UNIT HEATERS



CABINET TYPE
UNIT HEATERS

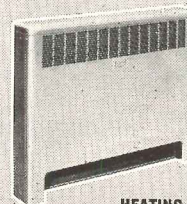


In Every Case...
SPECIFY

YOUNG

SPECIALISTS IN HEATING,
COOLING AND AIR CONDITIONING
EQUIPMENT FOR HOME AND INDUSTRY

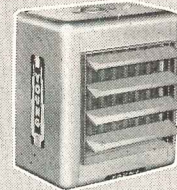
CONVECTORS



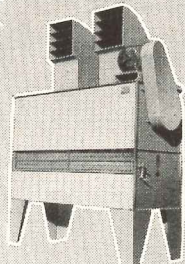
HEATING AND
COOLING COILS



HORIZONTAL TYPE
UNIT HEATERS



BLOWER TYPE
UNIT HEATERS



YOUNG



HEAT TRANSFER PRODUCTS

HEATING, COOLING AND
AIR CONDITIONING PRODUCTS
Convectors • Unit heaters • Heating coils • Cooling coils • Air
conditioning units • Evaporative condensers

AUTOMOTIVE PRODUCTS
Gas, gasoline, Diesel engine cooling radiators • Heat exchangers
• Intercoolers • Oil coolers • Supercharger intercoolers

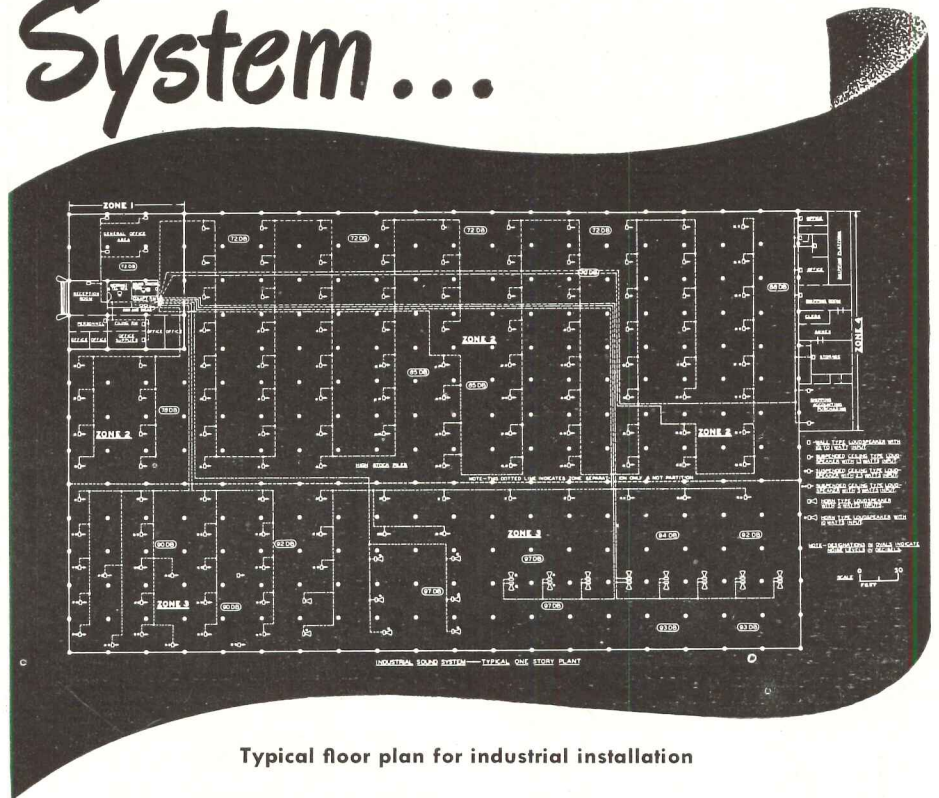
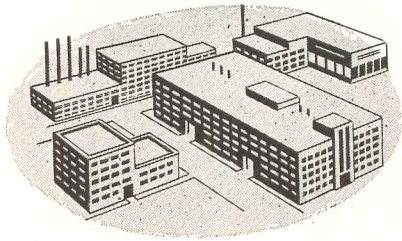
OIL FIELD, HEAVY INDUSTRIAL, MUNICIPAL &
CHEMICAL PROCESS COOLING EQUIPMENT
Engine jacket water coolers • Oil coolers • Steam and natural
gas condensers • Natural gas coolers • Evaporative coolers and
condensers • "VAD" Vertical air discharge cooling and condens-
ing units.

AERONAUTICAL PRODUCTS
Oil coolers • Supercharger intercoolers • Radiators • Heat ex-
changers • Valves • Regenerators

YOUNG RADIATOR CO.

General Offices: Dept. 519-C, Racine, Wisconsin
Plants at Racine, Wisconsin, and Mattoon, Illinois
Sales and Engineering Offices in All Principal Cities

It's Easy to Plan a Sound System...



Typical floor plan for industrial installation

—with time-saving RCA Engineering Service

YOU GAIN a good reputation when your clients are enthusiastic with the results of your plans and specifications. You generate this kind of client enthusiasm when you recommend a sound system that is engineered specifically to the individual requirements of your client's organization.

This benefit is yours when you use the services of RCA Sound Engineers to assist you when working out the

details of a modern sound system. You also save time and save money.

There is no ready-made "package" system that perfectly suits the noise level, type of buildings, needs of various types of plant and office layouts. Working with RCA's practical help for architects, you provide clients with a sound system that gives them the most for their money. An RCA Sound System utilizes the latest developments in sound system engi-

neering practice for high-quality reproduction of voice and music.

No matter what size or type of job you have on your drawing boards, RCA will help you. Put your sound system problems up to RCA. No obligation, of course.

Contact your nearest RCA Sound System distributor, or write: RCA Sound Products, Department 3C, RCA, Camden, New Jersey.

----- Let RCA Help You Plan and Engineer Sound Systems For -----

OFFICE BUILDINGS
SCHOOLS
CHURCHES
HOSPITALS
INDUSTRIAL BUILDINGS

HOTELS
INSTITUTIONS
DEPARTMENT STORES
TRANSPORTATION TERMINALS
RECREATIONAL CENTERS

WAREHOUSES AND GARAGES

DO YOU HAVE A COPY?

The Architect's Manual of Engineered Sound Systems. The most authoritative work book and reference manual published on sound systems. Typical plans, and specifications for all types of buildings. 288 pages. Price \$5.00 (\$5.50 foreign).



SOUND PRODUCTS

RADIO CORPORATION of AMERICA

ENGINEERING PRODUCTS DEPARTMENT, CAMDEN, N.J.

In Canada: RCA VICTOR Company Limited, Montreal

(Continued from page 194)

conversation at normal voice level can be conducted between the person paged and the originator of the call.

Formerly, when replies were made through a two-way trumpet reproducer, the trumpet would pick up all shop noises so that the reply was frequently unintelligible.

The trumpet reproducer is constructed of heavy gauge, spun aluminum with gray wrinkle finish; it is 10½ in. in diameter and in overall length, and is equipped with an adjustable mounting bracket. The compact, die-cast staff station is 6 in. wide, 6½ in. high and 3½ in. deep, and is finished to match the trumpet reproducer. Executone, Inc., 415 Lexington Ave., New York 17, N. Y.

ELECTRIC RADIATOR

Electrically heated through the medium of hermetically sealed oil is a new pressed steel radiator unit called *Hur-seal*.

The thermostatically controlled radiator is filled with a special grade, low expansion oil, and is permanently sealed. An electrical element, welded into the radiator or wall panel types, heats the oil and is said to provide a quick temperature rise to a surface temperature of 160° F.

Twelve models of various heights and designs are available in a range of colors with glossy finish. Acrow, Inc., 155 Washington St., Newark, N. J.

PLASTIC WALL COVERING

A plastic coating for finishing concrete, brick or block walls is said to provide both color and texture in a single spraying operation.

The coating is described as resisting scuffing, grease and oil, water, sunlight and exposure to weather.

The product consists of a liquid binder of synthetic rubber and a powder composed of plastic materials and asbestos fibers. These components are mixed on the site with water, which serves as the vehicle for spraying.

Scotch-Top is made in white and in 12 different shades of green, red and yellow.

The coating is now available in the Chicago area and will be offered nationally, according to the manufacturer, when skilled applicator crews have been trained. Minnesota Mining and Mfg. Co., 900 Fauquier St., St. Paul, Minn.

Investigate!!!
THE
AVAILABILITY

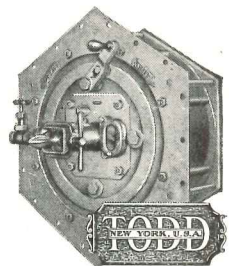
AND
ECONOMY
OF
FUEL OIL

AND
TODD
BURNERS

FOR YOUR
BOILER PLANT!

You'll find that for replacement of obsolete equipment or for new installations, Todd Burners will effect savings in fuel and maintenance costs. Skilled Todd specialists, modern Todd facilities—backed by 35 years of engineering experience—guarantee you economical burning of liquid and gaseous fuels. See your local Todd dealer now!

Oil Burners
Gas Burners
Combination
Oil and Gas
Burners



**COMBUSTION EQUIPMENT DIVISION
TODD SHIPYARDS CORPORATION**

81-16 45th Ave., Elmhurst, Queens, N. Y.

NEW YORK • BROOKLYN • ROCHESTER
BUFFALO • HOBOKEN • NEWARK • PHILADELPHIA
HARRISBURG • YORK • CHICAGO • CHARLESTON,
S. C. • BOSTON • SPRINGFIELD, MASS.
BALTIMORE • WASHINGTON • RICHMOND, VA.
ATLANTA • DETROIT • GRAND RAPIDS • TAMPA
GALVESTON • HOUSTON • MOBILE • NEW
ORLEANS • LOS ANGELES • SAN FRANCISCO
SEATTLE • MONTREAL • TORONTO
BARRANQUILLA • BUENOS AIRES • LONDON

ANNOUNCING...
The *New*, FASTER DRYING
Sani-Dri
HAND AND FACE DRYER

MODERNIZES
WITHOUT
STRUCTURAL
CHANGES

THE ONLY
DRYER
WITH THE
UNDERWRITER'S
SEAL OF
APPROVAL

BUILT-IN WALL MODELS AVAILABLE
FOR NEW INSTALLATIONS

**New, Improved Sani-Dri
CUTS DRYING TIME
25% OR MORE!**

Now . . . a new, improved heating element makes Sani-Dri the fastest drying machine of its kind! This modern, sanitary method of hand and face drying now takes 25% less time! For new installations or modernizations of old washrooms, there's nothing like the new faster-drying Sani-Dri. Write for the latest facts today!

SAVES UP TO 85% OF WASHROOM COSTS!

You eliminate towels completely with the Sani-Dri. No unsanitary litter . . . no fire hazard . . . no paper clogged soil pipes — Sani-Dri provides completely automatic drying service 24 hours a day, year after year with little or no maintenance! Sani-Dri pays for itself out of savings!



GET THE LATEST FACTS!

New brochure 1082 shows both built-in wall and pedestal models of new faster-drying Sani-Dri electric hand and face dryer. Write today!

Distributors in Principal Cities

THE CHICAGO HARDWARE FOUNDRY CO.
"Dependable Since 1897"
8349 Commonwealth Avenue
NORTH CHICAGO, ILL.



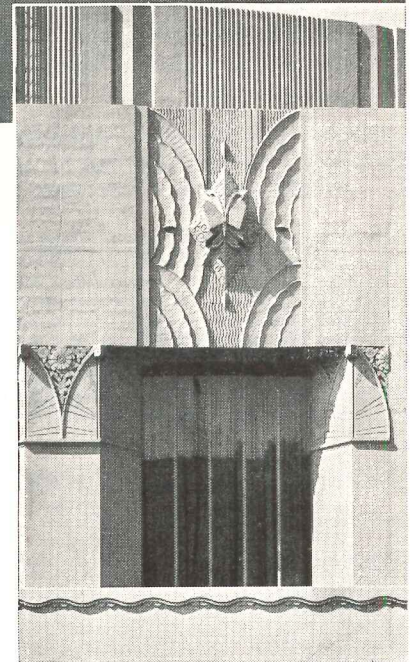
Architectural Concrete

theater resists severe weathering

SPOKANE'S FOX THEATER was built in 1931. For 18 years it has been exposed to frequent freezing and thawing cycles and extremes of temperature that range from -30°F . to 108°F . Yet this severe weathering has had no effect on the architectural concrete. Arrises remain as sharp as when the forms were stripped.

Architectural concrete buildings like this that are designed and constructed to resist any weather conditions maintain their original good appearance and remain structurally sound indefinitely. Such durability is the result of applying the well-defined principles and procedures of quality concrete construction.

The beauty and durability of architectural concrete also make it ideal for apartments, hospitals, schools, factories, office and commercial buildings. Having long life and requiring little or no maintenance, architectural concrete renders *low-annual-cost* service, the true measure of construction economy. That's important to owners, investors and public officials.



Illustrations above show a general view of the Fox Theater, Spokane, with (inset) a close-up of large ornamental bas-relief butterfly panel cast integrally with the wall against a plaster mold built into the forms. R. C. Reamer and Frank Wynkoop were the architects. Alloway & George were the contractors.

PORTLAND CEMENT ASSOCIATION
 33 WEST GRAND AVENUE, CHICAGO 10, ILLINOIS
 A national organization to improve and extend the uses of portland cement and concrete through scientific research and engineering field work

PROTECT LIVES AND PROFITS! SPECIFY...



MODEL 10EL
10,000 WATTS

Onan Emergency Electric Plants provide power for all essential needs . . .

LIGHTS • REFRIGERATION • VENTILATING SYSTEMS • COMMUNICATIONS • OIL BURNERS • STOKERS • ELEVATORS

* When storms, floods or breakdowns interrupt commercial power, Onan Standby Plants start automatically and take over the power load within seconds, stop when power is restored. Operating and maintenance costs are negligible. Widely used in hospitals and other institutions, radio stations, hatcheries, theaters, industrial plants . . . wherever power interruptions would be dangerous and costly. Available from 1000 to 35,000 watts.

What size Standby Plant will your project need?



Send coupon below for folder on Onan Standby Plants. It will help you specify the right size plant and the necessary accessories. If you have an unusual problem write our engineering department.

D. W. ONAN & SONS INC.
5137 Royalston Ave., Minneapolis 5, Minn.



Please send me your Standby Folder

Name.....

Address.....

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

ONAN STANDBY POWER

(Continued from page 140)

timber connectors are illustrated by sample designs and on-the-job photographs. Roof designs include trussed rafters, pitched trusses, Lank-Teco trusses, flat trusses and bowstring trusses. Special designs include bridges, trestles, towers, hangars, grandstands and farm structures. The book is being distributed free of charge to practicing architects and engineers. 116 pp., illus. Timber Engineering Co., 1319-18th St., N.W., Washington 6, D. C.

Boilers

Federal Boilers (Bulletin No. 125). Outlines special features and advantages of a line of boilers for radiant heating, domestic hot water, steam and hot water heating. Drawings and photos illustrate construction details. Ratings and specifications are listed. 6 pp., illus. Federal Boiler Co., Inc., Granite and West Sts., Midland Park, N. J.

LITERATURE REQUESTED

The following individuals and firms request manufacturers' literature:

M. Raymond Adler and Co., Architectural Design, 120 Academy St., Poughkeepsie, N. Y.

Pierre Beauvais, Architectural Student, 3518 Dorion, Montreal, Canada.

Bilt-Rite Organization, Inc., General Contractors, 68 Fourth Avenue, Brooklyn 17, N. Y.

A. Burns Cadwalader, Designer-Draftsman, 1525 Jay Street, Redding, Calif.

Alvaro Cardenas, Carrera 13 NO. 33-13, Bogota, Colombia, S. A.

William V. Cobern, Architectural Draftsman, 2913 Monroe Street, Ashland, Ky.

Herbert I. Fogelberg, P.O. Box 300, Fort Lincoln, Bismarck, No. Dakota.

Miss Luke Lietzke, Curator of Industrial Design, Akron Art Institute, 140 East Market Street, Akron 8, Ohio.

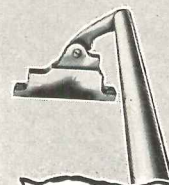
John G. Marks, Jr., 5211 Gerry Drive, Pittsburgh 27, Pa.

Frederick G. Nobbe, Architect, Box 98, R. D. 1, Long Branch, N. J.

Henry L. Reese, Consulting Engineer, 632 Washington Street, Reading, Pa.

John T. Simpson, A.I.A., 12 Broad Street, Red Bank, N. J.

Mrs. B. M. Smith, Librarian, Blair Public Library, Blair, Wis.



Specify

MONARCH

*instant
Exit*

**PANIC
DEVICES**

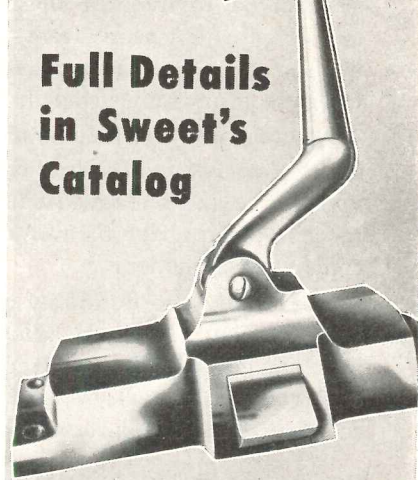


Mortise, Rim and Vertical Rod Types, that deliver steadfast *instant exit* service in heaviest traffic use, through untold years of service.

Write for literature



**Full Details
in Sweet's
Catalog**



CLAYTON & LAMBERT MFG. CO.
1705 Dixie Highway • Louisville 10, Ky.

WHEN YOU WANT

“maximum heat from each dollar of fuel cost”

SPECIFY PETRO, OF COURSE!

Many reasons account for the growing acceptance of oil heat for modern buildings. Hospitals, for example, emphasize the quiet operation and freedom from noisy fuel deliveries oil heat assures. Hotels welcome its dependable, comfortable warmth. To the exacting homeowner, it brings the convenience of automatic firing without furnace drudgery. To apartments it means a minimum of supervisory attention. To such establishments as hat factories it provides cleanliness, no soot or dirt.

AND when the plans call for a Petro, you gain a still further advantage — maximum heat per dollar of fuel cost.

You can appreciate why this holds true. Petro's Thermal Viscosity Control enables a Petro oil burner to handle the heaviest, *lowest cost* fuel oil at high combustion efficiency. Since heavy oils have also highest heat content, substantial savings are assured.

Yet, Thermal Viscosity Control represents only one of several exclusive Petro fuel-saving features that result from Petro's more than 45 years' specialized oil heat experience. As Mr. Severud puts it, when you want “maximum heat from each dollar of fuel cost,” specify Petro.



One of the country's outstanding consulting engineers, Mr. Fred N. Severud has been identified with the engineering profession for the past quarter century. He has served as consultant on such well-known structures as: Rome Air Depot, Rome, N. Y.; Lillian Wald Housing Project, New York; Tripler General Hospital, Hawaii; Veterans Hospital, Wilkes-Barre, Pa.; Hotels Interamericanos, Panama; Broadcasting Station KNX, Los Angeles, Calif.; and the Office Building and Broadcasting Station, Reykjavik, Iceland. Mr. Severud expresses this opinion of oil heat:

“Where we have used Petro Systems, we have found that a large part of their economy record is due to Petro's Thermal Viscosity system for burning lowest cost oils at high combustion efficiency and with completely automatic operation. This means maximum heat return from each dollar of

fuel cost and a labor expense limited to nominal observation.

“We have found, too, that the Petro organization gives intelligent thought to installation details and specifications, and their service extends to a continued interest after the system is installed.”

INDUSTRIAL MODELS: No. 5 or No. 6 fuel oil; manual, semi-automatic or automatic operation; 8 sizes to 450 bhp. Thermal Viscosity preheating.

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 Burners available in separate catalog. Copy of either sent gladly on request.

PETRO
REG. U. S. PAT. OFF.

cuts steam costs

PETROLEUM HEAT AND POWER CO. • Makers of Good Oil Burning Equipment Since 1903 • Stamford, Connecticut

CONNOR

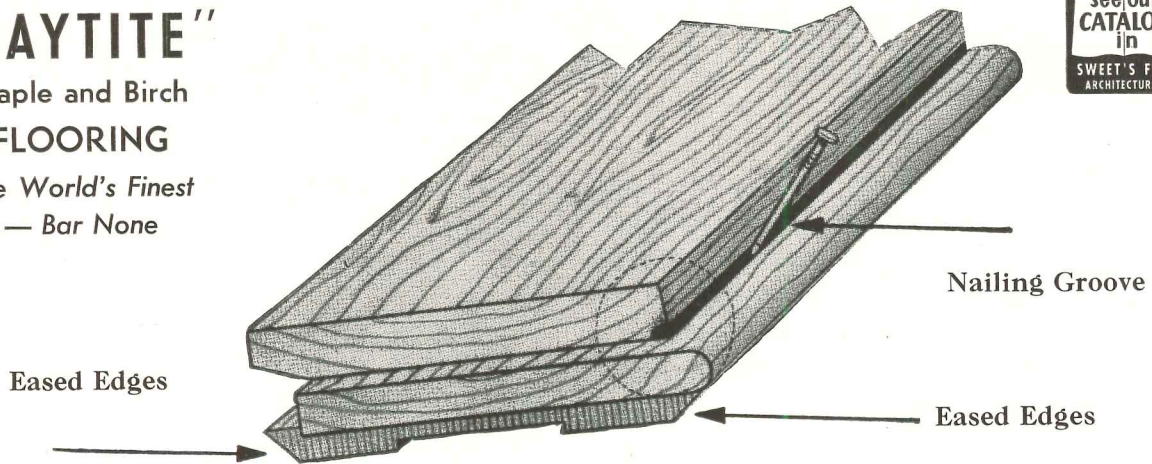
Manufactured and Graded Under M.F.M.A. Specifications

FOREST PRODUCTS SINCE 1872

"LAYTITE"

Maple and Birch FLOORING

The World's Finest — Bar None



Write for illustrated 75th Anniversary Booklet

CONNOR LUMBER AND LAND COMPANY

Northern Hardwoods, Pine and Hemlock

PHONE No. 3

MARSHFIELD, WIS.

P. O. BOX 112-R

Mills: Laona, Wisconsin and Connorville, Michigan

Behind The Mills — The Connor Timber Stands



INTRODUCTION TO ARCHITECTURAL DESIGN

Donald Atkinson Fletcher • Architect D.P.L.G.

A HANDBOOK FOR

STUDENTS • DESIGNERS • ARCHITECTS • TEACHERS

Dealing with the design process and with problems encountered in designing buildings. Published December 1947 • 6" x 9" • 212 pages

For beginners in architecture, this book offers a systematic introduction to design. It states in organized form material in design that is treated orally in the drafting room, but usually at random. Only when this material has been grasped can the study of design become effective. Basic factors in design, selected and paired, are exemplified by common architectural subjects forming eleven short exercises. These are arranged in a typical sequence, in an order suitable for learning. (Reviewed in December 1948 issue of *Architectural Record*.)

IN USE AS A TEXT

Department of Architecture, Rice Institute
Department of Landscape Architecture, University of Illinois
Department of Landscape Architecture, University of Georgia

USE COUPON BELOW

Copies of INTRODUCTION TO ARCHITECTURAL DESIGN are available at \$7.50 postpaid. Your order will be handled promptly on receipt of the coupon below.

DONALD A. FLETCHER
Box 1027, Grand Central Station P.O., New York 17, N. Y.

Enclosed find remittance of \$..... for..... copies of INTRODUCTION TO ARCHITECTURAL DESIGN at \$7.50 per copy.

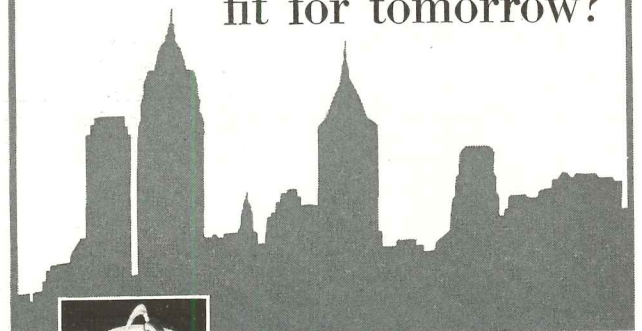
Please print Add 2% for Sales Tax in New York City

Name.....

