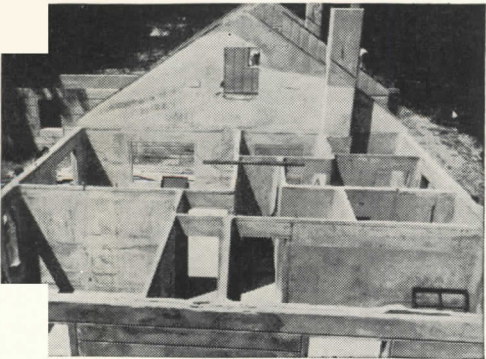
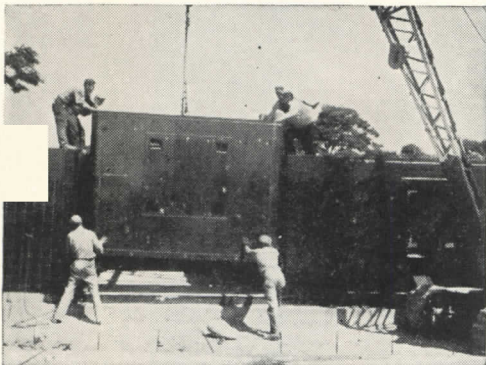




HIGH VALUE LOW COST HOUSING

MONOLITHIC CONCRETE HOMES BY ASSEMBLY-LINE METHODS



HERE is a milestone in home-building progress . . . well-designed, attractive homes, with walls and partitions cast in a durable concrete monolith . . . ultra-modern conveniences, even to radiant heating . . . only 30 minutes from the heart of New York City . . . selling, and selling fast, for \$11,900.

CALLAN BUILDERS, INC., of Manhasset, L. I., are building 150 of these concrete homes at Manhasset Isle, Port Washington, L. I. Through mechanized operation, using specially-designed, rugged steel forms, the frame is erected in less than 2 days—only 6 days to turn out a complete house! A crane places forms for the entire structure, complete even to screw holes for door hinges and other fittings. 'Incor'* 24-Hour Cement permits high-speed schedules and provides clean, smooth finished surfaces. Staunch 7-inch exterior walls have 3 inches of re-inforced concrete on either side of a one-inch insulation panel—a thoroughly moisture-proof wall. A pleasing exterior is obtained by rustication. Exteriors are painted with permanent cement paint; wall-paper is applied directly to inside walls.

Americans have a sixth sense—the dollar-value sense. You can tell it by the way they "go" for these concrete homes. And why not? Because here is a house proof against fire, rot, sag, crack and time itself . . . modern construction at its soundest and best.

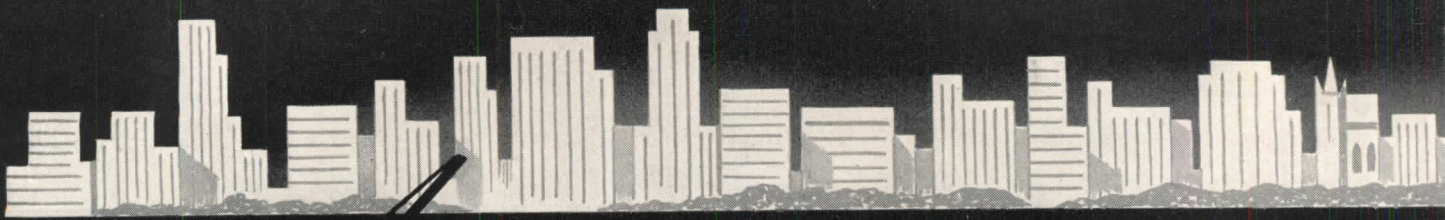
*Reg. U.S. Pat. Off.



LONE STAR CEMENT CORPORATION

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

LONE STAR CEMENT, WITH ITS SUBSIDIARIES, IS ONE OF THE WORLD'S LARGEST CEMENT PRODUCERS: 15 MODERN MILLS, 27,000,000 BARRELS ANNUAL CAPACITY



Announcing **UNITRANE—** the **NEW** Air Conditioning

Out of the Trane laboratories there comes a development that changes many long-standing notions of *what can* and *what cannot* be done with equipment for conditioning air in multi-room buildings.

This development is a device which transforms an ordinary room type unit cooler into a true air conditioner.

MOISTURE CONTROL

An ordinary unit cooler is primarily a device for reducing the temperature of air. As a part of this operation, it may also remove moisture from the air. But moisture removal is *a part of the air cooling process*. In an ordinary unit cooler it cannot be controlled separately. The Trane development provides the missing essential—*independent control of temperature and moisture.*

It is now possible, with a single, compact room unit, to control both sensible and latent heat in recirculated and ventilation air.

UNITRANE

The new air conditioning system which Trane engineers have designed around this

dual purpose room unit has been named the UNITRANE System.

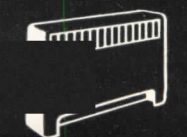
The unit itself is known as UniTrane Type MC. The symbol MC means Moisture Control.

NO DUCTS!

UniTrane—the *new* air conditioning—requires no ducts. It is a true unit system.

Each unit introduces the amount of ventilation air for which it is set—processes it—blends it with processed room air in the desired ratio—and circulates the conditioned air throughout the room.

Each room is separately conditioned in accordance with its particular requirements. Each has its own temperature control.



CONVECTOR-RADIATORS



UNIT HEATERS



HEATING COILS



PUMPS



HEATING SPECIALTIES



COOLING COILS



COMPRESSORS



INSTALLATION SIMPLIFIED

UniTrane uses water as a heating and cooling medium. The same simple piping circuit that supplies warm water to the units for heating in winter also supplies chilled water to the units for cooling in summer. Changeover from warm water to cold water is automatic.

ENGINEERING SIMPLIFIED

The UniTrane piping circuit is as simple as the piping of a straight hot water heating system for any given building.

Selection and installation of units is equally simple.

Elimination of ducts eliminates the bulk of the design and application problems.

UniTrane is quick, clean, easy to handle for old or new buildings. Careful product engineering conserves the consulting engineer's time for producing an installation that exactly meets requirements.

BROAD APPLICATION

UniTrane is for **large** multi-room buildings. It is exactly what is required for hotels, hospitals, office buildings and similar structures. Each room, office or suite has its own individually controlled air conditioning the year around.

UniTrane is for **medium-sized** multi-room buildings. Since this is a true unit system, the system may be used effectively in buildings of medium size as well as in large buildings.

The UNIT OF DESIGN is the room. Whether there are 20, or 200, or 2000 makes no basic difference.

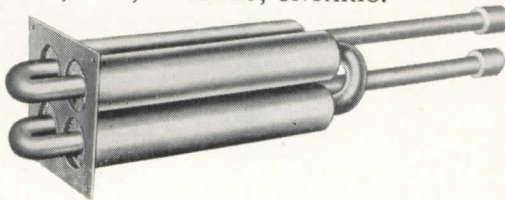
UniTrane is for comparatively small multi-room buildings. Any building that contains enough rooms to warrant a central boiler and a central source of chilled water is large enough for this new air conditioning.

DESIGN AND APPLICATION DATA

Your Trane Sales Office now has advance data on this important Trane development. Information is being placed in the hands of architects, engineers and contractors as rapidly as possible. Regular printed data is now on press.

If you agree with Trane engineers that this new system heralds a new era in multi-room air conditioning, you will want us to reserve copies of the new data for you. We'll gladly do so on request.

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

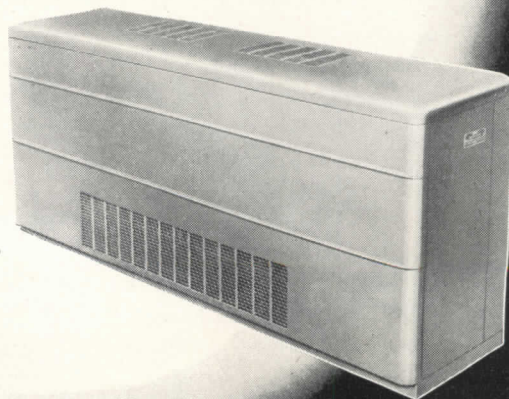


THE MOISTURE CONTROLLER.

Designed around a series of compact axial flow heat exchangers, this entirely new and different device has made possible the development of a radically improved unit air conditioner for multi-room buildings. Patent applied for.

UNITRANE TYPE MC ROOM

UNIT. The unit cooler, incorporating the new Trane Moisture Control element, becomes a true room air conditioner. It handles both room air and ventilation air. It controls moisture as well as temperature. It cleanses all air.



TRANE

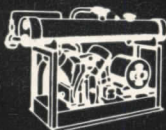
HEATING AND AIR CONDITIONING



R CONDITIONERS



FANS



REFRIGERATION EQUIPMENT



BLOWER UNIT HEATERS

BYERS WROUGHT IRON PIPE

*to help curb
maintenance
in 4
services here*

Steam returns, underground piping, hot and cold water lines—as every plant engineer knows, these services face severe corrosion hazards, and only a durable pipe material can protect against early failure and expensive replacement.

In writing the mechanical specifications for an addition to Mercy Hospital, Springfield, Ohio, this maintenance threat was forestalled by extensive use of wrought iron. All the returns, all underground piping except drains, and all hot and cold water lines larger than 2½-inches, were specified "wrought iron." Byers Wrought Iron pipe, in sizes from 3-inch to 8-inch, was utilized. A portion of the installation is shown in the picture. Maguolo & Quick, successors to P. M. O'Meara & Associates were the architects. T. J. Connor Company Inc., handled the plumbing and heating work.

SELECTION METHODS

If you are contemplating new construction, or extensions or replacement of existing piping services, you'll find it profitable to check up on the performance of wrought iron. Water varies widely in its corrosive characteristics, and selection of piping material should be preceded by a careful study, which we will be glad to help you make. Steam return lines, however, are invariably corrosive . . .



and wrought iron has been so uniformly successful in combating the attack that it should be given first consideration.

The unusual corrosion-resistance of wrought iron, which has led to its widespread and successful use, comes from the unique composition and structure of the material. Tiny threads of glass-like silicate slag, distributed through the body of high-purity iron, "detour" corrosive attack. They also anchor the initial protective scale, which

shields the underlying metal.

WANT LITERATURE?

Our bulletin, "Wrought Iron for Piping Systems" discusses the conditions encountered in varied services, and suggests proven means to combat them. We will be glad to send you a copy, on request.

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

WE NEED THE FACTS ON HOUSING 85
 An Editorial . . . by Kenneth K. Stowell

A CITY GLORIFIES ITS "OLD SWIMMING HOLE" 86
 Municipal Bath House and Park, Austin, Texas. Dan J. Driscoll, Architect

TRAFFIC AND PARKING IN BEVERLY HILLS 94
 A Brief Illustrated Summary of the Comprehensive Study and Report of Harland Bartholomew and Associates, City Planners

BACHELOR'S RESIDENCE IN THE HOLLYWOOD HILLS 100
 Residence of Mr. Richard A. Hartje, Los Angeles. Rolf Sklarek, Architect

COMPACT HOUSE IN CALIFORNIA CANYON 104
 Rodney Walker, Architect

CONSTRUCTION OUTLOOK FOR 1949 108
 By Thomas S. Holden and Clyde Shute

ELECTRONICS PLANT WITH PRECISE CONTROLS 130
 Western Electric Company's Allentown, Pa., Plant. The Austin Company, Designers and Builders

BUILDING TYPES STUDY NO. 144 . . . Recreation Buildings 110

THE PLANNING OF RECREATIONAL CENTERS 110
 By F. Ellwood Allen and Weaver W. Pangburn

PROJECTS
 Antonin Raymond and L. L. Rado, Architects; F. Ellwood Allen Organization, Park and Recreation Planners

1. Neighborhood Recreation Center, Summit, N. J. 115
2. The Community Center for Hickory, N. C. 118
3. A Recreation Center at Bloomington, Ill. 126

ARCHITECTURAL ENGINEERING . . . Technical News and Research . . . 135

RADIANT AND CONVECTION HEATING COMBINED 135
 By John M. Morse

MUSEUM LIGHTING STUDIED IN LABORATORY. 137
 By Laurence S. Harrison

WEST COAST INNOVATIONS IN SWIMMING POOL DESIGN . . . 143

PRODUCTS . . . for Better Building. 145

TIME-SAVER STANDARDS . . . Swimming Pool Design Data 149

MANUFACTURERS' LITERATURE 172

THE RECORD REPORTS . . . News from the Field 7

CONSTRUCTION COST INDEXES 26

REQUIRED READING 28

EMPLOYMENT OPPORTUNITIES 222

SEMI-ANNUAL INDEX. 240

INDEX TO ADVERTISEMENTS 244

ARCHITECTURAL RECORD



Copyright 1948 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. Radd; Associate in South America, Edmund J. Whiting, A.I.A. • **ART DEPARTMENT:** Myron S. Hall, 3rd, Director; Frances Torbert Assistant; Peter Piening, Consultant; 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.

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.

Adjustable Flush Valves Overwhelmingly Preferred

by 7 out of 8

ARCHITECTS

Based upon 288 replies from an unbiased survey made among 500 architects selected at random from the distribution list of Sweet's Architectural Catalog File.

by 20 out of 21

PLUMBING CONTRACTORS

Based upon 508 replies from an unbiased survey made among 1,154 of the country's leading plumbing contractors, including those registered at the 1947 N.A.M.P. Convention.

by 8 out of 9

FLUSH VALVE USERS

Based upon 247 replies received in an unbiased survey conducted among 458 hospitals, schools, hotels, office buildings, and similar public and commercial buildings; lists supplied by publishers of leading trade magazines.

Seldom has a single feature of any product received such overwhelming endorsement. These surveys show that all those who have anything to do with flush valve selection, installation, or maintenance vote almost unanimously in favor of making flush valves adjustable.

If you have a job that needs flush valves, be sure you get the kind that *can* be adjusted to provide maximum water savings accord-

ing to the needs of each individual fixture . . . the kind that is fully capable of maintaining peak operating efficiency despite years of service or changing operating conditions.

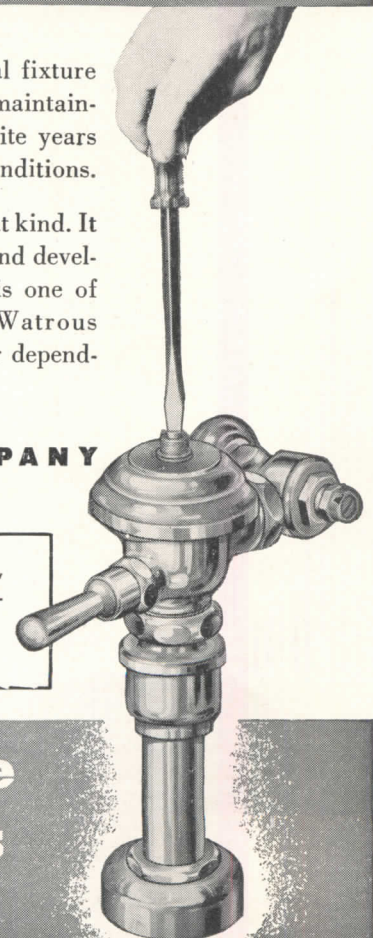
All Watrous Flush Valves are that kind. It was Watrous who first pioneered and developed the adjustable idea, and it is one of many contributions that make Watrous Flush Valves today outstanding for dependability and lasting economy.

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



For complete information on Watrous Flush Valves see Sweet's Catalog, or write for Catalog No. 448A. Also ask for Bulletin 477 giving a summary of "Architects' Views on Flush Valve Applications."

A few additional words in your specifications, such as: "All flush valves shall have an external adjustment for length of flush," will bring all the above advantages.



Watrous

Adjustable Flush Valves

BOTH DIAPHRAGM AND PISTON TYPES

THE RECORD REPORTS

Election Upset Turns Construction Industry's Thoughts toward Renewed Controls, Passage of Broad Housing Bill, Government Investigations

The election upset a month ago has the construction industry worrying in terms of allocations, priorities, controls. Evaluating the place of contractors, engineers and architects in the economy that lies ahead naturally bases itself on too-fresh reminiscences of federal control following the war.

Certainly there lies ahead for construction some repetition of the regulation pattern. This seems inevitable in view of the Administration proposals during the past two years on housing and other comprehensive measures which failed to find ready reception with a Republican-controlled Congress. Now that the Democrats hold the reins undisputedly, there remains very little doubt that the Democratic policies on important construction matters will be made an early matter of business in the 81st Congress.

The stumbling blocks to the Truman proposals largely are removed now. For example, the broad Taft-Ellender-Wagner housing bill which was stymied in the House after Senate passage no longer will run against opposition in the Banking or Rules committees. The key positions will be filled by Democrats and full party support of this and other Administration policies on Capitol Hill is assured.

Who Will Lead the Fight?

The picture is not entirely clear at this time concerning the significant Committee positions in Congress beyond the knowledge that they will be filled by Democrats. Of prime interest to the housing industry are the chairmanships of the Banking and Currency groups in both chambers. Whereas Jesse M. Wolcott, Michigan Republican, successfully steered the comprehensive housing bill away from his House Banking Committee on occasions, and always guided carefully the legislation voted to the floor, that group now will be under the direction of a Democratic chairman, probably Brent Spence of Kentucky. Rep. Spence is widely recognized as an ardent champion of federal assistance in housing construction, favoring slum clearance, urban redevelopment and government participation in the building of low-cost housing for low-income families.

Over on the Senate side, Charles Tobey, New Hampshire Republican who

chairmans the powerful Banking Committee, will give up that position. Sen. Robert F. Wagner of New York is in line for the job, but he has been in ill health, appearing on the Senate floor only twice during the last session. This situation means that the leadership of the Senate Banking group could go to Burnet R. Maybank of Charleston, S. C., who was up for re-election this year. Maybank is known as a liberal who was elected to finish the unexpired term of Hon. James F. Byrnes in 1941, and re-elected in 1942 and again this year.

The chairmanship of the important House Rules committee, held by Leo E. Allen of Illinois, now would go to Adolph J. Sabath, also an Illinoisan. Sabath is known to favor the asserted Administration housing policies; this is of significance because the Rules group holds the power to block any bills and hold them from House consideration, even though they have been given other committee approval. This is precisely what happened to the T-E-W measure in one instance.

Actual committee appointments will not be known until after the first of the year, but on the basis of current speculation that is the way the leadership will formulate after the caucus meetings.

Trade associations, for the most part,

gloomily reviewed the election returns and feared they faced a modified repetition of the controlled economy under which industry labored and which industry as a whole fought in the immediate postwar years.

Reorganization Plans in Doubt

The surprising Democratic victory also cast the proposed reorganization of the construction activities of government in a different light. The Herbert Hoover Commission on reorganization of the executive branch was voted into being by a Republican Congress, though it is manifestly bipartisan in its establishment and operation. Now a task force of the Hoover Commission, a task force headed by Robert Moses, New York Park Commissioner, has completed its controversial plan to bring the construction functions of federal government, including civil works of the Army Engineers, into a central agency. This would be a new Department of Public Works with cabinet status.

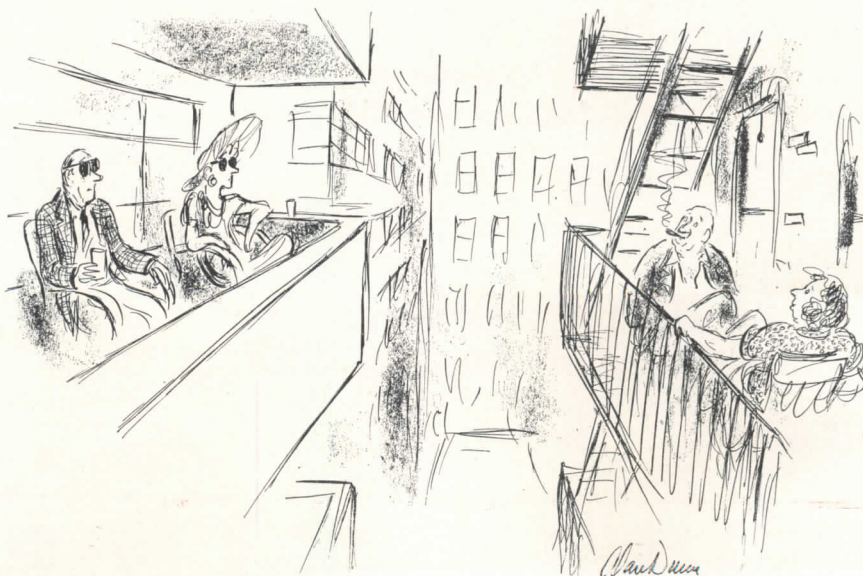
Congress will have to decide what to do with the plan when it is presented after the first of the year along with other suggestions for changes in the Executive branch.

The Moses plan for rearranging construction activities is said to embrace three principal points. These are outlined as:

1. The creation of a Department of Public Works directed by a Secretary receiving \$25,000 a year. There would be an undersecretary paid \$20,000 and four assistant secretaries at \$15,000 each.

2. Jurisdiction over flood control and rivers and harbors construction would be removed from the Army Corps of En-

(Continued on page 10)



— Drawn for the RECORD by Alan Dunn

Here it is...

the NEW FLEUR·O·LIER INDEX SYSTEM

THE GREATEST CONTRIBUTION TO LIGHTING SINCE FLUORESCENT!

Fleur-O-Lier Manufacturers proudly present to the lighting industry—the Fleur-O-Lier Index System—a method of specifying, identifying, and classifying fluorescent luminaires—with regard to their illumination characteristics.

There's been a long-felt need for a system of classifying fixtures—some method common to all who make, sell, specify or buy fluorescent fixtures.

This is it. It's simple, practical and basic.

"Why hasn't someone thought of this long ago!" say lighting engineers who have seen the Fleur-O-Lier Index System.

As Simple as ABC

WHAT IS IT?

The Fleur-O-Lier Index System is a simple method of identifying or describing any fluorescent luminaire on the basis of its illuminating performance.

WHY IS IT NEEDED?

Fleur-O-Lier Manufacturers devised the index system to give the "facts of light" about each luminaire. Because this classification quickly indicates the basic illuminating performance of a fixture, it eliminates vague generalities, broad but unfounded claims and gives needed factual data.

WHAT DOES IT ACCOMPLISH?

Its purpose is two-fold:

1. It provides an exact formula which the specification writer may use to

FLEUR·O·LIER *Manufacturers*

Fleur-O-Lier is not the name of an individual manufacturer, but of a group of fixtures made by leading manufacturers. Participation in the Fleur-O-Lier program is open to any manufacturer who complies with Fleur-O-Lier requirements.

- For **SPECIFYING** Lighting Fixture Performance
- For **IDENTIFYING** Fluorescent Lighting Fixtures

express the illuminating characteristics and performance he recommends.

2. It supplies a precise formula for fixture identification and classification that allows the buyer to *know* he's getting the illumination recommended.

WHO'LL USE IT?

Architects, lighting engineers, lighting consultants, lighting salesmen, contractors and utility lighting men . . . anyone who specifies or recommends lighting fixtures can use this simple, practical and fool-proof method to give an exact definition of the illuminating performance he selects for an installation.

Fixture manufacturers will use the system to indicate the performance characteristics of their fixtures.

Buyers and users will employ this method of indexing to make certain they are getting what the specifier recommends.

HOW DO I GET IT?

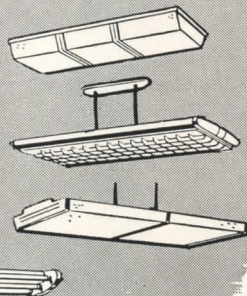
The Fleur-O-Lier Manufacturers have prepared a booklet which explains the Fleur-O-Lier Index System completely . . . what it is and how to apply it. It's complete with tables. Use the coupon below to send for your free copy of the new booklet.

AND HERE'S WHY YOU SHOULD INSIST ON THE FLEUR-O-LIER *Label*

The Fleur-O-Lier label means that the fixture was built to exacting specifications—then tested, checked and certified by Electrical Testing Laboratories, Inc. The Fleur-O-Lier label assures you of sound mechanical construction,

safe and proper electrical design and materials, and tested, certified lighting performance.

To be sure of precise illumination characteristics, long trouble-free operation and complete user satisfaction—insist on the Fleur-O-Lier label.



Fleur-O-Lier Manufacturers
2116 Keith Building
Cleveland 15, Ohio



Gentlemen:

Please send me a free copy of the booklet describing the Fleur-O-Lier Fixture Index System and containing the Fleur-O-Lier Specifications and Testing Procedures.

NAME _____

COMPANY _____

STREET _____

CITY _____ STATE _____

THE RECORD REPORTS

engineers and transferred into the new Department of Public Works where it would be handled primarily by officers of the Army, the Navy and the Air Corps assigned to the new department. The Army Corps has been supervising civil functions construction since 1824.

3. The grouping of all construction activities of the federal government, now distributed among dozens of separate agencies, under the Department.

If the Moses proposal is given serious consideration by Congress, chief point of tension will develop around the civil functions issue. There is already pro and con discussion of the matter in Washington, and the Hoover report has not been made public.

The New York planner is said to argue the point in a memo to Hoover which claims that some of the work now handled by the Army is not rightfully within its jurisdiction. The Moses memo is quoted in part as saying: "The Army engineers continue to control part of the rivers and harbors and flood control spheres at a time when reclamation in the broad sense, power development and other phases of engineering work involving rivers and harbors should be a part of the same program."

Opponents to any change in the present long-standing setup say a change would endanger the nation's defense plans by taking the large construction projects out of the hands of skilled

engineers now familiar with their planning, construction and administration. Moses, on the other hand, claims benefits could as easily come in this respect from the arrangement he proposes.

The memorandum states: "The argument that rivers and harbors work can only be directed by the Army engineers becomes even more absurd when it is realized that fewer than 200 Army engineers are involved and the remainder of the personnel under their control numbering over 30,000 are civilians who supply most of the detailed knowledge and continuing direction."

G.I. Mortgages Lose Ground

Agency men who are interested in G.I. building point out that the secondary market for G.I. mortgages has deteriorated since last year. No doubt this partly reflects the general credit situation. Bankers expect a rise in long-term interest rates and so are putting their money into short-term credit for the time being. They are waiting. But, say the officials, the G.I. mortgage has had harder sledding than other long-term commitments. Since the banks can't easily dispose of G.I. mortgages, they are entering into fewer of them.

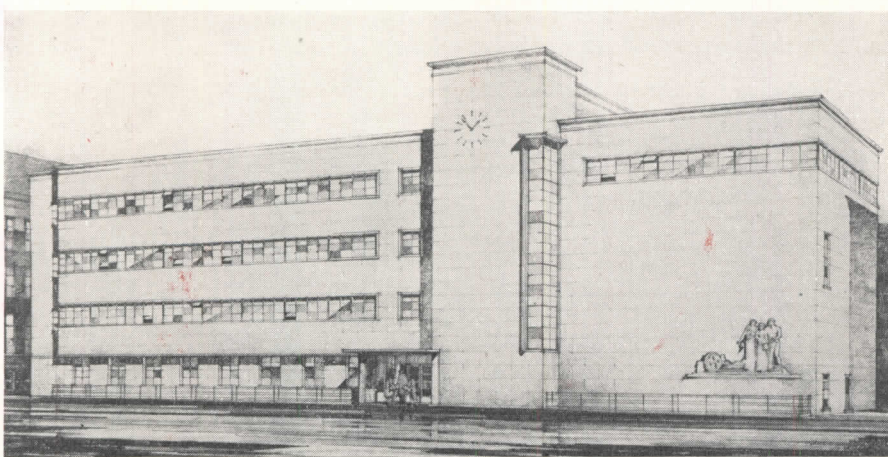
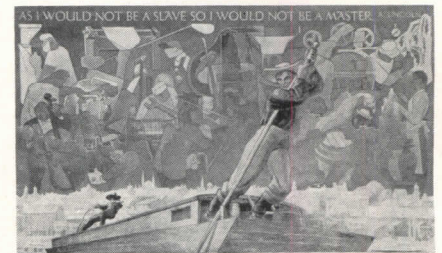
One of the reasons, it is said, is the absence of standard appraisals for G.I. houses. The 1948 Housing Act called for use of FHA standards when it authorized RFC to back the market, but it did not tell FHA to do the appraising. A lender reselling to the RFC must certify that the home is up to FHA requirements, but lacks FHA's word that his certification is accurate. Lenders don't like that.

Veterans Administration has arranged to let its local appraisers carry the ball. They will make inspections with FHA's rule-book in front of them. The RFC has accepted this system, taking the word of the VA appraisers.

This alone is not expected to go far in reviving building for veterans. There is still the question of interest rates. Agencies continue to discuss it without adding new ideas to the discussion. Veterans Administration would like to see the mortgage rate raised, as Congress allowed, but other agencies still oppose.

Although the RFC published regula-
(Continued on page 12)

"Portrait of a City's Character," mural painted by Stuyvesant Van Veen for the Lincoln National Bank of Cincinnati



The University of Toronto's new Mechanical Building, designed by Allward and Gouinlock, Architects, has a 200- by 600-ft. basement laboratory, a top-floor machine drafting room

NEWS FROM CANADA

By John Caulfield Smith

Building Kettle Boiling

Following a leveling off during the summer, construction contract awards have resumed their upward trend. According to the authoritative MacLean Building Reports, they reached \$79.7 million in September, or \$3.5 million more than in the same month last year. The total for the first nine months of 1948 was \$744.2 million compared with \$548.2 million for the first nine months of 1947. Housing and commercial construction continued high in September, but engineering and industrial awards were down compared to the same month last year.

Housing in Seven Countries

House building activity, building material production, employment of building labor and building costs in seven countries are reviewed in the

latest issue of *Housing Progress Abroad*, a quarterly publication of the Central Mortgage and Housing Corporation. The countries dealt with are the United States, the United Kingdom, Australia, New Zealand, South Africa, Sweden, and Canada.

The report notes that between 1939 and 1947 Canada's house-building activity increased by 62 per cent. This rate was higher than that of any of the countries under review with the exception of the United States which showed a rise of 65 per cent.

Large increases of house-building in Canada and the United States were accompanied by significant increases in the output of building materials. Between 1939 and 1947, the production of lumber in Canada rose 30 per cent, bricks 77 per cent and cement 112 per

(Continued on page 154)

DOUBLE DUTY INSULITE



Far above all other things to remember when specifying insulation are these two outstanding facts: *INSULITE builds* — *INSULITE insulates*. Two things for the cost of one! Insulite (Bildrite) Sheathing provides greater bracing strength than wood sheathing, plus twice the insulating value. Specify Double-Duty Insulite for sheathing, lath or interior finish.

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

INSULATES AS IT
BUILDS AS IT

double-duty
INSULITE
The GENUINE

BUILDS
INSULATES

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

INSULITE DIVISION PAPER MINNESOTA & ONTARIO COMPANY
MINNEAPOLIS 2, MINNESOTA

PROGRESS ON PARADE at the



Under Auspices of American Society of Heating & Ventilating Engineers

Striking advances in equipment — the latest trends and practices — newest and best ways to heat, ventilate and air condition all types of commercial and public buildings, industrial plants, institutions, and homes — a wealth of useful, stimulating ideas are in store for you here. Greatest display of its kind ever held, its informative, technically staffed exhibits and demonstrations will afford unequalled opportunity to see and compare at one time hundreds of new and improved items from complete units to maintenance supplies — to discuss your specific plans, problems and requirements first-hand with engineering specialists.

No architect, consulting engineer, or contractor serving these rapidly advancing fields can afford to miss this outstanding display of progress. So plan now to attend — note the date.

Management International Exposition Company

THE RECORD REPORTS

(Continued from page 10)

tions governing credit for prefabricators, it has not stimulated much interest among banks. Manufacturers are interested; naturally they would be. It is still uncertain whether they will be able to do much borrowing. The chief trouble is that the banks are not especially interested in finding new business and so can't get enthusiastic.

Research Funds Asked

The housing agencies will ask the next Congress for more money to support research into housing. The actual research will, of course, be *farmed out*, partly to the Bureau of Standards but mostly to universities. With present appropriations, a few projects have been financed and are said to show encouraging progress. Most of those under way or planned for next year relate either to standardizing components or to metal construction. There is also work on the strength and capacities of various materials.

It is pointed out that a code standardizing plumbing equipment, promulgated several months ago, is winning acceptance. Two cities have adopted it and more than 15 expect to before the year ends. Bureau of Standards hopes to do more work on key components.

The setting of standards for key components is expected to do something to bring costs down. Numbers of models are reduced, which lets dealers carry smaller inventories. Lower inventories, in turn, mean lower overhead. Builders need worry less about types of components to be used: there are fewer types to worry about. Finally, it is cheaper to produce standard components.

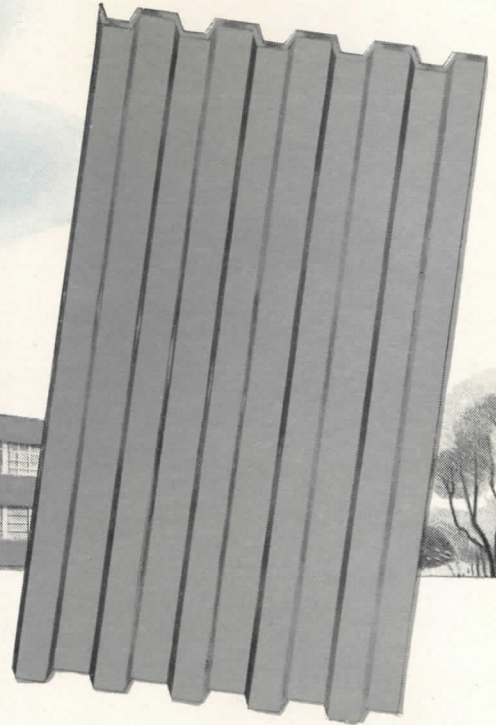
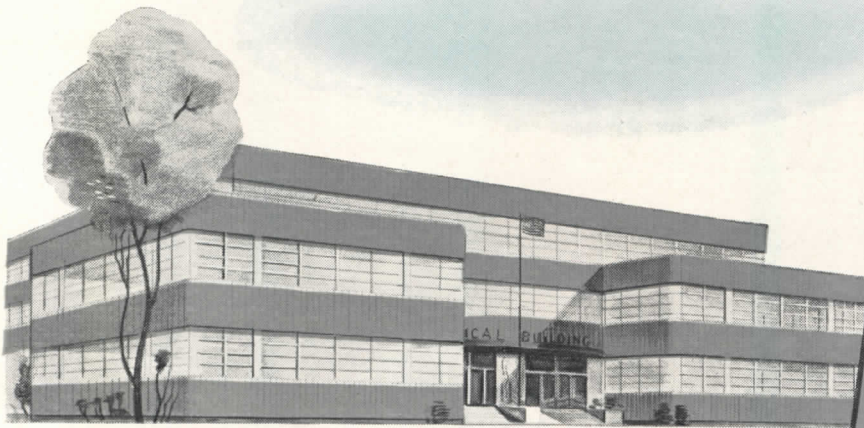
Government Demand High

Evidently, key materials will remain tight even if, as some officials expect, housing volume declines next year. The Administration has been working for months on a new Lend-Lease program, said to be backed by both parties. The amount is estimated at \$3 billion. It will use up steel and other major materials.

Marshall Plan shipments are shifting from food and clothing to industrial materials. Orders for industrial equipment have been steadily rising and, say the officials in that agency, will continue to. This will put more pressure on the market.

Finally and most important, the military program is just getting into stride. Appropriations made last spring are first being spent. There are orders on behalf of airplane, ordnance and other

(Continued on page 14)



SAVE THREE WAYS

on Exterior Wall Panels with Alcoa Economy Castings

LOW FIRST COST

You save right from the start with Alcoa Economy Castings for Spandrels and Wall Panels. By co-ordinating specifications and production facilities, Alcoa can now offer castings at economy prices.

FAST CONSTRUCTION

Large, light Alcoa sections go up fast—saving both handling and erection costs. And castings may be delivered to the job complete with anchor holes. This means simplified installation . . . saves construction time and money.

LESS MAINTENANCE

Lower maintenance costs result naturally from

the use of Alcoa Aluminum. Aluminum resists corrosion . . . produces no colored compounds to rust-streak adjoining surfaces . . . and requires no painting.

Send for Free Booklet

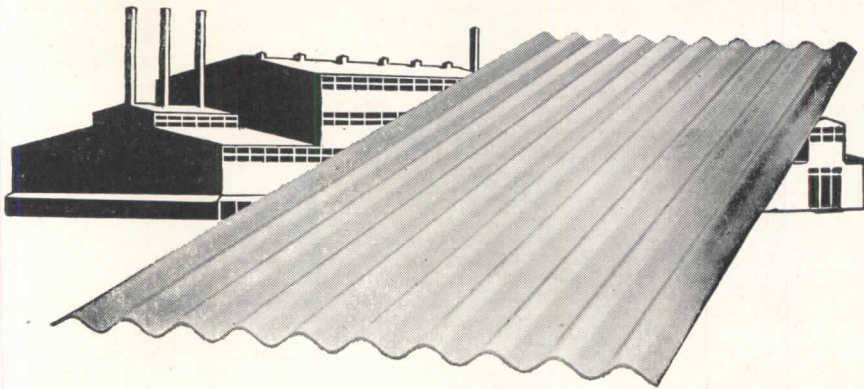
Send for the free booklet, "Alcoa Economy Castings". You'll find it a valuable reference with information on typical details . . . methods of anchoring . . . expansion and contraction . . . heat transmission . . . shrinkage . . . as well as recommendations for the writing of specifications.

Call your nearby Alcoa sales office or write ALUMINUM COMPANY OF AMERICA, 1867 Gulf Building, Pittsburgh 19, Pennsylvania.

ALCOA FIRST IN ALUMINUM



Planning a
**Chemical Plant
 Oil Refinery
 Paper Mill?**
 ... or an addition ●



**You can now get
 ASBESTONE**

Asbestos-Cement Corrugated Roofing & Siding

—the lifetime roofing and siding that's fireproof and corrosion-proof. Asbestone can't be damaged by weather, rats, or termites. No painting. No upkeep.

Here are a few of the many prominent users:

- LONE STAR CEMENT CORP.
- CALIFORNIA OIL CO.
- CHAMPION PAPER and FIBRE CO.
- ETHYL CORPORATION
- FREEPORT SULPHUR CO.
- NEW ORLEANS PUBLIC SERVICE
- MOBILE PAPER MILL CO.
- CROSBY CHEMICALS, INC.
- STANDARD OIL OF N. J.
- UNIVERSAL ATLAS CEMENT CO.

Why we can assure you early delivery

We are concentrating on production of this single industrial product. Stocks are now ample to make some immediate shipments. Free Engineering Service, available on request, shows how Asbestone can be adapted to your needs.

ASBESTONE CORPORATION

5300 TCHOUPITOULAS STREET NEW ORLEANS 15, LA.

Specialists in Asbestos-Cement Building

Products for over 25 Years

THE RECORD REPORTS

(Continued from page 12)

programs, which are high now and will go higher.

All of these, taken together, reinforce the forecasts made last spring that regardless of the party to be in power, there is a strong chance that controls will be restored in 1949. It looks as if there will be greater government demand than can be supplied by mere spending of money.

Will Controls Return?

Demand for controls may come in two forms, which could create confusion. There is the prospect, first, that existing government orders will have to be handled through some system of priorities and allocations. The Army officers talk about it.

In addition, the National Security Resources Board has worked out another system of controls for use if there is war. This is a complete job covering just about everything. Under new labels it revives all of the old agencies and their rules, including a rehash of the famous L-41.

Some of the top officials feel that it should be offered at once to Congress. It would be enacted, but not put into force. Then, in the event of war, all of the controls would become effective on an order by the President. Some of the Congressional leaders are said to have recommended doing the job right away.

Debate on relatively minor curbs for instant use and others that are much broader and more detailed but would be used only-in-case may be simultaneous. People would have to testify about both sets, which are bound to overlap here and there.

Basing Points Modified

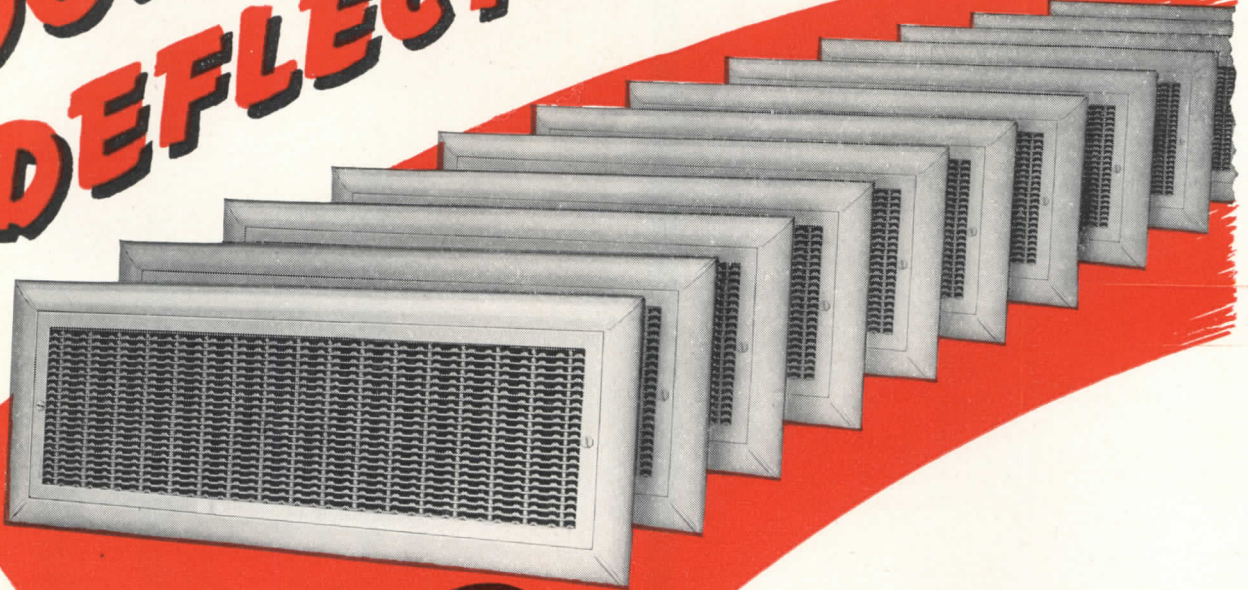
The Federal Trade Commission has theoretically modified its attitude to basing points. A single shipper, evidently, may use them — if the rest of the industry is doing it differently. Such a case is not known to exist; in every industry everybody or nobody prices F.O.B. basing point. The Capehart Committee almost certainly will recommend some change in law letting present pricing systems continue — unless conspiracy is proved without the fact of basing points themselves being a major element of the proof.

Probes Increasingly Likely

It now seems pretty certain that the government paths ahead include one being laid out for intensified scrutiny of the building industry and its operations on several fronts. Most evident is the

(Continued on page 16)

DOUBLE DEFLECTION



uni-flo[®] GRILLES

LOOK AT THESE FEATURES

WRITE FOR THIS LITERATURE



BULLETIN
F-3717

- ★ RAPID DIFFUSION
- ★ HIGH ASPIRATION EFFICIENCY
- ★ MAXIMUM TEMPERATURE DIFFERENTIAL
- ★ MINIMUM PRESSURE DROP
- ★ REMOVABLE CORE
- ★ GUARANTEED PERFORMANCE

BARBER-COLMAN COMPANY
1232 ROCK STREET, ROCKFORD, ILLINOIS

(Continued from page 14)



STYLING CAN CHANGE WITH THE SEASONS WHEN BASED ON *Oak Floors*

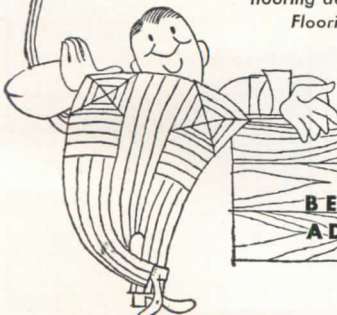
In your houses, owners can change from winter to summer furnishings and still have harmonious rooms—provided the flooring is oak.

The mellow luster of this rich wood blends subtly with the soft, cool pastels of summer, and glows warmly amid the bolder tones of winter decor. Seasonal styling becomes far more flexible and economical when such an adaptable flooring is used.

The same adaptability to new ideas and styles lasts for the life of the home. New wallpaper or paints meet no discords from beautiful oak. The natural grain and texture form a harmonious base for whatever colors and styling may be chosen in replacing the original decor.

The most versatile floors you can suggest—and at the same time, those with the most enduring beauty—are oak.

ASK FOR ARCHITECTS' DATA BOOK—which gives quick and usable information for specifying, laying, finishing and maintaining oak floors. Available from your local oak flooring dealers or from the National Oak Flooring Manufacturers' Association, 814 Sterick Building, Memphis, Tenn.



OAK FLOORS

BEAUTY • DURABILITY
ADAPTABILITY • ECONOMY

stepped-up probe of discrepancies as charged in the veterans' emergency housing program. A whirlwind of controversy surrounding this subject threatens to break out into something approaching a national public scandal this winter. Failure of home builders to follow plans and specifications in constructing veterans' housing is but one of the often-cited violations involved.

There are plenty of instances of faulty postwar home construction throughout the land, but in fairness to conscientious contractors it is pointed out that these are relatively few in proportion to the total number of homes built, put under roof in the emergency program. And all officials connected with compliance operations say they have found builders, for the most part, willing and ready to rectify the wrongs.

With the opening of the 81st Congress just about a month away, more and more is going to be published about violations in home construction. There are predictions, freely made, that fraud charges will mount up to a climax some time this winter, spilling forth in a flood of publicly-aired complaints far more voluminous than any in evidence since the end of the war.

There are those who fail to realize that only a limited number of homes built, sold to veterans and occupied by veterans are subject to any type of government action, even if they are proved to be in the "shoddy" classification: only priority-built homes. Congress will be criticized for not providing more stringent applications.

One assistant to the Attorney General said the Justice Department was "shocked" in discovering what a small number of cases in all those it has investigated to date actually come under existing law for prosecution. It is feared that only the most glaring types of violation under the Housing Act can be overtaken through the regular legal channels.

Specifications Are Vague

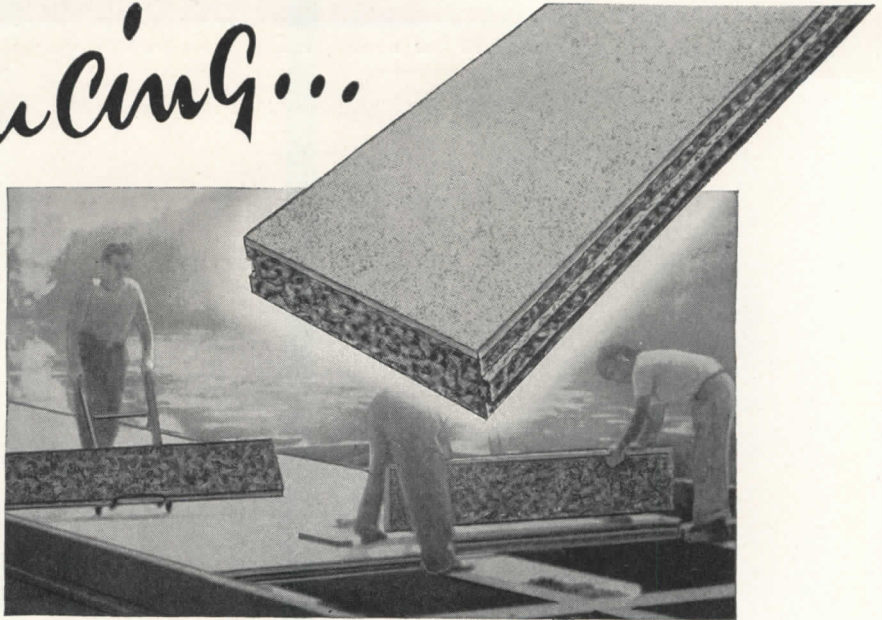
Why is this true? Specifications vaguely drawn are said to be one of the principal reasons. There are specific cases on record where contractors followed plans but these plans did not prescribe definite materials or else they permitted use of materials that failed to satisfy the veteran-owner after the house was occupied. Yet these plans had government approval before the home was built. In many such cases priorities were given the contractor, too. Such instances leave the builder free of guilt and out-

(Continued on page 18)

Introducing...

the new

Durisol



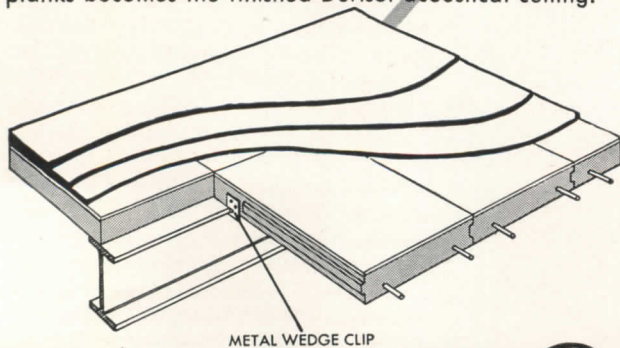
3-IN-1 Insulated Roof Plank

Combines { 1. ROOF DECK
2. THERMAL INSULATION
3. ACOUSTICAL CEILING } in a single fireproof material at one installation cost

**SAVES UP TO 20%
over equivalent flat roof construction!**

The Durisol Insulated Roof Plank combines in one unit *all* the components needed for the roof deck: structural strength, thermal insulation, and cement surface... *plus* an unusually efficient acoustical ceiling. Construction costs are thereby reduced to a minimum.

The Durisol insulated roof deck is complete—ready for application of the built-up roofing—after two simple, high-speed operations: attaching planks to the framework, and caulking the joints. And furthermore the underside of the planks becomes the finished Durisol acoustical ceiling.



The Durisol Insulated Roof Plank is made in 3¼" and 4¼" thicknesses (including ¼" cement coating) 16" width with sides tongue-and-grooved, and in lengths to span up to 8'. It is incombustible and supports a live load of 40 pounds per square foot with a high safety factor.

WHAT IS DURISOL?

Durisol is made from chemically mineralized wood shavings combined with Portland cement. In addition to the Insulated Roof Plank, Durisol is also moulded into wall slabs, sheathing, hollow blocks, soffit blocks, and other forms to meet a wide range of construction needs.

Durisol is mould-proof, rot-proof, termite-proof, vermin-proof, and unaffected by moisture. Its high thermal insulating and sound absorbing properties combined with its strength, light weight, and incombustibility make Durisol an outstanding material... Durisol opens up unusual possibilities for increasing construction efficiency and reducing construction costs.