Street.....

City..... Zone..... State.....

Are yesterday's buildings fit for tomorrow?



The demand for newer, better, up-to-date office space goes on—yesterday's buildings must be modernized to meet the competition. Look to your drinking water equipment for a major part of the answer!

Halsey Taylor Drinking Fountains, for instance, are the choice of architects and building owners everywhere. Write!

THE HALSEY W. TAYLOR CO., Warren, Ohio

Halsey Taylor

DRINKING FOUNTAINS

A-2

--- on cutting fuel bills in Half



During New England's severe winter of 1947-8, the J. C. Corrigan Company, Inc., of Dorchester, Mass., cut its fuel bill nearly 50% by installing a DRAVO Counterflo Heater. Coal for the previous winter season had cost this company between \$1100.00 and \$1200.00, whereas only \$652.00 was spent for oil to fuel the DRAVO Heater during a similar period.

Besides fuel savings, the maintenance expense for the old heating system was practically eliminated because the DRAVO Heater operates automatically by thermostatic control. "Even more important" says J. C. Corrigan, President, "... part of our substantial increase in production this winter was due to the improved heating system."

Employees in the Corrigan plant manufacture custom-built conveying systems and need adequate warmth for efficient fitting and assembling. Previously, the plant was heated by a coal burning furnace using blowers and ductwork to distribute the warm air. Excessive roof heat losses in this 165' x 70' x 27' building, prevented it from being comfortable. To heat "cold spots" that developed, eight pot-bellied stoves were installed. Maintenance of this old heating method required three hours labor every day. Coal and ashes had to be hauled through the heart of the busy plant. Even with the eight stoves to supplement

the coal-fired furnace, heat was inadequate and employees spent valuable production time huddling around the stoves.

In November 1947, one DRAVO Counterflo Heater with an output capacity of 2,000,000 Btu was installed. No ductwork was needed. Only fuel and power lines had to be connected and a vent stack installed. Now the entire factory area is maintained at the proper degree of warmth for workers' comfort and efficient production. During sub-zero weather last winter, the single DRAVO Heater delivered enough heat within 20 minutes after it was turned on to satisfy the thermostat's setting. Moreover, the DRAVO Heater is shut down to conserve fuel during non-working hours, whereas the coal furnace had to be fed over weekends while the plant was not in operation to maintain some warmth for the Monday morning shift.

DRAVO Counterflo Heaters burn oil, gas or coal. Units burning non-solid fuels can be converted from one fuel to another very readily. Coal-fired heaters can be converted for burning gas or oil.

You may also have a problem like Corrigan's—or one more complex. Write us for information and the name of our nearest representative. DRAVO CORPORATION, Heating Section, Dravo Bldg., Fifth and Liberty Avenues, Pittsburgh 22, Pa.

DRAVO CORPORATION



Pittsburgh • Cleveland • Philadelphia • Detroit
New York • Chicago • Atlanta • Boston
Sales Representatives in Principal Cities

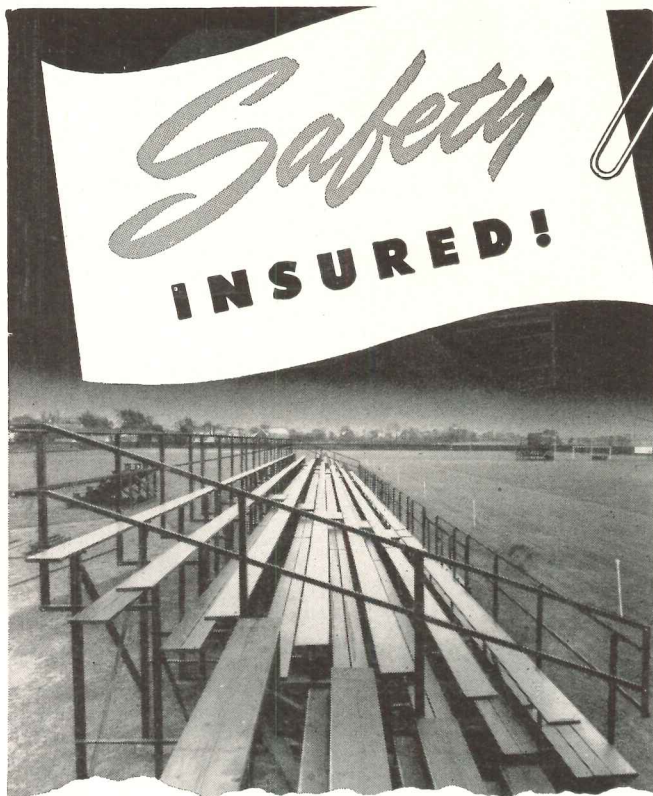
5 FUNCTION HEATING with JUST ONE UNIT!



1 DRAVO CORPORATION, Heating Section, Room 812-3
Dravo Bldg., Fifth and Liberty Avenues, Pittsburgh 22, Pa.
We would like to consider DRAVO Counterflo Heaters for:

- Name..... Comfort Heating
Title..... Year 'round Ventilating
Company..... Process Drying
Address..... Tempering Make-up Air
City and State..... Heat Curing

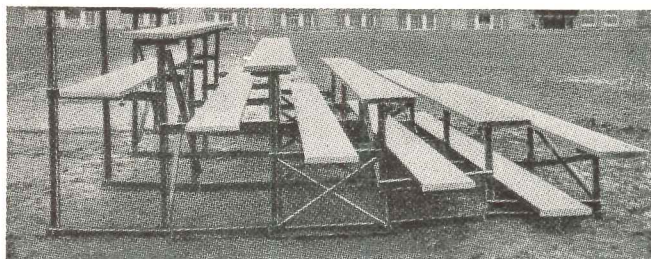
P-6301



REST ASSURED—a Wayne Grandstand or Gymstand can be depended upon for safety. Their all-steel understructures are designed to carry full live load, plus impact and sway, with an ample factor of safety.

The Type "H", for example, is a safe, inexpensive, steel portable grandstand that meets almost every outdoor need. Note, in the photo below, that the construction permits base members to adjust themselves to uneven ground without straining the supporting members. Note, also, the strongly fabricated supporting structure and the comfortable seats and footrests.

Furnished in depths up to 15 rows and in 15 foot units, or as a continuous stand, the Type "H" presents a good appearance and is really economical. You can find out more about this grandstand by writing to:



"Wayne Stands  for Safety"

WAYNE IRON WORKS

REPRESENTATIVES IN 42 CITIES

148 NORTH PEMBROKE AVE. • WAYNE, PENNA.

**This ADDING MACHINE
Adds and Subtracts
FEET and INCHES!**



No other
ADDING MACHINE

matches **ALL** of Addometer's Advantages

Handiest helper on construction jobs you ever saw! Adds, subtracts FEET AND INCHES and $\frac{1}{8}$ fractions quickly, accurately — right on the job. Only $11\frac{1}{2}$ x $2\frac{1}{2}$ in. size, weighs 14 oz.; 8-column capacity; single stroke dial clearance. Also adds dollars and cents up to \$10,000.00.

"Can't Do Without It," Users Say — Contractors, architects, engineers highly praise Addometer's advantages — thousands in daily use.



Money-Back GUARANTEE — The Addometer is yours for only \$12.95, postage prepaid — 10-day money-back guarantee if not fully satisfied. Descriptive folder on request — or, send check or money order *NOW*.

Reliable Typewriter & Adding Machine Co.

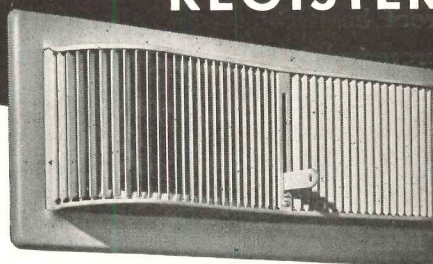
Dept. L-3, 303 W. Monroe St., Chicago 6, Ill.

TRUE DIFFUSION

with the New

AIR
DIFFUSION

**HONEYWELL
REGISTER**



SIX Important New Features!

1. Smart new functional design
2. No streaks on walls and ceilings
3. Installation costs drastically cut
4. Balancing becomes quick one man job
5. Branch quadrants eliminated
6. Manual shut-off aids fuel saving

MINNEAPOLIS-HONEYWELL REGULATOR CO.

2600 FOURTH AVENUE SOUTH • MINNEAPOLIS 8, MINN.

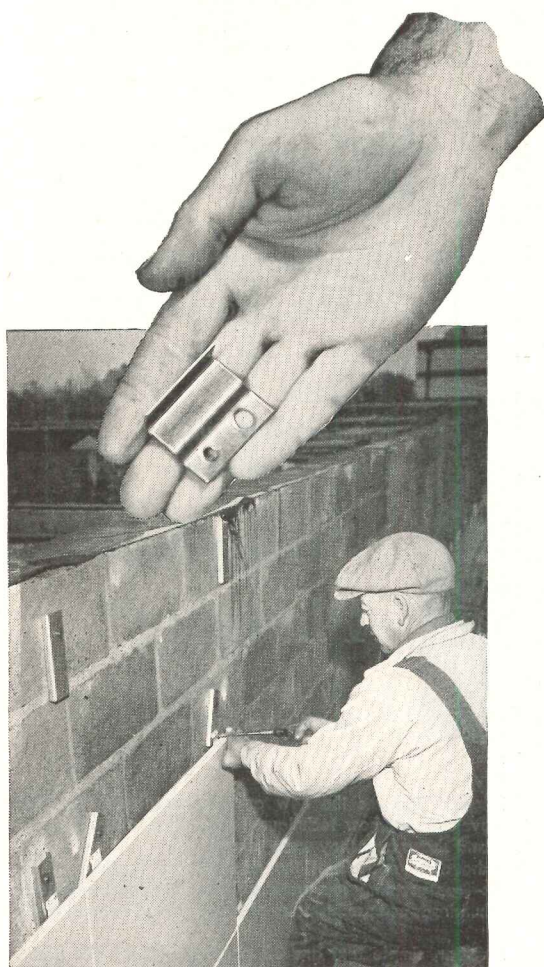
Helps your clients to...

Better
PUT UP A ~~GOOD~~ FRONT

—with Inconel-fitted
**GLASIRON
PANELS!**



Inconel clips hold this facade secure! Specified by the architects, Charles N. Agree, Inc., colored Glasiron panels provide a permanently attractive appearance for the Dearborn Theatre, Dearborn, Mich. For more information about Glasiron, write: Wolverine Porcelain Enameling Co., Detroit, Mich.



Glasiron panels being fastened to steel furrings. No need to worry if the enamel coat chips off these attachment clips. They're Inconel. They won't rust. They resist corrosion. (Inset) Stamped Inconel clips ready for welding to Glasiron panels prior to enamel-fusing process.



Since 1924, the word for attractive, durable building panels has been: *Glasiron*.

These porcelain enameled-steel building fronts have always possessed excellent resistance to hard knocks, abrasion, temperature extremes and corrosive atmospheres.

And now they are free of the threat of unsightly rust stains.

These rust stains could have been caused by the steel clips used to attach panels to wood, masonry or other building materials. The careful erection of a building front frequently requires adjustment of the clips — bending, twisting and hammering. Their protective coating is often fractured or knocked off, leaving the metal itself exposed.

After a thorough testing of several other alloys, Inconel* was specified for the attachment clips. Corrosion resistant and completely rustproof, Inconel's high ductility permits quick, easy panel installation.

Inconel-equipped *Glasiron* building panels are made in a wide selection of sizes, shapes, colors and finishes... for all sizes and types of buildings. Full information and specification details can be obtained by writing the manufacturer, Wol-

verine Porcelain Enameling Co., Detroit, Michigan.

The Wolverine Company's use of Inconel is only one of the dramatic ways in which the Inco Nickel Alloys are providing "life-of-the-building" service. Better known examples are Monel* Tie Wire and Monel Roofing Sheet. These materials are regularly specified by leading architects throughout the country.

Corrosion-resistant, strong and highly ductile, Monel Tie Wire is used to secure metal or fabric lath to furring bars, channels and studs. It is also used to anchor brick and masonry to framework.

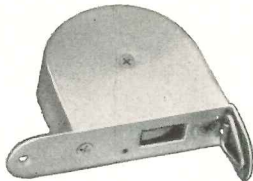
Monel Roofing Sheet can be easily and quickly fabricated into gutters, downspouts, flashings and louvers as well as complete metal roofs. Its superior mechanical properties and corrosion resistance make it possible to use light weight, economical sheet thicknesses. As a result, roofers' quotations on Monel roofing parts are comparable to those submitted on other materials — and sometimes they are even lower.

You can easily get full information on Monel Tie Wire and Monel Roofing Sheet. Write today for our free, fully-illustrated literature.

*Reg. U. S. Pat. Off.

THE INTERNATIONAL NICKEL COMPANY, INC. 67 WALL STREET
NEW YORK 5, N. Y.

Specify CALDWELL ADJUSTABLE SASH BALANCES for the same price as ordinary balances



150AT

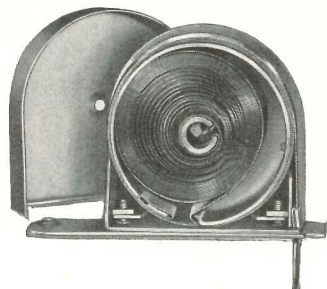
You run no risk of changed specifications when you write "Caldwell" Clock Spring Sash Balances. They give you all the advantages of an adjustable balance for the price of an ordinary balance.

The patented brake, controlled by set screws, smoothly controls the spring action. This is particularly valuable at the extreme top and bottom of the sash travel when glazing variations exist, when there are irregularities in the sash or when extra long tape lengths are needed.

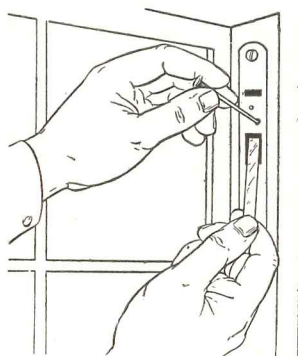
BUILDERS LIKE LOCKING DEVICE THAT CUTS INSTALLATION TIME

An exclusive Caldwell feature cuts installation about 10 minutes per window. Tape may be pulled out and locked at any desired length, leaving both hands free for sash installation. Also prevents damage to tape, which may occur if tape slips from hand during installation.

Caldwell Sash Balances are furnished in both side jamb and overhead styles in uniform cases, covering sash weighing from 4 to 105 pounds. They are unconditionally guaranteed for the life of the building.



Type 154 Flat Top (FT) showing the patented variable brake adjustment.



WRITE FOR NEW CALDWELL FOLDER

CALDWELL MANUFACTURING COMPANY
55 INDUSTRIAL STREET • ROCHESTER 4, N. Y.

CALDWELL

MAKERS OF SASH BALANCES FOR OVER 60 YEARS

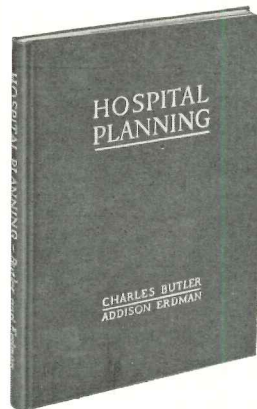


to all architects and engineers interested in BETTER SCHOOL LIGHTING.

Shortly we will publish data in the pages of The Record on a new school lighting fixture which is revolutionary in several aspects. If you would like all the advance details and specifications, please write us immediately and you will receive it just as soon as it is off the press.



Solar Light Manufacturing Co.
1357 SOUTH JEFFERSON STREET, CHICAGO 7, ILLINOIS



"The first
important manual
in a generation on . . ."

"Hospital Planning"

by Charles Butler, F.A.I.A.
and Addison Erdman, A.I.A.

"Hospital Planning" features the new and unprecedented facilities demanded by revolutionary new techniques in hospitalization. It poses actual problems and shows how they were solved.

Here is an exhaustive analysis of the most striking features of 51 modern hospitals—representing the work of 30 celebrated architects—culminating in hundreds of case histories of ideas proved exceptionally successful.

Illustrating the clear, simple text are 32 photographs, 11 site plans, 187 floor plans, and 38 special unit plans of rooms, wards, department and numerous construction details. 232 pages, 9½ x 11. Stiff cloth binding. Thoroughly indexed.

Architectural Record Book Department
119 West 40th Street, New York 18, N. Y.

Enter my order for . . . copies of "Hospital Planning,"
by Charles Butler and Addison Erdman @ \$15.00 a
copy. I enclose \$

(for New York City delivery add 30c for sales tax—
\$15.30 in all.)

Name _____

Address _____

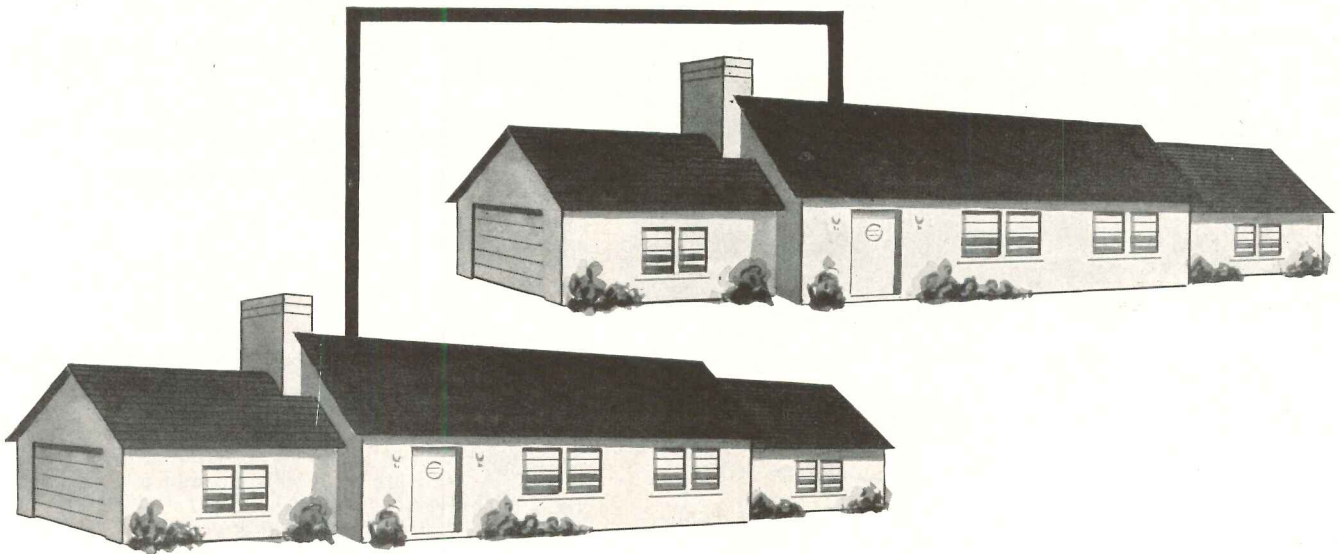
City _____ Zone _____ State _____

\$125,000,000

This is the staggering potential made available for hospital construction by the federal Housing Survey and Construction Act.

START NOW!

Twin Construction?



ABSOLUTELY NOT! ONE IS CONSTRUCTED WITH Medusa **JOB-FITTED** Cements

● A few years from now these homes will certainly not be "twins" in appearance. The architect specified two of Medusa's *Job-Fitted* Cements for one . . . Medusa* Waterproofed Gray for the mortar coats and Medusa* Waterproofed White for the finish. The builder of the other home used ordinary gray and white. The stucco on one will probably become stained with dirt all too soon. Tiny cracks may appear. But the stucco made of Medusa Waterproofed White stays whiter, cleaner and free of disfiguring cracks indefinitely. These two Medusa *Job-Fitted* Cements have a waterproofing material mixed in at the mill. Moisture and dirt cannot enter this stucco. It's sealed at the sur-

face and waterproofed *all the way through*. Naturally, the owner of one of these homes is going to continue to be pleased . . . the one whose architect specified Medusa *Job-Fitted* Cements. And the builder was glad because Medusa *Job-Fitted* Cements are easier to work with, save time and give a better-looking job.

So specify Medusa *Job-Fitted* Cements for your next projects. There's one for every purpose that will give better-looking, longer-lasting results and keep your clients sold on you and Medusa. The coupon below will bring you all the facts. Send it today.

*When not available, use Medusa Waterproofing Powder or Paste.

"FIFTY-SEVEN YEARS OF CONCRETE PROGRESS"

MAIL COUPON NOW!



MEDUSA **JOB-FITTED** CEMENTS

MEDUSA WHITE
MEDUSA WHITE WATERPROOFED
MEDUSA GRAY WATERPROOFED
MEDUSA AIR-ENTRAINING
"MEDCO" HIGH EARLY STRENGTH
MEDUSA BRIKSET
MEDUSA STONESET

MEDUSA PORTLAND CEMENT CO.

1015-1 Midland Building • Cleveland 15, Ohio

Yes! I'd like complete information about the following special Medusa products that are checked:

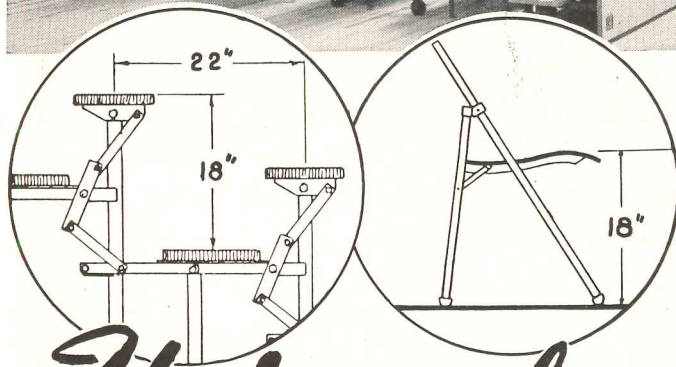
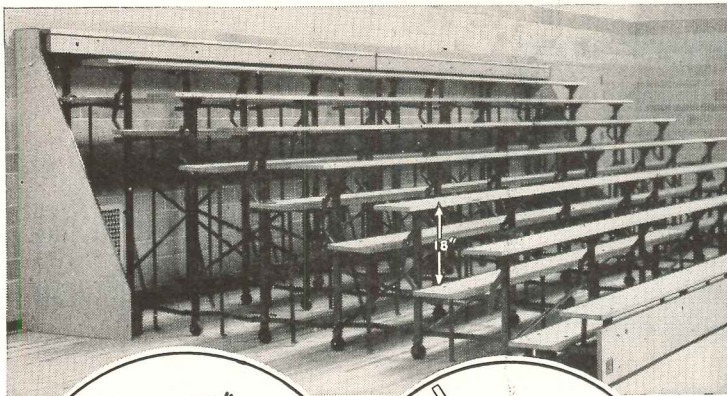
- | | |
|--|---|
| <input type="checkbox"/> Medusa White | <input type="checkbox"/> Medusa BrikseT |
| <input type="checkbox"/> Medusa White Waterproofed | <input type="checkbox"/> Medusa Air-Entraining |
| <input type="checkbox"/> Medusa StoneSet | <input type="checkbox"/> Medusa Gray Waterproofed |
| <input type="checkbox"/> "Medco" High Early Strength | |

Name

Address

City State

MR. ARCHITECT: Write for your copies---today



A treatise on rolling and folding types of MODERN GYMNASIUM SEATING

by HAROLD R. SLEEPER, A.I.A.

has been compiled by this nationally prominent A.I.A. architect. It is a comprehensive report, prepared expressly for the Gymnasium Seating Council, showing the need for seating, flexibility, seat types, space saving features, budgeting, general and detailed planning, space requirements, other data and specifications. Various types of seating and blueprint plans are shown.

A second folder, also by Mr. Sleeper, includes a seating capacity analysis of a national survey, by geographical areas, to aid you in planning seating needs.

Both reports have been edited and criticized by the American Institute of Architects and are available for distribution to architects. They provide you inestimable help when planning present and future Gymnasium Seating Requirements. A copy of each is available to you. Write for yours today.

At left is a Universal Roll-A-Way Gymnasium stand, with inset showing chair height seating—for comfort. Our engineers will gladly assist you with your planning.