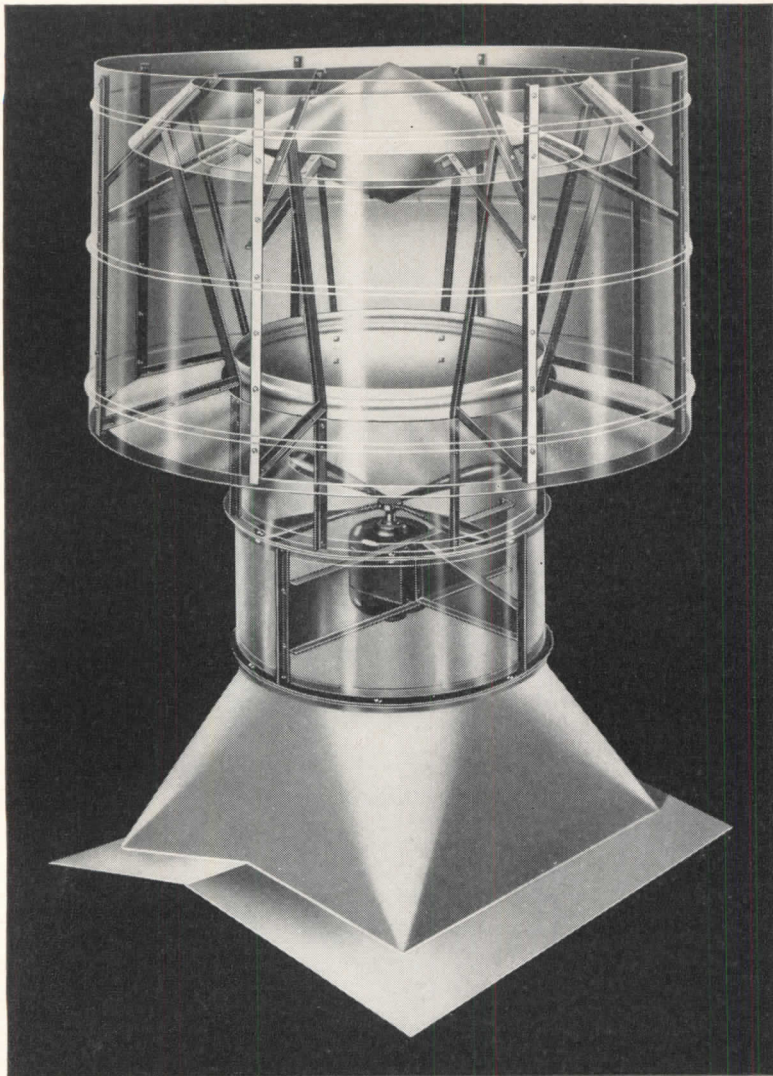
Write for full facts today! Illustrated catalog folder and special bulletin on the Durisol Insulated Roof Plank will be sent by return mail.

Durisol

INC.

420 LEXINGTON AVENUE • NEW YORK 17, N. Y.
PLANTS AT ABERDEEN, MD. and BEACON, N. Y.

BURT FREE-FLOW FAN VENTILATOR



FOR ACCELERATED VENTILATION WHENEVER YOU NEED IT AND ADEQUATE VENTILATION ALL THE TIME!

The Burt Free-Flow Fan Ventilator is a dual-purpose unit. With power off, it provides gravity ventilation usually adequate for normal needs. When occasional production operations create extremely high temperatures or an excess of smoke, dust, fumes, etc., its high velocity electric fan quickly exhausts the extra heat or impurities. Positive ventilation is assured at all times. Write for further information on the versatile Free-Flow Fan and other Burt ventilators. There is a type and size for every need.

SEE SWEET'S OR WRITE FOR CATALOG AND DATA SHEETS

The **BURT MFG. Co.**

905 S. High Street

Akron 11, Ohio, U.S.A.

VENTILATORS • LOUVERS • OIL FILTERS • SHEET METAL SPECIALTIES

THE RECORD REPORTS

(Continued from page 16)

side the jurisdiction of the compliance divisions with only a moral sense of obligation to force corrective measures.

Congress has acted to tighten these provisions of the housing law since it first applied to veterans' housing after World War II; they will be a subject of considerable debate in the forthcoming session according to current signs.

The Office of the Housing Expediter recently buttressed its compliance division staff with the addition of 300 special investigators. This move, and greater concentration on veterans' housing violations by Justice Department attorneys, are expected to increase the tempo of government attention to the subject as the weeks go by. There already have been fines and jail sentences for guilty builders. These have been based on proved faulty construction of veterans' homes built with priorities under the veterans' emergency housing law, and other proved violations such as receipt of over-payments and failure to follow plans. Some 500 constructors have been brought into court. Other thousands have been given an opportunity to make restitution in one way or another — through correcting the evil on site, or by cash refunds.

But all the activity so far is said to be a bare minimum of what the government will undertake. The program definitely is an expanding one at this time and politics is expected to have little influence on its ultimate fulfillment.

Bender Probe Is Full-Scale

Another investigation spotlighting contractors is that carried on by Congressman George H. Bender's (Ohio) Procurement and Buildings subcommittee. Started informally on the basis of information sought out by the General Accounting Office on veterans' re-use housing contracts, the Bender investigation had on it the brand of a full-scale Congressional probe.

By his own assertions, Mr. Bender is out to recover about \$200 million, an amount he claims Public Housing Administration "poured down the drain" in over-payments to contractors who erected the re-use housing during the veterans' emergency program. The Ohio Congressman comments: "This is another case where the Administration has given a raw deal to the veteran and to the American taxpayers generally. About \$450 million of public monies were involved in this program. A special contract form was worked out under which some 200 contractors throughout the country were allowed, in addition to a

(Continued on page 20)

the men who know
upholstery best choose

Duran

Furniture Club of America—Furniture designed and installed by L & B Equipment Co., Chicago, Ill.



Duran
all plastic
**UPHOLSTERY
COVERING**

Because Duran surpasses the exacting standards of upholstery experts, it was the natural selection of America's foremost furniture club . . . year-round host to the thousands of experts who visit the nation's busiest furniture center . . . mecca of furniture manufacturers and buyers from all over the world.

This same upholstery excellence in many rich Duran colors, elegant finishes, is available to you for superb styling on furniture, walls and panelling . . . for unrivalled pliancy and resistance to wear, fading and peeling . . . for real servicability and client satisfaction. Send for samples.



THE MASLAND DURALEATHER COMPANY 3236-90 Amber St., Philadelphia 34, Pa.

"It's Only a Suggestion—



*But if You Want to Build
that Building Next Spring—*

Better forward those drawings to Macomber now — this month — if possible.

Builders are refiguring with Macomber where on-the-site fabrication has boosted building prices sky high.

Then they discover this better, faster, more economical method wherein Roof Trusses, Purlins, Longspans, Bar Joists and Decking are delivered ready to install.

You will find our delivery schedules better than you can get most places. Macomber has 12 acres of fabricating facilities devoted 100% to Steel Building Products.

From coast to coast, there are few people in the construction business who would not rather work with Macomber products. There IS a whale of a difference when one firm fabricates ALL the steel.

So, get your jobs entered and scheduled now.

V-BAR JOISTS AND PURLINS • V-STUDS • TRUSSES • LONGSPANS • DECKING

STANDARDIZED SERVICE IN STEEL CONSTRUCTION

MACOMBER

INCORPORATED
CANTON, OHIO

IN MEXICO D. F.—MACOMBER DE MEXICO S.A. CEDRO 500

STANDARDIZED STEEL BUILDING PRODUCTS

THE RECORD REPORTS

(Continued from page 18)

fee which represented profit, a fixed overhead for each dwelling unit constructed which far exceeded the actual amounts they spent. . . . I have evidence that PHA officials made practically no attempt to call a halt to this disgraceful situation, taking the position that nothing in the contract prevents the contractor from making an additional profit out of the overhead allowance. This attitude deliberately ignores the language of the contract, which provides that overhead funds expended should approximate the amounts allocated. It shows a callous indifference to the plight of the homeless veterans and to the waste of public funds."

The decision to go ahead with the subcommittee probe was a direct result of the General Accounting Office action. GAO scrutinized 40 of some 450 contracts made during the program and turned up enough evidence of what it considers over-payment to justify the full-dress Congressional handling.

Materials Easier to Get

Apparently the material shortages that plagued contractors in the earlier stages of the veterans' housing program — in the construction of both permanent and temporary housing — are being eased to a great extent. The Department of Commerce October industry report showed building material production breaking all records in August; at a level of 165 on the composite index as compared with 100 as a monthly average for 1939. This was the highest point recorded in the nine and a half years the monthly report has been kept. And in all postwar computations, Commerce finds that 1947 set a new 33-year record for volume of construction materials produced.

As output of building materials makes encouraging progress, the industry is faced with confusion resulting from the Supreme Court decision last April in the now-famous Cement Case. There is strengthening opinion in Washington to clarify the law on allowable pricing methods, as a sort of short cut to clearer understanding for producers, shippers and consumers. In the opinion of most experts, Congress needs to do this to clear the air befogged by the Federal Trade Commission ruling and the subsequent Supreme Court decision upholding it.

This attitude has been expressed by Dr. Melvin T. Copeland, chairman of the Advisory Council of the Senate Trade Policies Committee, the group now struggling with the problem. He says:

(Continued on page 22)

at home!

WITH ANY STYLE . . . ANY SIZE . . . HOUSE



CHARLES SCHREIBER,
Architect

ASPHALT SHINGLES BELONG WITH MODERN LINES!

It is in the imagination of the designer that the full merit of a material reveals itself. This is becoming apparent in the many interesting applications of asphalt shingles to contemporary design coming from architects' offices in all parts of the country.

In departing from heavy lines, heavy eaves—in eliminating the

non-functional and streamlining the whole—the neat, purposeful appearance of asphalt shingles has become significant to the modern designer.

Asphalt shingles also, of course, give him the additional tool of color—with a varied enough selection from bright to subdued to

neutral to permit achieving any desired effect. Asphalt Shingles definitely offer *more* than economy!

The submission of examples of the current use of asphalt shingles in contemporary design by practicing architects is invited—as are also comments, suggestions and questions.

ASPHALT ROOFING INDUSTRY BUREAU • 2 West 45th St., New York 19, New York

FREE! . . . This booklet, "Choose Your Roof for rain . . . AND SHINE". 24 pages in full color. Filled with ideas on choosing and combining colors for exterior styling. From members or direct.



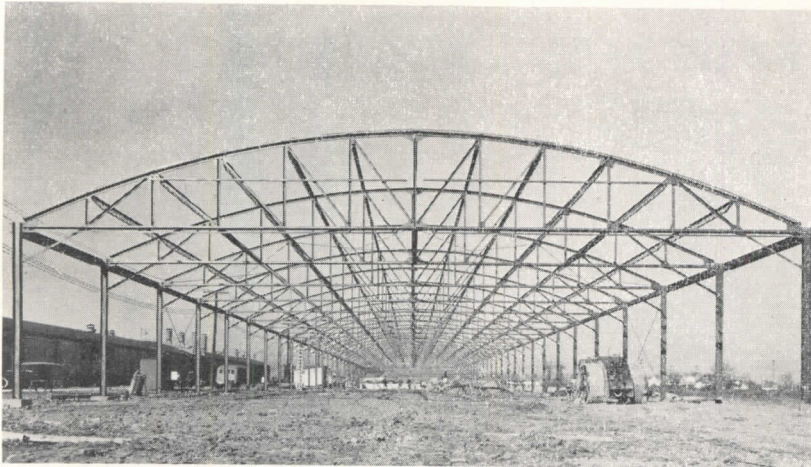
asphalt

SHINGLES

CONSTRUCTION'S BIGGEST DOLLAR'S WORTH

SPONSORED BY 28 LEADING MANUFACTURERS OF ASPHALT SHINGLES • SIDINGS • ROLL AND BUILT-UP ROOFINGS

Riveted *for Safety*



Bowstring Trusses *by*



RIVETING in truss fabrication means positive security and above all simplicity in the finer phases of steel construction.

The Bowstring Truss, a truly original Mesker development, provides greater strength and flexibility to meet every requirement of industrial or commercial construction, wherever clear floor space is required.

THE Mesker Bowstring Truss design eliminates columns. Greater floor space and the resulting finer appearances are but another feature of Mesker design. Mesker in truss fabrication, means safety, means better and standardized construction.

Mesker Steel prefabricated products are superior in every field — a true fact you expect from one of the oldest fabricators in the country.

WRITE TODAY
FOR CATALOG
AND FREE
DESIGN
INFORMATION



NEW YORK OFFICE
250 West 57th St.

CHICAGO OFFICE
549 W. Washington St.

THE RECORD REPORTS

(Continued from page 20)

"If the matter were left to the Federal Trade Commission, the hope for clarification within a helpful period of time would be slim. The Commission proceeds case by case, and one member of the Commission stated, in effect, at the first hearings of the Trade Policies Committee that the law regarding delivered prices can be fully interpreted and understood only after the Commission and the Courts have examined a large number of cases and rendered their decisions. So far, however, the more cases on delivered prices dealt with by the Commission, the more confused the situation has become. What state of confusion the law might be in with a dozen, 50, or 100 more decisions is difficult to imagine.

"The time factor, furthermore, is not unimportant. The Cement Case, for example, was before the Commission and in the courts for a period of about 10 years, at a cost of millions of dollars to the government and to the companies in the industry. Proceedings in the Rigid Steel Conduit Case were started over seven years ago, and that case is now awaiting action by the Supreme Court. If the law on delivered prices cannot be settled until after numerous other industries have been subjected to that sort of treatment, we are in for a dishearteningly long period of confusion. In fact, if the law can be settled only by such long drawn out proceedings in many cases, I fear that it never will be settled. Hence the situation is one which seems clearly to call for action by Congress."

Dr. Copeland's opinion was stated after his Council had entered well into its investigations of the effect of the Supreme Court decision on the nation's economy in general, and how similar decisions might affect the pricing methods of all major businesses. The Council will formulate recommendations for the Senate Committee. The Committee, in turn, will advise Congress on the need for legislation and what form it believes new laws should take.



ON THE CALENDAR

Nov. 4-Jan. 7: "Decorative Arts Today," exhibition of ceramics, textiles, silver, glass, etc., Newark Museum, Newark, N. J.

Jan. 10-14: 3rd National Materials Handling Show, Convention Hall, Philadelphia.

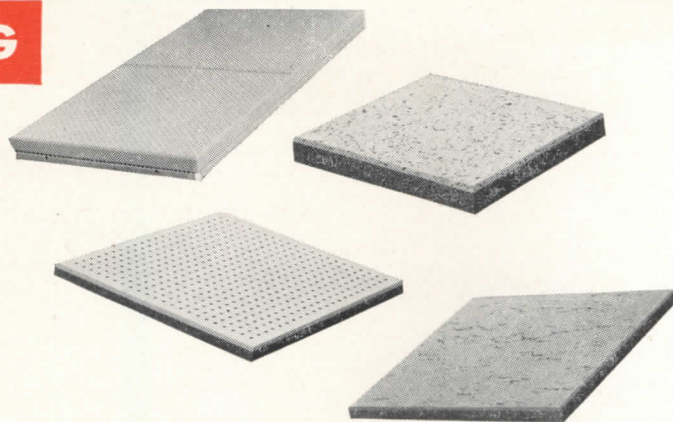
Jan. 24-28: 9th International Heating & Ventilating Exposition, International Amphitheatre, Chicago.

Feb. 12-20: 1949 Home Show of St.

(Continued on page 164)

SOUND CONDITIONING

HOW TO SELECT THE PROPER ACOUSTICAL MATERIAL



High acoustical efficiency is not the only important consideration in the selection of an acoustical material. Nearly all acoustical materials on the market are "efficient." Other characteristics, such as fire resistance, insulation value, moisture resistance, or appearance, may be deciding factors, depending on the requirements of the job. Each acoustical material has its own outstanding characteristics which distinguish it from other materials. Before selecting a material it is best, therefore, to look first at the special requirements of the job and then choose the material that is best adapted to meet those requirements.

EFFICIENCY. Since noise is the confused mixture of sounds at many frequencies, the acoustical efficiency of a material is measured by the percentage of sound it absorbs at average frequencies, or, the "noise reduction coefficient." *Arrestone* (85%) and *Cushiontone* (75%) are the most highly efficient of the Armstrong materials.

COST. Cost is usually determined by the method of application required and is lowest where the material can be nailed or cemented to an existing surface. In general, the Armstrong materials can be ranked as follows: lowest, *Cushiontone*; next *Cushiontone F* and *Travertone*; then *Corkoustic*; and highest, *Arrestone*.

FIRE RESISTANCE. Three of Armstrong's acoustical materials are rated as incombustible. Two of them *Travertone* and *Cushiontone F*, are made of mineral wool. The third, *Arrestone*, consists of a steel pan containing a mineral wool

pad wrapped in flameproof paper. Also, *Cushiontone* is available on special order with a fire-retardant paint finish.

APPEARANCE. Outstanding in appearance among Armstrong's acoustical materials is *Travertone*, with its marble-like fissured surface. *Corkoustic* also has an attractive fissured surface. There are other appearance features common to all the Armstrong materials. All bevels are factory painted like the face of the material. In all perforated units holes are drilled cleanly—not punched. Unusual design arrangements are possible with the use of rectangular sizes and unperforated border units.

MOISTURE RESISTANCE. For natatoriums and other high-humidity areas, only *Corkoustic* is recommended. Its cork composition gives it unusually high natural resistance to moisture.

INSULATING VALUE. All of Armstrong's acoustical products, being low density materials, have considerable thermal insulation value. *Corkoustic*, having a thermal conductivity of only 0.19 B.T.U., is outstanding.

Three other characteristics not to be overlooked in selecting an acoustical material are light weight, light reflection value, and ease of maintenance. Armstrong's Acoustical Materials are light in weight, have high light reflection, and can be repainted without impairing acoustical efficiency. For complete data, see Sweet's File, Section 11a, or write direct to Armstrong Cork Company, Acoustical Department, 2412 Stevens Street, Lancaster, Pennsylvania.



*TRAVERTONE IS A TRADE-MARK FOR WHICH REGISTRATION IS PENDING.

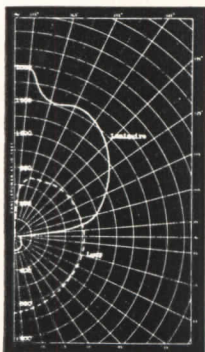
CUSHIONTONE® • CUSHIONTONE F • TRAVERTONE® • ARRESTONE® • CORKOUSTIC® • ARMSTRONG'S ACOUSTIC CEMENT

ARMSTRONG'S ACOUSTICAL MATERIALS

This is the Wakefield *Commodore*



... an Economical Incandescent Luminaire for Classrooms, Offices and Drafting Rooms



Shown here is the distribution curve for the Commodore No. 369, plotted by Electrical Testing Laboratories. All Commodores are Underwriters Approved.

The Wakefield Commodore is being used with marked success in one of the experimental rooms of Rosedale School in Austin, Texas, where the concept of the coordinated classroom as the answer to good lighting was developed. When the elements of decoration, daylight control and seating were brought into balance, it was shown that the luminous indirect Commodore unit provides a quality and a quantity of illumination contributing remarkably to an environment in which seeing is relatively effortless.

Of particular interest is the fact that Commodores are economical to install

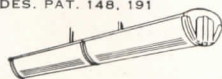
and maintain. And they are adaptable to practically any lighting requirement since they are manufactured in a complete series for wattages from 200W to 1000W, with all hangers and reflectors uniformly styled. The white molded Plaskon reflectors are made in diameters from 15 to 26 inches, varying in wall thickness to insure uniformity of brightness throughout any installation. The hangers are aluminum, finished in satin aluminum.

For complete data on the Wakefield Commodore, write for Catalog 48A. The F. W. Wakefield Brass Company, Vermilion, Ohio.

Wakefield Over-ALL Lighting

FOR OFFICE • DRAFTING ROOM • STORE AND SCHOOL

DES. PAT. 148, 191



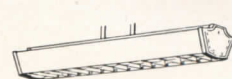
THE STAR



THE GRENADEIER IV



THE COMMODORE.



THE DIPLOMAT





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. Shrinier



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

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.

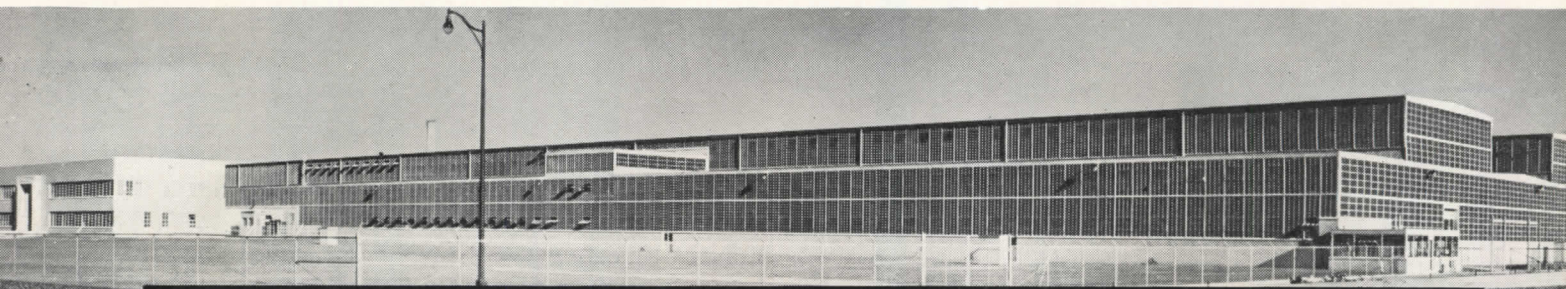
METLWALS are installed in four easy steps by erection crews . . . (1) attach floor and ceiling channels; (2) insert studs in channels; (3) snap on panels; (4) slip on base. One man can handle a full-size panel. All parts and panels can be cut on the job. No need for plaster in new construction. No filler

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-12, 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.



MARTIN PARRY
MP
PRODUCTS

METLWALS

68 Years of Service

**ALL-FLUSH PANELING
MOVABLE PARTITIONS**

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

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 Brick and Concr. Brick and Steel		Residential		Apts., Hotels, Office Bldgs. Brick and Concr.	Commercial and Factory Buildings Brick and Concr. Brick and Steel	
	Brick	Frame				Brick	Frame			
1920	136.1	136.9	123.3	123.6	122.6	122.8	122.9	108.6	109.8	105.7
1925	121.5	122.8	111.4	113.3	110.3	86.4	85.0	88.6	92.5	83.4
1930	127.0	126.7	124.1	128.0	123.6	82.1	80.9	84.5	86.1	83.6
1935	93.8	91.3	104.7	108.5	105.5	72.3	67.9	84.0	87.1	85.1
1939	123.5	122.4	130.7	133.4	130.1	86.3	83.1	95.1	97.4	94.7
1940	126.3	125.1	132.2	135.1	131.4	91.0	89.0	96.9	98.5	97.5
1941	134.5	135.1	135.1	137.2	134.5	97.5	96.1	99.9	101.4	100.8
1942	139.1	140.7	137.9	139.3	137.1	102.8	102.5	104.4	104.9	105.1
1943	142.5	144.5	140.2	141.7	139.0	109.2	109.8	108.5	108.1	108.7
1944	153.1	154.3	149.6	152.6	149.6	123.2	124.5	117.3	117.2	118.2
1945	160.5	161.7	156.3	158.0	155.4	132.1	133.9	123.2	122.8	123.3
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
July 1948	252.4	253.6	241.2	245.1	237.4	203.4	206.8	182.5	181.6	180.9
Aug. 1948	255.5	256.4	246.1	250.2	244.2	204.8	208.2	184.7	183.8	183.2
Sept. 1948	257.3	257.6	247.8	252.0	246.4	205.8	209.1	186.3	185.6	184.7
	% increase over 1939					% increase over 1939				
Sept. 1948	108.3	110.5	89.6	88.9	89.4	138.5	151.6	95.6	90.6	95.0

ST. LOUIS					SAN FRANCISCO					
Period	Brick	Frame	Apts., Hotels, Office Bldgs. Brick and Concr.	Commercial and Factory Buildings Brick and Concr. Brick and Steel	Period	Brick	Frame	Apts., Hotels, Office Bldgs. Brick and Concr.	Commercial and Factory Buildings 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
July 1948	231.3	235.5	210.4	211.3	209.6	222.2	220.4	211.5	217.4	213.6
Aug. 1948	232.6	236.8	212.7	213.4	213.6	223.4	221.6	213.8	219.2	218.1
Sept. 1948	234.9	238.1	215.7	218.1	215.7	225.2	222.9	215.7	221.3	219.5
	% increase over 1939					% increase over 1939				
Sept. 1948	113.2	122.5*	81.7	82.1	81.3	113.3	124.5	83.7	81.5	88.4

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.

* Erroneously reported for Aug. 1948 as 123.2%; the correct August figure was 121.3%.



Above: A view of the Lillian Wald Housing Development now under construction. State financed, the project is directed by the New York City Housing Authority. Architects are Frederick L. Ackerman & Lafayette A. Goldstone. Plumbing contractor is Eugene Duklauer, Inc. Distributor: Glauber, Inc., N. Y. Left: Architects' drawing of the development.

TWENTY-FIVE MILES OF "85" RED BRASS PIPE in the Lillian Wald Houses


IN New York City's huge, \$22,372,000 Lillian Wald Housing Development there will be 1,861 dwelling units. An estimated 6,954 persons will occupy the four eleven-story and twelve fourteen-story apartment buildings which, with their 7,695 rooms, will cost \$14,450,266 to construct.

And to serve these houses with a full flow of clear water for years to come: 130,000 feet of Anaconda "85" Red Brass Pipe, 1/2" to 6" SPS.

No more trusted material could have been chosen for this important water-carrying job. Anaconda "85" Red Brass Pipe has been in use since 1927, and had undergone ten years of

testing before that. Strong, non-rusting and of uniformly fine grain structure, it has become known as the highest quality corrosion-resistant pipe obtainable at a reasonable price.

4888


Anaconda
"85" RED BRASS PIPE

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

REQUIRED READING

WHAT IS A WINDOW?

Windows in Modern Architecture. By Geoffrey Baker and Bruno Funaro. Architectural Book Publishing Co., Inc. (112 W. 46th St., New York 19, N. Y.), 1948. 8½ by 11 in., illus. 144 pp. \$8.50.

Since man's innate curiosity and love of sunlight and fresh air make it highly improbable that he ever will accept air conditioning and artificial lighting as a substitute for the window, the architect can look forward to many more years of supplying him with the fenestration he so stubbornly demands. Hence any architect, no matter what type of building he is designing, will find this slim volume on windows of absorbing interest.

Messrs. Baker and Funaro, having themselves felt the need for a book such as this, have made a thorough study of the subject and have come up with a reference book on window design that is complete. Everything from the characteristics of different kinds of glass to the "geometry and mechanics of the sun" is included. Everything, furthermore, is carefully diagrammed and illustrated.

To be specific, there are two pages devoted to the basic types of opening sash; 10 to hardware, accessories and sun shades; 14 to stock windows; six to installation details. All of this is information which the architect will find extremely handy to have at his fingertips. And of equal value to him will be the large section titled "63 Windows in Use," which gives photos and construction details of windows in various types of building, including a hermetically sealed office building.

ART AND AMERICA

Made in America: The Arts in Modern Civilization. By John A. Kouwenhoven. With an introduction by Mark Van Doren. Doubleday & Co. (14 W. 49th St., New York 20, N. Y.), 1948. 6 by 8 5/8 in. xv + 303 pp., illus. \$5.00.

"From the point of view of those who have been trained in the cultivated tradition," writes Mr. Kouwenhoven, "the emergence of a civilization from popular roots has been a phenomenon of dubious merit." This is what the author means by the conflict of the vernacular or machine design and the cultivated tradition of European influence.

The vernacular, indicating one phase of American civilization, is that from which has evolved the natural in American culture. While men of Upjohn's caliber digested the foreign tradition, some of their contemporaries were constructing roads, bridges, canals. While men put Corinthian decoration on steam turbines, others, the decorative sub-

ordinated to purpose, invented portable riveting machines and unconsciously developed another kind of art. It was a battle between the esthetic and the practical, there was plenty of "ginger bread," but there was also the invention of the "balloon" structure, and the mixing of lime, sand and stone for building in woodless areas.

Throughout the book in chapters entitled "Space and Chance," "Stone, Steel and Jazz," etc., the author forcefully conveys the spirit of "natural integrity." Architecture, engineering, manufacturing, model-T-ism, as well as art, literature — all are included in this comprehensive analysis of Americana. Says Mark Van Doren in his introduction: "His broadest view takes in all Western civilization since the day when democracy and machinery got married and set up their modern house . . ."

PRIMER ON ARCHITECTURE

An Introduction to Architectural Design. By Donald A. Fletcher. Donald A. Fletcher (Box 1027, Grand Central Station P.O., New York, N. Y.), 1947. 6½ by 9¼ in. 212 pp., illus. \$7.50.

Integration of diverse factors is an art and a necessity to be learned in the achievement of good design. It is upon this principle that Architect Fletcher presents his primer for beginning students in architecture with the purpose of anteceding and complementing books on design already in circulation. The basis of the book, acknowledgedly, is the method of work followed at the École des Beaux-Arts in Paris.

A systematic project, the book is divided into three sections: Factors in

Design — Eleven Exercises in Architecture; A Method of Work; and Notes on Related Topics.

At the beginning of the exercise section the requisites for the proposed sketches are specified. Mr. Fletcher emphasizes in no uncertain terms the need for the new student to discover how to create a unified design, and at the same time to pursue diligently his own inspiration. The exercises progress from gazebo to pump house, portico, club house, church façade, museum and library, hall of the fine arts, minor building for a summer music festival, church group, boat house, and railroad station. The design of each has its own particular place in the development of the embryo architect.

In the second section Mr. Fletcher outlines a method of work starting with the preliminary analysis of the problem and carrying through to the design stage, presents a group of preliminary exercises, and winds up with five pages of "hints for the drafting room."

The final section is given over to an assortment of short topics, alphabetically arranged, including arranging a sheet, drawing and rendering, lettering, scales and styles.

FACILITIES FOR CAMPING

Camp Site Development. By Julian Harris Salomon. Girl Scouts of the United States of America (155 E. 44th St., New York 17, N. Y.), 1948. 8 by 10½ in. vi + 106 pp., illus. \$4.00.

Although written specifically to serve as a guide for those planning Girl Scout camping facilities, this volume will be of interest to anyone planning similar facilities for any other organization, as it contains much basic information on camp needs.

Mr. Salomon, who is Camp Consultant to the Girl Scouts, and the author of several other books on camp planning, stresses particularly the need for a topographical map of the site as the basis for an overall master plan. "Without such a plan," he warns, "it might happen, for example, that an infirmary is built in a place that ultimately proves to be the only place available for a campfire circle or a play field."

Subjects covered by Mr. Salomon includes water supply, roads and electricity; sewage and waste disposal; the administration area (camp office, infirmary, shower house, shop, etc.); dining lodge and kitchen; campers' living quarters; and aquatic facilities and equipment. Each section offers plans, diagrams and sketches as well as general information and construction details. The facilities illustrated are of all sizes, some of them fairly primitive, others quite civilized; they are suitable to all sections of the country, and they include

(Continued on page 30)

PUBLICATIONS ON RECREATIONAL BUILDINGS

Available from the National Recreation Assn.,
315 Fourth Ave., New York 10.

Planning a Community Recreation Building.
Principles and features. \$0.25

Recreation Areas—Their Design and Equipment. A guide to the planning of playgrounds, playfields and athletic fields; 169 illustrations. \$6.00

Selected Bibliography on the Design and Equipment of Recreation Areas and Structures (MP 161). \$0.20

Standards for Neighborhood Recreation Areas and Facilities. \$0.15

Standards for Municipal Recreation Areas. Includes description of the various types of municipal areas. \$0.50

**AT CONCRETE FLOOR PRICES YOU CAN GET
THE BEAUTY AND DURABILITY OF TILE**

When you want concrete floors of tile beauty and durability specify the use of Colorundum. For hotels, banks, stores, hospitals, show rooms, service stations and factories you get bright, colorful floors with an armor plate surface of long life — at the cost of an average concrete floor. Colorundum is a dry powder, composed of powerful coloring mediums, fused aggregates, water-proofing and hardening elements plus cementitious binders.

colorundum

FOR INTEGRALLY COLORED CONCRETE FLOORS

Colorundum is used exactly as it comes from the container and permits the foolproof application of a dust-coat floated and trowelled into the topping. The non-slip, dense surface of Colorundum makes it an ideal flooring for indoors or outdoors . . . both on new work or resurfacing old floors. Write for further interesting information.

A. C. HORN COMPANY, INC.

ESTABLISHED 1897—50th ANNIVERSARY
manufacturers of materials for building maintenance and construction
43-36 TENTH STREET, LONG ISLAND CITY 1, N. Y.
HOUSTON, TEXAS • CHICAGO, ILLINOIS • SAN FRANCISCO, CALIF. • TORONTO, CANADA



Subsidiary of Sun Chemical Corp.



HOTELS



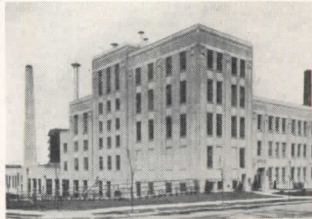
MEAT PACKING



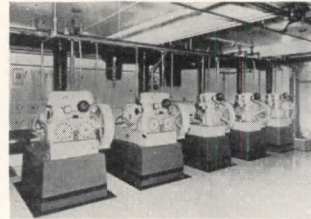
FISHING BOATS



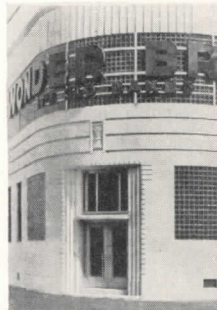
THEATRES



BREWERIES



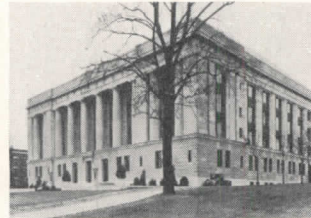
LOCKER PLANTS



BAKERIES



BOTTLING PLANTS



OFFICE BUILDINGS

In Every Field

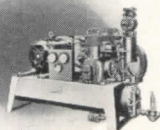
of air conditioning
and refrigeration

BAKER
installations rank among
the finest

AT the heart of thousands of successful, high performance installations, lie Baker equipment and Baker engineering. Baker offers one of the world's widest lines for both Freon and Ammonia applications. Next time air conditioning or refrigeration are part of your client's specifications, call your Baker distributor for expert assistance in planning, engineering and installation. Write today for address of office nearest you.

BAKER

Zone balanced • Engineered



**AIR CONDITIONING
AND REFRIGERATION**

Factories at Omaha, Nebraska and South Windham, Maine . . . General Offices at South Windham, Maine

REQUIRED READING

(Continued from page 28)

every kind of facility required. In the section dealing with campers' living quarters, for instance, the accommodations range from the simple Adirondack lean-to and the canvas tent to the deluxe unit lodge, and include plans for kitchen and wash shelters.

COMMUNITY CENTERS

Community Centers as Living War Memorials: A Selected Bibliography with Interpretive Comments. Compiled by James Dahir. Russell Sage Foundation (130 E. 22nd St., New York, N. Y.), 1946. 6 by 9 in. 63 pp. 50 cents.

Despite the fact that this is not a new book (it was published just two years ago), it is a valuable source of information for the architect concerned with recreational buildings — the subject of the RECORD's Building Types Study this month (see pp. 110-129). It is a bibliography *par excellence* on the community building, not only listing a wide variety of books, pamphlets, articles and studies on the subject, but grouping them conveniently and giving a brief comment on the content and value of each. Thus the architect who is particularly interested in the various types of community centers may turn to Chapter III, where he will find the types broken down into general and miscellaneous, centers in housing developments, and centers in school buildings. Each section has general comments by Mr. Dahir and its own list of references, each discussed in turn.

Since the main theme of Mr. Dahir's compilation is the community center as a war memorial — a building which need not necessarily be limited to recreational purposes, his list includes references on the large, clinic-equipped center as well as the small village club.

ART IN THE MUSEUM

Painting and Sculpture in the Museum of Modern Art. Edited by Alfred Barr, Jr. The Museum of Modern Art (11 W. 53rd St., New York 19, N. Y.), 1948. 7¾ by 10¼ in. 327 pp., illus. \$5.00.

Once again the Museum of Modern Art has compiled a catalog of paintings and sculpture from the collection in its galleries. Arranged in 20 sections with an introduction by Alfred Barr, Jr., director of the Museum Collections, the volume contains interpretative comment as well as 380 diversified plates illustrating modern American and European primitives, Expressionism, Cubism, the Romantic tradition in the U. S., free form, traditional forms, folk sculpture, etc. Thirty nationalities are represented among the artists.

**Better Finish
and
All-Aluminum
means**



LESS "LOST LIGHT"

Alzak*-Processed Reflectors are the most efficient commercial lighting reflectors on the market. Less light is absorbed and lost in the reflector. Better, longer-lasting reflector surface keeps Alzak Reflectors at top efficiency even in heavy industrial atmospheres.

All-aluminum Alzak Reflectors will not spall or break, if dented. Soap and water readily clean the reflector surface to maintain lighting efficiency.

Leading fixture manufacturers of lighting make Alzak Reflectors in all standard sizes and styles. ALUMINUM COMPANY OF AMERICA, 1474 Gulf Building, Pittsburgh 19, Pennsylvania. Sales offices in 55 leading cities.

*Patented process

Substantial savings accrue per year, per lighting standard, by installing aluminum lighting standards... they never show red rust, are resistant to traffic fumes and industrial atmospheres. Their light weight permits erection without cranes.

**Less Maintenance
with
Aluminum Standards**

**Here's What the
ALZAK PROCESS
Does...**

1. Brightens aluminum reflector surfaces electrochemically to produce lighting efficiencies as high as 83%.

2. Seals the bright, high-efficiency reflecting surface with a durable, protective coating of transparent aluminum oxide.

This Alzak surface treatment is an *integral* part of the aluminum reflector shell.

• The Patented Alzak Process is licensed by Alcoa only to manufacturers of carefully engineered lighting fixtures.

ALZAK

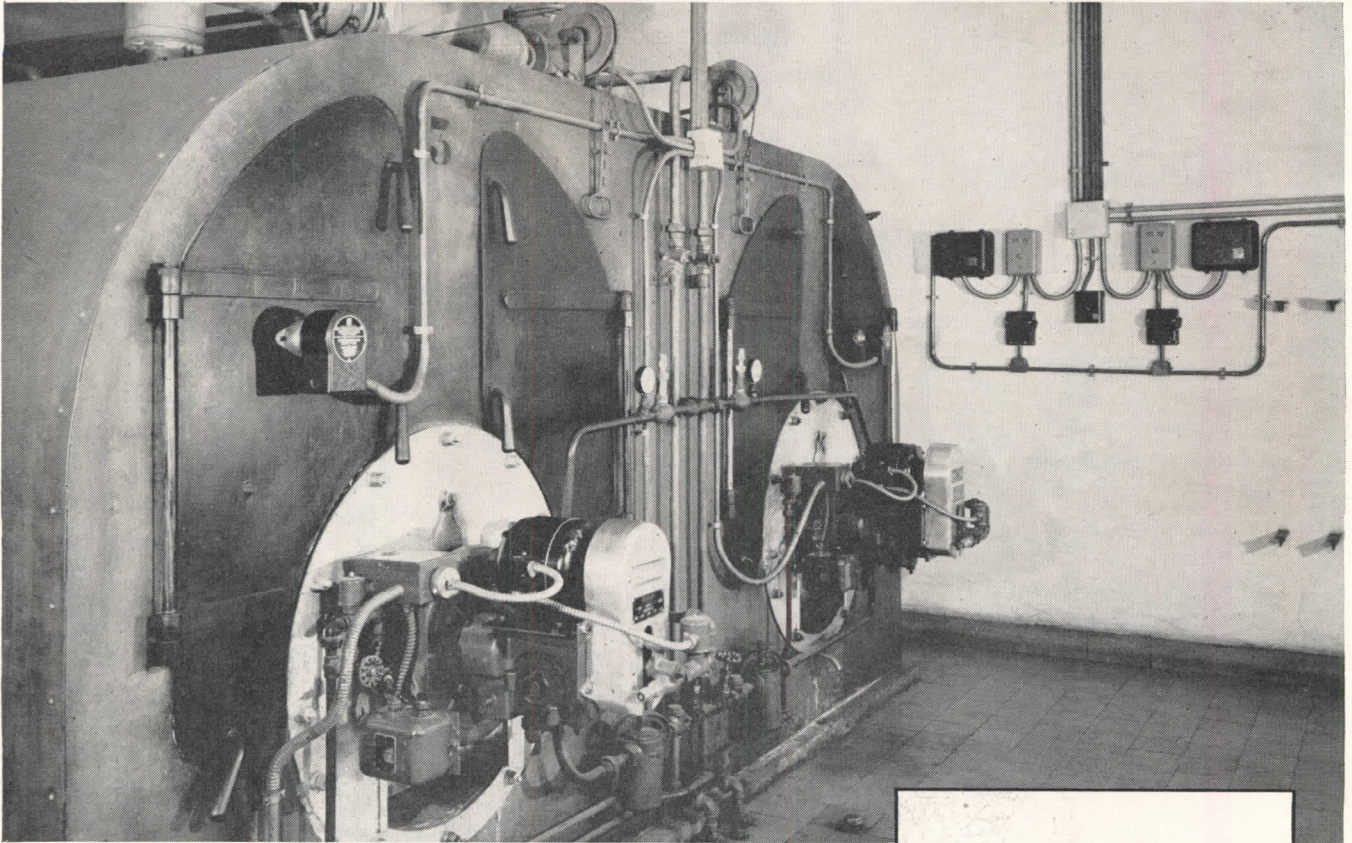


®

made and processed by leading lighting manufacturers

PROCESSED REFLECTORS OF ALCOA ALUMINUM

ENTERPRISE BURNERS CUT OPERATING COSTS 30% AT SOLVAY LABORATORIES' STEAM PLANT!



TYPICAL EXAMPLE OF HOW THESE MODERN FLEXIBLE BURNERS SAVE INDUSTRY TIME AND MONEY

Just a year ago the Solvay Corporation, world's largest producers of industrial soda, installed two Enterprise full automatic C-P oil burners in its Brussels laboratory. For 25 years previously, the forced hot water boilers had been fired by antiquated equipment, fuel-hungry, requiring constant attention and extra labor. Now, after almost 5000 operating hours, the new Enterprise burners are cutting down operating costs by 30%, both in labor savings and through increased boiler efficiency at low output—and there has been no shutdown for maintenance or repairs. Flexibility and the maintenance of steady steam pressure—important factors in the success of this company's laboratory work—are directly attributable to these modern V-belt drive burners. As a result of this remarkable performance record, Solvay has installed seven more Enterprise Burners in other of their factories and buildings.

Perhaps *your* present firing system has outlived its time—is costing more in fuel and upkeep than it is worth. Why not check with your nearest Enterprise distributor for full information and recommendations for replacement? Call or write today.

ENTERPRISE Burners are available in a range of capacities to meet every commercial and industrial need.

Boiler HP	12 to 650
-----------	-----------

Gals. per hr.	4 to 200
---------------	----------

Enterprise V-Belt Burners are available in pump or gravity type, manual, semi-automatic and full automatic control, burn heavy or light oils and combination gas and oil.



Choice of Heating Experts . . . Everywhere

ENTERPRISE Burners



BURNER DIVISION OF ENTERPRISE ENGINE & FOUNDRY CO.
18th & FLORIDA STS., SAN FRANCISCO 10, CALIFORNIA • DISTRIBUTORS IN PRINCIPAL CITIES

What every Architect
should know about

MICARTA

Micarta is ideal for bar tops and fronts as well as for fountain tops. It is not marred when cigarettes are snuffed out against it.

*If you are uncertain,
if you don't know what
Micarta will do . . .*

**Here's a
challenging offer:**

Try to chip it!

Use silverware, cooking implements, the ordinary tools that would be used in a busy kitchen or pantry. *Just try!*

Try to dent it!

Bang heavy glasses, ash trays, cups, or even cooking pots and pans on it. *Just try!*

Try to stain it!

Spill alcohol on it, boiling water, nail polish, polish remover, even hydrogen peroxide up to 8 hours. *Just try!*

Try to score it!

Gouge it with the edge of a half dollar. You can, of course, scratch it with the point of a sharp steel penknife, but as for anything else, *just try!*

Try to spoil it!

Use it as an ash tray. Snuff out cigarettes against it. Walk on it. Actually *boil* it in water. *Just try to spoil it.*



Micarta table tops offer a tough, impervious surface that makes possible "hospital cleanliness." Sanitation is quite as important in public eating places as in hospital operating rooms, where Micarta is extensively used.



Micarta's well known resistance to all types of food products, and to detergents and household cleansers, makes this beautiful plastic popular for kitchen sinks, and work surfaces.

MICARTA is a remarkably tough and strikingly handsome plastic laminate, available in 32 colors and finishes. It is widely used in homes, stores, shops, public buildings and institutions.

Micarta requires virtually no maintenance. It is not affected by boiling water, alcohol, detergents, household cleansers, dilute acids, condiments, and barber and beauty shop preparations.

While Micarta is highly resistant to cigarette burns, a special cigarette-proof grade is available for *complete* protection. Micarta is made in the following forms:

MICARTA SHEET, 1/16" thick, used by fabricators who have the requisite bonding equipment.

MICARTA PANEL, in 7/8" and 1 1/4" thicknesses. This is Micarta Sheet, bonded to special cores of mahogany-faced Weldwood Plywood.

MICARTABORD, 5/32" thick, used generally as a wall surface.

We invite you to send the coupon for a free sample. *Test* Micarta's unusual properties yourself.



Made by Westinghouse. Sold for decorative purposes only by

UNITED STATES PLYWOOD CORPORATION • New York 18, N. Y.

United States Plywood Corporation

55 West 44th Street, New York 18, N. Y.

I WANT TO GIVE MICARTA THE "THIRD DEGREE." Without any obligation whatever, send me, *free*, a sample of Micarta so I can see for myself how beautiful, tough, wear-resisting and abuse-proof Micarta really is.

NAME _____ TITLE _____

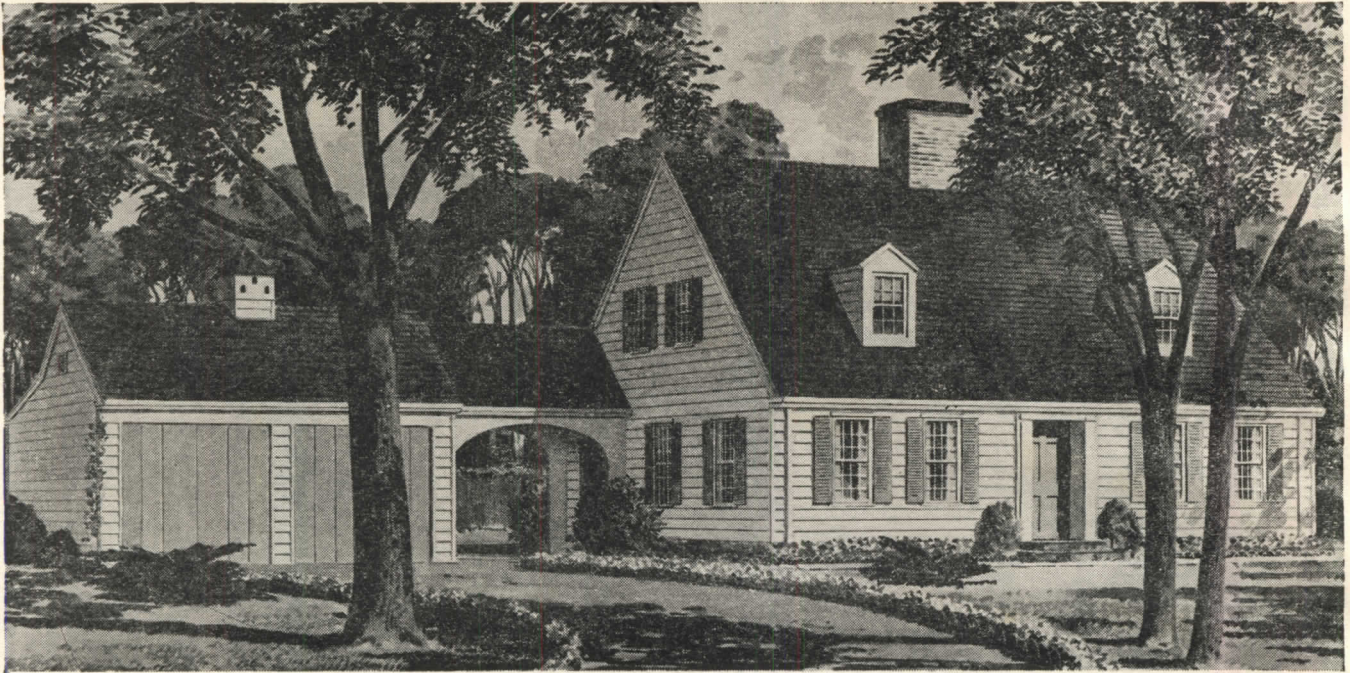
COMPANY _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

More and more, Micarta is being used for furniture tops in homes, hotels, and institutions. Micarta Truwood, made with genuine wood veneers, is widely used for such applications. Incidentally, Micarta can be worked by hand tools. It can be sawed, trimmed, planed and drilled.





WHAT DO YOU REALLY KNOW ABOUT ALUMINUM SIDING?

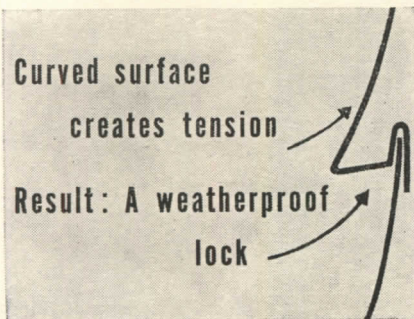
When Kaiser Aluminum Siding is mentioned, perhaps you're inclined to think: "Oh, yes—know all about it."

But do you?

Granted you may know that Kaiser Aluminum Siding is made of highest grade, roll formed aluminum.

Granted you may know that it's strong and dent-resistant... that its permanent beauty can't be marred by splits, knots or sawing scars.

But do you know all these *other* facts which make Kaiser Aluminum Siding superior to any other? For instance...