Universal

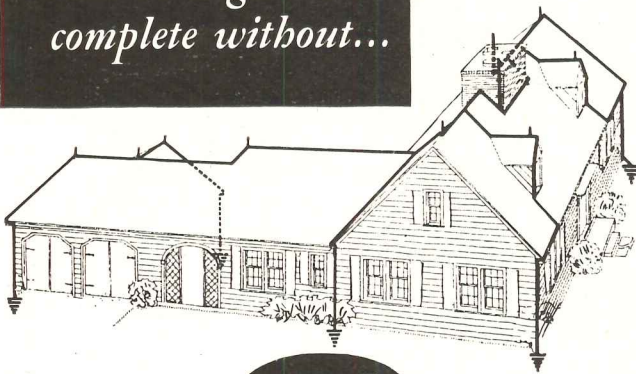
BLEACHER COMPANY

CHAMPAIGN

Bleacher Experts for Over 30 Years
606 SOUTH NEIL STREET

ILLINOIS

No building is
complete without...



IPC

improved lightning protection

The finishing touch to every new building is I.P.C. complete lightning protection equipment... a service you owe the owner.

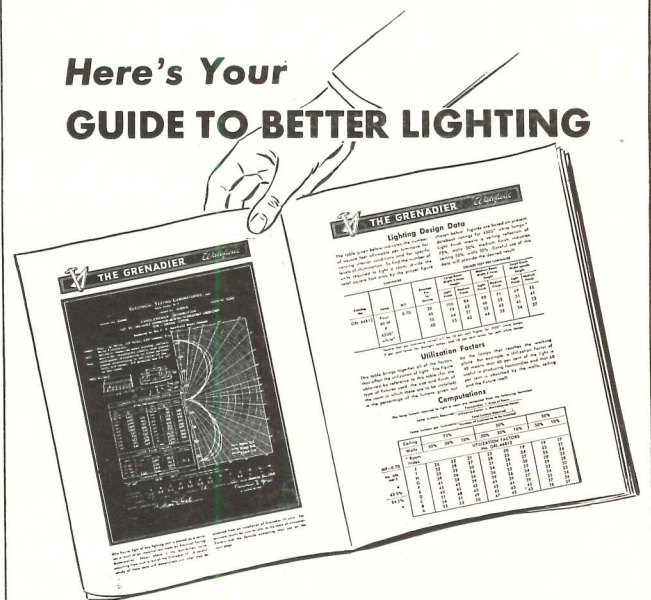
Besides protecting lives and irreplaceable treasures, in many cases I.P.C. protection reduces insurance costs. The un concealed portion of the equipment can be suitably ornamented to be an attractive addition to the building.

Approved by National Boards and Bureaus, this modern and complete lightning protection equipment can be inexpensively installed by experts.

Write for complete information

INDEPENDENT PROTECTION COMPANY
GOSHEN, INDIANA

Here's Your
GUIDE TO BETTER LIGHTING



A factually written, fully illustrated 36-page catalog showing the complete Wakefield line of fluorescent and incandescent lighting equipment—with photographs, working drawings, design data and distribution curves. Write for your copy today.

THE F. W. *Wakefield* BRASS COMPANY
VERMILION, OHIO

PROVIDENCE WAREHOUSE WITH 22,000 SQ. FT. FLOOR AREA USES CHASE COPPER TUBE FOR RADIANT HEATING!



HERE'S WHY
you, too, will want Chase Copper Tube
in your Radiant Heating Installations!

EASY TO BEND **LONG LENGTHS**
LOW COST **LIGHT IN WEIGHT**
SOLDERED FITTINGS **LONG LIFE**
SMALL DIAMETERS

Pouring concrete over 12,000 feet of Chase Copper Tube. Installation also included 5500 feet for office ceiling and 1200 feet for sidewalk and drive snow removal. Architect: Charles A. Maguire & Associates, Providence, R. I. Building Contractor: A. F. Smiley Construction Co., Pawtucket, R. I. Heating Contractor: J. F. Higgins Heating Co., Providence, R. I.

BIG jobs . . . little jobs, Chase Copper Tube has the advantages that mean fast, economical installation . . . dependability! For instance: you reduce costly, time-consuming connections because Chase Copper Tube is available in coils up to 100 feet long. Its flexibility means quick, easy hand-bending! And no fittings are needed at bends.

In floor installations, as illustrated, there's no need for accurate leveling of Chase Copper Tube. For ceilings, its light weight makes this overhead work easier . . . and its small diameter does not require extra plaster for coverage. Send for instructive, informative booklet that discusses radiant heating in theory and practice. Write Dept. AR39.

Send for **FREE** book
"Suggestions for Designing
RADIANT PANEL HEATING
with Copper Tube."
MAIL THIS COUPON TODAY!



**Chase Brass & Copper Co., Dept. AR39
Waterbury 91, Conn.**

Please forward your book "Suggestions for Designing Radiant Panel Heating with Copper Tube."

Name _____

Address _____

City _____ State _____

Chase



the Nation's Headquarters for
BRASS & COPPER

WATERBURY 91, CONNECTICUT

SUBSIDIARY OF KENNECOTT COPPER CORPORATION

THIS IS THE CHASE NETWORK . . . handiest way to buy brass

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

royal jet-flow

outperforms heating units
costing three times
as much*



M. J. BROCK says:
"We consider the Royal
Jet-Flow a remarkable devel-
opment in home heating,
giving the small home owner the type of heat
that has heretofore been available only in a
high-cost home."

M. J. BROCK
M. J. Brock & Sons



M. J. Brock
Homes

* Proved by tests conducted in America's
Finest Independent Laboratory. Royal Jet-Flow
uses jet principle and high outlet delivery
to achieve a velocity of 300 feet per minute.
Heats entire average size house with a mini-
mum differential from room to room. Royal
Jet-Flow costs only slightly more than a floor
furnace—much less than forced air.

write today for complete information

royal heaters, inc.

1024 WESTMINSTER AVENUE
ALHAMBRA, CALIFORNIA

EMPLOYMENT OPPORTUNITIES AVAILABLE

Advertising rates on request

Positions Open

WANTED: Architectural Draftsmen experienced in making working drawings and details. Please submit employment and experience record, samples of work, and monthly salary expected. Marr and Holman, Architects, 702 Stahlman Building, Nashville, Tennessee.

WANTED: Structural Engineers and Steel Draftsmen and Detailers. Please submit employment and experience record, samples of work, and monthly salary expected. Marr and Holman, Architects, 702 Stahlman Building, Nashville, Tennessee.

WANTED: Mechanical and Air Conditioning Engineers who can design and make working drawings for air conditioning, plumbing and heating for buildings and industrial plants. Please submit employment and experience record, samples of work, and monthly salary expected. Marr and Holman, Architects, 702 Stahlman Building, Nashville, Tennessee.

WANTED: Electrical Engineers who can design and make working drawings for interior lighting and power work for buildings and industrial plants. Please submit employment and experience record, samples of work, and monthly salary expected. Marr and Holman, Architects, 702 Stahlman Building, Nashville, Tennessee.

ARCHITECTURAL DRAFTSMAN: Experienced in working drawings and details for schools, churches, apartments and residential work in contemporary design. Office located in Harrisburg, Pennsylvania. Permanent connection for man who can qualify. State qualifications, references and salary required. Box 397, *Architectural Record*, 119 W. 40th St., New York 18.

YOUNG EXPERT DELINEATOR AND DESIGNER: Trained along modern trend of architecture. Must have design ability for renderings in any medium. Fine opportunity in exceptional modern office. Work consists of highest type of contemporary architecture. Submit samples of work and salary expected in first letter. Offices of M. J. DeAngelis, 42 East Avenue, Rochester, New York.

WANTED: Country architectural office with wide selective practice has opening for vigorous, versatile, intelligent and unencumbered man well grounded in contemporary principles of design and skilled in executing them. Give training, experience and objectives. Box 398, *Architectural Record*, 119 W. 40th St., New York 18.

WANTED: Top architectural designer, renderer, draftsman of ability, by long established central western office. Modern designer with background of historical architecture. University graduate, European travel and study, or training at American Academy of Rome. Good background, initiative, diplomatic, pleasing personality. Prospective future partnership. Furnish complete information, references. Box 399, *Architectural Record*, 119 W. 40th St., New York 18.

ARCHITECTURAL OR CIVIL ENGINEER: with engineering design experience in the building industry. Write: John E. Somerville, Architect, 403 West Walnut Street, Green Bay, Wisconsin.

EXCELLENT OPENING: for ambitious architectural draftsman with experience to handle all phases of working drawings and details on educational, institutional, and commercial structures. Small furnished apartment available. Please submit full experience record and salary expected. Wells and Denbrook, Architects, Grand Forks, North Dakota.

(Continued on page 210)

SIX REASONS WHY YOU SHOULD CHOOSE

Adlake Aluminum Windows

1. NO MAINTENANCE COST!

Adlake Windows need no painting, no maintenance other than routine washing.

2. MINIMUM 'AIR INFILTRATION'!

A unique combination of non-metallic weatherstripping and patented serrated guides assures maximum weathertightness.

3. FINGER-TIP CONTROL!

You can raise and lower an Adlake Window with one finger—millions of times—each operation as smooth and fast as the one before.

4. NO WARP, ROT, RATTLE,

stick or swell, *ever*, with weather-defying Adlake Windows!

5. EASY INSTALLATION!

You put Adlake Windows into *completed masonry openings*. It's so easy to do that a perfect job is assured if the simple instructions are carried out.

6. STURDY, LUSTROUS ALUMINUM

construction makes Adlake Windows the most beautiful windows on the market today. And their beauty *lasts!*

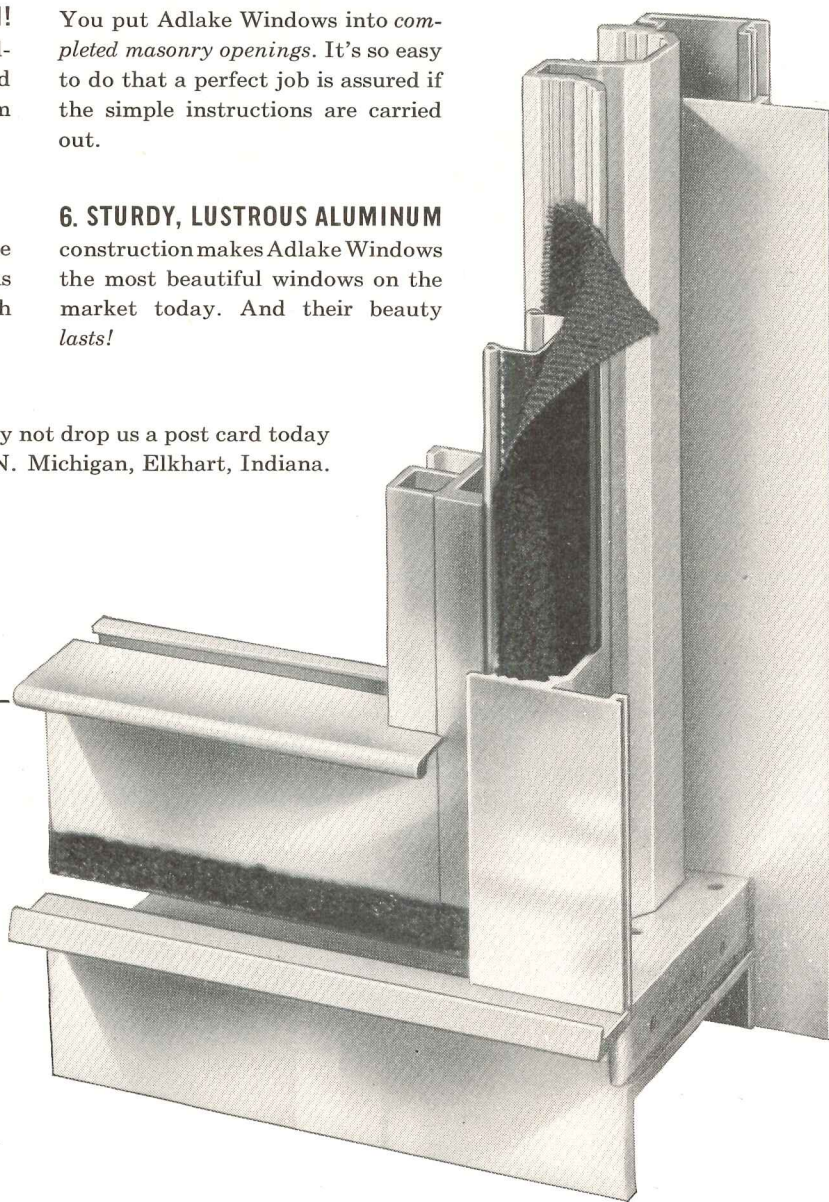
IF YOU PLAN to build or remodel, why not drop us a post card today for complete data? Address: 1102 N. Michigan, Elkhart, Indiana. No obligation, of course.



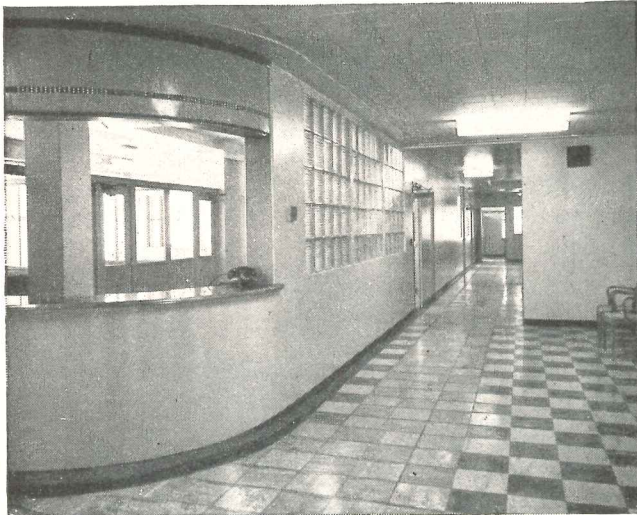
THE
Adams & Westlake
COMPANY

Established 1857

ELKHART, INDIANA • New York • Chicago



Your Hospitals Get a
BEAUTY TREATMENT
with MOULTILE FLOORS



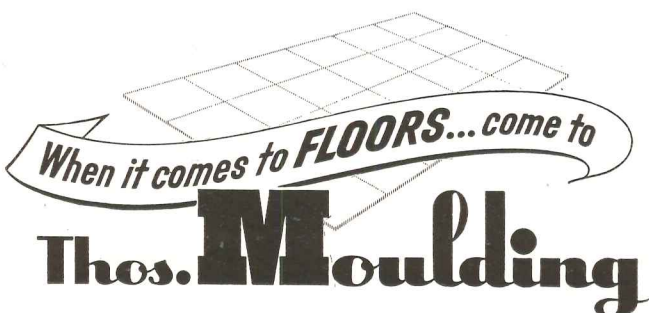
BROADLAWNS HOSPITAL
 Des Moines, Iowa

Dougher, Rich
 and Woodburn, Arch.

Moultile brings to hospitals a colorful note of sprightly, sparkling beauty that cheers patients and staff alike. No "skin-deep" beauty, either, Moultile colors are built right in, go all the way through. They never fade or show signs of wear, in spite of frequent cleanings or heavy hospital traffic. Buoyantly resilient, Moultile affords a wonderful underfoot comfort to the doctors and nurses who walk miles of corridors every day. The smooth, non-porous surface does not absorb odors and affords fast economical cleaning. And the low original cost fits even the tightest budget. Yes, feature by feature, Moultile is the ideal floor for hospitals.

Moultile is a treat for you, too. Such a pleasure to work with! Thirty-three harmonizing colors and tile-by-tile installation enable you to design appropriate, distinctive floor patterns. There's a world of confidence, too in knowing that Moultile assures complete lasting client satisfaction. Whether your plans are for hospital or home, shop, show-room or showplace, be sure they include Moultile.

Check Sweet's for complete information on Moultile and the other Thos. Moulding floors. Or write for your copy of our new full-color catalog. THOS. MOULDING FLOOR MFG. CO., 165 W. Wacker Drive, Dept. AR-3, Chicago 1, Ill.



EMPLOYMENT OPPORTUNITIES AVAILABLE

Advertising rates on request

(Continued from page 208)

ARCHITECT: Man with broad general experience, capable of developing complete working drawings from preliminary sketch. Design ability desirable. Work varies. State age, experience, salary expected and when available. Send recent photograph. Atlee B. and Robert M. Ayres, 3002 Transit Tower, San Antonio, Texas.

Positions Sought

ARCHITECTURAL DESIGNER DRAFTSMAN: Unusually fine record. Sketches, complete working drawings, details. Commercial, municipal, residential. Schools, hospitals, theatres, churches. Perspectives, color work. Fixtures, Interiors. Dependable, Unencumbered. Box 400, *Architectural Record*, 119 W. 40th St., New York 18.

ARCHITECTS — ATTENTION! Why worry about finding draftsmen. Let this established firm do your plans and specifications — complete — by topflight draftsmen, structural engineers and mechanical engineers with years of experience — each man is a seasoned veteran. Your designs and your identity will be scrupulously protected. We furnish the continuous liaison, labor, prints and bound specifications ready to let. Don't be burdened with overhead. Let us free you to take on more work. Write us your problem. Prompt replies. Architectural & Engineering Enterprises, Inc., Box 490, Bartlesville, Okla.

ARCHITECT: N.C.A.R.B., expert on Industrial Buildings, Plant Sites, Housing, Government Projects; all phases of architectural practice. Consider proposals from Engineer, Architectural, Commercial and Industrial Organizations. Partnership Possibilities Interesting. Box 401, *Architectural Record*, 119 W. 40th St., New York 18.

ARCHITECT AND STRUCTURAL ENGINEER: Registered in Illinois. Age 46. University of Illinois graduate. Expert on Industrial Structures. Desires Responsible Position or Partnership with minimum compensation in Five Figures. Box 402, *Architectural Record*, 119 W. 40th St., New York 18.

Prefabrication in Building

By RICHARD SHEPPARD, F.R.I.B.A.

This book examines the development of prefabrication in England, America and elsewhere, and analyzes in detail the various systems — some commercial and some merely experimental — which have so far been used. It considers the important relationship between prefabrication and the industrial and economic background in various countries and outlines the changes that prefabrication is bringing about in building procedure.

No builder or architect who is seeking ways to economize on house construction can afford to miss this valuable guide — 148 pages printed in large clear type on heavy coated paper, well indexed and illustrated with 163 excellent photographs and diagrams. \$5.50 per copy.

Book Department, *Architectural Record*
 119 West 40th Street, New York 18, N. Y.

I enclose \$..... Send me copy(s) of "PREFABRICATION IN BUILDING," by Richard Sheppard at \$5.50 per copy. (Add 2% Sales Tax for New York City delivery — \$5.61 in all)

Name

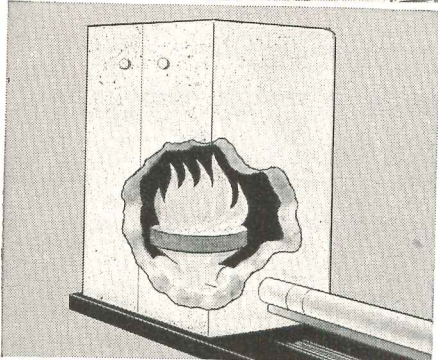
Address

City..... Zone..... State.....

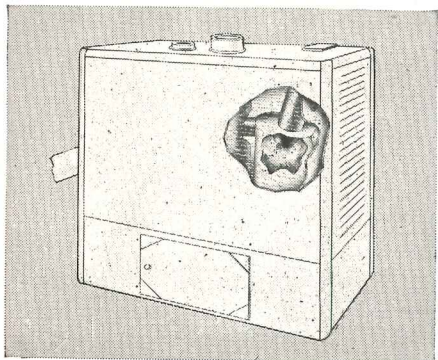
**Must buyers of your
houses pinch pennies
for food and
WASTE DOLLARS
FOR FUEL**



**Not if you specify
ANTHRACITE
Equipment!**



Automatic Anthracite Stokers—Installed in an existing boiler or furnace and in new houses, automatic hard coal stokers deliver *plenty* of heat quickly . . . save up to 52% on fuel bills . . . eliminate fuel worries.



The Revolutionary Anthratube—The Anthratube saves on fuel bills . . . its proved efficiency is over 80%. This scientifically engineered boiler-burner unit, with "Whirling Heat" and other revolutionary features, produces quicker response and superior performance than units using other types of fuel.

**Automatic Anthracite Heat offers
savings up to 52% on annual fuel bills**

• Here's how you can be a real friend to your clients . . . and build good will plus future business for yourself.

Just ask a few clients if they would rather burn money or Anthracite . . . it's as simple as that.

Then tell your clients how they can offset today's high living costs with completely automatic Anthracite equipment.

You'll find that most people will welcome the chance to save \$100 to

\$200 every year . . . particularly when they learn they can have all the comfort and convenience of completely automatic heat. Moreover you can assure them they will have *plenty* of heat . . . because there's plenty of hard coal now, and for years to come.

• • •

Get complete information about modern coal stokers, and data on the revolutionary new Anthratube, by writing to Anthracite Institute *now*.

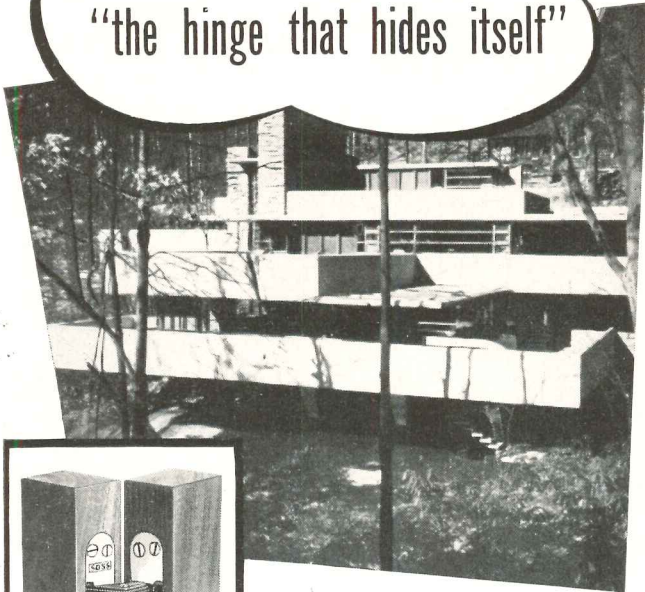


ANTHRACITE INSTITUTE

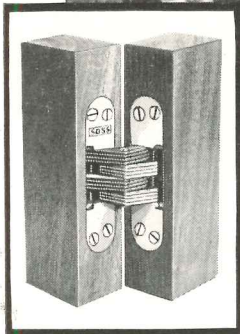
101 Park Avenue • New York 17, New York

equipped with
SOSS INVISIBLE HINGES

"the hinge that hides itself"



The home of Edgar J. Kaufmann
at Bear Run, Pa.



This ultra-modern home, designed by a world famed architect, has had its beauty and distinctiveness of design enhanced by SOSS INVIS-

IBLE HINGES. The hinges that have no protruding butt, as they are mortised in the door—completely hidden from view.

These remarkable SOSS HINGES allowed the architect to carry through to the most minute detail the spirit of modern architecture. For SOSS HINGES assured him of the flush, smooth, streamlined interior surfaces that would so harmonize with the overall design as to produce an everlasting symphony of architectural beauty.

There's a weight-rated SOSS HINGE for every type of installation. Whether it's a small cupboard door or the heaviest entrance door, you can be assured there's a SOSS HINGE, operating on hardened steel roller bearings, ready to do that particular job.

All SOSS HINGES are manufactured from only the finest of materials. The hardened steel roller bearings assure long life and ease of operation. All pins are made of special analysis hard drawn steel. All links are special heat treated steel. Body sections are cast from special zinc alloy with a tensile strength of 47,000 pounds per square inch.

Write for **FREE CATALOGUE** that gives complete details, blue print templates, and the many uses of this modern hinge to—



SOSS MANUFACTURING COMPANY
21769 HOOVER ROAD • DETROIT 13, MICHIGAN

HOW TO GET RID OF EXHAUST GAS FUMES IN GARAGE BUILDINGS

INEXPENSIVE SOLUTION TO A SERIOUS
GARAGE VENTILATION PROBLEM

For the garage owner planning a new building or extensive remodeling, National has designed and engineered an under-floor System for effective removal of poisonous carbon monoxide gas and smoke. The National Underfloor System is completely fabricated at factory and is shipped complete with motor and blower in a packaged kit—nothing else to buy. A proven, adequate, dependable system—National has many hundreds of installations in garages in every part of the country. Send us your floor plans and specifications. We will gladly supply scaled drawings of our equipment. Literature on request.

Illustration shows
standard kit with
four extra tube
outlets.

\$319.50

complete packaged
kit, F.O.B.
Decatur.

Write for circular.



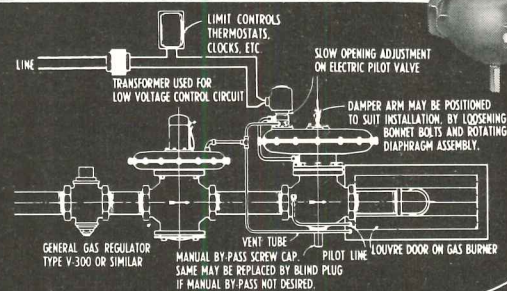
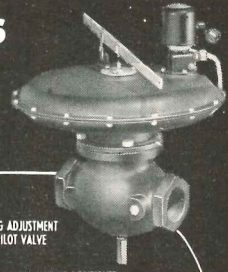
The National System of Garage Ventilation

Dept. 917-U, 330 N. Church Street, Decatur, Illinois

World's largest manufacturer of exclusive garage ventilating equipment

GENERAL CONTROLS

Type B-55 slow opening
electric diaphragm
GAS VALVES



Provides safe on-off control of natural, mixed, manufactured or liquefied petroleum gases for domestic and commercial boilers, furnaces and ovens.

Adjustable opening speed 5 to 60 seconds. Closing speed 3 to 6 seconds. Manual opening device provided in case of prolonged current failure. Damper arm provides combined gas-air control. Safely controls main burners in response to temperature or pressure controls, time clocks and other regulating switches. Low current consumption. Pressure range to 5 P.S.I. Sizes 3/4" to 6" I.P.S.

For complete specifications request new catalog.

66-4

GENERAL
801 ALLEN AVENUE



CONTROLS
GLENDALE 1, CALIF.

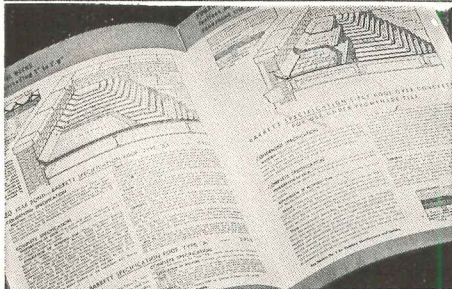
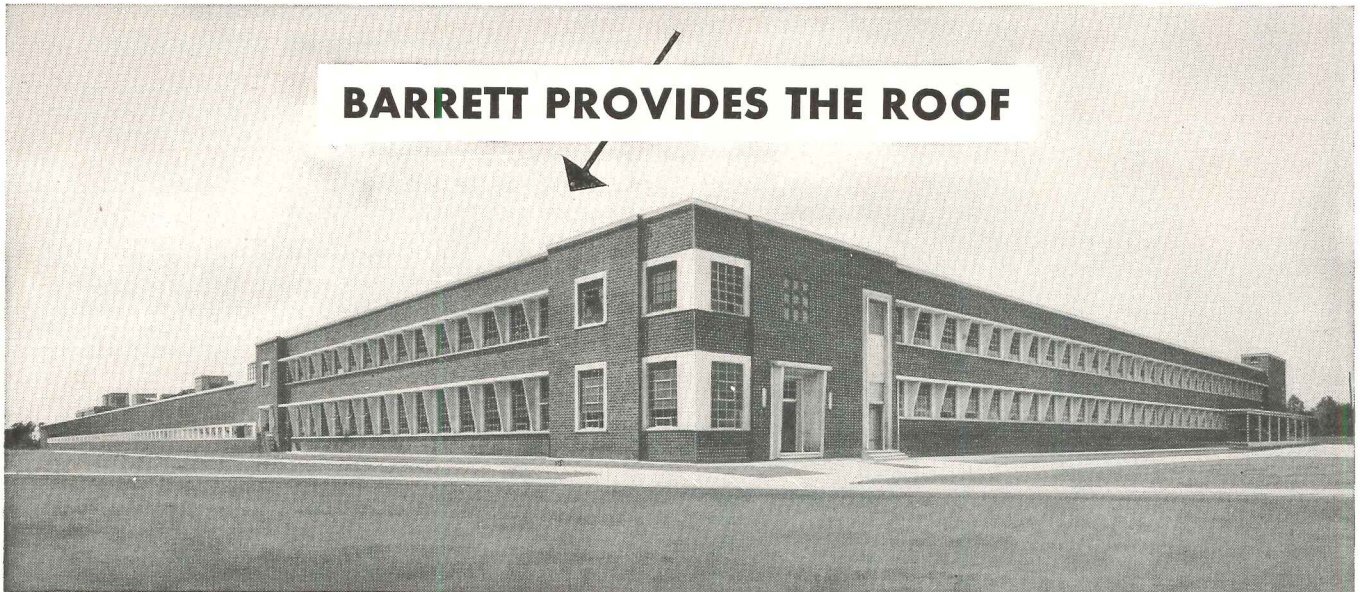
Manufacturers of Automatic Pressure, Temperature & Flow Controls

FACTORY BRANCHES: Birmingham (3), Boston (16), Chicago (5), Cleveland (15), Dallas (2), Denver (10), Detroit (8), Glendale (1), Houston (6), Kansas City (2), New York (17), Oklahoma City (1), Philadelphia (40), Pittsburgh (22), Seattle (1), San Francisco (7), St. Louis (12)

DISTRIBUTORS IN PRINCIPAL CITIES

NEW "SPRINGMAID" BLEACHERY IS ONE OF THE MOST MODERN IN THE WORLD

BARRETT PROVIDES THE ROOF



No effort has been spared to make this huge new bleachery of the Springs Cotton Mills, near Lancaster, S. C., one of the world's most up-to-date buildings of its kind. Fittingly, it's protected by a Barrett* roof. Barrett Specification* roofs are modern, today, as they were when they were first developed many years ago—still the toughest, longest-lasting, best-value built-up roof that money can buy.



1 Barrett Specification* roofs are applied by Barrett Approved Roofers according to rigid Barrett specifications developed through years of successful roofing experience.



2 They are built-up of alternate layers of finest grade coal-tar pitch and felt. Barrett pitch, the *life-blood* of the roof, is impervious to water and unexcelled as a waterproofing agent.



3 Top quality felt of Barrett's own manufacture holds the pitch in place and permits the use of greater quantities of this waterproofing than would otherwise be possible.

4 Final steps are a triple-thick coating of pitch—*poured*, not mopped—plus an armored surface of gravel or slag. Result is a roof that takes Fire Underwriters' Class "A" rating—a roof so good it can be bonded for 20 years.

SEE BARRETT'S CATALOG IN "SWEET'S"

THE BARRETT DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 Rector Street, New York 6, N. Y.

36th St. & Gray's Ferry Avenue
Philadelphia 46, Pa.

2800 So. Sacramento Avenue
Chicago 23, Ill.

1327 Erie Street, Birmingham 8,
Alabama

In Canada: The Barrett Company,
Ltd., 5551 St. Hubert St.,
Montreal, P. Q.

*Trade-mark Reg. U. S. Pat. Off.



CASTELL



World's
Finest
DRAWING
PENCIL

18 degrees 7B to 9H

Still at
Pre-war Price
15¢ ... less in quantity
A NAME FAMOUS
SINCE 1761

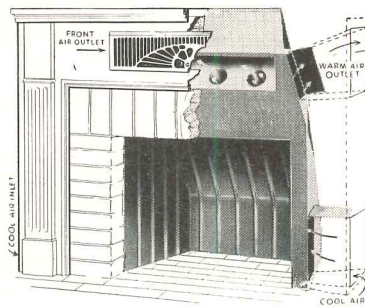
A.W. FABER-CASTELL
PENCIL COMPANY INC., NEWARK 4, N.J.

HEATFORM

The *Superior* Heat Circulating Fireplace
• most efficient and durable of all •

*TRADE MARK REG.

before you recommend
a heat circulating fireplace...



HEATFORM with part of masonry cut away

HEATFORM in use all over America for 27 years... Nationally advertised in home magazines and Dodge Corp. Home Owners' Catalog.

FOR COMPLETE INFORMATION
SWEET'S CATALOG
Section 29-G-8

• be sure you have complete information on HEATFORM.

• comparison proves HEATFORM produces more heat and provides longer years of service because of these exclusive features:

- ribbed reinforced firebox
- super heating round air passages through the throat
- upper and lower heating chambers

SUPERIOR FIREPLACE CO.

1706-C. East 15th St.
Los Angeles 21, Calif.

601-L. North Point Road
Baltimore 6, Maryland

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.

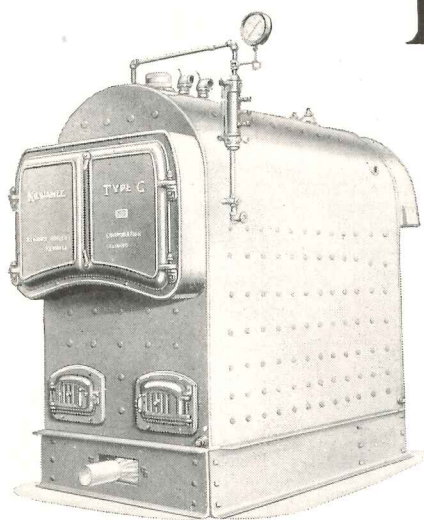


Entrance and lobby in new home of the MAGIC CHEF range, St. Louis

Harris Armstrong, Architect
 Ferris & Hamig, Engineers
 Sodemann Heat and Power Co.,
 Heating Contractors

**Administrative
 Office and Sales
 Display Structure**
Heated with

KEWANEE[☆] STEEL BOILERS



Unique in design, this outstanding structure is purposed to serve both administrative and display functions of the American Stove Co.

The outline of construction materials and equipment reads like a "Who's Who" of American industry. Significantly the heating boilers are KEWANEE.

Installed are two Kewanee Boilers, Type "C", 14,580 feet capacity, for gas firing . . . the preferred boiler for heating America's important large buildings.

☆ Reg. U. S. Pat. Off.

KEWANEE BOILER CORPORATION

BOILERMAKERS 80 YEARS KEWANEE, ILLINOIS
 Branches in 60 Cities—Eastern District Office: 40 West 40th Street, New York City 18
 Division of AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

Serving home and industry

AMERICAN-STANDARD • AMERICAN BLOWER • CHURCH SEATS • DETROIT LUBRICATOR • KEWANEE BOILER • ROSS HEATER • TONAWANDA IRON

New Efficiency Idea!

Rotary (R)
LEVA·DOCK

**SELF-LEVELING RAMP
FOR LOADING DOCKS**



Leva-Dock moves up and down with truck bed level

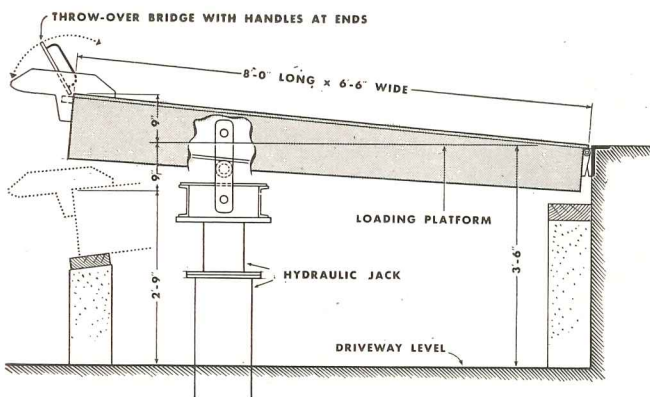
Leva-Dock Permits Fast Direct Loading

Loading and unloading trucks and trailers presents a tough loading dock problem because (1) truck bed heights vary as much as 12 inches, and (2) the truck bed moves down or up as loading and unloading progresses. This problem has been made very serious by the use of platform and fork-lift trucks handling heavy unit loads.

The Leva-Dock makes it possible to load directly into or unload from all types of trucks or trailers . . . without using steel plates, bridge ramps, or other slow and frequently dangerous methods. Installation is simple and inexpensive.

Write for architect's data file

Rotary Lift Co., 1003 Kentucky, Memphis 2, Tenn.



How the Leva-Dock Operates

The Leva-Dock is a hinged ramp, positioned by a hydraulic jack. Supporting arms and "throw-over" bridge connect ramp and truck bed. Platform automatically travels up or down as truck springs are relieved or compressed during loading and unloading.

**DESIGNED TO STAY
CLEANER LONGER**



LP-20
Available in
Black or White

- **OPEN FRONT AND BACK DESIGN** . . . cuts cleaning time to a minimum. No germ collecting crevices . . . always sanitary.
- **SELF-RAISING** . . . seat remains upright when not in use with bowl serving as urinal. Seat stays clean and dry.
- **DURABLE** . . . double strength plastic pads are shatter-proof, fire-proof. Assure long life . . . low maintenance.
- **SOLID PLASTIC** . . . strong and durable. Plastic covered hinge is moisture proof, dirt free.

WRITE NOW for catalog for full details on model LP-20 (illus.), model LP-40 with self-sustaining hinge, and a complete line of conventional models.

DEPT. AR.

THE SPERZEL COMPANY

All Sperzel Seats fit Standard Bowls
123 14th AVENUE S. • MINNEAPOLIS, MINN.

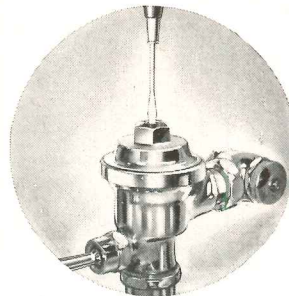
Its Simplicity
is your assurance
of efficiency



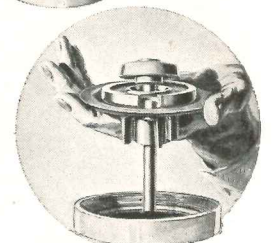
**DELANY
FLUSH VALVES**
are highly recommended for private homes, and particularly for "rental construction" as now planned by the Government.

Pin-point adjustment of water consumption for all variable factors of volume, pressure and fixtures.

One of the features of accessibility and simplicity of the DELANY VALVES that reduce maintenance to an absolute minimum—the flush valve with only 6 moving parts.



INSTANT
OUTSIDE
CONTROL OF
FLOW



Available thru all
leading supply houses.

SINCE 1879
Coyne & Delany Co.
BROOKLYN N.Y.
FLUSH VALVES • VACUUM BREAKERS • PLUMBING SPECIALTIES
IN CANADA: THE JAMES ROBERTSON COMPANY, LIMITED • MONTREAL • TORONTO • ST. JOHN, N. B.

G-E Q-Floor Wiring used in modern Cleveland Bank

When the Central National Bank of Cleveland opened its fourteenth branch office at 509 Euclid Avenue, it provided Cleveland with the most modern building and the finest banking facilities possible.

Complementing its modern design, this new structure has an electrical raceway system designed to maintain its modernity—Robertson Q-Floors with General Electric Q-Floor Wiring.

This General Electric Q-Floor Wiring installation is well-equipped to handle all immediate needs for electrical and signal service. In addition, provisions for future requirements are literally built into the permanent raceway system.

By means of simple fittings, the steel cells of the entire Q-Floor become part of the electrical and signal distribution systems. Since the cells are on six-inch centers, outlets can be installed every six inches in the floor.

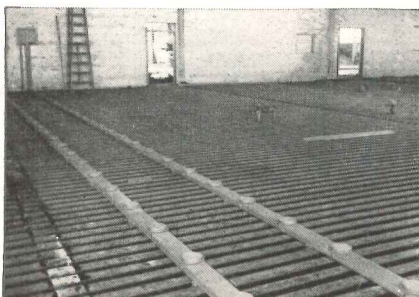
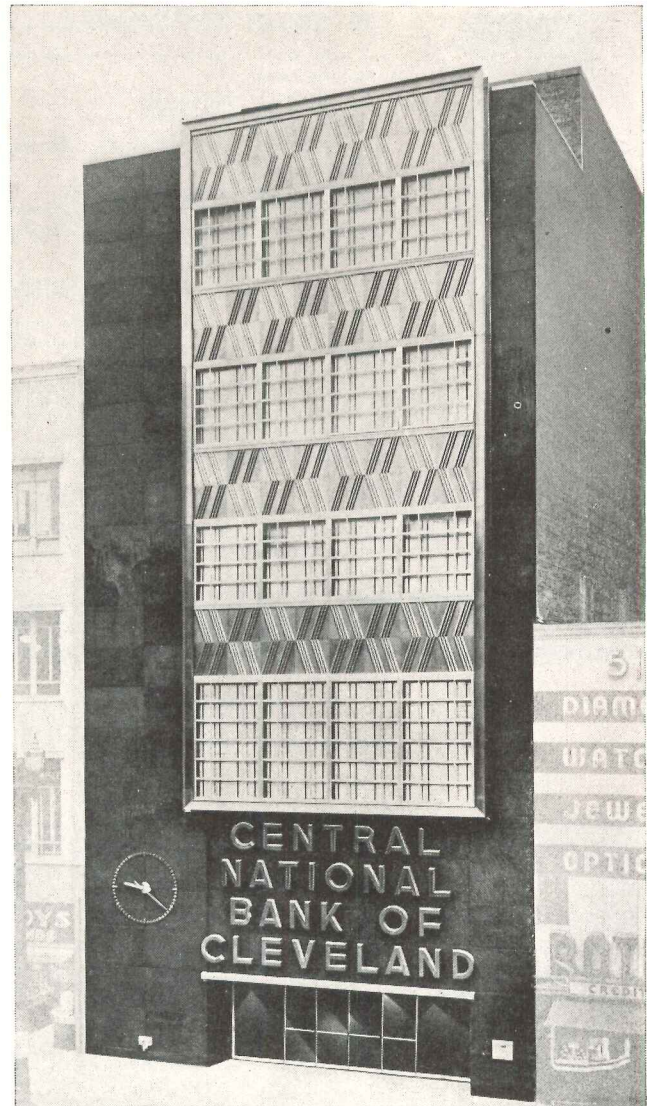
Q-Floors suitable for any size, any type, of building

While Q-Floors are extremely suitable for monumental structures, any building—commercial, industrial, or institutional—can be designed to stay electrically adaptable with Q-Floor and G-E Q-Floor Wiring. In fact, there is almost no type of building where Q-Floor Wiring cannot be successfully employed.

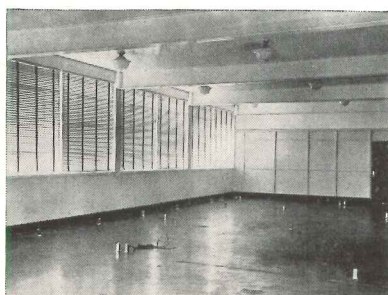
Get complete details on G-E Q-Floor Wiring

The General Electric Q-Floor Wiring story is presented in a 106-page book, "Q-Floor Wiring Data Manual." This comprehensive catalog contains descriptions, wiring diagrams, installation details, and other valuable information on this highly-flexible distribution system for architects, builders, and electrical contractors. If you would like a free copy, write to Section C16-35, Construction Materials Department, General Electric Company, Bridgeport 2, Connecticut.

Q-Floor is manufactured only by the H. H. Robertson Company, Pittsburgh, Pa. Samples can be seen at any General Electric Construction Materials or Robertson district office.



Q-Floor with electrical headers in place. To install an outlet anywhere in the floor, it is only necessary to tap through the floor surface to the Q-Floor cell, pull wires through, and install outlet.



View of a typical General Electric Q-Floor Wiring installation in an office, showing handy signal and electrical outlets before furniture is arranged.

Architect: Conrad, Hays, Simpson, & Ruth
Electrical Engineer: Clyde H. Loughridge
Electrical Contractor: Martien Electric Company
General Contractor: The Hunkin-Conkey Construction Company
Manager of Building Department, Central National Bank of Cleveland: J. R. Behan



Q-Floor Wiring
 FOR ELECTRICAL FLEXIBILITY

GENERAL  **ELECTRIC**



Hillyard Products and "Maintainers" Protect Your Floors Year after Year!

★ Super SHINE-ALL ...

A neutral chemical cleaner—not a soap—does not have to be rinsed.

★ HIL-TONE ...

A floor dressing—not a greasy floor oil. Leaves a protective coating.

★ Super HIL-BRITE ...

Highest quality wax—self-polishing—self-leveling—non-brittle—made from No. 1 Carnauba.

★ WOOD PRIMER ...

A penetrating seal that water proofs wood floors and prevents breaking down of cell structure.

★ Star GYM FINISH ...

Our No. 1 gymnasium finish which is serving thousands of schools and public and private concerns.

★ ONEX-SEAL ...

A marvelous water and weatherproof seal for terrazzo, tile, marble, slate and cement floors.

★ HILLYARD "MAINTAINERS"

are a nation-wide organization of floor treatment experts. Advice and recommendations given without obligation.



STEELTONIAN ...

Steel wool machine for dry-cleaning, wet sealing, wet scrubbing, polishing and honing. Uses economical "roll your own" steel wool.

SEND FOR FREE BOOK

Send for the free Job Specification book. Full of helpful information on proper floor maintenance and sanitation.

HILTONIAN ...

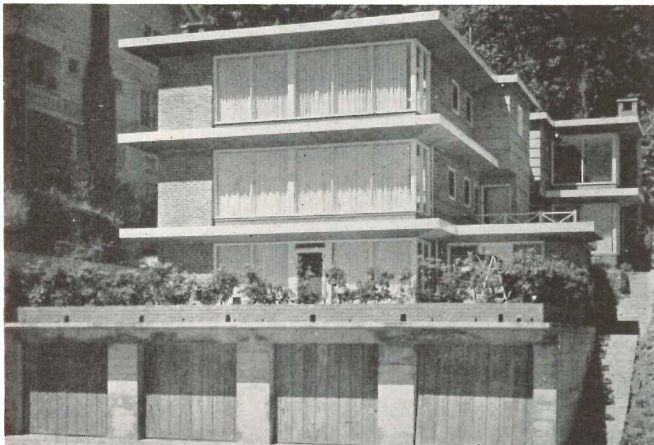
Electric twin-brush scrubbing, polishing and waxing machine. A model for every purpose. 16-inch, 19-inch and 22-inch.

HILLYARD SALES COMPANIES

DISTRIBUTORS FOR

HILLYARD CHEMICAL CO., ST. JOSEPH I, MO.

BRANCHES AND WAREHOUSE STOCKS IN ALL PRINCIPAL CITIES



K. S. Brown Photo

McCaul Apartment House No. 3

Mr. McCaul tried ROBERSON HEATSUM CABLE in two units of one apartment house and found it very successful. He has since had it installed in three other apartment houses.

ELECTRIC RADIANT HEAT

Eliminates central heating plant • Makes it possible for each tenant to control and pay for his own heat • Is so clean that redecorating is required only half as frequently • Lowers the operating cost of the heating system which decreases customers' rentals

HEATSUM CABLE

Manufactured by

L. N. ROBERSON COMPANY

1539 East 103rd Street

Seattle 55, Washington

Literature on request

THE "GUIDE" IS

Colorific!

Pale shades, dark shades, the "in-between" shades that are so hard to find . . . all are attractively presented for easy selection in the MOLETA COLOR GUIDE.

150 beautiful colors are displayed in the COLOR GUIDE. Each tint is shown on a large page (9" x 15") . . . distinctly shown in finished, right-on-the-wall effect. The correct mixing formula is given on the reverse of each page.



Write for your copy of the MOLETA COLOR GUIDE—\$5, delivered anywhere in the U. S. A.