DO YOU KNOW Kaiser Aluminum Siding has a preformed curved surface—a feature found in no other siding? This deliberately engineered feature makes it the strongest residential siding used. It produces a rigid weathertight joint and creates a tension which eliminates waves or buckles as each piece is nailed down. And it creates clean lines.



DO YOU KNOW that Kaiser Aluminum Siding costs no more than other fine materials? And that in many ways it *saves* money for builders and home owners? Its light weight speeds construction, cuts labor costs—and it requires no special tools for application. What's more, it takes fewer nails and its non-porous surface requires less paint. Paint goes on faster, too!



DO YOU KNOW that with Kaiser Aluminum Siding on their homes your clients can forget about the usual maintenance problems? For Kaiser Aluminum Siding will never rot, rust, warp or crack in any climate. It's fire resistant and can't be damaged by rats or termites. And its surface is especially prepared to assure firm paint adherence and lasting finishes.

Want to know more? Write for additional information on Kaiser Aluminum Siding—the new material with a unique combination of advantages!

Kaiser Aluminum Siding specifications:

Length	. . . 10, 12, 14 and 16 ft. standard lengths
Width	. . . 6 $\frac{1}{4}$ " Thickness030"
Weight	. . . 580 lbs. per 1146 base feet (1000 sq. ft.)
Shipped in cartons containing 200 base feet, weighing 106 lbs. overall.	

Kaiser Aluminum SIDING

product of Permanente Metals Corp.

SOLD BY PERMANENTE PRODUCTS COMPANY, KAISER BUILDING, OAKLAND 12, CALIFORNIA . . . WITH OFFICES IN:
Atlanta • Chicago • Cincinnati • Cleveland • Dallas • Detroit • Houston • Indianapolis • Kansas City • Los Angeles • Milwaukee
Minneapolis • New York • Oakland • Philadelphia • Portland, Ore. • Salt Lake City • Seattle • Spokane • St. Louis • Wichita

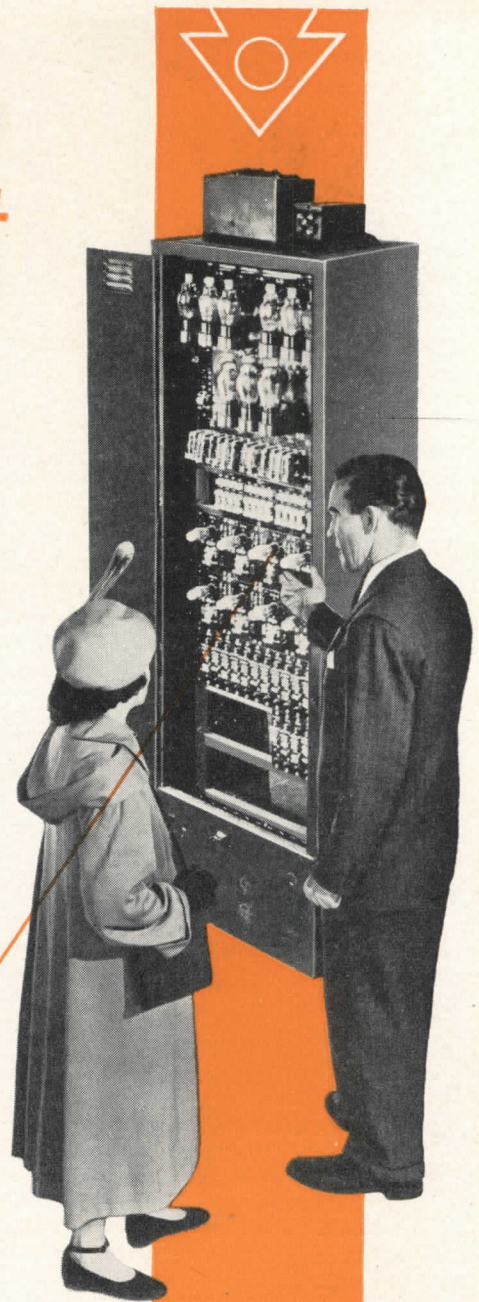
THE MAGIC BRAIN OF ELECTRONIC SIGNAL CONTROL REDUCES ROUND-TRIP TRAVEL TIME

You can now add a 'touch' of startling newness to your building . . . and at the same time speed up elevator service. How? With Otis Electronic Signal Control, the first successful application of modern electronic magic to proven signal control operation.

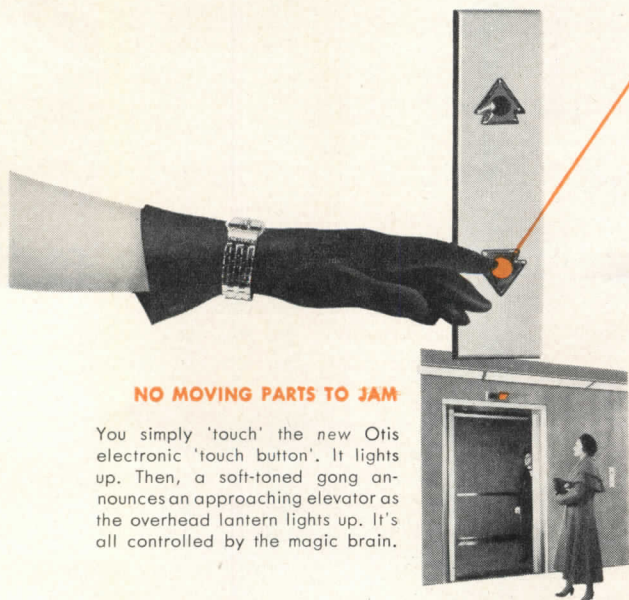
With Otis Electronic Signal Control, you don't depend upon human memory to keep track of calls. All calls are registered and remembered by a greatly simplified electronic system . . . a *magic brain* that automatically stops cars at the right floors and eliminates false stops and needless travel. Cars make more trips . . . carry more passengers. Traffic handling is speeded . . . service improves . . . operating costs go down

Otis Electronic Signal Control adds a 'touch' of advanced design to your building. Passengers no longer *push* a conventional landing button. They merely *touch* the new Otis electronic button. As if by magic, the button lights up and registers the call. No moving parts to be tampered with; no contacts to maintain.

Otis Electronic Signal Control is available for new buildings and for modernizing existing buildings. For further details call your local Otis Elevator Company office.



The magic brain — the electronic panel in the control room.



NO MOVING PARTS TO JAM

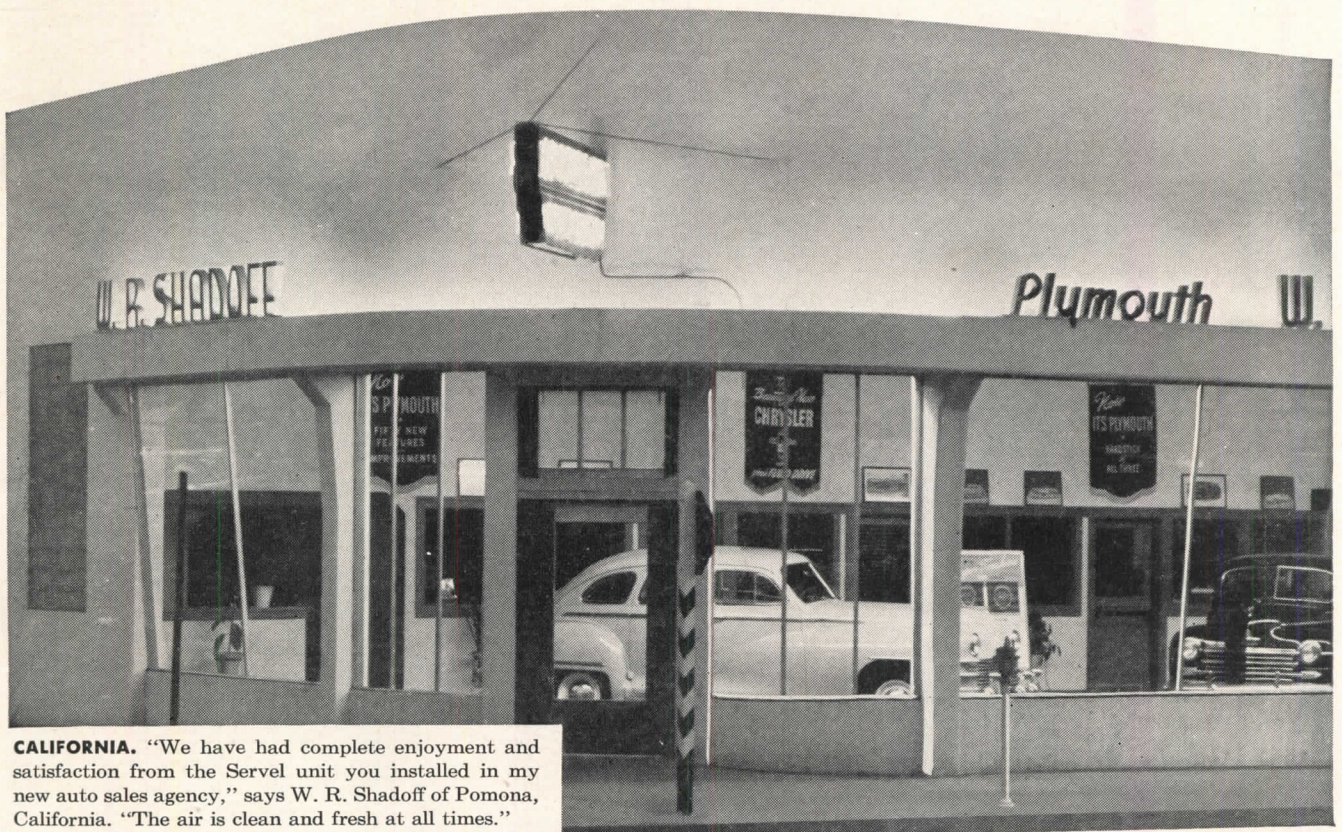
You simply 'touch' the new Otis electronic 'touch button'. It lights up. Then, a soft-toned gong announces an approaching elevator as the overhead lantern lights up. It's all controlled by the magic brain.



**ELECTRONIC SIGNAL CONTROL
ELEVATORS**

AS ALWAYS, OTIS LEADS THE WAY . . . THIS TIME WITH THE MAGIC OF MODERN ELECTRONICS

"Promotes sales, builds



CALIFORNIA. "We have had complete enjoyment and satisfaction from the Servel unit you installed in my new auto sales agency," says W. R. Shadoff of Pomona, California. "The air is clean and fresh at all times."

Servel All-Year Air Conditioning wins praise from store owners the country over

The four stores pictured here have widely varied sales problems and are located in different parts of the country. But the owners are unanimous in their praise of the way Servel *All-Year* Air Conditioning has helped their business. And their statements are typical of hundreds of letters sent in by other business and professional men, testifying to the business-building benefits of this amazing year-round air conditioning system.

With a "flick of the finger," the Servel unit supplies cool, dehumidified air in summer . . . and warm, properly humidified air in winter. In between seasons, the same single unit provides independent air circulation at prevailing temperatures. Year round, it filters dust, dirt and irritating pollen from the air. Every

Servel unit is covered by a 5-year factory warranty.

In a Servel-conditioned store, stocks remain fresh and new-looking . . . customers are more comfortable . . . personnel more efficient and energetic. Many merchants feel that the Servel *All-Year* Air Conditioning Unit will "pay for itself" in a very short time through these benefits.

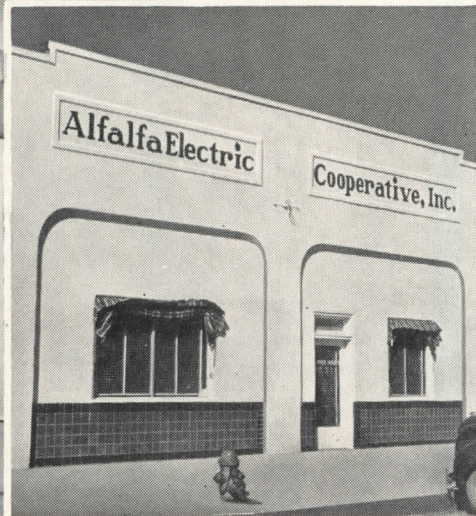
Do you have clients or prospects who would benefit from the year-round comfort and business-building advantages of Servel *All-Year* Air Conditioning? Your local gas company will be glad to give you detailed information on specifications, installation, etc. Or, write direct to Servel, Inc., 8812 Morton Avenue, Evansville 20, Indiana.

profits,"

say business men



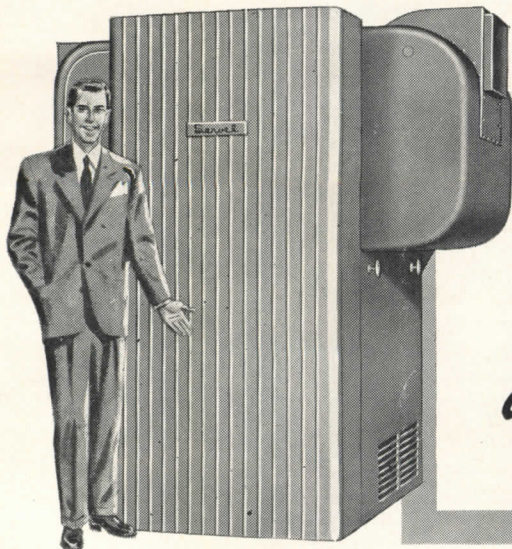
LOUISIANA. "We have used Servel All-Year Air Conditioning for more than six years and consider the original cost repaid many times over," writes David C. Silverstein, of Silverstein's Women's Apparel, Monroe, La.



OKLAHOMA. "The Servel installation has contributed much toward the efficiency of our staff," reports Clarence R. Green, Manager of the Alfalfa Electric Cooperative, Inc., of Cherokee, Okla.



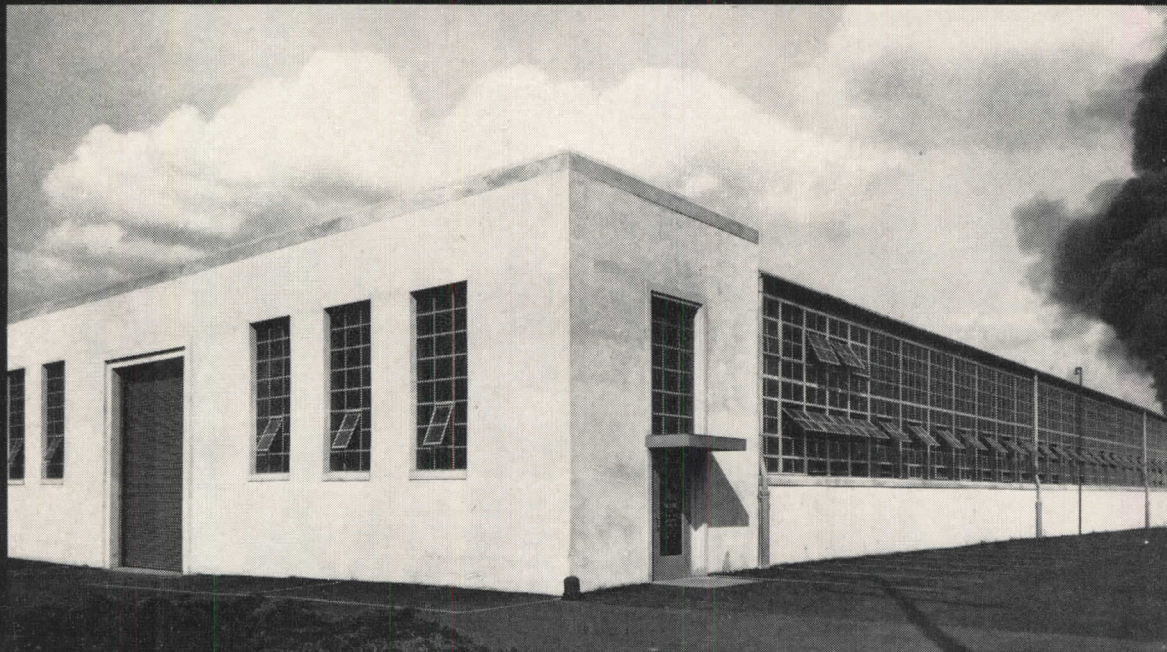
TEXAS. "I am well pleased with my Servel unit," states J.W. Hetherington, jeweler, of Texas City, Texas. "People prefer to shop where the temperature is normal and the air pure and clean."



Servel
All-Year AIR CONDITIONER

1818 HOPE'S 1948

LOK'D BAR FACTORY SASH



Jaeger Machine Plant, Columbus, Ohio

A. F. Tynan, Architect

BETTER SASH COSTS LESS TO OWN

To get the most enduring windows at the lowest ultimate cost you must have stronger sash and more resistance to corrosion. In any industrial district you can see broken ventilators, weathering strips rusted off, loose and warped window frames that testify to the destructive power of wind and vibration and the corrosive action of a smoky atmosphere.

Hope's Lok'd Bar Factory Sash are built to equal the life of the best building, even under abusive conditions and their superior weather-tightness saves heat losses and gives lasting shelter in plants where bench workers need the full light of large glass areas.

Hope's design doubles the strength of ordinary light sash because the Lok'd Bar joint, made by threading the horizontal muntin thru the Bulb T vertical sash bar, has extra thickness where it is

needed and is stronger in proportion to the weight of its metal. The ventilator sections, with flanges rolled in one piece, do away entirely with applied weathering strips; thus there is no crevice in which corrosion can start. Ventilators are solid welded at the corners; each is a complete unit which reinforces the sash where the void is cut for it. The flanges close on wide, tight-fitting contact surfaces, reducing wind infiltration to less than one cubic foot per minute at 25 miles per hour.

These features assure the most lasting satisfaction to the owner with important savings in the cost of repairs to his building. Hope's Lok'd Bar Steel Factory Sash are made with ventilators either pivoted on bronze cups, or projected on strong steel arms with brass guides. Write for the Lok'd Bar Catalog; it gives complete details and physical data illustrated with full scale drawings.

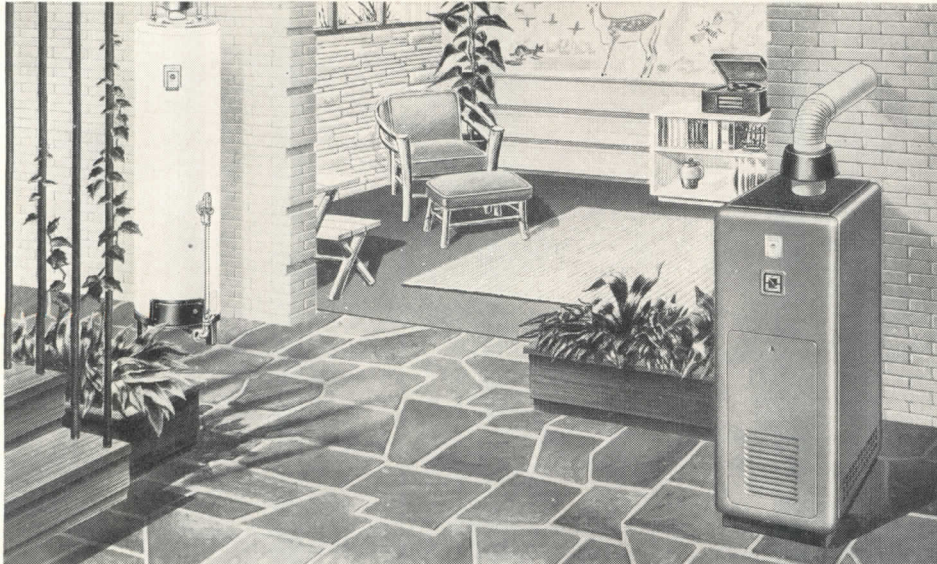
HOPE'S WINDOWS, INC., *Jamestown, N. Y.*

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

FIRST

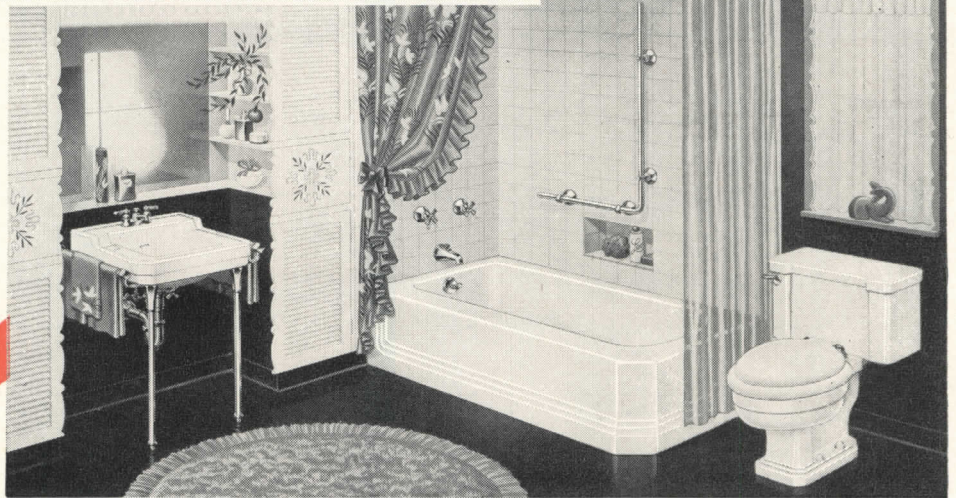
in heating and plumbing
for any home you plan or build

... (including your own)!



Not all homes would allow for this distinctive basement design. But all of them gain from the efficient performance and economical operation of American-Standard Heating Equipment. Shown here are the **EMPIRE**, a compact but powerful automatic gas-fired boiler, and the always reliable **BUDGET** gas-fired Automatic Storage Water Heater.

Everybody everywhere wants a bathroom that's new as tomorrow. Here the charm of provincial design is combined with the modern conveniences offered by American-Standard Plumbing Fixtures. The roomy bath is the corner model **MASTER PEMBROKE**, the graceful lavatory is the **COMRADE**, and the low, free-standing water closet is the quiet **COMPACT**.



■ You get a real advantage when you choose American-Standard Heating Equipment and Plumbing Fixtures. For they are first in completeness of line, to meet the needs of every size of home. They lead in variety of product, to give you wide flexibility in designing and styling. And they're noted for expert engineering and construction which assures long, satisfactory service.

Whatever the job, you can't beat American-Standard as a single, reliable manufacturing source for heating equipment and plumbing fixtures. For full details, contact your Heating and Plumbing Contractor. **American Radiator & Standard Sanitary Corporation**, P. O. Box 1226, Pittsburgh 30, Pennsylvania.



AMERICAN-Standard

First in Heating and Plumbing

Serving home and industry

AMERICAN-STANDARD • AMERICAN BLOWER • CHURCH SEATS • DETROIT LUBRICATOR • KEWANEE BOILER • ROSS HEATER • TONAWANDA IRON



St. John's Church,
Los Angeles, California.
Ross Montgomery —
William Mullay,
Architects.

The feeling is mutual . . .

Regal simplicity in the church as a whole . . . regal simplicity in the Lockwood Hardware used for all its interior doors. Plain, graceful trim in cast bronze carries out the designers' original feeling without detracting from functional value.

Here again is proof that Lockwood's eye for creating fine hardware—hardware that fulfills every decorating or architectural plan — is a boon to those with vision. Here again is proof that Lockwood means *more of the best* in Finishing Hardware.

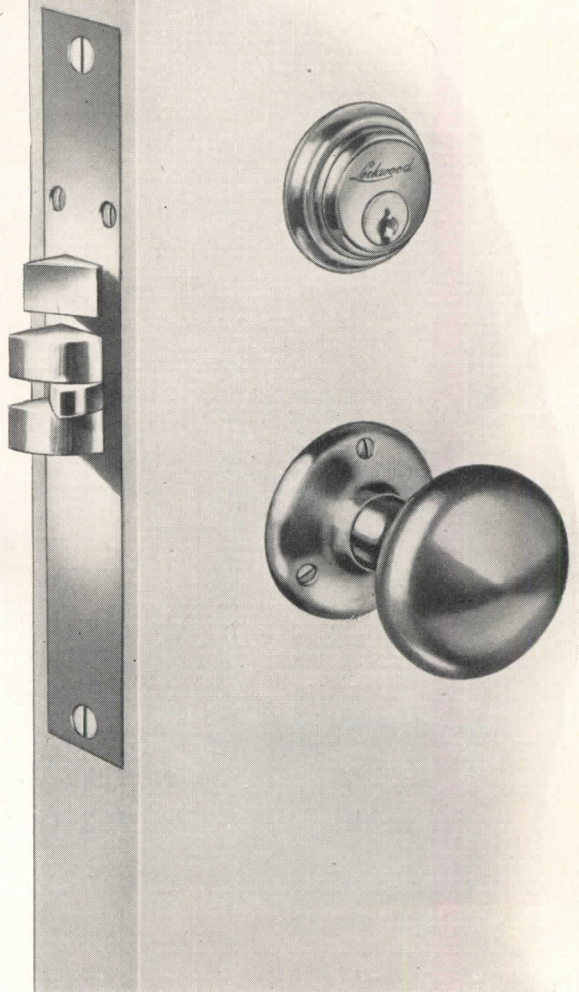
L 89 - A

It's easier for you to specify the *right* hardware from Lockwood's catalog, "Simplified Specifications." You'll find this listed in Sweet's for 1949; or write for a free copy of your own.