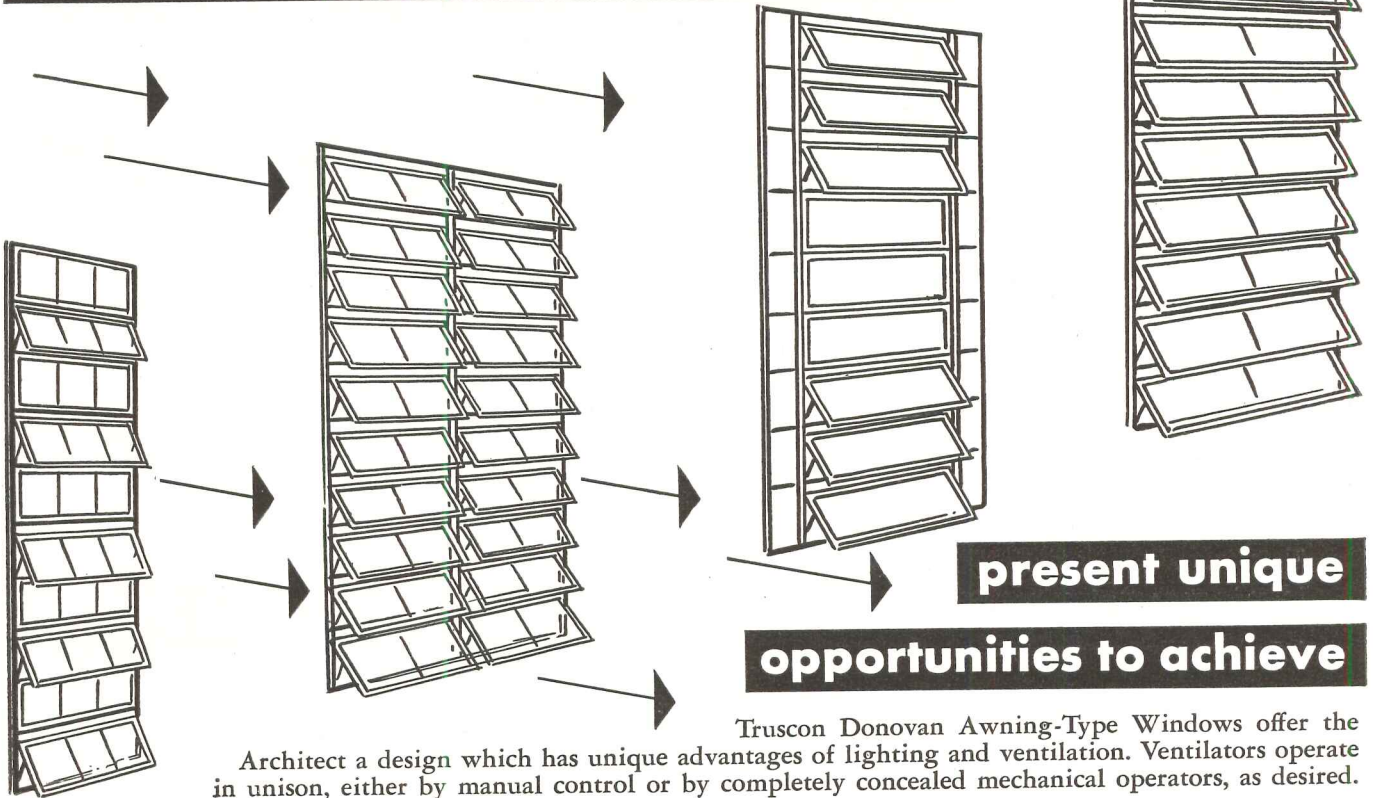
MONROE, LEDERER AND TAUSSIG, INC.

606 N. American St., Phila. 23, Pa.

Moleta FLAT OIL PAINT
ARCHITECTURAL The Truly Washable Paint.

TRUSCON DONOVAN

AWNING-TYPE WINDOWS



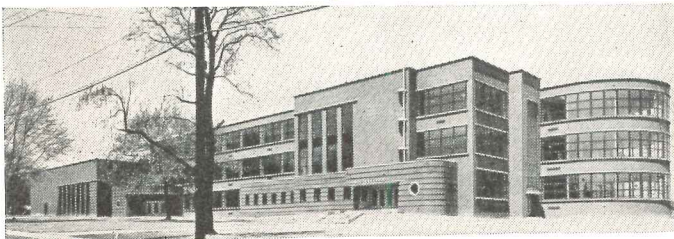
present unique opportunities to achieve

Truscon Donovan Awning-Type Windows offer the Architect a design which has unique advantages of lighting and ventilation. Ventilators operate in unison, either by manual control or by completely concealed mechanical operators, as desired.

The awning principle of the open ventilators permits the admission of air in inclement weather. Fully opened, the windows afford approximately 100% ventilation. Fixed panels may be located wherever you wish.

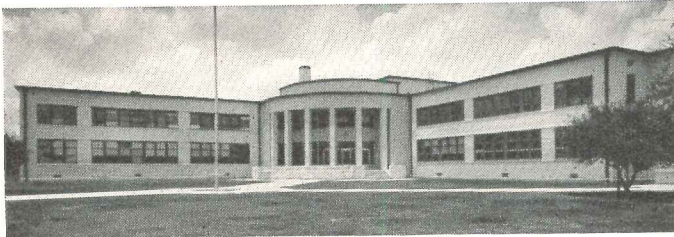
The Donovan design completely eliminates all unsightly exposed connecting arms, screws, racks, etc. These Truscon Steel Windows are sturdily built

distinctive institutional structures



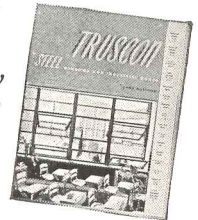
Above: Hillman Junior High School, Youngstown, Ohio. Excellent use of Truscon Donovan Awning-Type Windows.

Below: Truscon Donovan Awning-Type Windows used in Ripley Memorial, Houston, Texas.



of unusually heavy special casement sections. They are positively and easily operated, assuring you of a high quality product incorporating features not available in any other window design.

New Literature. Send for new catalog complete with installation details and specifications on Truscon Steel Windows for every type of residential, commercial, industrial and institutional use.



TRUSCON STEEL COMPANY

YOUNGSTOWN 1, OHIO

Subsidiary of Republic Steel Corporation

Manufacturers of a Complete Line of Steel Windows and Mechanical Operators • Steel Joists • Metal Lath • Steeldeck Roofs • Reinforcing Steel • Industrial and Hangar Steel Doors • Bank Vault Reinforcing • Radio Towers • Bridge Floors.

WHAT ABOUT
TRADE-IN
VALUE?



"What will be the trade-in value a year from now?" any automobile buyer will ask.

The wise home builder, too, should say: "What will this house be worth ten, twenty years from now?"

In each case the answer depends on soundness of construction, on quality of materials and workmanship.

Therefore, for the interior finish of a home—consider lime plaster. Because, with proper workmanship and the right materials, it is SOUND CONSTRUCTION, an integral part of your building.

For it makes ceiling, walls and partitions of each room into one monolithic surface, free of joints, vermin and rodent proof, fire safe, acoustically right.

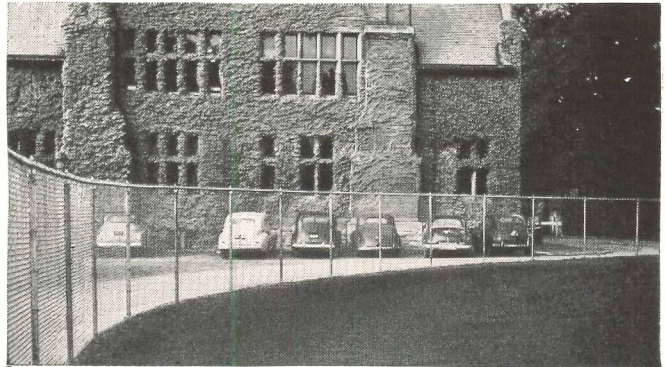
And because it is DURABLE, for lime plaster has withstood the ages in the many fine examples of the builder's art of all periods.

Present day technological advances assure you of hydrated plastering lime that is always right—always 99½% pure.

You can recognize it by the familiar red zigzag stripes on the bags, our trade mark.



THE OHIO
HYDRATE
& SUPPLY
COMPANY
WOODVILLE
OHIO



REALOCK FENCE

Provides Permanent Property Protection

Used in protection of power plants, schools, reservoirs, hospitals, disposal plants, and similar types of property, a Realock® Fence provides years of trouble-free service. Made of steel wire, heavily galvanized, it is tamper-proof, weather-resistant, low in cost—furnished with or without barbed wire at top.

Let us submit estimates for fence material ready for erection or covering complete installation by trained crews. Write to our nearest office.

©Reg. U. S. Pat. Off.

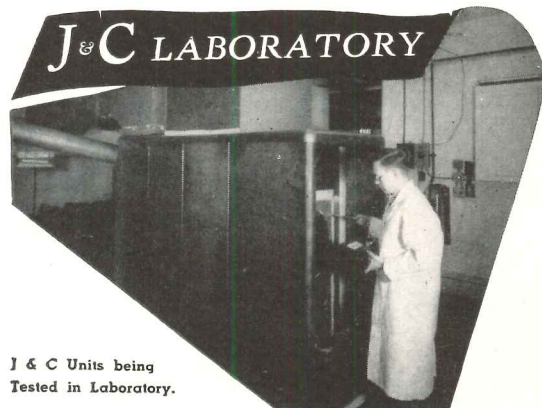


WICKWIRE SPENCER STEEL DIVISION
361 DELAWARE AVENUE · BUFFALO 2, NEW YORK

THE COLORADO FUEL AND IRON CORP.
CONTINENTAL OIL BUILDING · DENVER 2, COLORADO

THE CALIFORNIA WIRE CLOTH CORP.
1080-19TH AVENUE · OAKLAND 6, CALIFORNIA

BRANCHES & DISTRIBUTORS IN KEY CITIES EVERYWHERE



J & C Units being
Tested in Laboratory.



PROVES PERFORMANCE

PRECISE MEASUREMENT . . . Of exact static pressure drop across each J & C unit and proper blower size for each J & C Model.
EXHAUSTIVE TESTS . . . of J & C units provide installation engineers with the data needed for correct installations.

ONLY IN THE LABORATORY . . . may technicians definitely establish:
Correct Pressure Loss Measurements
Proper Temperature Rise
Accurate Flue Gas analysis
Known Heat Transfer

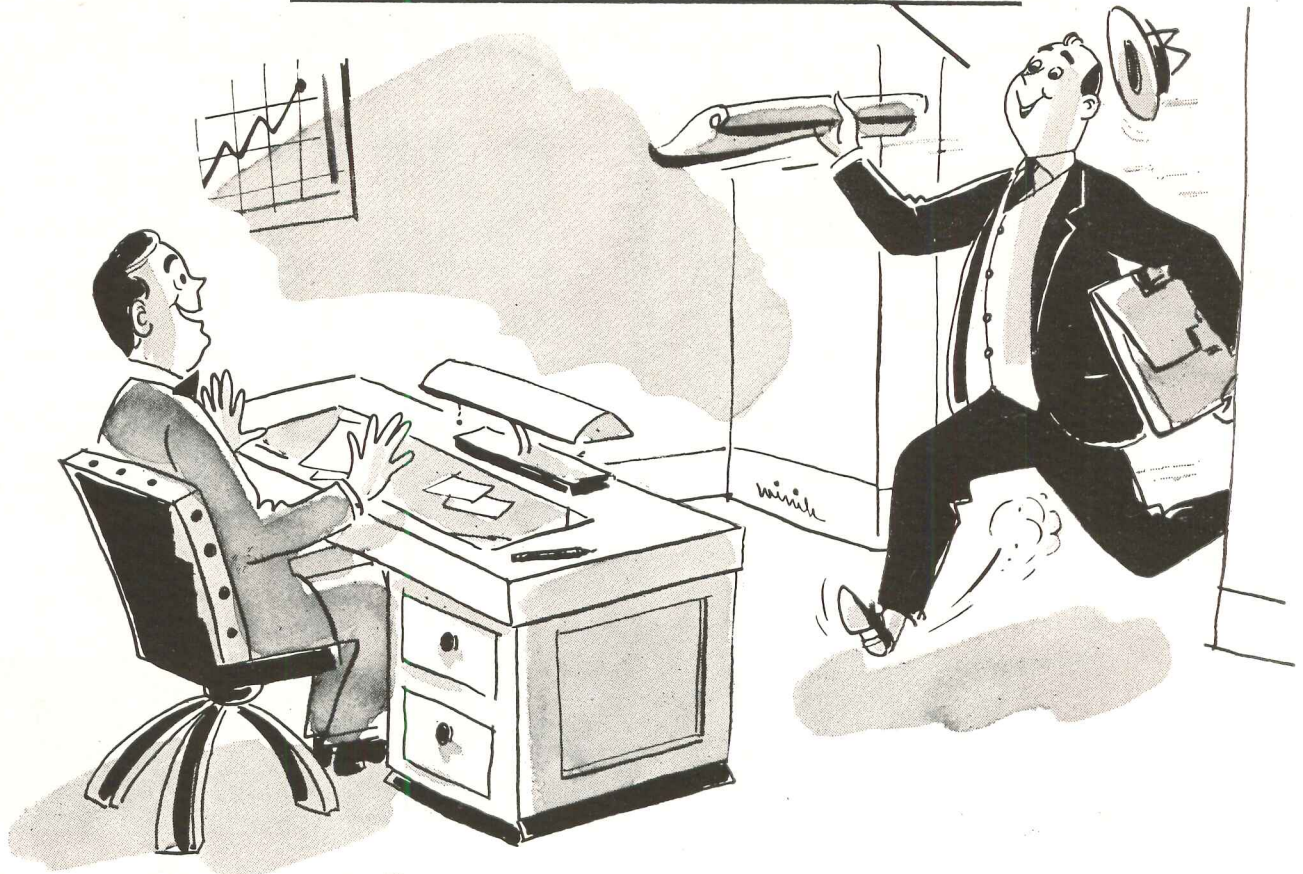
NO GUESSWORK . . . The J & C laboratory, working for you, permits accurate installations because performance capabilities are precisely determined.

THE COMPLETE LINE . . . COMPLETELY PROVEN

J & C, America's largest and most complete Warm Air Heating Line, offers over 100 types and sizes with outputs from 3,800,000 down to 100,000 Btu in the Famous Tubular Series . . . other models down to 52,500 Btu. Exact engineering plus endless testing provide the J & C features that give you an "edge" when you specify or install J & C.

A PRODUCT OF
JACKSON & CHURCH COMPANY, SAGINAW, MICHIGAN

I WAS WRONG! YOU CAN AFFORD FABRON WALL COVERINGS!



YOU CAN'T BLAME an architect for thinking that the use of FABRON may be out of line with his client's budget. He is apt to say, "Such beautiful, high quality material must be expensive—and it's probably very costly to apply". What a revelation when he discovers the truth—that *if* there is any additional cost involved, it is insignificant indeed . . . particularly when contrasted to the subsequent savings FABRON effects for his client by reducing the cost of his wall maintenance and eliminating periodic redecorations.

Why not look into FABRON for one of those projects now on your drafting boards! Send us your preliminary drawings. We'll give you an estimate of the cost of FABRON and an approximate cost of its installation. After comparing its value and cost with other wall treatments, you will have no hesitancy in specifying FABRON.

Remember—the only time to consider FABRON is *before* you are writing the specifications, *after* you know the *facts* about FABRON.

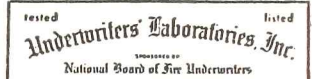
FREDERIC BLANK & Co., INC., (Est. 1913) 230 PARK AVENUE, NEW YORK 17, N. Y.

- In one operation, FABRON hides plaster blemishes, prevents expensive plaster repairs, assures complete washability and color fastness. Saves money to the owner by eliminating periodic redecorations. Initial cost falls within present-day budget. Furnished in double rolls. Applied like wallpaper. Easily repaired by invisible inlay method. More than 180 colors, textures and patterns offer a decorative latitude unmatched by conventional treatments. And—FABRON prevents the spread of fire, carries the label of the Underwriters' Laboratories, Inc.



THE ATLANTA BILTMORE
Atlanta, Georgia

One of more than 1,000 hotels benefitting from FABRON'S long-term durability and easy maintenance. FABRON is also serving in over 1,000 hospitals as well as countless schools, universities, etc.



Fabron[®]
the canvas-plastic-lacquer wall covering



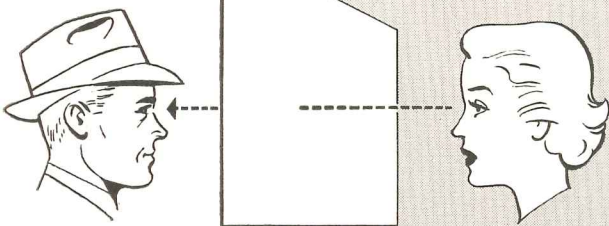
From his side ...



IT'S A MIRROR

(HE CAN'T SEE HER)

From her side ...



IT'S TRANSPARENT

(SHE SEES HIM)

*... a Unique Glass
with Intriguing Uses*

In the same piece of glass, you have both a mirror and a transparent pane—with choice determined by the intensity of light on either side.

Seen from the brightly-lighted side, the glass is a mirror—seen from the dimly-lighted side, it's a transparent pane. And, with the flick of a switch, the effect can be reversed. This is made possible by a thin chrome alloy coating which permits a reflection of about 50%.

Transparent Mirrors have many practical and decorative uses—already they are being used as one-way vision panels in residence doors, in restaurant dining rooms and in displays . . . for special decorative effects in hotels, theaters and stores. Your own imagination will suggest many more uses.

For full information on Transparent Mirrors, write to Liberty Mirror Division, Libbey-Owens-Ford Glass Company, 6939 Nicholas Building, Toledo 3, Ohio. * T. M.

Libbey-Owens-Ford
Mirropane*
TRANSPARENT MIRROR

LIBERTY MIRROR DIVISION

Libbey-Owens-Ford Glass Company

HOLLOW METAL

5 ACRES OF ONE-FLOOR FACTORY
designed for straight line, efficient production



As specialists in the fabrication of bronze, aluminum, steel and stainless steel, we offer our services wherever hollow metal doors, interior trim, elevator enclosures, cold rolled mouldings and metal specialties are required.

JAMESTOWN METAL CORPORATION

104 Blackstone Avenue

Jamestown, N. Y.

FITZGIBBONS

For 63 years, the right name in
STEEL BOILER HEAT



A.S.M.E. CODE
Constructed

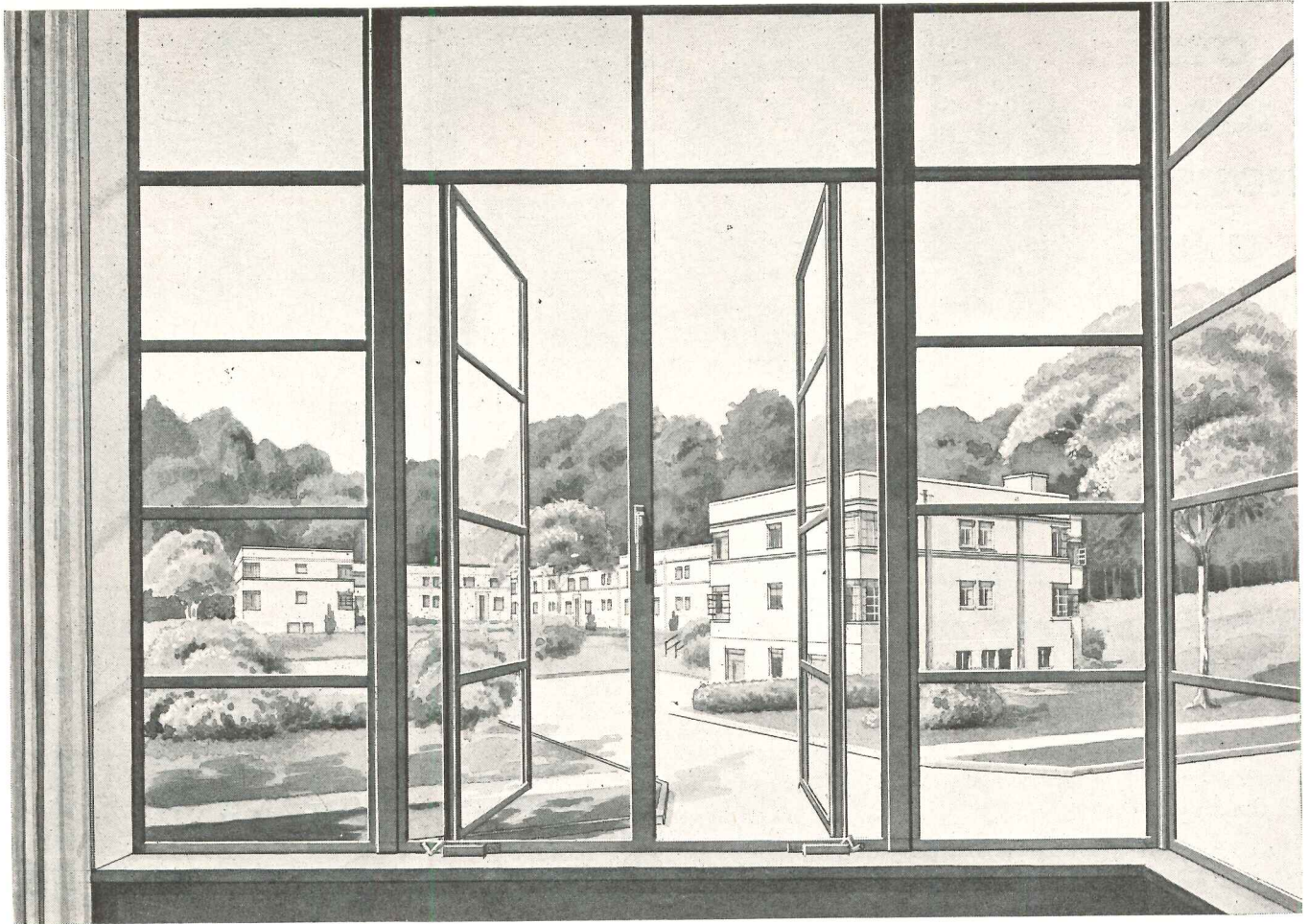
HYDROSTATICALLY
Tested

HARTFORD INSURANCE
Inspected

S.B.I. CODE rated



Fitzgibbons Boiler Company, Inc. 101 PARK AVE. NEW YORK 17, N. Y.



Greendale Manor Apartments, town of Greenburg, N. Y. Architect: Laurence M. Loeb, White Plains, N. Y. Built by Frank J. Filardi Construction Co., Harisdale, N. Y. for Healy Central Realty Co.

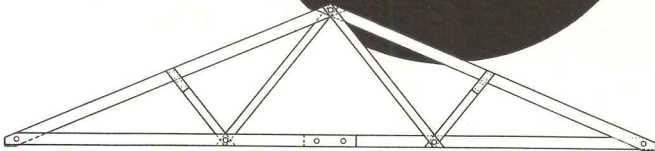
There's bright living ahead for New Yorkers who live in Greendale Manor. In this new garden-type apartment village, large, sun-inviting Lupton Metal Windows provide an abundance of daylight to each dwelling unit. The narrow, graceful frames and smartly-designed operating hardware of Lupton Metal Windows blend perfectly with modern design. Air flow is easily controlled to supply exactly the right amount of ventilation in every room. Economy, a vital feature of large scale building is effected by the long life of Lupton Metal Windows. Lupton Residence Casements can be supplied in a wide range of stock sizes and types. Bronze wire screens are available for all windows. There is a Lupton Metal Window for every type of building. Write for our catalog or see it in Sweet's.

MICHAEL FLYNN MANUFACTURING CO.
700 East Godfrey Avenue, Philadelphia 24, Penna.
Member of the Metal Window Institute

LUPTON METAL WINDOWS

OVER
10,000
HOUSING
UNITS

BUILT WITH
**TECO
TRUSSED
RAFTERS**



... tied down with

Trip-L-Grip Framing Anchors

TRUSSED RAFTERS ARE THE KEY TO REDUCED HOUSING COSTS . . .

A mid-western university home construction time study states, "Roof trusses are the key to major savings. (Savings on wall and floor installations are greater than on the trusses themselves.)"

Teco Trussed Rafters for 20' to 32' clear spans eliminate interior bearing walls—permit complete flexibility of interior design—or eliminate interior walls altogether. Especially suitable for apartments or mass housing projects and large homes. With only four basic members, they can be easily built in a shop or on the job.

Faster—Stronger—Framing Connections



with **TRIP-L-GRIP
FRAMING ANCHORS--**

. . . eliminate insecure toe nailing. Trip-L-Grip Framing Anchors tie trussed rafters securely to plate and speed erection by acting as automatic spacers. Made of 18 gauge zinc coated steel—special nails provided FREE.

FREE to architects and engineers . . . typical designs of Teco Trussed Rafters and data for using Trip-L-Grips.

TIMBER ENGINEERING COMPANY

1319 18th St., N. W., Washington 6, D. C.

Gentlemen:

Please send me typical design of Teco Trussed Rafters for 20' to 32' span, (check one)

- () 4" in 12" roof slope () 6" in 12" roof slope
() 5" in 12" roof slope () 7" in 12" roof slope
() Application and Design Data on using Trip-L-Grips

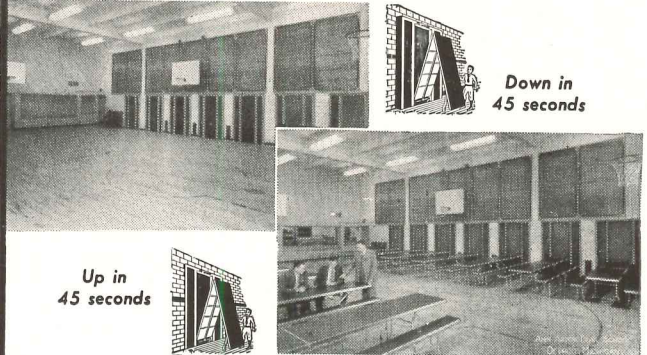
Company Name.....

Address.....

My Name.....

HAVE HEAVIER ENROLLMENTS
CREATED A SPACE PROBLEM?

ARE YOU STOPPED BY HIGH
BUILDING FOOTAGE COSTS?



Up in
45 seconds

Down in
45 seconds

**MULTIPLE USE OF SPACE—
Greater Efficiency—Less Cost!**

In school and public building design consider "IN-WALL" units. Eliminate storage space, gain 1/3 more seating, plus multi-use of lunchroom area.

**SCHIEBER
MFG. CO.**
12728 Burt Rd.
Detroit 23, Mich.

**SCHIEBER
In-wall**

FOLDING TABLES & BENCHES

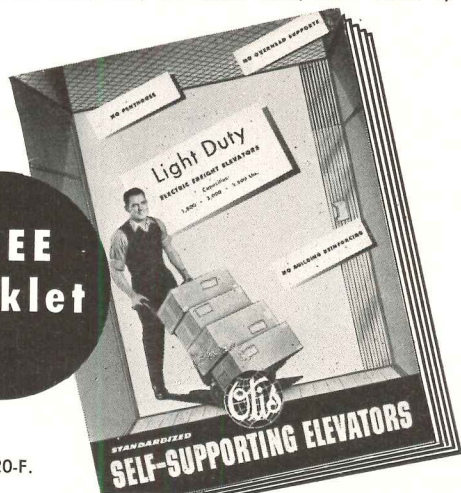
NEW!

**Low Cost
Light Duty**

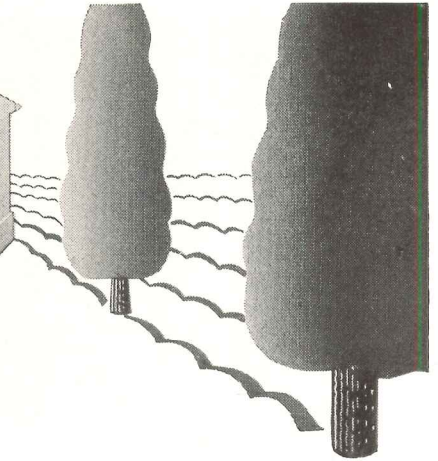
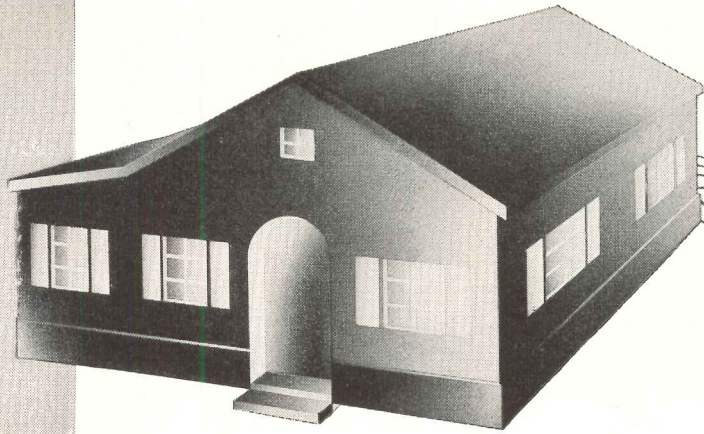
ELECTRIC ELEVATORS

Why handle freight the slow, costly way — by hand! You can now handle light freight electrically in loads of 1,500, 2,000 and 2,500 pounds with the new Otis Self-Supporting Elevator. Designed for a maximum rise of 35'-0" it is suitable for any 2 or 3 story commercial or institutional building. It is inexpensive to install because its self-supporting design requires no penthouse, no overhead supports, no building reinforcing. OTIS ELEVATOR COMPANY, 260 11TH AVE., NEW YORK 1, N. Y.

**FREE
Booklet**



Write for
Bulletin B-720-F.

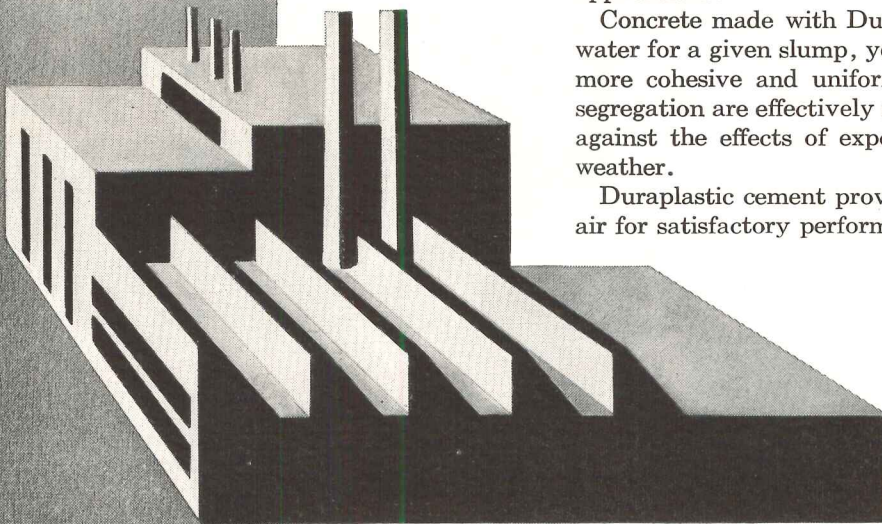


Suburban home...

Build it better
with

*DURAPLASTIC

...or Industrial Plant



For flexible building design, there's no material like concrete. And for added durability in concrete construction, more and more architects and contractors specify Atlas Duraplastic Air-Entraining Cement. At no extra cost, Duraplastic provides more durability to structural or mass concrete—in foundations, floors, walls, slip-form, gunite, stucco and many other building applications.

Concrete made with Duraplastic cement requires less mixing water for a given slump, yet, it is more plastic, more workable, more cohesive and uniform—easier to finish. Water-gain and segregation are effectively minimized. The concrete is protected against the effects of exposure, such as freezing and thawing weather.

Duraplastic cement provides the proper amount of entrained air for satisfactory performance and requires no added expense or unusual changes in methods or procedure. It complies with ASTM and Federal specifications. Send for further information to Universal Atlas Cement Company (United States Steel Corporation Subsidiary), Chrysler Building, New York 17, New York.

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

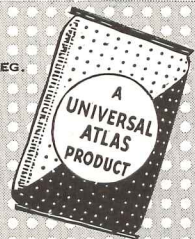
*"Duraplastic" is the registered trade mark of the air-entraining portland cement manufactured by Universal Atlas Cement Co.

AR-D-84

ATLAS DURAPLASTIC

AIR-ENTRAINING PORTLAND CEMENT

TRADE MARK REG.
U. A. C. CO.



MAKES BETTER CONCRETE AT NO EXTRA COST

"THE THEATRE GUILD ON THE AIR"—Sponsored by U. S. Steel Subsidiaries—Sunday Evenings—ABC Network



Air Conditioned with Frick Refrigeration

The new building of Maryland's largest broadcasting and television station, at Baltimore, is air conditioned throughout with three Frick compressors, each having four cylinders, as shown below.



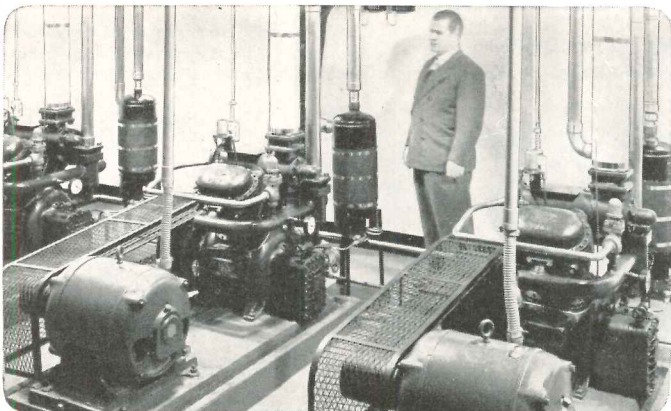
Gloria Halliday, Popular Singer at Station WBAL

This fine installation won the 1948 Building Trades Award for the Paul J. Vincent Co., Baltimore Distributors for Frick Refrigerating, Ice-making and Air Conditioning Equipment.

Enter your order now for the air conditioning system you need. Consider Frick NEW "ECLIPSE" compressors: for details write



Frick Refrigerating Machines at Radio Station WBAL



SAFEST AND SIMPLEST METHOD
The Nailock Method is the simplest and safest method of installing a suspended ceiling construction with or without acoustical tiles.

Use Nailock

FOR SUSPENDED CEILING CONSTRUCTION
Permits Use of Any Acoustical Materials Required

Reduce time-wasting grief and time cost on suspended ceiling jobs. Nailock Universal Nailing Channels provide a means for securely fastening backing or backer-board and acoustical tiles in place, and assure a rigid, safe and permanent suspended ceiling installation.

NAILOCK STEEL DIVISION
THE SANMETAL PRODUCTS CO., INC.
1689 Urbana Road • Cleveland 12, Ohio

ZONOLITE* Insulating Concrete

for RADIANT HEAT SYSTEMS

OFFERS YOU

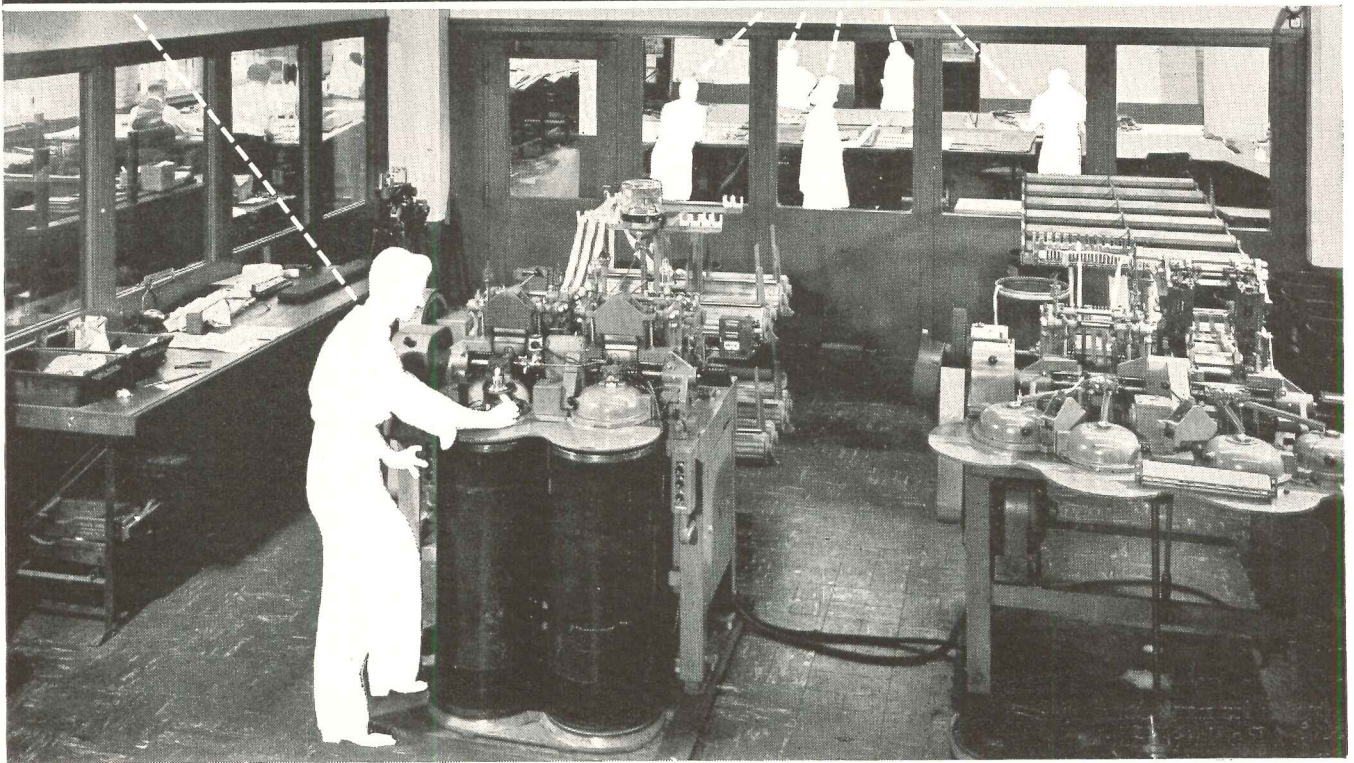
- ✓ Economical operation, less heat loss
 - ✓ Greater efficiency
 - ✓ Elimination of condensation
 - ✓ Quicker control of room temperature
 - ✓ Ability to heat with lower temperature in system
- *Zonolite is a registered trademark of Zonolite Company



For FREE information about ZONOLITE INSULATING CONCRETE write to Dept. AR-39

ZONOLITE COMPANY
135 S. La Salle Street
Chicago 3, Illinois

HE NEEDS HUMIDITY CONTROL... **THEY** NEED QUIET



satisfy them (and your client) . . . specify *Thermopane*

Perhaps you'll never have the special problem faced by the testing laboratory for textile machinery shown above. Here exceptionally high humidity must be maintained inside without steaming the glass, and noise from equipment must be subdued for workers in the outer room. Owners and management expect such special requirements to be designed into a building these days.

You can assure them of these benefits by specifying *Thermopane**, the double-glass unit with the insulation built in, for windows and office partitions. Here's why:

- *Thermopane* cuts heat leakage through

glass, adds comfort winter or summer . . . pays off in year-by-year fuel savings . . . keeps interiors cooler in summer.

- By keeping condensation on glass to a minimum, maintaining proper and efficient humidities is easier.

- It blocks out distracting exterior noise . . . and, in partitions, subdues ordinary inter-office sounds to a mere hum.

Include *Thermopane* windows and partitions in all the new structures you design, and tell your clients why. They'll appreciate it. Contact your L·O·F Glass Distributor about *Thermopane* standard sizes, or write us direct.

*©

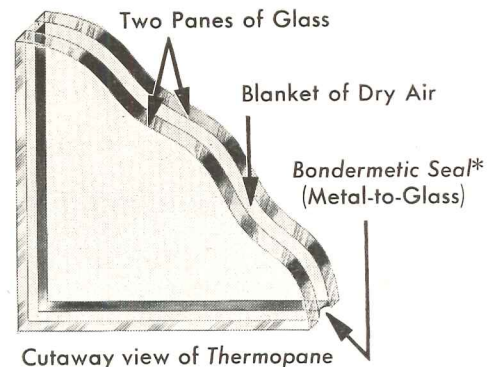


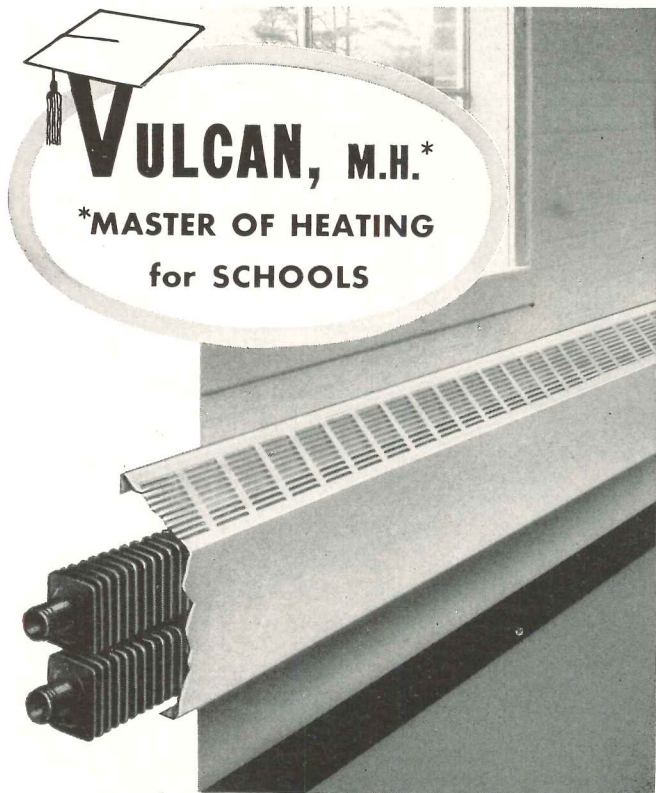
Thermopane

made only by

LIBBEY-OWENS-FORD GLASS COMPANY

2639 Nicholas Building, Toledo 3, Ohio





VULCAN, M.H.*
***MASTER OF HEATING**
for SCHOOLS

Again Vulcan leads the way to better heating with its new Solid Front, Slotted Slope Standard Radiation Cover (Type SF-SS). This cover combines improved convection with a solid radiant heating surface; provides protection against damage to clothing. Sloping top prevents children from climbing on it. Cover is rigidly supported by strong steel brackets.

DRAFT-FREE COMFORT

Vulcan continuous-line radiation installed along outside walls under large, modern window areas, in the class room, gymnasium or natatorium minimizes cold-air drafts; assures positive balanced heat distribution.


COMPACT INSTALLATION

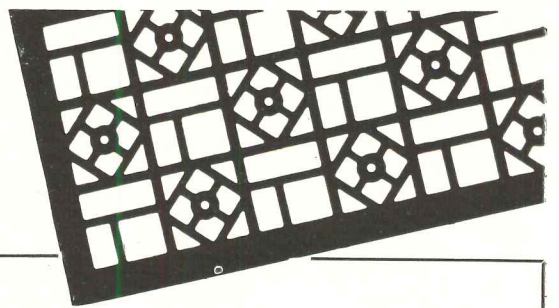
Designed for either steam or forced hot water, Vulcan occupies less space, provides more heat. Fins, offset for rigidity, are permanently imbedded in seamless steel pressure tube or copper water tube.

EASY TO INSTALL

Vulcan Radiation is easy to install because it is light in weight, requires few fittings and supports. Available in any desired length.

Complete Data in Sweet's Architectural File

THE VULCAN RADIATOR COMPANY
26 FRANCIS AVENUE
HARTFORD 6, CONN.

RADIATOR MANUFACTURERS FOR OVER TWO DECADES



HENDRICK GRILLES

for *modern* interiors

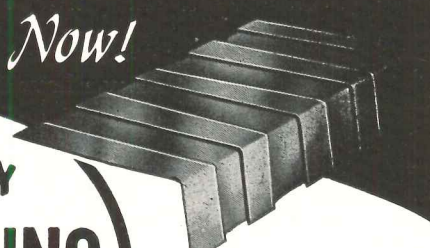
Many unusual decorative effects are obtainable with Hendrick Ornamental Grilles, of which there are over a hundred distinctive designs. They are made from heavy-gauge aluminum, brass, bronze, copper, Monel, steel and stainless steel, in a wide range of over-all dimensions, bar sizes, and number and size of perforations. Sizes are accurate, perforations clean-cut, with no burrs or other imperfections. Write for full information.



Perforated Metals
 Perforated Metal Screens
 Architectural Grilles
 Mitco Open Steel Flooring,
 "Shur-Site" Treads and
 Armorgrids

HENDRICK
Manufacturing Company
 38 DUNDAFF STREET, CARBONDALE, PA.
 Sales Offices in Principal Cities

Available Now!



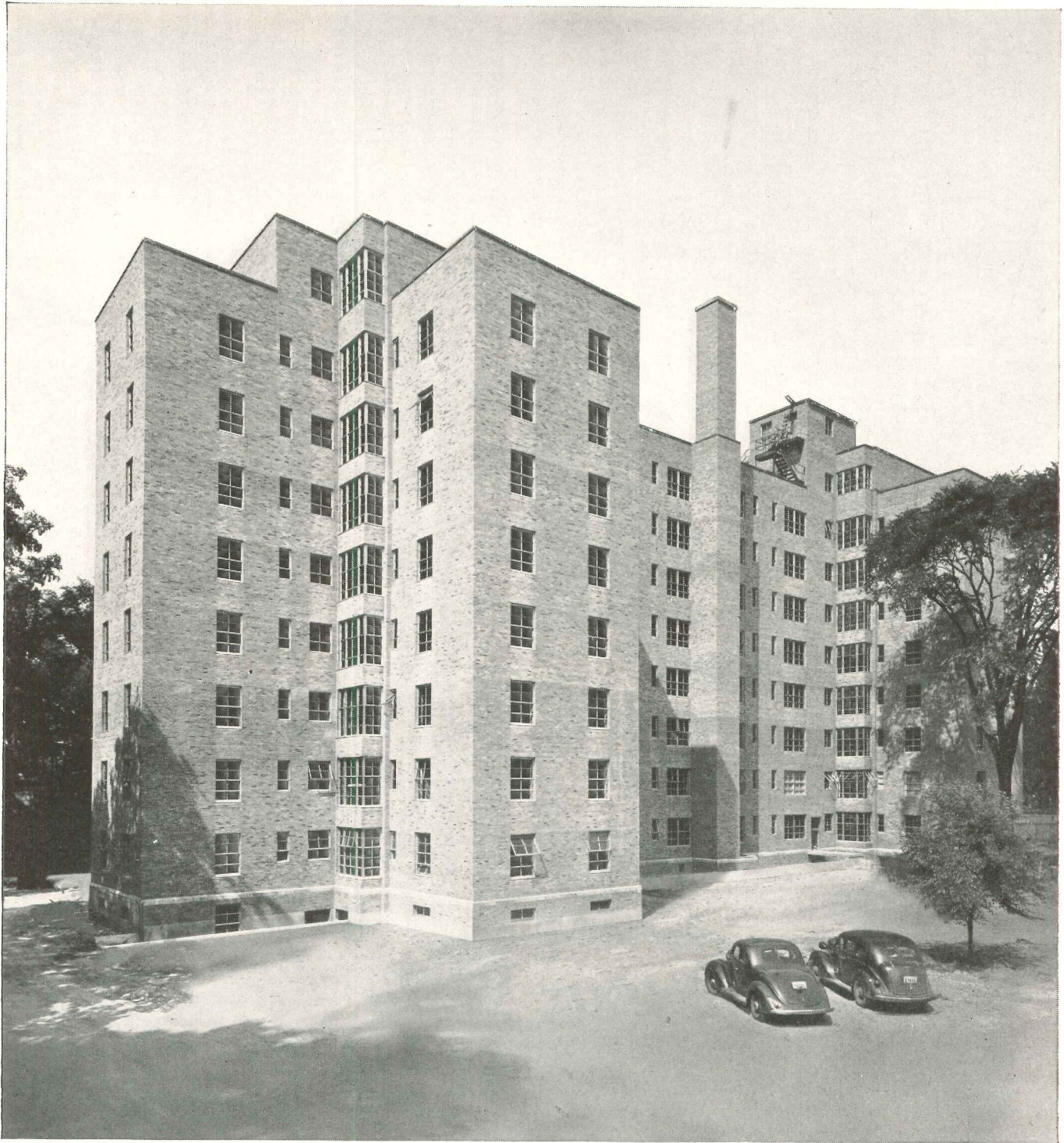
CHENEY FLASHING
3-Way Bond
 16 OZ. COPPER

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

CHENEY FLASHING CO. Trenton, N. J.