Lockwood

HARDWARE MANUFACTURING COMPANY

Division, Independent Lock Company
Fitchburg, Massachusetts



AT HOME ON THE HIGH SEAS . . .



G-E TEXTOLITE*
PLASTICS surfacing
tops them all!

G-E Textolite table tops add to the beauty of this smart cocktail and dining lounge aboard a new Grace Line passenger ship.

You get something extra when you specify General Electric Textolite surfacing material for table, bar, and counter tops.

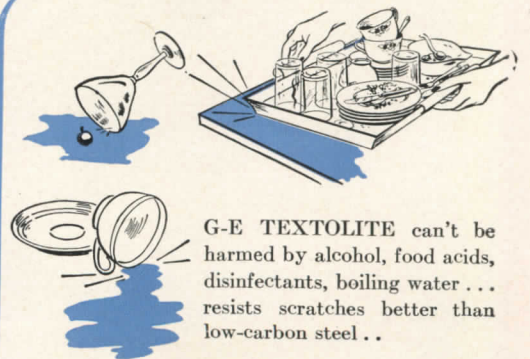
New beauty, yes! G-E Textolite . . . available in a variety of colors and patterns, imparts richness to the decor of any hotel, restaurant, bar, soda fountain, or cafeteria.

And durability plus! With rugged G-E Textolite on guard you needn't worry about wear and tear on working or serving surfaces. Because G-E Textolite actually resists scratching better than low carbon steel. Its rugged laminated construction stands up under shock. And even hot grease or boiling water won't harm it!

You can get more facts about G-E Textolite surfacing material by mailing the attached coupon. Your free copy of the booklet you'll receive shows in full color the many standard Textolite patterns. You'll also find out, in detail, why you should use this beautiful, practical plastics surfacing in hotels, restaurants, and other installations. Plastics Division, Chemical Department, General Electric Company, 1 Plastics Avenue, Pittsfield, Massachusetts.

**Reg. U.S. Pat. Off.*

GENERAL  ELECTRIC
 CD48-L1
EVERYTHING IN PLASTICS



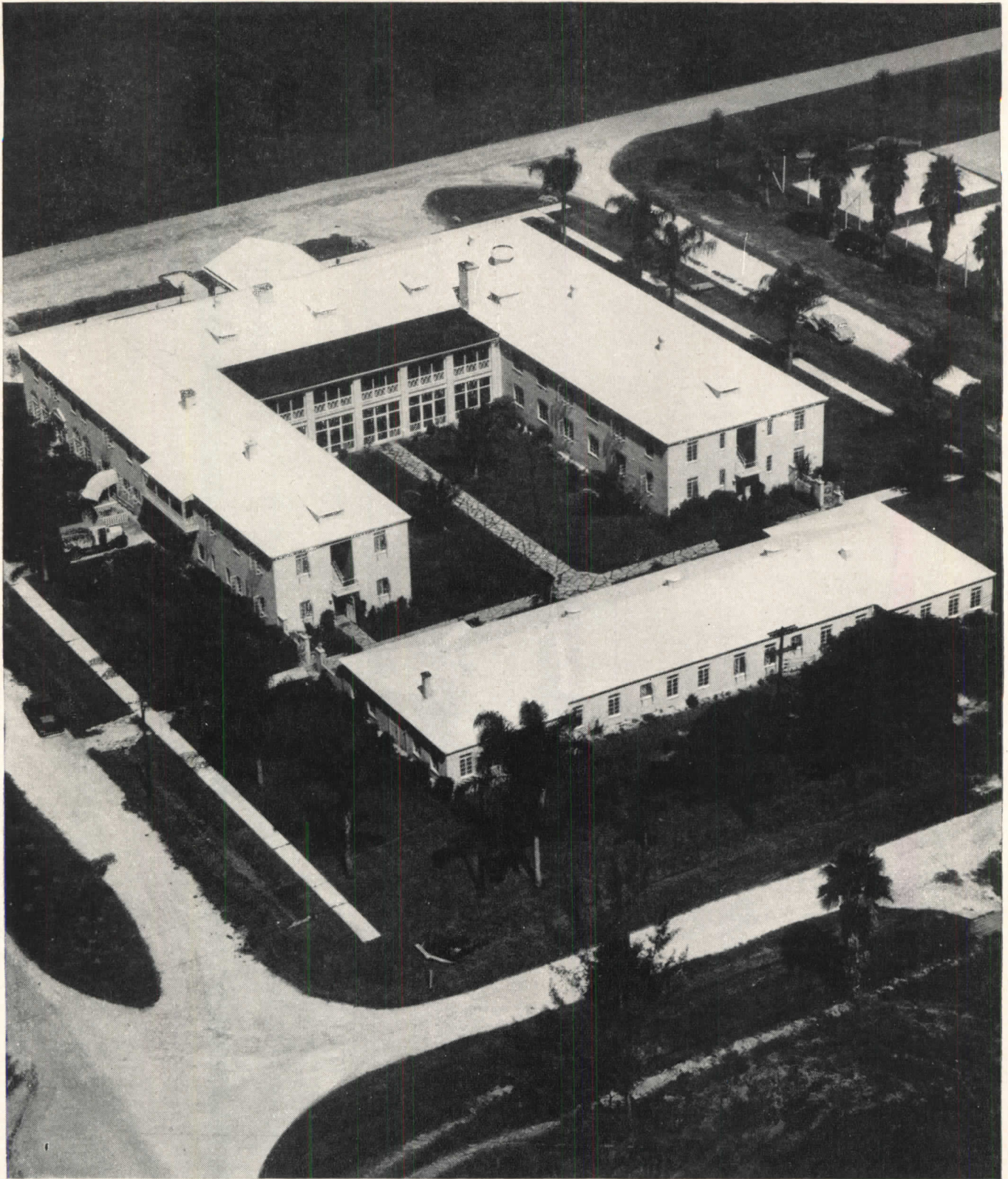
G-E TEXTOLITE can't be harmed by alcohol, food acids, disinfectants, boiling water . . . resists scratches better than low-carbon steel . . .

General Electric Co.
Section A W-12
1 Plastics Avenue
Pittsfield, Mass.



Send me my copy of "Textolite Decorative Surfacing Materials for Table and Counter Tops."

Name.....
 Business.....
 Address.....
 City..... State.....



Inn near Everglades Built with Open-Web Joists—Located on the south shore of Lake Okeechobee, close to Florida's famous everglade country, Clewiston Inn offers rest and relaxation to the vacationist. The two-story, patio-type building has 64 double guest rooms, plus eight apartments. 150 tons of Bethlehem Open-Web Joists were used in its construction. Floor structures built with open-web steel joists, concrete floor slab and plaster ceilings are fire-safe, for they keep fire from spreading for at least two hours. In addition, floors built in this way are also economical, shrink-proof, sound-retardant and vermin-proof. *Architect:* L. Phillips Clarke, West Palm Beach, Fla.



6 common conditions

where

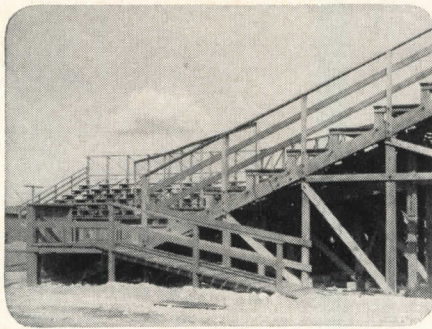
*WOLMANIZED

PRESSURE TREATED

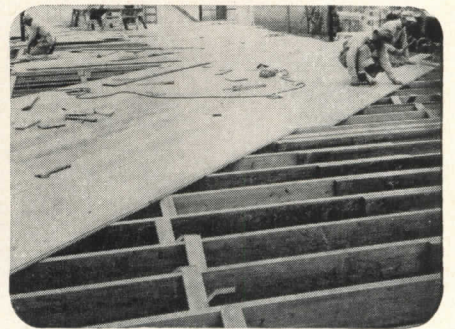
LUMBER

protects against

DECAY and TERMITES



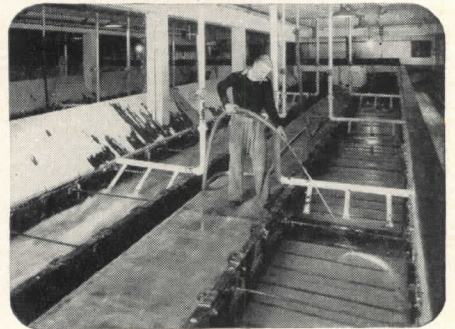
1. Ground moisture and rain held in joints etc., of outdoor structures.



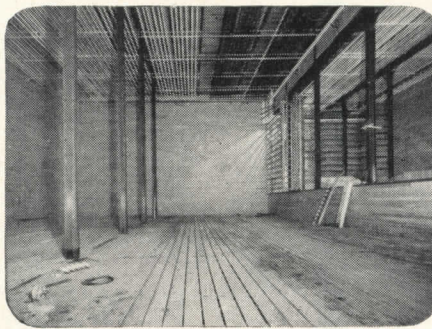
2. Wood used in or near the ground open to attack by termites.



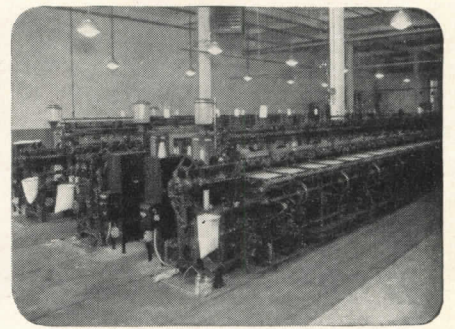
3. Wherever moisture is condensed because of concrete or masonry.



4. Where steam and vapor from industrial processes are prevalent.



5. Walls, floors, ceilings subject to condensation from refrigeration.



6. Wood exposed to moisture in artificially humidified buildings.

LASTS FOR DECADES

You give your clients extra value when you specify lumber whose resistance to wood-decay and termites gives it 3 to 5 times the life of ordinary wood.

Actual service records, available to you, demonstrate that "Wolmanized" pressure-treated lumber gives just such performance.

Owners quickly recognize your interest in better building when you point out the lasting protection so easily available with Wolmanized lumber.

This lumber is pressure-treated with salts that are toxic to decay fungi and termites. Wolmanized lumber is clean, odorless, paintable and non-corrosive to metals.

Best of all, the extra cost of Wolmanized lumber is always less than the cost of labor alone in replacing failing, untreated wood.

For further information and copies of actual service records, write today to American Lumber & Treating Company.

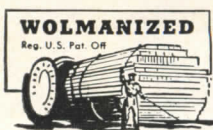
Know more about this money-saving treated lumber

Complete information on Wolmanized lumber, including suggested specifications, is available in this new booklet.

Write for your copy today.



*Registered Trade Mark



AMERICAN LUMBER & TREATING COMPANY

General Offices: 332 South Michigan Ave., Chicago 4, Illinois

Boston 9 New York 17 Washington 5 Jacksonville 2, Fla. Portland 5, Ore. Los Angeles 15 San Francisco 5
 141 Milk St. 420 Lexington Ave. 831 Southern Bldg. 719 Graham Bldg. 1220 S. W. Morrison St. 112 West 9th St. 604 Madison St.

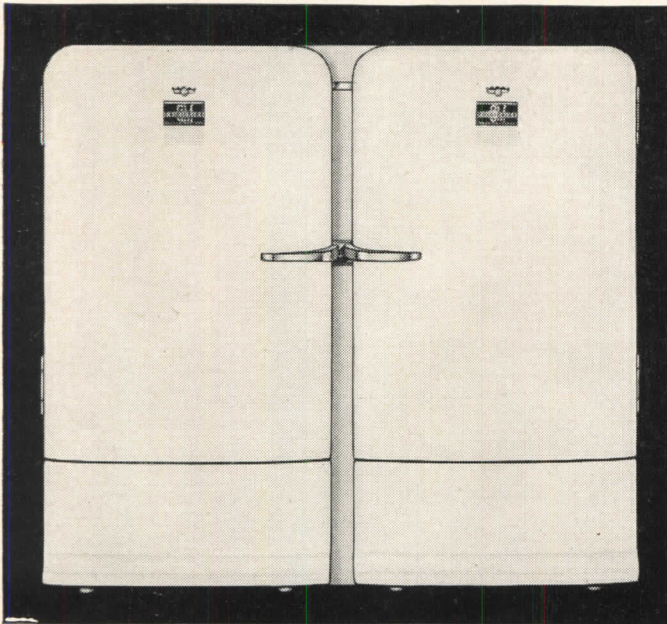
2

smart new answers to the "more-capacity" problem

Specify the New Frigidaire Tandem Refrigerators and Electric Ranges

Many a kitchen needs appliances with larger capacity than home-size models—yet has neither the room nor the need for large commercial equipment. For these "in-between" households, institutions and clubs, Frigidaire now offers an ingenious solution—the new Frigidaire Tandems. As the pictures show, Frigidaire doubles up matching units to make attractive single "packages," provides needed extra capacity at low cost.

Ask your dependable Frigidaire Dealer about these new Tandems now. Or write Frigidaire Division of General Motors, Dayton 1, Ohio. (In Canada, Leaside 12, Ontario.)

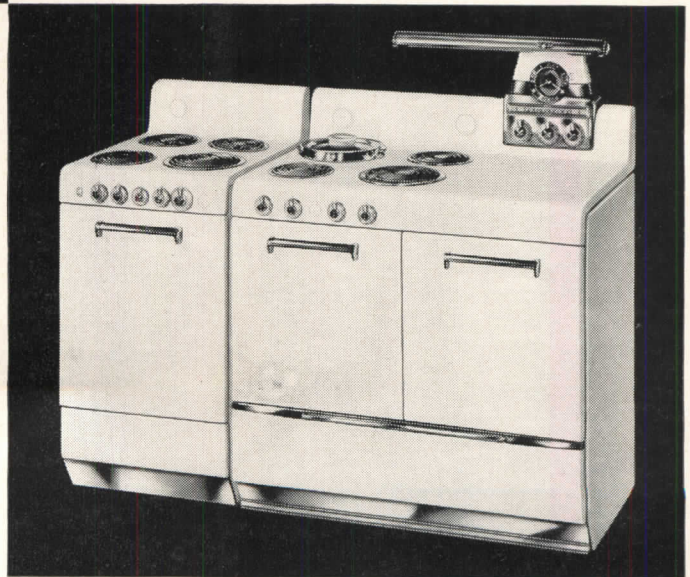


FRIGIDAIRE TWIN-7 REFRIGERATOR TANDEMS

—two Frigidaire De Luxe or Master "sevens" connected by a special joiner. Provides a total of as much as 15.4 cu. ft. of refrigerator space; 4 single, 2 double-width Quickube Ice Trays; 2 full-width Hydrators and many other famous Frigidaire features. Joiner strip is all metal, finished in matching white dulux.

FRIGIDAIRE ELECTRIC RANGE TANDEMS.

A Frigidaire de luxe 40-inch range combined with a 21-inch Frigidaire range. They have matching appointments, provide up to 3 ovens and broilers; and 8 surface cooking units (or 7 and deep well Thermizer Cooker). Here is a team that doubles capacity for electric cooking, baking, roasting—in only half again as much space!



You're twice as sure with two great names

FRIGIDAIRE

Made only by

GENERAL MOTORS

CORNING ANNOUNCES NEW SERVICES

to help you solve any commercial lightingware problem!

Corning Glass now offers a completely balanced line of commercial lightingware for diffusion and prismatic light control from fluorescent and incandescent light sources. This lightingware is the product of extensive research and is made to high standards of quality and tolerance.

To help you use this lighting effectively, Corning now offers many new services which are available for the asking. Whether you are an architect, lighting engineer, or fixture manufacturer, be sure you have this information in your files:



Bulletin LS-17, "Corning Engineered Lightingware," just published, describes and shows you how to use Corning's completely balanced line of lightingware to best advantage. It is a condensed handbook that will save you valuable time.



Installation data sheets conforming to the standards of the Illuminating Engineering Society are available on outstanding commercial installations, schools, stores, and institutions. They help you to plan.



Electrical Testing Laboratory curves have now been completed for the new Corning curved lens panels, the flat lens panels, and some of the Lenslites. You will find them valuable when planning a prismatic installation.

This information was developed especially to help you. Corning is interested in seeing to it that you get it promptly. Call your nearest Corning office, or if you prefer, mail the coupon below.

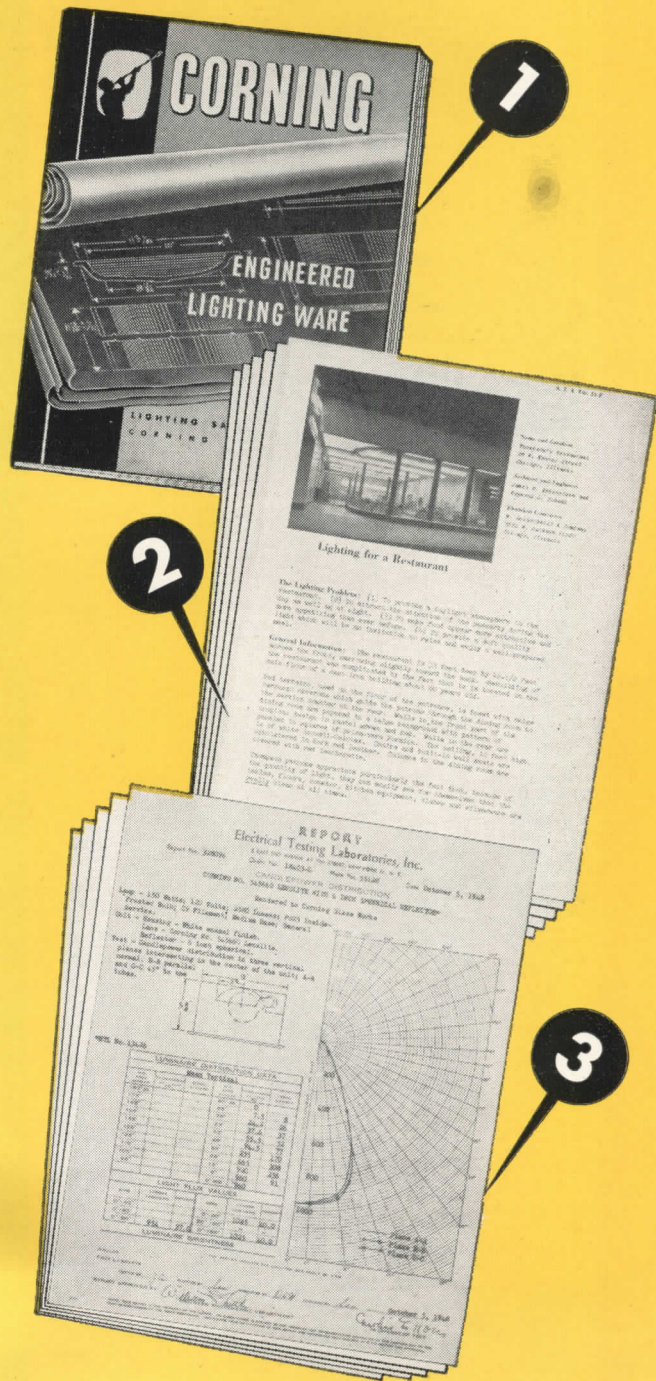
LIGHTINGWARE

SALES OFFICES

New York
718 Fifth Ave.
Circle 6-8224

Chicago
1470 Merchandise Mart
Delaware 6600

San Francisco
1355 Market St.
Underhill 2727



CORNING GLASS WORKS, DEPT. AR-12, CORNING, N. Y.

Please send me the information checked:

- Bulletin LS-17, "Corning Engineered Lightingware"
- Installation data sheets ETL curves

Name Title

Firm

Address

City Zone State



**For beautiful,
durable floors
over concrete**

... It's
Bruce Block
HARDWOOD FLOORS

Prefinished and Unfinished



REG. U. S. PAT. OFF.

■ Bruce Blocks are designed for modern construction. Installation over concrete slab is simple and economical. The blocks are laid in mastic, without nails or splines, directly over concrete. No clips, screeds or wood subfloor are used.

A Bruce Block Floor will last the lifetime of the building in which it is installed. Thus it's far more economical than other floors that wear out or are easily damaged and must be replaced every few years. With its cushion of mastic, this modern hardwood floor is quiet, resilient, warm and comfortable underfoot. It's easy to keep clean and beautiful, too. The patterned design is distinctive and decorative.

Due to heavy demand, it is not anticipated that additional orders can be taken on Bruce Blocks for at least the next 6 months. Specify on jobs being planned now for future construction. For further information, write E. L. BRUCE CO., MEMPHIS, TENN., World's Largest Maker of Hardwood Floors.

Write for this
Catalog today

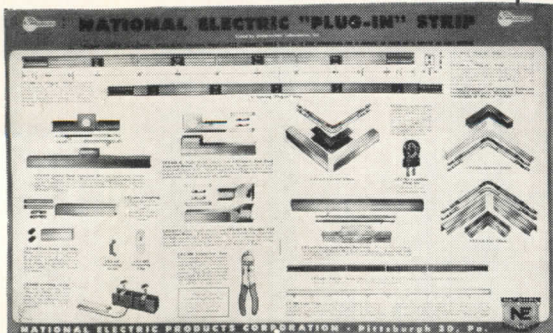
on the NEW
Multi-Outlet Wired Strip
that gives you a
S-P-R-E-A-D
of outlets

You'll find in this booklet:

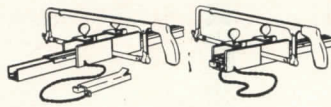
1. How PLUG-IN STRIP fits into architectural design.
2. How easily PLUG-IN STRIP is installed.
3. A complete illustrated catalog-chart of all the parts and fittings required for any job.
4. Instructions on the use of LOPO-TRIM—the metal quarter-round for housing telephone and other low-potential wiring.

And for:
**ARCHITECTS, CONTRACTORS
WHOLESALEERS**

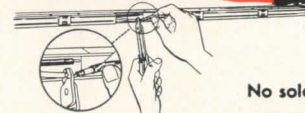
A handy 16½" x 10" Catalog
Wall Chart



**National Electric
Products Corporation**
Pittsburgh 30, Pa.

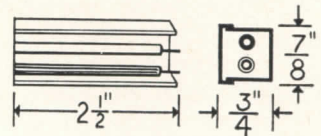
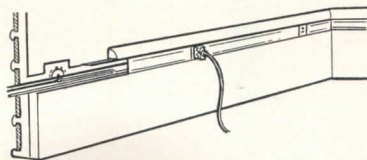


STEP 6
Cut-in-the-field instructions



STEP 7
The Coupling

No soldered
or screwed
connections



Architectural Design Details

PLUG-IN STRIP and LOPO-TRIM
are listed by Underwriters' Laboratories, Inc.



National Electric Products Corporation
1310 Chamber of Commerce Building
Pittsburgh 19, Pa.

- Please send me your new PLUG-IN STRIP
Catalog No. CF-2 (A. I. A. File 31C71)
- Also Illustrated Catalog Wall Chart

Name.....
Address.....
.....



Willis Mills, architect

ALL THE COMFORTS OF HOME—INCLUDING TELEPHONE RACEWAYS

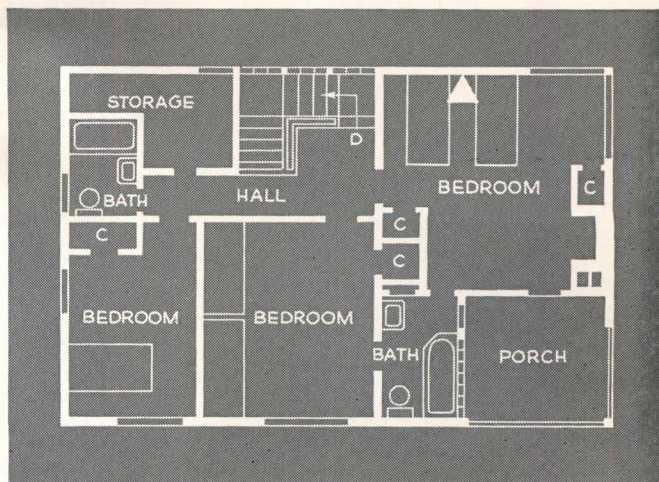
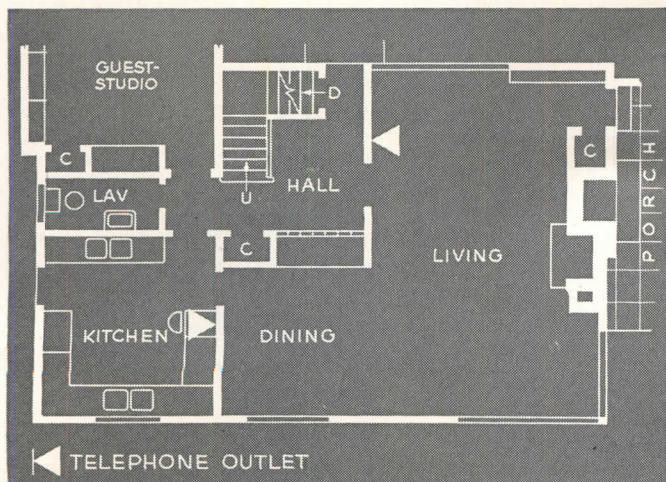
Neat, built-in telephone facilities make it unnecessary to have exposed telephone wiring on walls and woodwork. And they give a full measure of telephone convenience to the owner. That's why telephone raceways are being included in the smaller as well as larger homes.

In most homes, a few pieces of pipe or electrical tubing installed within the walls during

construction will carry telephone wires to conveniently located outlets. The cost is low.

For homes of any size, your Bell Telephone Company will be glad to help you plan modern telephone arrangements. Just call your Telephone Business Office and ask for "Architects and Builders Service."

BELL TELEPHONE SYSTEM



GET BETTER BOND WITH BRIXMENT!

The position of a brick should never be shifted after it has been laid. Shifting the brick breaks the bond and causes cracks between the brick and the mortar. If brick have been improperly spaced so that there is too little or too much space for the closure brick, and if it is therefore necessary to correct the width of the head joints, the brick and mortar should be removed from the wall, and the brick should be relaid with fresh mortar.



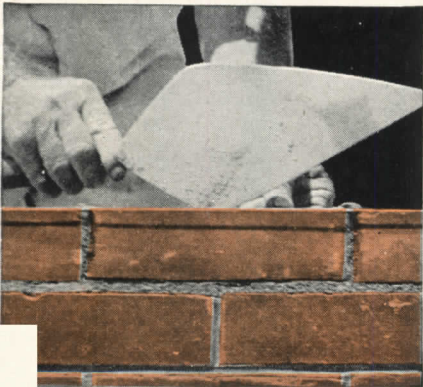
After the brick has once been laid,



its position should never thereafter be changed. Shifting the brick breaks the bond between the brick and the mortar, and causes cracks in the wall.



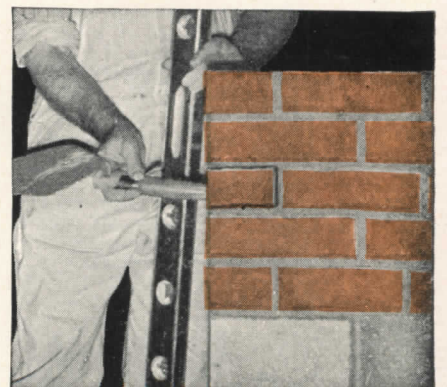
Brick should be laid true to the line, when originally placed. If any delay occurs before they are tapped into place, the bond will be broken and a crack will result. Realignment of a brick should never be attempted after a higher or following course has been laid.



If a brick is not laid true to the line when originally placed, and if the bricklayer comes back and taps it into place later, cracks will result.



Realignment of a brick should not be attempted after a higher or following course has been laid. When a brick is hammered back into line, the bond between the brick and mortar is broken. Cracks due to such realignment are frequently found at the corners of the wall.



BRIXMENT mortar's extreme plasticity greatly encourages accurate bricklaying. Its higher water-retaining capacity also lengthens the time in which adjustments can be made, before the mortar has set. Once laid, Brixment mortar makes a stronger,

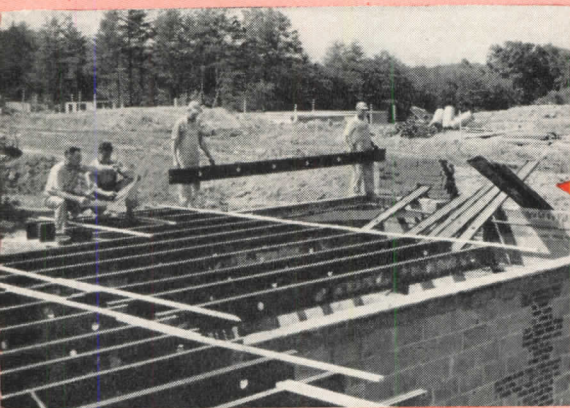
more durable bond with the brick because it is ground finer and keys better into the pores of the brick. It is the *combination* of these advantages, plus greater speed and economy, that has made Brixment the largest-selling masonry cement on the market.

LOUISVILLE CEMENT COMPANY, Incorporated, LOUISVILLE, KENTUCKY

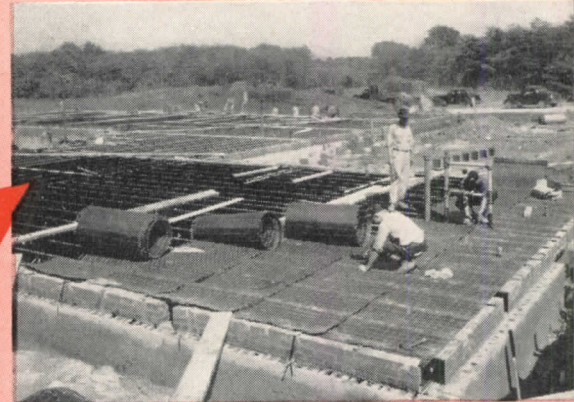


Architect's rendering of first unit, Kent Village Apartments. Roberts Construction Corporation, owner and builder; Berla and Abel, architects.

Kent Village moves



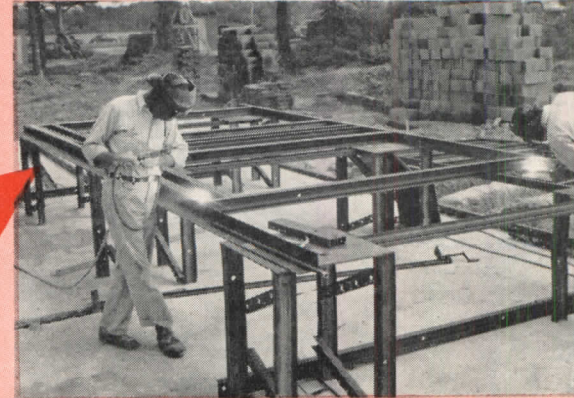
1 First stage of framing construction. Stran-Steel floor joists are placed in position.



2 Fibre-backed steel mesh is nailed directly to Stran-Steel joists.



3 Two-inch concrete floor has been poured and finishing operations are under way.



4 Accurately-sized Stran-Steel studs are now assembled into wall sections.



Construction is proceeding without a hitch on the first two blocks of the \$14,000,000 Kent Village garden-type apartment project now being erected in Prince Georges County, Maryland, near Washington, D. C.

Roberts Construction Corporation, owner and builder, ascribes much of this gratifying progress to Stran-Steel framing. This precision framing is providing greater speed, economy and ease of construction than would have been possible with any other framing material.

Nailable Stran-Steel framing permits economical dry-wall construction with plaster board. Its permanent rigidity eliminates the possibility of subsequent wall movement from warping and shrinking. And an incombustible Stran-Steel framework adds substantially to the fire-safety of the completed building.

If you're planning a building of any type—residential, commercial or industrial—it will pay you to investigate the advantages of Stran-Steel framing. Ask your local Stran-Steel dealer for full information, or write for his name and address.

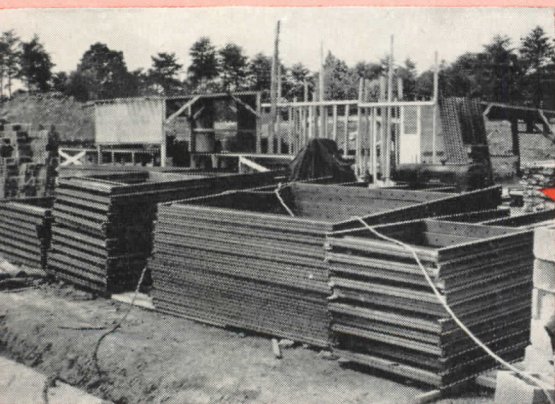
GREAT LAKES STEEL CORPORATION

Stran-Steel Division • Dept. 36 • Penobscot Building • Detroit 26, Michigan

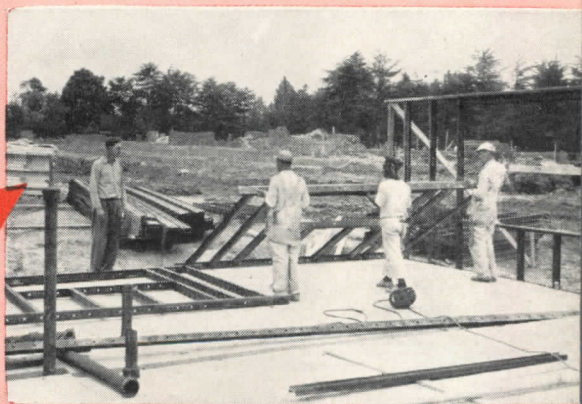
UNIT OF NATIONAL STEEL CORPORATION



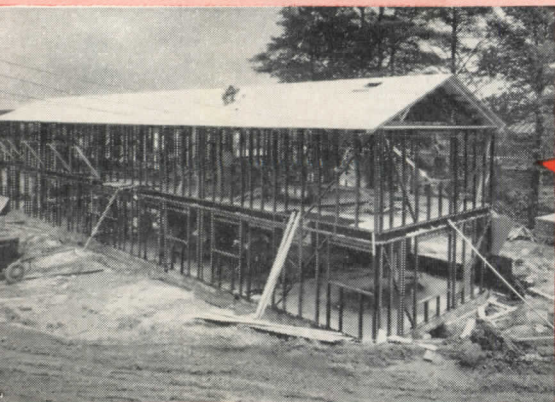
ahead with STRAN-STEEL FRAMING



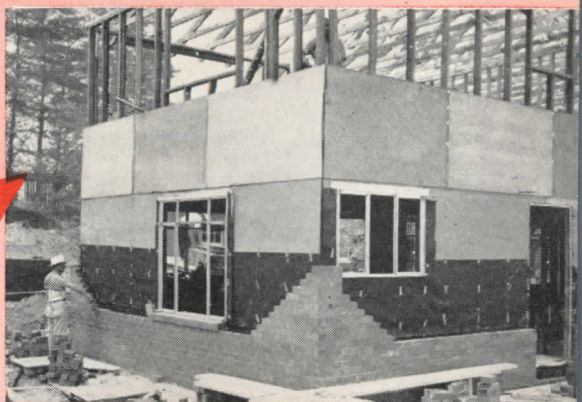
5 Completed wall panels ready for erection.



6 Raising a precision Stran-Steel wall panel into position.



7 Completed exterior framework of first unit ready for close-in.



8 Close-in, wallboard is nailed directly to Stran-Steel framework.

GORDON B. ROTH
BUILDER

September 22, 1947

Kimberly-Clark Corporation
Neenah, Wisconsin

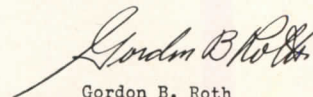
Gentlemen:

It gives me great pleasure to advise you that in my twenty-five years of building private homes, apartment houses and commercial buildings, I have tried many types of insulation and have never really been satisfied until five years ago when I started using Kimsul.

In the Tompkins house, I used 3200 square feet of Double Thick Kimsul in the walls and ceilings. As a result of this, I feel fuel bills should prove to be very nominal. I have also built ten modern homes in Long Beach, New York, ranging in price from \$18,500 to \$40,000. And some twenty-five one-family houses selling from \$14,000 to \$15,000. All of these homes are insulated with Kimsul.

My post-war program is very extensive and I will continue to use Kimsul.

Very truly yours,



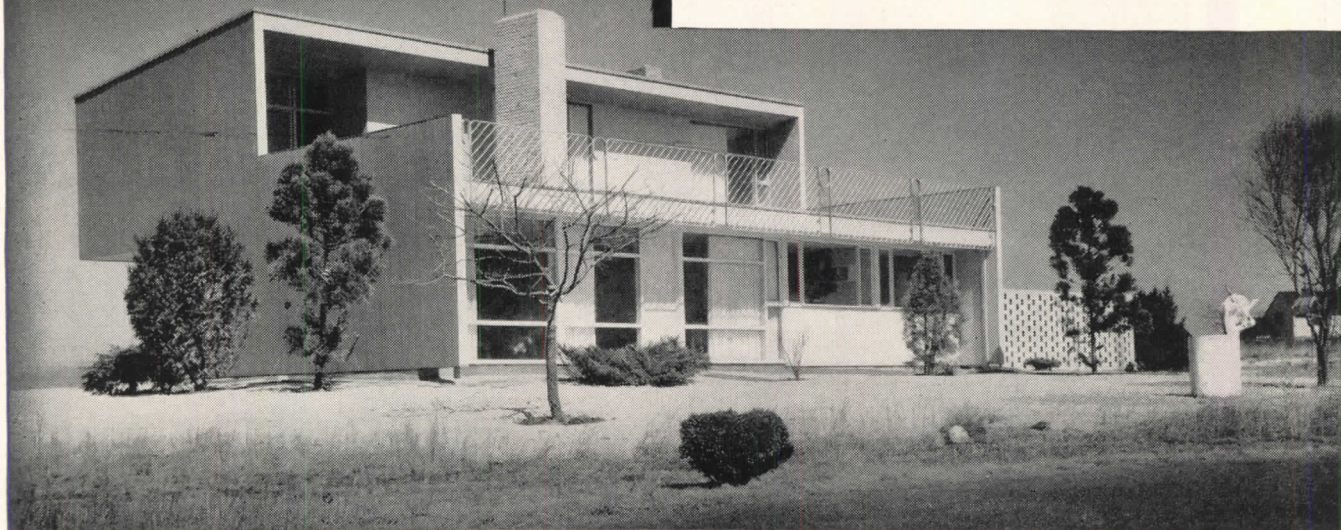
Gordon B. Roth

GBR:rr

Tried many insulations, satisfied only with KIMSUL*

—says leading New York builder

The fully KIMSUL-insulated home of Gilbert C. Tompkins in Hewlett Bay Harbor, New York. Marcel Breuer was the architect. Photograph by Ezra Stoller, Pictorial Services.



It's true. Many-layer KIMSUL* insulation is fast becoming the favorite of builders and architects from coast to coast. For KIMSUL automatically provides uniform insulating efficiency over every inch of covered area. Its "k" factor is 0.27. It's the only insulation with the PYROGARD* fire-resistant cover. And one of the easiest to install quickly and

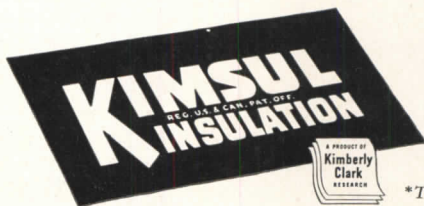
profitably—no need for expensive machinery.

KIMSUL comes in handy, compact rolls, compressed to 1/5 installed length. To give maximum protection at lowest cost, specify it by thickness: Commercial Thick (about 1/2 in.) for walls and floors. Standard Thick (about 1 in.) for walls, attics and floors. Double Thick (about 2 in.) for attics.

Free insulation booklet. Here's a new, illustrated manual covering the latest techniques in the field. Write us for your free copy of the KIMSUL Insulation Book. Mail your request on your business letterhead.

KIMBERLY-CLARK CORPORATION
KIMSUL Division • Neenah, Wisconsin

Insulate when you build.
Over-all insulation
means ready salability.

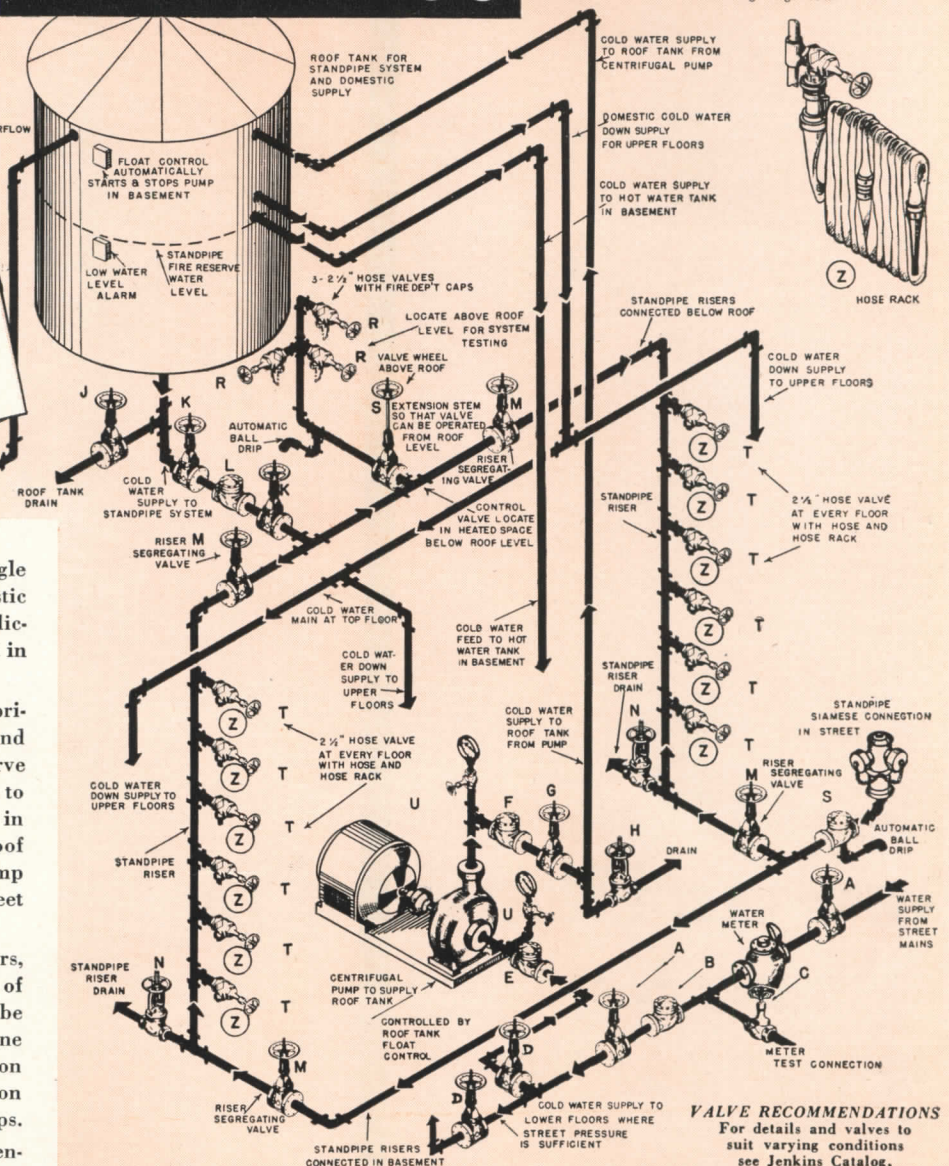


*Trademark

Jenkins PRACTICAL PIPING LAYOUTS 38

Diagram by Huxley Mateheim
Consulting Engineer

How to plan a
STANDPIPE SYSTEM
with
SINGLE ROOF TANK
for
Fire Line and
Domestic Water Supply



A typical standpipe system using a single roof tank for both fire line and domestic water supply is shown here. It is applicable to buildings not exceeding 300 feet in height.

A roof gravity tank provides the primary water supply for both standpipe and domestic supply. The standpipe fire reserve is below the hot and cold water outlets to assure water supply in case of failure in the main line. The float controlled roof tank is supplied from a centrifugal pump in the basement, or directly from the street main if pressure is sufficient.

The standpipe system has two risers, cross connected at the top and bottom of the system. This allows one riser to be shut down for repairs while the other one remains in service. The bottom connection is tied into the siamese street connection for attachment to fire department pumps.

Consultation with accredited piping engineers and contractors is recommended when planning any major piping installation. Copies of Layout No. 38, enlarged, with additional information, will be sent on request. Just mail the coupon.


A CHOICE OF OVER 500 VALVES

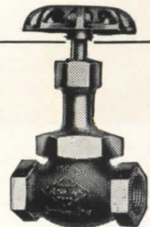
To save time, to simplify planning, to get all the advantages of Jenkins specialized valve engineering experience, select all the valves you need from the Jenkins Catalog. It's your best assurance of lowest cost in the long run.

Code	Quan.	Jenkins Valves	Service
A	2	*Fig. 825 I.B.B.M. Gate	Main Water Supply Shutoffs
B	1	*Fig. 629 I.B.B.M. Swing Check	Prevent Backflow to Mains
C	1	Fig. 106-A Bronze Globe	Water Meter Test Valve
D	2	*Fig. 825 I.B.B.M. Gate	Cold Water Supply Shutoff
E	1	*Fig. 629 I.B.B.M. Swing Check	Prevent Backflow from Pump
F	1	*Fig. 629 I.B.B.M. Swing Check	Prevent Backflow to Pump

Code	Quan.	Jenkins Valves	Service
G	1	*Fig. 825 I.B.B.M. Gate	Centrifugal Pump Discharge
H	1	Fig. 275-U Bronze Gate	Pump & Riser Drain
J	1	Fig. 651 I.B.B.M. Gate	Roof Tank Drain
K	2	*Fig. 825 I.B.B.M. Gate	Roof Tank Shutoff
L	1	Fig. 629 I.B.B.M. Swing Check	Prevent Backflow to Roof Tank
M	4	*Fig. 825 I.B.B.M. Gate	Standpipe Riser Segregation
N	2	Fig. 275-U Bronze Gate	Riser Drains
P	1	*Fig. 825 I.B.B.M. Gate	Control Valve for Roof Test Hose Valves
R	3	Fig. 715-A Bronze Angle Hose	Roof Test Manifold
S	1	Fig. 629 I.B.B.M. Swing Check	Prevent Standpipe Water Draining thru Siamese
T	12	Fig. 715-A Bronze Angle Hose	Hose Shutoffs
U	2	Fig. 741-G Bronze Needle	Pressure Gage Control

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

LOOK FOR THIS  DIAMOND MARK
Since *Jenkins Bros* 1864



JENKINS VALVES

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

Sold Through Reliable Industrial Distributors Everywhere

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

Please send me a reprint of Piping Layout No. 38.

Name.....

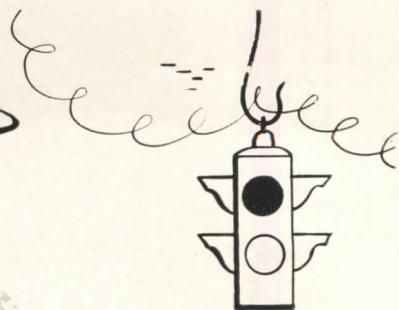
Company.....

Address.....



"HEY, THERE'S ANOTHER SMOOTH-SURFACED ASBESTOS ROOF"

"YOU'RE RIGHT! NO SLAG OR GRAVEL... NO EXCESS WEIGHT"



Yes-it's Flexstone* Each ply is a flexible covering of stone!

• The secret of a Johns-Manville Flexstone Roof is in the *felts*. They're made of fireproof, rotproof, enduring *asbestos*.

Flexstone Built-Up Roofs won't dry out from the sun... need no periodic coating. They're *smooth-surfaced*, too—permit thorough drainage... make any damage easy to locate and repair. They are engineered to each job... applied only by J-M Approved Roofers.

J-M asbestos felts are perforated to make application easier... give you a smoother job and conform better to irregularities in the roof deck.

Send for Flexstone brochure BU-51A. Contains complete specifications. Address: Johns-Manville, Box 290, New York 16, N.Y.

*Reg. U. S. Pat. Off.



"AND THESE PERFORATED FELTS SURE GIVE A SMOOTHER JOB"



Made of ASBESTOS

Johns-Manville **FLEXSTONE** Built-Up Roofs

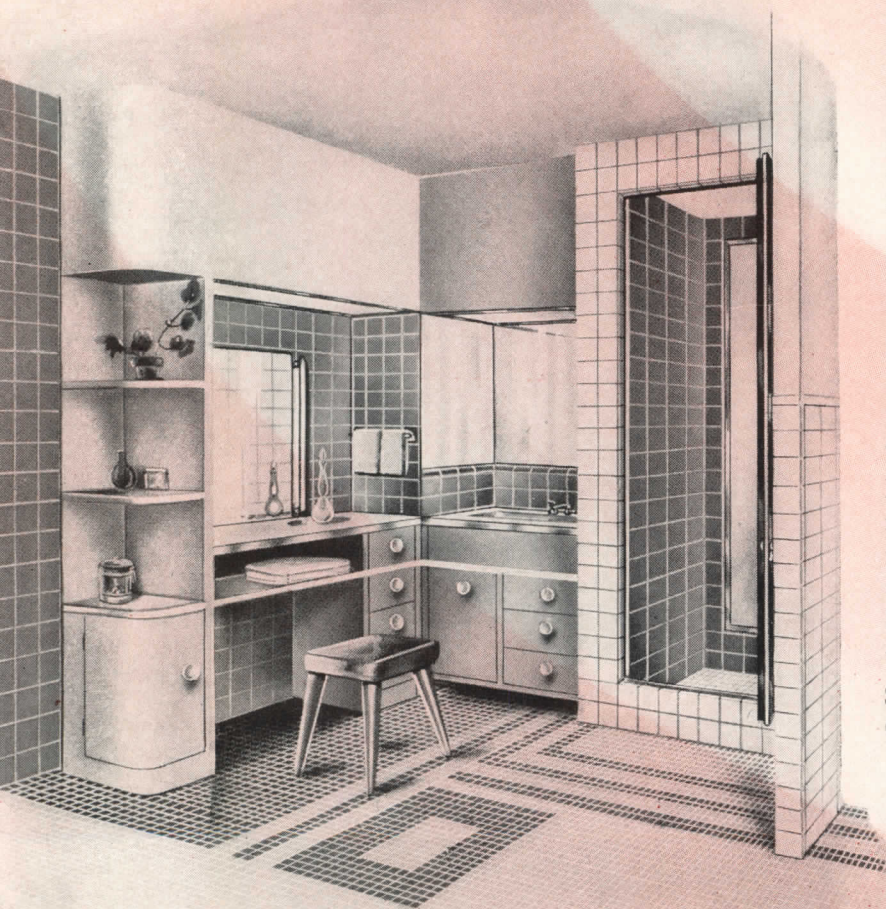
With color-balanced

Suntile

you're sure of

● BETTER TILE

● BETTER INSTALLATION



Being *sure* of the tile you select is important. Being *sure* of its installation is equally important.