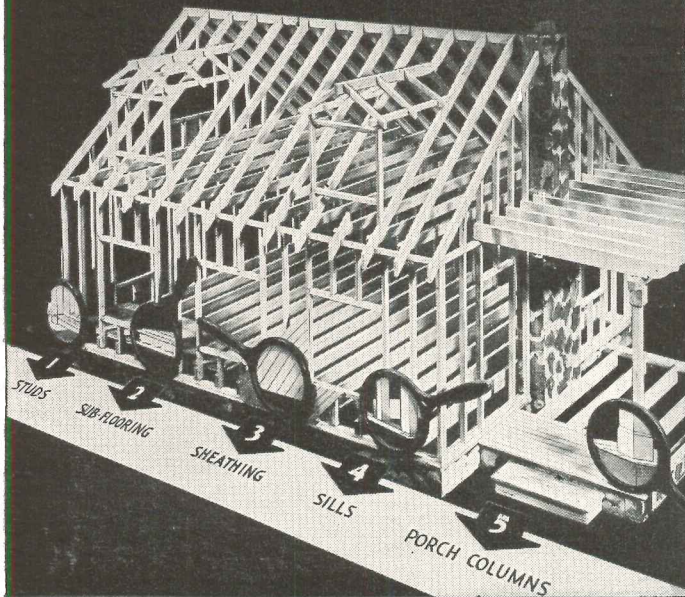
9-Story Apartment Structure Has Open-Web Joists—This is Tudor Plaza, a 68-family apartment building recently completed at Buffalo, N. Y. Modern in every detail, and cooperatively owned, Tudor Plaza has apartment units of from 1½ to 9 rooms, including two penthouse apartments. It also has a 65-car garage. Used in its construction were 125 tons of Bethlehem Open-Web Steel Joists. Floor structures with these joists, in combination with concrete floor slab and plaster ceilings, do much to make structures fire-safe, for they keep fire localized for two hours or more, depending upon the plaster used. This type of floor construction is also economical, shrink-proof, sound-retardant, and immune to attack by vermin. *Architect:* Backus, Crane & Love, Buffalo. *Consultant:* Green & James, Buffalo. *Contractor:* Boehm Construction Co., Inc., Buffalo.

FOR INFORMATION ABOUT BETHLEHEM OPEN-WEB STEEL JOISTS SEE OUR CATALOG IN SWEET'S



3-WAY PROTECTION

For This Vital 20%



SAFEGUARD

your clients' building investment with
CZC—pressure-treated wood

(Chromated Zinc Chloride)

You can make the "vulnerable 20%" of a frame house last indefinitely by specifying wood treated with Du Pont Chromated Zinc Chloride. This means *building for permanence* . . . years of additional service for the entire structure . . . a minimum of replacement and maintenance costs. Wood treated with CZC (Chromated Zinc Chloride) gives 3-way protection because it:

1. **RESISTS DECAY**—Prevents growth of fungi which cause decay, even in buildings with high humidities.
2. **REPELS TERMITES**—Termites will not attack wood treated with Du Pont CZC (Chromated Zinc Chloride).
3. **RETARDS FIRE**—Is difficult to ignite . . . gives added safety to any wooden structure.

Wood treated with Du Pont CZC (Chromated Zinc Chloride) is clean, odorless, paintable and safe to handle.

Write today for full details. Address Du Pont, Grasselli Chemicals Dept., Wilmington 98, Delaware.

Specify **WOOD TREATED WITH**
DU PONT CZC
(Chromated Zinc Chloride)



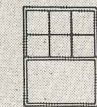
REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
...THROUGH CHEMISTRY

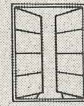
Insist on this Seal...



when you specify ALUMINUM WINDOWS



DOUBLE-HUNG



CASEMENT



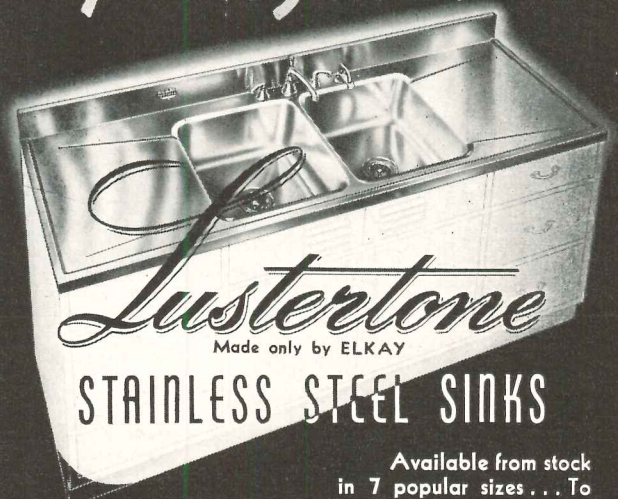
PROJECTED

This seal assures windows that, when tested by the independent Pittsburgh Testing Laboratory, meet the A.W.M.A. quality specifications for materials, construction, strength of sections, and minimum air infiltration requirements.

For complete specs covering "Quality-Approved" aluminum windows—double-hung, casement and projected—and names of approved manufacturers, consult Sweet's or write to the address below, Dept. R.

ALUMINUM WINDOW MANUFACTURERS ASSOCIATION
209 Cedar Avenue, Takoma Park, Washington 12, D. C.

for permanence • beauty • satisfaction
specify...



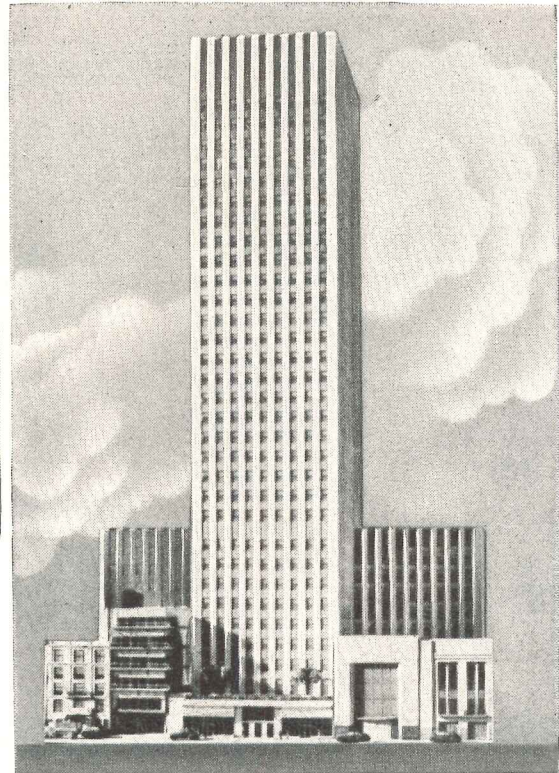
Lustertone
Made only by ELKAY

STAINLESS STEEL SINKS

Available from stock in 7 popular sizes . . . To fit any cabinet—or as a complete unit . . . Custom built in any size, shape or arrangement . . . No. 18 Gauge Stainless Steel—satin finish for lasting beauty and easier cleaning . . . Seamless—one-piece bonded construction—no overlapping or soldered edges . . . Guaranteed to outlast any home or building.

1948 Sweet's Architectural File—23/a6

ELKAY MANUFACTURING CO.
1870 S. 54th AVENUE • CHICAGO 50, ILLINOIS
Pioneer manufacturer of Stainless Steel Sinks—Est. 1920




THE NAME



HELPS "SELL" AIR CONDITIONING



The trademark  is a term of acceptance in air conditioning—the symbol of the best in cooling equipment and engineering know-how. 20 years of air conditioning experience—backed by thousands of York-equipped installations—have established York's leadership in the industry.

These are the facts which help "sell" air conditioning when York equipment is specified or recommended:

YORK HAS THE MOST COMPLETE RANGE OF EQUIPMENT

YORK OFFERS EXPERIENCED TECHNICAL AND PRACTICAL ASSISTANCE

YORK HAS UNEQUALLED ORGANIZATION OF TRAINED SALES ENGINEERS

YORK OFFERS CERTIFIED MAINTENANCE CONTRACTS

YORK MAINTAINS CONTINUOUS PRODUCT RESEARCH

The assistance you need in your planning or installation is as near to you as your telephone. Call on the facilities of your York District Office. You will find that every York sales engineer is a specialist in his field.

York Corporation, York, Pa.

FOLEY'S DEPARTMENT STORE, Houston, Texas
 Kenneth Franzheim, Architect
 Edward Ashley, Consulting Mechanical Engineer
 Raymond Loewy Associates, Retail Planners and Designers
 Francis J. Niven, Construction Engineers
 Strauss-Frank Co., Mechanical Contractors
 Frank Messer & Sons Inc., General Contractors

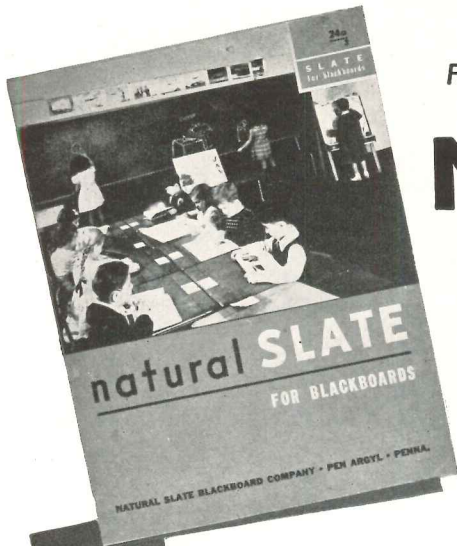
• • •

ESSO BUILDING, Rockefeller Center, N. Y.
 Carson & Lundin, Architects
 Pollak & Grieve, Engineers
 John W. Harris Associates, Inc., General Contractors
 Buensod-Stacey, Inc., Mechanical Contractors

YORK *Refrigeration and Air Conditioning*

HEADQUARTERS FOR MECHANICAL COOLING SINCE 1885





For Complete Specification Data on

NATURAL SLATE

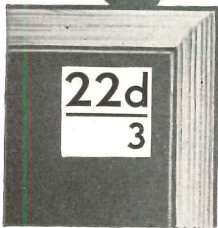
See Our
NEW

Catalogs in SWEET'S



This catalog describes advantages of Natural Slate blackboards and includes complete specification data.

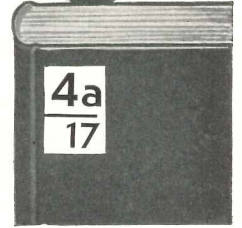
This catalog contains 7 typical uses for Structural Slate with sizes and specification details.



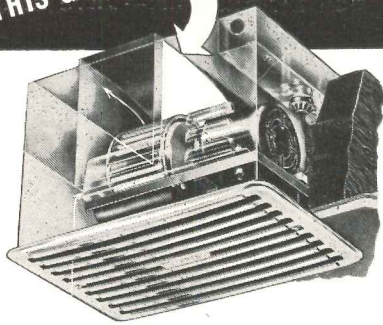
NATURAL SLATE BLACKBOARD COMPANY

PEN-ARGYL • PENNA.

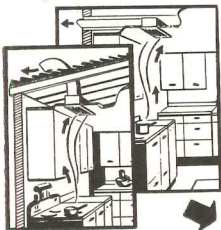
THE STRUCTURAL SLATE COMPANY



Only THE CLIPPER HAS THIS GREASE PARTITION!



Hundreds of pounds of grease and dust suspended in the air as mist pass through a kitchen ventilator during its operating life *but only the Clipper moves this harmlessly outdoors without gumming or wearing the motor.* The Clipper is guaranteed for 5 years because the motor is entirely removed from the air stream. It's easy to install in old or new houses. Mounts in the ceiling between joists with only the dripless ceiling grille visible.



Sketches show how easily Clipper is installed between joists and vented through roof or a side wall.

TRADE-WIND CLIPPER

Trade-Wind Motorfans, Inc.
5707 S. Main St., Los Angeles 37, Calif.
Send complete information on the Clipper.

NAME _____
ADDRESS _____

Recognized Everywhere!



IT'S HAWS FOR HIGHEST QUALITY

- Best Materials
- Finest Workmanship
- Trouble-free Valves and Fittings
- Complete Sanitation

Write today for '49 HAWS Catalog.
Specify HAWS—and be sure!

HAWS SANITARY DRINKING FOUNTAINS
ELECTRIC WATER COOLERS

HAWS DRINKING FAUCET CO.

1441 FOURTH STREET (Since 1909) BERKELEY 10, CALIFORNIA
Agents and Sales Representatives in All Principal Cities

The Restoration of Colonial Williamsburg

A Reprint of the December, 1935
Issue of
ARCHITECTURAL RECORD



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 prints have been sold but the demand continues unabated.



104 pages, bound in cloth
\$2.50 per copy

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 \$2.50 per copy. (Add 2% Sales Tax
for New York City deliveries.)

Name.....

Address.....

City and State..... A.R. 3-49

WHEN YOU PLAN A SCHOOL...

*plan for improved
classroom environment*

In planning any school, you will undoubtedly be considering the improved classroom environment which science now pronounces essential—the maximum physical and visual comfort required for efficient study and good health. Fine school furniture by American Seating Company is designed with full regard for these considerations.



American UNIVERSAL Lifting-Lid Desk No. 434

American UNIVERSAL Desks are internationally famous for comfort, efficiency, and durability. ENVOY Chairs, Desks, and Tablet-Arm Chairs; Universal Tables; and Bodiform Auditorium Chairs—all feature comfort, economy, and serviceability. Our Seating Engineers are at your service for consultation on school seating plans—without obligation. Write for details.



American BODIFORM
Tablet-Arm Auditorium Chair

Use our experience on auditorium seating problems

We have had years of experience in the highly specialized field of school-auditorium seating. This experience and our vast fund of helpful technical data are yours to command. For auditorium seating offering the utmost in comfort, beauty, and durability, investigate American BODIFORM Chairs. Write today for the full story.

WORLD'S LEADER IN PUBLIC SEATING

American Seating Company

Grand Rapids 2, Michigan

Branch Offices and Distributors in Principal Cities

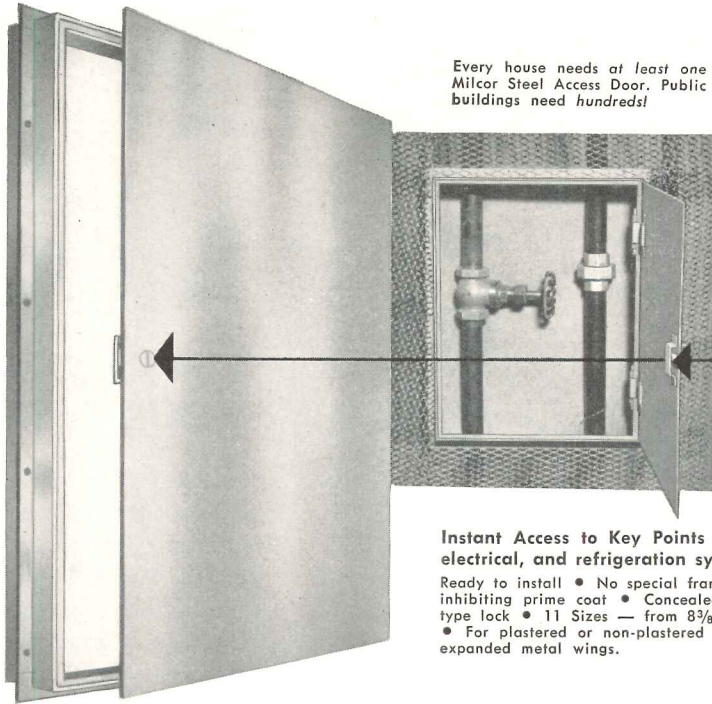
Manufacturers of

School, Auditorium, Theatre, Church, Transportation, Stadium Seating, and Folding Chairs

YOU CAN DO IT LIKE THIS,
BUT THERE'S AN EASIER WAY!



Every house needs at least one
Milcor Steel Access Door. Public
buildings need hundreds!



A SCREW DRIVER
DOES THE TRICK!

Milcor Steel Access Doors (flush with wall)

Instant Access to Key Points in plumbing, heating,
electrical, and refrigeration systems

Ready to install • No special framing • Painted with rust-
inhibiting prime coat • Concealed hinges • Flush, screw-
type lock • 11 Sizes — from 8 $\frac{3}{8}$ "x 8 $\frac{3}{8}$ " to 24 $\frac{3}{8}$ "x 36 $\frac{3}{8}$ "
• For plastered or non-plastered walls • With or without
expanded metal wings.

look better, last longer, cost less

— and earn you credit for delivering *the best job at the least cost!*

Yes, these handsome flush-type *Milcor Steel Access doors* actually cost less than the old type!

For one thing, they cut labor costs and building time. They are installed quickly and easily—flush with the wall or ceiling. You can paint or paper right over them. And they eliminate costly special construction required by other types of installation.

There is no ugly, old-fashioned frame protruding

from the wall to mar the appearance of your job. And the good looks are permanent. Milcor Steel Access doors can't crack, shrink, warp, or rot.

Deliver the kind of jobs that satisfy your clients—and keep them satisfied. Specify "Milcor" for steel access doors—and for other steel building products called for in modern fireproof construction. Consult the Milcor catalog in your Sweet's file.

INLAND STEEL PRODUCTS COMPANY

FORMERLY MILCOR  STEEL COMPANY

MILWAUKEE 1, WISCONSIN

Baltimore 24, Md. • Buffalo 11, N.Y. • Chicago 9, Ill. • Cincinnati 25, Ohio
Cleveland 14, Ohio • Detroit 2, Mich. • Kansas City 8, Mo. • Los Angeles 23, Calif.
New York 22, N.Y. • Rochester 9, N.Y. • St. Louis 10, Mo.

F-322A



This 20-page
Milcor Manual
—with complete in-
formation on the
Milcor Metal Lath
Products line — is
yours for the ask-
ing! Tear out cou-
pon and mail today!

INLAND STEEL PRODUCTS COMPANY, 4101 West Burnham Street, Milwaukee 1, Wisconsin
Send me (without obligation) a *Milcor Manual* with full details on Milcor Steel
Access Doors and other products in the complete Milcor Metal Lath line.

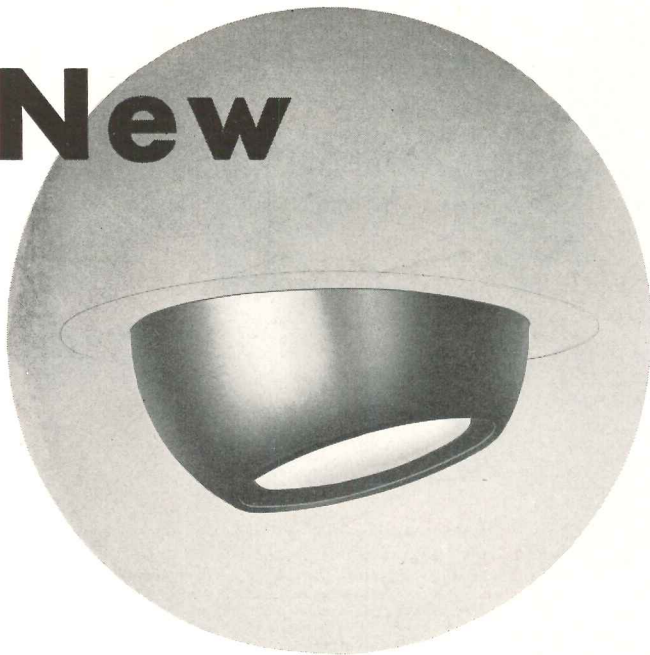
Name..... Title.....

Company.....

Address.....

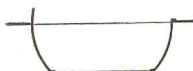
City..... (.....) State.....

New

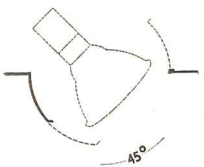


CENTURY'S NEW EYEBALL

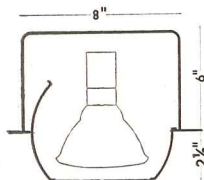
Cat. #362 — \$21.00
(patent applied for)



simple: The only visible part of fixture No. 362 is a truncated hemisphere, precision spun and finished in satin aluminum. The fixture plate and plaster ring are perfectly flush with the finished ceiling.



efficient: The fixture is fully adjustable in any downward direction up to 45° off the vertical. It uses the PAR 38 150 W spot or flood lamps as well as the new 75 W R-30 lamp.

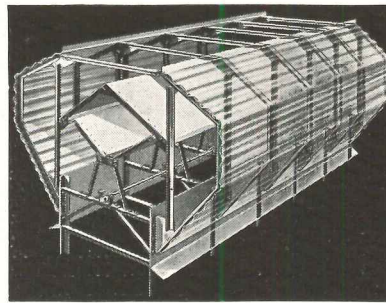


compact: No comparable fixture approaches the small size of No. 362. It is perfectly scaled for large or small rooms and can easily fit into those "tight" spaces where adjustability is often required. ONLY requires 6" depth above ceiling line.

applications: 1. Paintings. 2. Displays. 3. Floral decorations. 4. Statues. 5. Objets d'Art. 6. What-nots. 7. All other Accentlites—and wherever flexible down-lighting is indicated.

CENTURY LIGHTING, INC.

419 W. 55th St., New York 19, N. Y.
626 No. Robertson Blvd., Los Angeles 45, Cal.



Versatile
Fool-Proof
Economical
Efficient

BURT MONOVENT VENTILATES YOUR ENTIRE ROOF LINE

Installed in a continuous run along the roof ridge, the Burt Monovent Continuous Ridge Ventilator is serving industry efficiently in installations from a foot to a thousand feet in length. Mounts on any type roof — pitch, curb or saw tooth. Makes the roof a giant valve to quickly and economically exhaust impure air, heat and fumes. The Monovent is one of six different types in Burt's *complete* ventilator line. Burt Engineers will be glad to recommend the installation best suited to your plant — without obligation.

THE BURT MFG. CO.

ROOF VENTILATORS • OIL FILTERS
EXHAUST HEADS

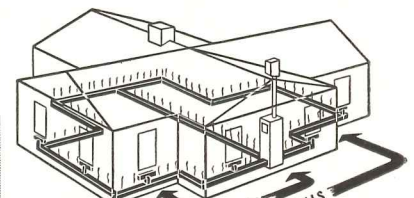
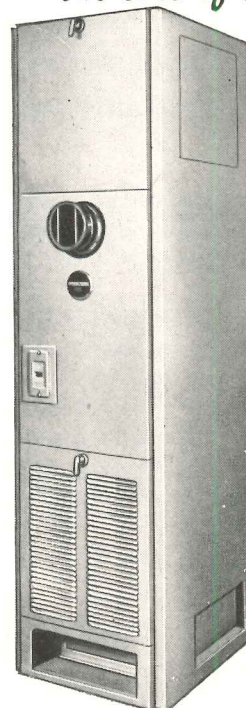
48 E. SOUTH ST., AKRON 11, OHIO

SEND FOR CATALOGS
Burt Engineers are glad to help on plans

RADIANT FLOOR PANEL HEATING plus FILTERED CIRCULATING WARM-AIR

Both in one unit - At less than the cost of conventional heating!

The INTERNATIONAL WARM-AIR AUTOMATIC OIL or GAS FURNACE



BASEBOARD OR FLOOR REGISTERS UNDER WINDOWS
COMPACT 2'x2' FITS IN CLOSET OR NICHE
UNDER-FLOOR DUCTS AT OUTSIDE WALLS

FOR RANCH-TYPE or BASEMENTLESS HOMES...

A truly great advance in modern heating engineering — that really overcomes the basic problems of home heating. Under-floor ducts eliminate cold floors and chilly walls... Base register banishes cold air cascading down windows... Elimination of air stratification assures uniform temperatures at all levels. Low cost installation — economical operation.

Send for literature giving details and typical layouts.

INTERNATIONAL OIL BURNER CO.
Park & Spring Aves. St. Louis 10, Mo.

Announcing... A New Store Book

Ben Schnall Photo

"Planning Stores That Pay"

by Dr. Louis Parnes, A.I.A.

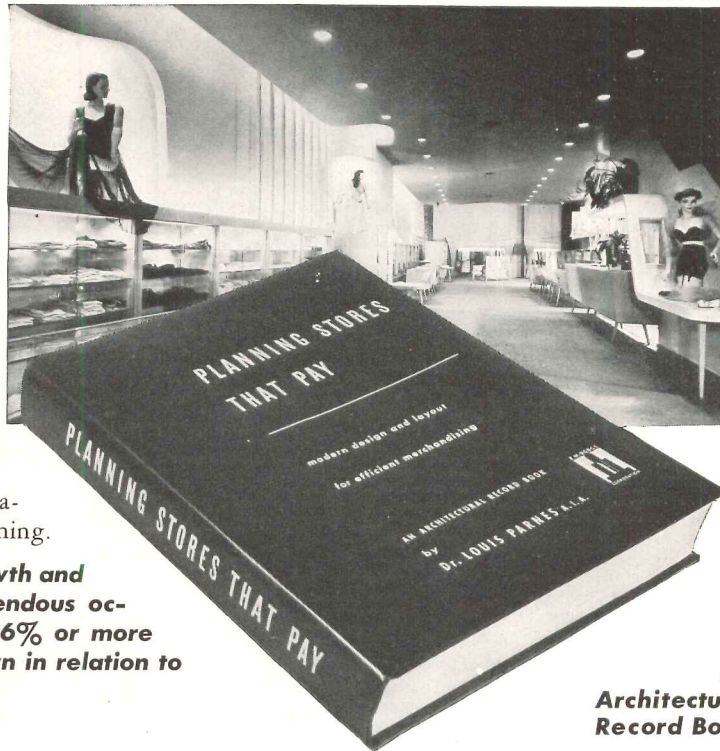
for

Architects and Store Designers,
Department and Chain Store
Administrators

"The great majority of department stores today are not making the most efficient use of their space,"

says Dr. Louis Parnes, international authority on store planning.

"This is due to haphazard growth and bad planning . . . The tremendous occupancy costs, which absorb 6% or more of gross sales, can be cut down in relation to sales by good design."



An
Architectural
Record Book

In his new comprehensive study "Planning Stores that Pay," Dr. Parnes demonstrates the amazing degree to which architecture — as expressed in counter lengths, traffic flow, etc. — speeds and increases retail sales, not only for department stores but for specialty and chain stores. Point by point he conducts a tour of the store to illustrate the right and wrong aspects of profit-making design. He shows how to compute such diverse factors as, say, the ideal width of show windows and the optimum number of chairs in a shoe department.

With more than 500 illustrations, he explores every detail of the store and its arrangements — entrances, arcades, show windows, transportation systems, furniture and fixtures, receiving and shipping facilities, floor and department layouts, display arrangement and lighting, and all the hundreds of items that go to make up a modern merchandising machine. Everything is calculated from the viewpoint of efficiency, and the contribution of each part of the store to the process of selling goods profitably is the criterion of its recommended design. Diagrams, charts and scale drawings, from hundreds of leading stores and from the works of America's greatest store architects, prove each point graphically.

Why Every Department Store — Old or New — Now Needs an Architect's Service

Composite statistics of department store income and expense have long been put to invaluable use in stepping up store efficiency. Dr. Parnes shows how they also can be used as a precise basis for designs that automatically enhance sales . . . and reveals the enormous potential profits thus available. The first store to be thus fully engineered will have extraordinary advantages! *But meanwhile every department store in the country can begin at once to plan its architectural transformation.*

A Basic Textbook on Store Architecture

"Planning Stores That Pay" is a book of basic principles, but specific ideas flow from its pages in rapid succession. A single chapter has enough suggestions to launch a number of long-term projects in store layout, equipment,

etc. Any department store administrator can see that it will pay him to call in private architects for immediate replanning, and that such replanning may well pay for itself a hundred times over.

Department stores have exhausted great resources of effort and ingenuity to maintain their life-line margin of profit. The fact that "Planning Stores That Pay" suddenly injects into this situation sensational new weapons for combatting competition makes this an extremely valuable, if not indispensable, book for architects and store administrators. With it they can speak each other's language, work together, and make the most of today's great opportunities.

Order Your Copy Now

"Planning Stores That Pay" is now available to you at the price of \$15 per copy. But because the demand for this book is exceeding even the most sanguine expectations, the initial printing may soon be exhausted. Therefore, to make sure of your copy of this new, basic text on advanced store design and planning, order your copy now.

Use the convenient coupon at the right. The book will be sent promptly on receipt of your order . . . postpaid.

Over 500 photographs and diagrams of floor plans, store fronts and interiors.

Features 112 stores and shops . . . the work of more than 60 architects and designers.

300 pages; 8 3/4 x 11 1/4; heavy, durable, cloth binding; 80 lb. coated stock; Detailed Table of Contents; Comprehensive Index.

TABLE OF CONTENTS

1. Introductory Survey
2. City Planning Considerations
3. The Selling Zone
4. The Customers' Zone
5. The Merchandise Zone
6. The Show Window
7. The Personnel Zone
8. Interior Lighting
9. Circulation and Transportation
10. Scientific Surveys and Data

CONTENTS OF A TYPICAL CHAPTER

To indicate how logically and thoroughly this book deals with its subject, here are the section headings of a single chapter (Chapter 3, entitled "The Selling Zone"):

Space Organization. Coordination and Arrangement of Central Sales Areas. Relative Size of Departments. Circulation on Selling Floors: Aisle Layout; Aisle Densities; Equipment Layout. Fixture Specifications. Self-Service Equipment. Flexible and Standardized Equipment. Service Stations. Interior Display. Interior Column Spacing. Productivity, Efficiency, and Equipment Layout. Special Sales Rooms. New Trends in Basements. Main Floor Layout.

A few of the architects and firms whose works are discussed are:

Carson & Lundin
Morris Lapidus
Shreve, Lamb & Harmon
Kenneth Franzheim
Fred N. Severud
Harry Devine
William Lescaze
H. Roy Kelley
John S. Redden
Albert C. Martin
John M. Hatton
Morris Ketchum, Jr.
Ernest J. Kump
Stiles O. Clemens

BOOK DEPARTMENT, ARCHITECTURAL RECORD
119 West 40th Street, New York 18, N. Y.

Enclosed is \$.....for.....copy(s) of "Planning Stores That Pay," by Dr. Louis Parnes, A.I.A., at the price of \$15 per copy. For N. Y. C. add 2% sales tax.

Name.....

Address.....

City.....Zone.....State.....

INDEX TO ADVERTISEMENTS

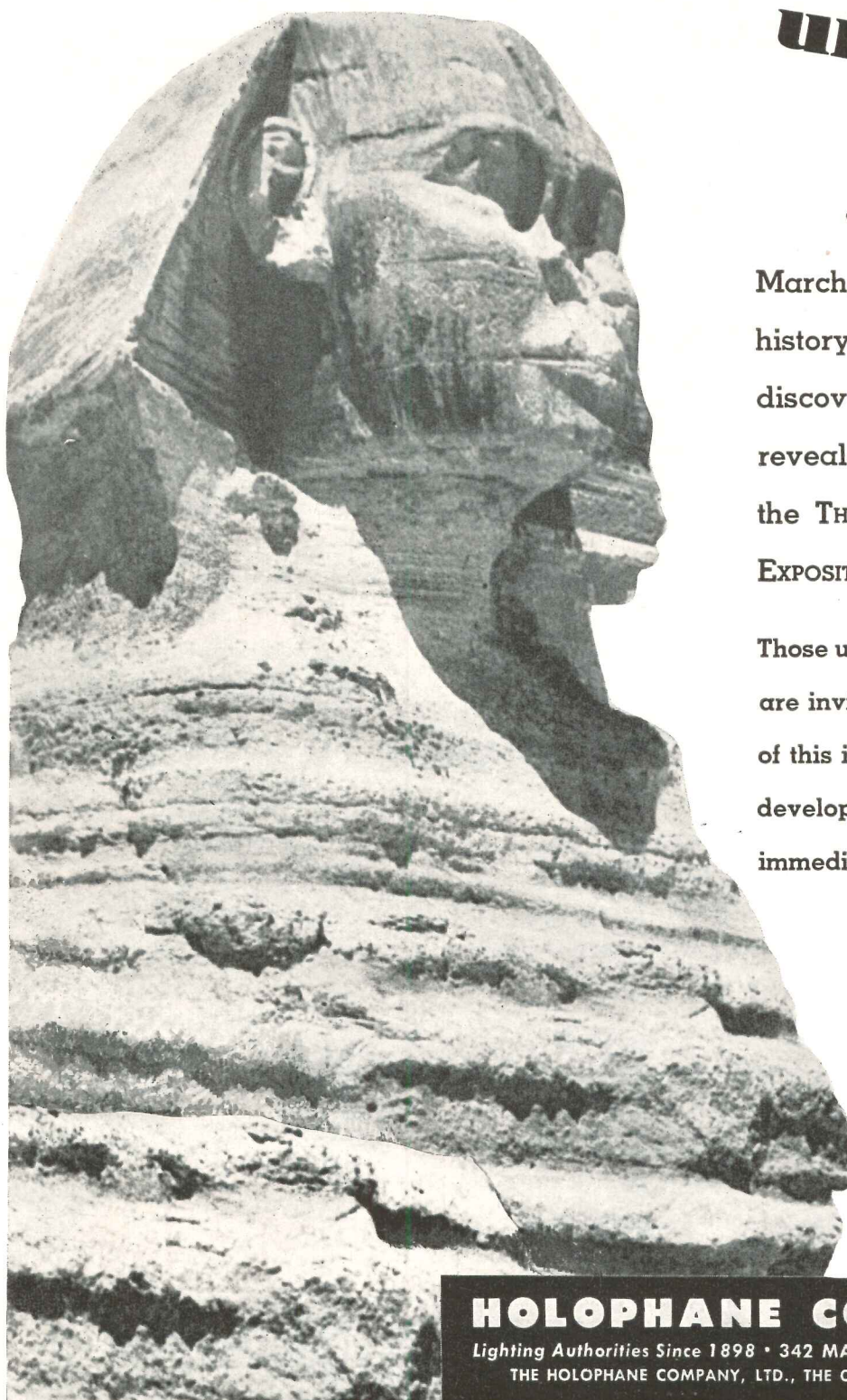
MANUFACTURERS' PRE-FILED CATALOGS
 Symbols "a", "b", and "e" indicate that catalogs of firms so marked are available in Sweet's Files as follows:

a—Sweet's File, Architectural, 1949
 b—Sweet's File for Builders, 1949
 e—Sweet's File, Engineering, 1949

ab Accurate Metal Weathersrip Co., Inc.	158	ae Hart & Hegeman Division	40	a Pittsburgh Reflector Company	71
abe Adam, Frank Electric Co.	59	Haws Drinking Faucet Co.	232	abe Pittsburgh Steel Products Co.	185
a Adams & Westlake Company	209	ae Hendrick Manufacturing Co.	228	a Portland Cement Association	197
Aerofin Corporation	70	a Herring-Hall Marvin Safe Co.	157	a Powers Regulator Company	80
Alan Wood Steel Company	20	a Hillyard Sales Companies	218	a Pyle-National Company	193
a Alberene Stone Corp. of Virginia	22	Holophane Company, Inc.	239	Radio Corporation of America	195
a Allegheny Ludlum Steel Corp.	15	a Hood Rubber Co. Division	12	Reliable Typewriter & Adding Machine Co.	202
ae Allied Chemical & Dye Corp.	213	a Hope's Windows, Inc.	82	a Republic Steel Corporation	219
a Aluminum Window Manufacturers Assn.	230	a Horn Brothers Co.	174	abe Revere Copper & Brass, Inc.	66
ae American Abrasive Metals Co.	178	abe Hunter Fan & Ventilating Co., Inc.	167	ab Reynolds Metals Company	31-47
a American Brass Company	155	a Imperial Brass Mfg Co.	6	ab Richmond Radiator Company	47
a American Sealing Company	233	Independent Protection Company	206	Roberson L N Company	218
ae American Structural Products Co.	163	ab Inland Steel Products Co.	235	ae Raddis Plywood Corporation	60
a American Tile & Rubber Co.	168	ab Insulite Division	11	a Rotary Lift Co.	216
American Trucking Association	173	a International Business Machines Corp.	50	Royal Heaters, Inc.	208
American Type Founders Sales Corp.	188	International Nickel Company, Inc.	203	ae Ruberoid Co.	84
a Anaconda Copper Mining Co.	155	International Oil Burner Co.	236	ae Rust-Oleum Corporation	152
a Anthracite Institute	211	a Jackson & Church Co.	220	a Sanymetal Products Co., Inc.	41-226
a Armc Co Steel Corporation	36	a Jamestown Metal Corp.	222	Sarcotherm Controls, Inc.	63
ae Arrow-Hart & Hegeman Electric Co.	40	ae Johns-Manville	14	Schieber Mfg. Co.	224
ae Barber-Colman Company	72	ae Josam Manufacturing Co.	83	abe Schlage Lock Company	57
abe Barrett Division	213	ae Keasbey & Mattison Company	62	a Seapocel Metals, Inc.	148
Bergen Cabinet Co.	160	a Kennecott Copper Corp.	207	a Sedgwick Machine Works	162
a Bethlehem Steel Company	229	a Kennedy, David E. Co.	46	ab Serval, Inc.	64-65
Bigelow-Sanford Carpet Co.	38	a Kewanee Boiler Corporation	215	ae Sloan Valve Company	4th Cover
ab Bird & Son, Inc.	166	Kewaunee Mfg. Co.	164	a Smith, H. B. Co., Inc.	142
a Blank, Frederic & Co., Inc.	221	ab Kimberly-Clark Corporation	58	Solar Light Mfg. Co.	204
Books	204-210	Kinetic Chemicals, Inc.	76-77	Soss Manufacturing Co.	212
e Bradley Washfountain Co.	186	ae Kinnear Manufacturing Co.	172	Southern Pine Association	16
a Brasco Manufacturing Co.	183	a L.C.N. Door Closers	149	ae Sperzel Company	216
ab Bruce, E. L. Co.	51	a Laclede Steel Company	170	a Stained Shingle & Shake Association	55
ae Bulldog Electric Products Co.	61	ab Lawson, F. H. Co.	45	ae Stanley Works	81
ae Burt Mfg. Co.	236	Lees James & Sons Company	19	abe Stran-Steel Division	69
Byers, A. M. Co.	4	Liberty Mirror Division	222	a Structural Steel Co.	232
ab Cabot, Samuel, Inc.	190	abe Libbey-Owens-Ford Glass Co.	222-227	ab Superior Fireplace Co.	214
a Caldwell Manufacturing Co.	204	Lighting Products, Inc.	184	ab Surface Combustion Corp.	177
Case, W. A. & Son Mfg. Co.	3rd Cover	Lincoln Electric Company	159	Swedish Crucible Steel Company	37
abe Ceco Steel Products Corp.	2-3	Lone Star Cement Corp.	214	ae Taylor, Halsey W. Co.	200
abe Celolux Corporation	141	Luria Engineering Corp.	25	ab Thrush, H. A. & Company	56
a Century Lighting, Inc.	236	a Macomber, Incorporated	146	a Tile Council of America	67
a Chase Brass & Copper	207	ae Mahon, R. C. Co.	79	abe Tile-Tex Company, Inc.	8-9
a Cheney Flashing Co.	228	Marlo Coil Co.	13	Timber Engineering Company	224
Chicago Hardware Foundry Co.	196	a Martin-Parry Corp.	49	Todd Shipyards Corp.	196
abe Church, C. F. Mfg. Co.	52	McQuay, Inc.	53	ab Trade Wind Motorfans, Inc.	232
ab Clayton & Lambert Mfg. Co.	198	a Medart, Fred Products, Inc.	73	abe Trane Company	147
ae Colorado Fuel & Iron Corp.	220	a Medusa Portland Cement Co.	205	a Trinity Portland Cement Division	34
a Columbia Mills, Inc.	48	ab Mengel Company	191	ae Trumbull Electric Mfg. Co.	35
Combustion Equipment Division	196	Michaels Art Bronze Co. Inc.	150	abe Truscon Steel Company	219
ab Connor Lumber & Land Co.	200	Miller Company	68	a United States Gypsum	171
Corning Glass Works	144	ae Mills Company	27	ab United States Plywood Corp.	191
Coyne & Delany Co.	216	Minneapolis-Honeywell Regulator Co.	202	ae United States Steel Corporation	
b Crane Co.	74	ab Minnesota & Ontario Paper Co.	11	Subsidiaries	225
ab Cuprinol Division	234	a Minwax Company	194	a Universal Atlas Cement Company	225
a Curtis Companies Service Bureau	153	ae Modine Mfg. Co.	44	a Universal Bleacher Company	206
a Cutler Mail Chute Co.	234	Monroe, Lederer & Taussig, Inc.	218	a Valley Metal Products Co.	21
a Danbury Rubber Company	72	ae Moulding, Thos. Floor Mfg. Co.	210	a Van Range, John Co.	176
ab Darworth & Co.	234	a Nailock Steel Division	226	a Van Rhee, John Co.	180
a Day-Brite Lighting	151	ab Natcor Store Fronts	234	a Vermont Marble Company	179
abe Detroit Steel Products Company	42	a National Gypsum Company	161	a Vonnegut Hardware Co.	228
a Douglas Fir Plywood Assn.	32	National System of Garage Ventilation	212	ae Wade Mfg. Co.	192
ae Dravo Corporation	201	a Natural Slate Blackboard Co.	232	ae Wakefield, F. W. Brass Company	206
ae Du Pont, E. I. de Nemours & Co.	230	Neo-Ray Products, Inc.	189	ae Ware Laboratories, Inc.	165
a Durisol, Inc.	182	ae Nesbitt, John J., Inc.	23	a Wayne Iron Works	202
a Elkay Manufacturing Co.	230	Ohio Hydrate & Supply Co.	220	ae Wheeling Corrugating Company	29
Employment Opportunities	208-210	ae Okonite Company	240	ae Wickweir Spencer Steel Division	220
Faber, A. W. Castell	214	Olsonite Plastics Division	37	Wiley, R. & W. Inc.	30
Faber Eberhard	39	ae Otis Elevator Company	75-224	ae Wing, I. J. Mfg. Co.	154
Federal Seaboard Terra Cotta Corp.	24	a Onan, D. W. & Sons, Inc.	198	Woodwork Corporation of America	175
a Fitzgibbons Boiler Company	222	ae Owens-Corning Fiberglas Corp.	54	a Worthington Pump & Machinery Corp.	187
Fleicher, Donald A.	200	ae Owens-Illinois Glass Co.	163	ae York Corporation	231
abe Flintkote Company	2nd Cover	Oxalid Division	1	a Young Radiator Co.	194
abe Flynn, Michael Manufacturing Co.	223	a Petroleum Heat & Power Company	199	abe Zonolite Company	226
Frick Company	226	abe Pittsburgh Plate Glass Company	33-78-169		
ab Frigidaire Division	181	a Pittsburgh Plate Glass Co.—Paint Division	33		
ab Gate City Sash & Door Co.	156				
General Aniline & Film Corp.	1				
General Controls	212				
General Electric Co.—Lamps	43				
ae General Electric Co.—Wiring	17-217				
ab General Motors Co.	181				
a General Portland Cement Co.	34				
a Goodrich, B. F. Co.	12				
ae Grasselli Chemicals Department	230				
abe Great Lakes Steel Corporation	69				
Guth, Edwin F. Company	18				

NEW YORK—H. Judd Payne, Publishing Director; Robert F. Marshall, Business Manager; Tom Tredwell, Advertising Mgr.; Benton B. Orwig, Creative Service Manager; M. A. Murphy, Advertising Production Manager, 119 West 40th Street; BOSTON—Harry M. Horn, Jr., 855 Park Square Bldg.; CHICAGO—C. B. Riemersma, Robert T. Franden, John M. Cogan, 700 Merchandise Mart; CLEVELAND—John C. Jackson, 321 Hanna Bldg.; DALLAS—O. O. Paulsell, 412 Construction Bldg.; LOS ANGELES—Bob Wettstein, 672 South Lafayette Park Place; PHILADELPHIA—Tom Tredwell, 1321 Arch St.; PORTLAND—Bob Wettstein, 907 Terminal Sales Bldg.; SAN FRANCISCO—Bob Wettstein, 1003 TWA Bldg., 240 Stockton St.

**it can't
be told
until**



•
•
•

March 29th . . . when the history-making new lighting discovery by Holophane will be revealed . . . in Booths 11 & 12 at the **THIRD INTERNATIONAL LIGHTING EXPOSITION, STEVENS HOTEL, CHICAGO**

Those unable to attend the exposition are invited to write for full details of this important lighting development which will be released immediately on March 29th.



HOLOPHANE COMPANY, Inc.

Lighting Authorities Since 1898 • 342 MADISON AVENUE, NEW YORK 17, N.Y.
THE HOLOPHANE COMPANY, LTD., THE QUEENSWAY, TORONTO 14, ONTARIO

SELECTION CHART FOR WIRES AND CABLES

APPLICATION	CABLE RECOMMENDED NO.	CABLE	MAX. VOLT.	REMARKS
AERIAL	14	Okocal Paper	75,000	Lead-covered, high voltage Pigtails and risers to 28 KV For severe abrasive or tree conditions For less severe tree conditions Insulated to prevent ground contacts— used on insulators With in-built messenger—light weight, economical Either Unilay or Dualay construction
	6	Okonite V. C.	28,000	
	12	Okolast	12,000	
	12	Okoloom	5,000	
	13	Candee	5,000	
	2	Okolite	35,000 5,000	
BUILDINGS	2	Okolite	35,000	Non-leaded in wet locations—Types RW and RWSN General use for "permanent" buildings General use Types T and TW, general use and wet locations Types RW and RWSN, wet locations Non-leaded in wet locations Type RW, wet locations Type RW and RWSN, wet locations Type RH, general use—for 75°C. operation Types T and TW, general use and wet locations Type R, general use Type T, small diameter Loxsteel metallic armor Non-metallic sheathed Type RU, also for communication
	1	Okonite	5,000	
	6	Okonite V. C.	28,000	
	21	Hazakrome	600	
	4	Okosheath	2,000	
	20	Waterite	5,000	
	2	Okolite	5,000	
	7	Performite	5,000	
	18	Hazakrome	600	
	21	Hazakrome	5,000	
	19	Hazacode	600	
	COMMUNICATIONS	21	Hazakrome	
24		Hazard Armored	600	
23		Hazardex	600	
8		Okolatex	600	
8		Okotel	600	

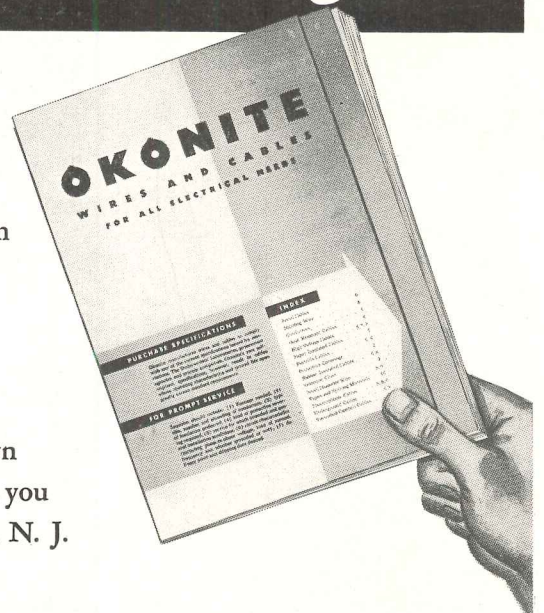
COMPILED TO HELP YOU ...

... CONDENSED TO GIVE YOU

Vital Data on Cable

Shown above is part of a specimen page in Okonite's basic condensed catalog. You may have it already in your office bound in Sweet's Architectural, Builders', Engineering, Mechanical Industries, Power Plant, or Process Industries Files. If you do not have any of these catalogs, or if you should wish an extra reprinted copy, you can get one from us merely by requesting it on your company letterhead.

It contains descriptions of each cable listed under "buildings" and twenty other classifications in the Selection Chart. Almost all these wires and cables are illustrated. Protective Coverings and Conductors are treated separately in illustrated sections of their own along with a section on Okonite Tapes and Splicing Materials. When you write, ask for Bulletin AR-1036-B. The Okonite Company, Passaic, N. J.



7318

OKONITE



insulated wires and cables

THE BEST CABLE IS YOUR BEST POLICY