Color-balanced Suntile offers you assurance of both.

Suntile's *extra quality* in form and finish is the result of rigid manufacturing control. Suntile's *color-balance* is a unique feature developed through years of scientific color measurement and selection. Color-balance permits harmonious blends and smart, distinctive settings for modern-day interiors.

Suntile's *extra quality* in installation is achieved through careful selection and training of authorized Suntile dealers. These men have the *know how* to bring out all of Suntile's inherent qualities.

For better tile—better installations, let us send you the name of an Authorized Suntile Dealer. He can show you real clay Suntile in 16 wall colors. In addition, he can show you impervious unglazed ceramic mosaic Suntile in 15 colors—and Suntile Camargos in 10 colors—both in modular sizes.

See Sweet's Catalog for complete information. The Cambridge Tile Manufacturing Co., Cincinnati 15, Ohio.

COLOR BALANCED

Suntile

..... A real clay tile
..... Bright with color
..... Right for life



Suntile OFFERS YOU BOTH—*Better Tile.... Better Installation*



Centuries of Service

the Dependable Metals

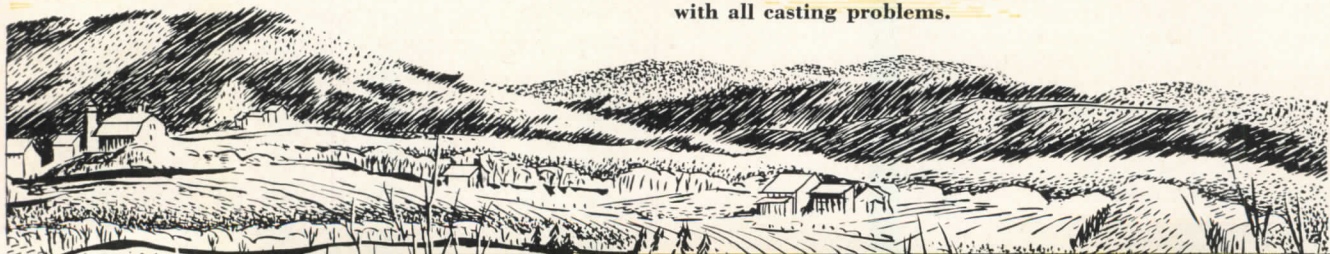
Brass and Bronze

For richness of tone in centuries-old bells . . . for strength and endurance in industrial castings . . . for beauty and permanence in architectural use . . . cast brass and bronze are top choice of leading designers everywhere.

Those who mold the character of our modern buildings . . . architects, designers and decorators . . . know the desirable effects that can be achieved with the traditional metals. Engineers choose them for countless purposes where the important considerations are freedom from corrosion, great strength, and reliability throughout long service.

Specify brass and bronze castings . . . they are available NOW!

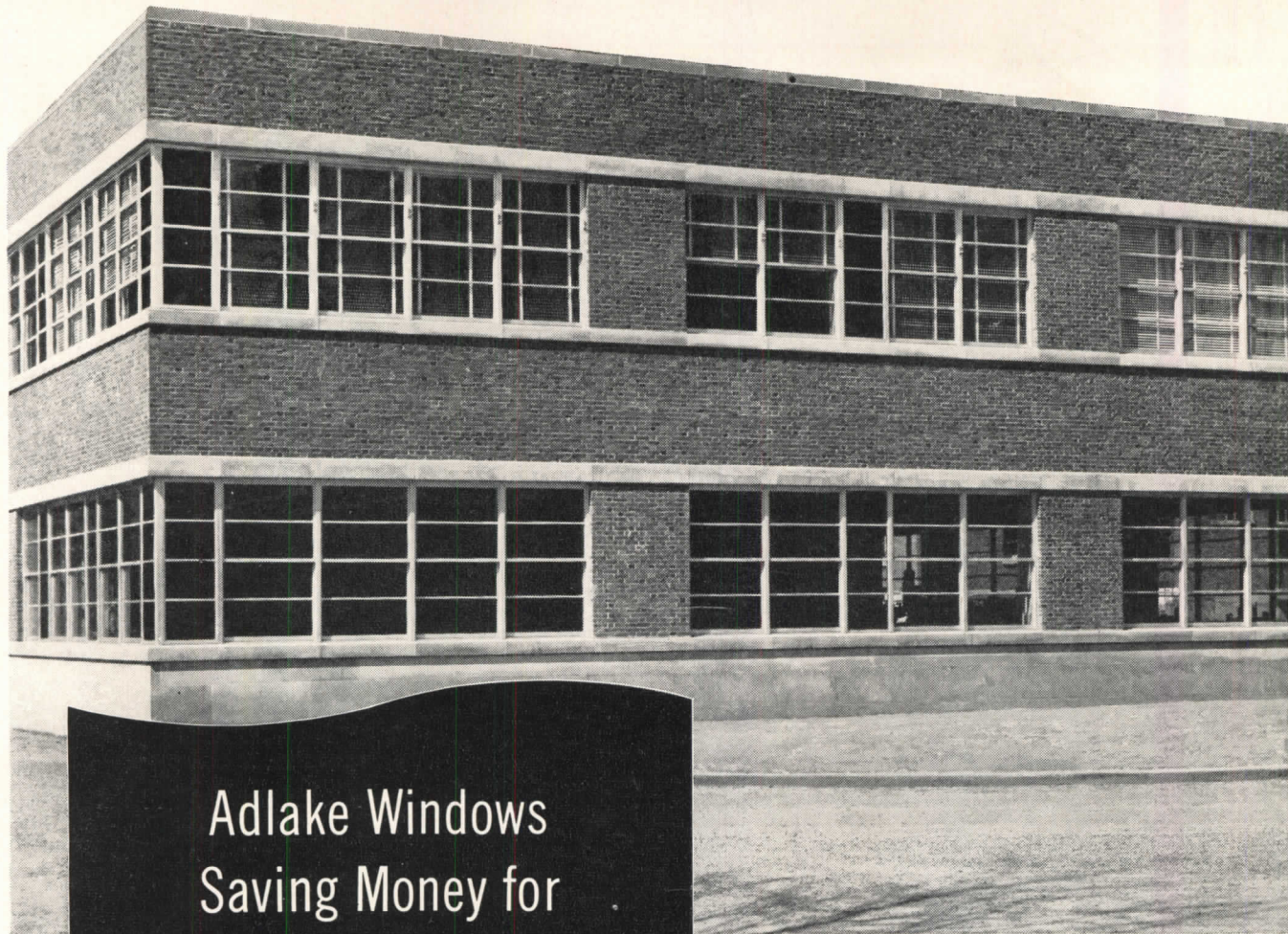
The Brass and Bronze Ingot Institute (formerly Non-Ferrous Ingot Metal Institute) suggests your local foundry for help with all casting problems.



BRASS AND BRONZE



NO MAINTENANCE COST!



Adlake Windows
Saving Money for
Univ. of Rochester

*Architects: Kaelber & Waasdorp;
Contractor: A. W. Hopeman & Sons

The 103 Adlake Aluminum Windows (Series 600) in the newly-built Engineering Building* of the University of Rochester (New York) will save the university a considerable sum, over a period of years, *eliminating* maintenance costs. The windows will ultimately *pay for themselves* through this economy. Adlake windows require no painting, no maintenance other than routine washing! And they *last as long as the building*.

ONLY ADLAKE WINDOWS have the combination of woven-pile weather stripping and patented serrated guides that assures minimum air infiltration and absolute finger-tip control.

Adlake Windows never warp, rot, rattle, stick or swell. They look lovely and operate smoothly for the life of the building.

INFORM YOUR CLIENTS about the wiping out of maintenance costs and the long, worry-free service they can expect from Adlake Aluminum Windows. For complete data, drop us a post card today at 1102 North Michigan Avenue, Elkhart, Indiana. No obligation, of course.

Adlake Aluminum Windows have these "plus" features:

- Minimum Air Infiltration • Finger-tip Control
- No Warp, Rot, Rattle, Stick • No Painting or Maintenance • Ease of Installation

THE Adams & Westlake COMPANY

Est. 1857 • ELKHART, INDIANA • New York • Chicago



Furnishers of Windows
to the Transportation Industry
for over 30 years

All Adlake double-hung windows carry this seal

QUALITY

MEMBER, ALUMINUM WINDOW MANUFACTURERS ASSOCIATION

COPYRIGHT 1946 BY THE ALUMINUM WINDOW MANUFACTURERS ASSOCIATION

SEAL

SPECIFICATION DH-A1 An equivalent of this window has been examined by PITTSBURGH TESTING LABORATORY, conforms in Materials, Construction, Strength of Sections and Air Infiltration requirements to ALUMINUM WINDOW MANUFACTURERS ASSOCIATION Specification DH-A1

Comfort for All Employees—

B&G Hydro-Flo Heating

provides the right temperature for each occupational activity



Welding Room 60°

Machine Shop 65°

Office 72°

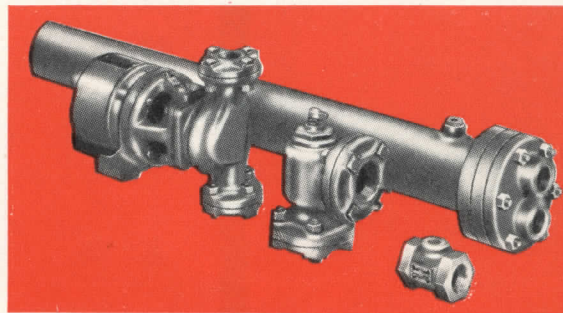
It is generally recognized that the comfort conditions under which employees work have a direct bearing on efficiency. That's why a rapidly growing number of industrial plants are installing or converting to B & G *Hydro-Flo* Heating.

This system takes full advantage of the basic superiority of *mechanically circulated* hot water as a heating medium. It establishes ideal comfort conditions because it can be zoned to deliver automatically the exact amount of heat desired in each department. It automatically changes the rate of heating to meet changes in the weather . . . saves fuel by eliminating over-heating.

The advantages of *Hydro-Flo* Heating are not limited to new installations—existing hot water or steam heating plants can be easily converted. The simplicity of B & G *Hydro-Flo* equipment is assurance of dependable operation and low maintenance.

The preferred system for homes

Hundreds of thousands of B & G *Hydro-Flo* Systems are in successful operation today . . . in homes . . . in apartments . . . and in low-cost housing developments where economy of operation is essential to owners with modest incomes.



Simple, dependable equipment

The equipment of a B & G *Hydro-Flo* Heating System can be installed on any hot water heating boiler or used with a steam convertor. Basic units consist of a B & G Circulating Pump, Flo-Control Valve, Water Heater, Monoflo Fittings.

Plus hot water for washroom or process use

The Water Heater unit of a *Hydro-Flo* System furnishes a virtually limitless supply of hot water, all year 'round. It is connected to the same boiler that heats the building, saving the cost of a separately-fired heater. Hot water is produced at amazingly low cost.



BELL & GOSSETT

Dept. AU32, Morton Grove, Ill.

Company

*Reg. U. S. Pat. Off.

why have a question . . .
when you can have

CRANE ?

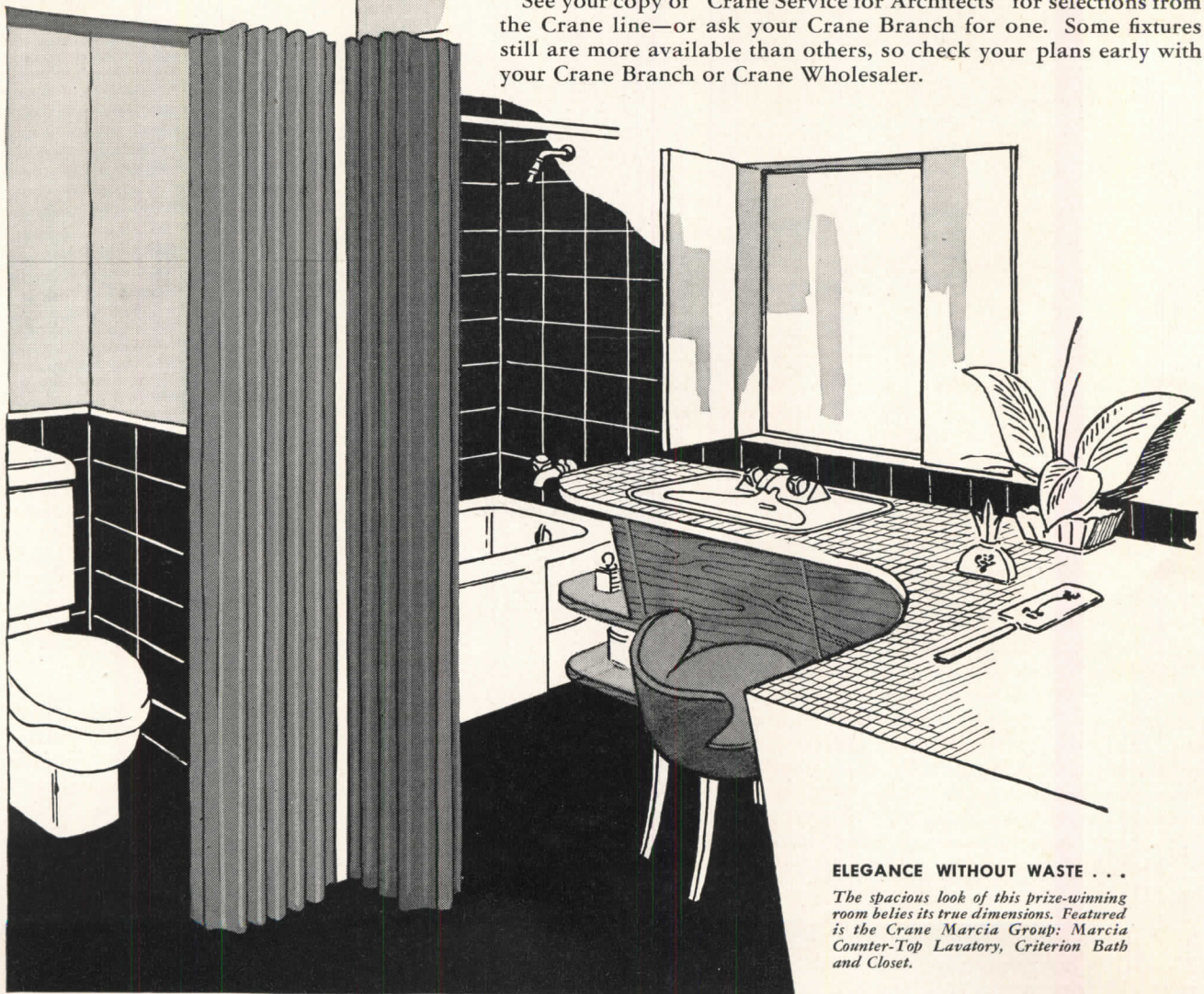
Why have clients wonder, "Is this the best?" When it's Crane, they *know* it's best! They themselves have chosen Crane in national surveys . . . year after year . . . above all other plumbing brands.

And *you* know it's best for them! The broad Crane line includes a style for every taste—a price for every building budget.

You can offer them Crane quality not only in bathroom fixtures, but in kitchen sinks and laundry tubs . . . each with the most popular development in years—Crane *Dial-ese* controls!

You can offer Crane quality in *heating* . . . complete systems for hot water, warm air, or steam . . . for coal, coke, oil, or gas.

See your copy of "Crane Service for Architects" for selections from the Crane line—or ask your Crane Branch for one. Some fixtures still are more available than others, so check your plans early with your Crane Branch or Crane Wholesaler.



ELEGANCE WITHOUT WASTE . . .

The spacious look of this prize-winning room belies its true dimensions. Featured is the Crane Marcia Group: Marcia Counter-Top Lavatory, Criterion Bath and Closet.

CRANE

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

CRANE CO., GENERAL OFFICES:
836 S. MICHIGAN AVE., CHICAGO 5

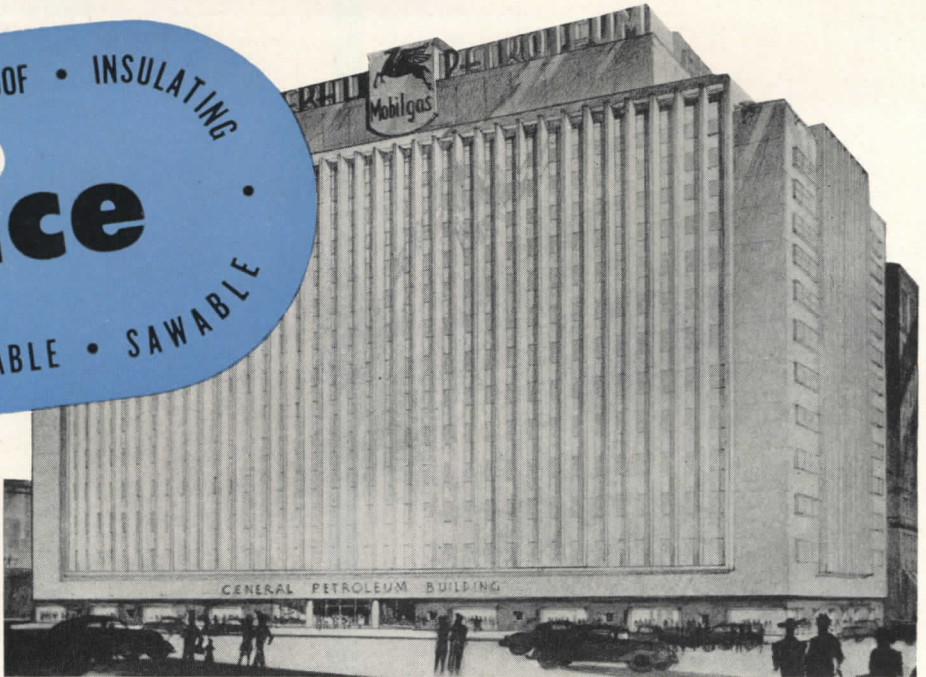
PLUMBING AND HEATING
VALVES • FITTINGS • PIPE

LIGHT WEIGHT • SOUND PROOF • INSULATING

uniform
pumice
graded

FIRE PROOF • NAILABLE • SAWABLE

GENERAL PETROLEUM BUILDING
LOS ANGELES
Walter Wurdeman and Welton Becket
Architects
Murray Erick and Associates
Structural Engineer
STEEL FRAME WITH PUMICE
CONCRETE ABOVE GROUND LEVEL



PUMICE CONCRETE SAVES BUILDING COSTS

This imposing fireproof structure was built with pumice concrete (including the ground floor slab) to keep dead weight at a minimum. As a result, its light steel frame and foundation economies saved many dollars in construction costs. The many other advantages of pumice concrete added measurably to the value of the building. The Prudential Life Insurance Building in Los Angeles is another outstanding example of Pumice concrete construction by these same designers.

UNIFORM GRADED PUMICE CONFORMS TO STANDARD REQUIREMENTS FOR LIGHTWEIGHT AGGREGATE IN ALL TYPES OF CONCRETE CONSTRUCTION

The weight-strength ratio of pumice concrete may be varied to meet your building requirements. Pumice mixes are designed for economical structural purposes up to 2500 psi at a weight of less than 90 pounds per cubic foot. Lightweight concrete can be designed to take full advantage of the many superiorities of pumice aggregate. Pumice concrete weighing 60 pounds per cubic foot, for example, has maximum resistance to transmitted sound and a tremendous advantage over ordinary concrete in low thermal conductivity. It cannot be equalled for these qualities and fireproof characteristics by any similar material with the same structural value. Exposed masonry walls of this material have acoustic qualities that are in great demand for hospitals, libraries, auditoriums and classrooms.

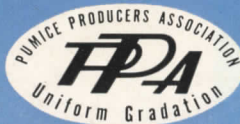
PUMICE CONCRETE MASONRY UNITS have all the structural advantages of ordinary concrete plus excellent insulation, lightweight, low sound transmission, nailability and beautiful texture.

LOAD BEARING UNITS . . . available from responsible manufacturers in all parts of the United States who process Uniform Graded Pumice aggregate. These units can be designed to fit requirements for weight/strength ratio, thermal conductivity and acoustic properties. Standard mix data for maximum use of these values is available from any member of Pumice Producers Association.

BACK-UP AND PARTITIONS . . . pumice masonry units with less structural strength have greater weight savings, more heat resistance and better sound absorbing qualities. Check up on the advantages of pumice units with your own masonry manufacturer or write direct to any member of the Pumice Producers Association.



DESERT MATERIALS
CORPORATION
6371 Wilshire Blvd.
Los Angeles 36, Calif.



PUMICE AGGREGATE
SALES CORPORATION
121 South Yale
Albuquerque, N. M.



LLOYD A. WILLIAMSON PUMICE, Bend, Oregon

PUMICE PRODUCERS ASSOCIATION

715 First National Bank Building
Albuquerque, New Mexico

"Let the public
be served"

Facing tile
for
**PUBLIC
BUILDINGS**



Let the public be served in buildings worthy of their purpose.
Let the interiors be light and cheerful!

Let these centers of community activity have dignity—utility—
permanence!

With Structural Clay Facing Tile you achieve all of this. You
can put infinite variety into the design and color of Libraries,
Courthouses, Museums, Recreation Centers... give them inter-
esting, attractive, efficient interiors... make them buildings
people like to be in.

And, in the final accounting, Facing Tile means real economy
for the public. It *goes up fast and it's built to last*. It's a wall and
a surface finish *in one!* It's fireproof, extremely strong struc-

turally, can withstand the heaviest traffic year after year and
stay like new. It will not crack, scratch or decay. Maintenance
costs no more than simple soap-and-water cleaning. Refinishing
is never necessary.

Facing Tile is available, glazed or unglazed, in efficient modular
sizes, in a wide variety of light-reflecting colors. Contact any
Institute member or see Sweet's Architectural Catalog for
additional data.

SEND FOR MODULAR FACING TILE HANDBOOK

Free to registered architects and engineers. Write Desk AR12
of the Institute on your letterhead. Fifty cents to others.

FACING TILE INSTITUTE

1756 K STREET, N. W. • WASHINGTON 6, D. C.

INSTITUTE MEMBERS

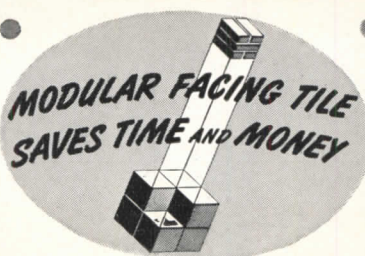
Belden Brick Company, Canton, Ohio

Continental Clay Products Co., Kittanning, Pennsylvania

Charleston Clay Products Co., Charleston 22, West Virginia

Hanley Company, New York 17, N. Y.

Hydraulic Press Brick Co., Indianapolis, Indiana



Mapleton Clay Products Co., Canton, Ohio

INSTITUTE MEMBERS

Metropolitan Paving Brick Co., Canton, Ohio

National Fireproofing Corp., Pittsburgh 12, Pennsylvania

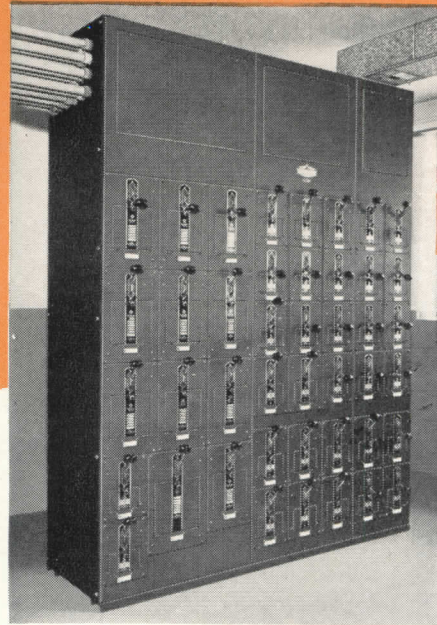
Stark Brick Company, Canton, Ohio

Standard Clay Manufacturing Co., New Brighton, Pa.

West Virginia Brick Company, Charleston, West Virginia

THIS
Frank Adam
 INSTALLATION

AFTER

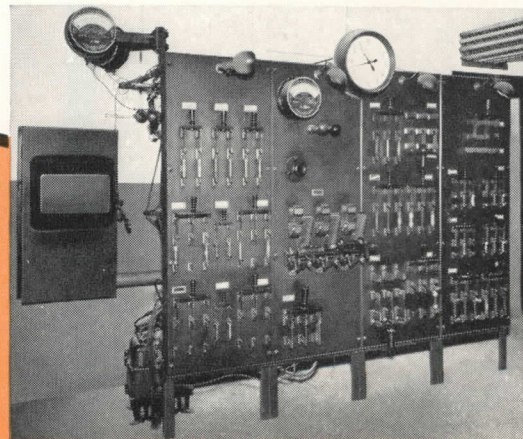


SOLVED MANY POWER PROBLEMS

Behind the attractive appearance of this new Ⓢ Shutlbrak Switchboard is a host of features which added greatly to the safety, efficiency and operation of one company. It provided, for instance, a more compact unit with greater electrical capacity... greater operating efficiency with less maintenance... easier, faster and more positive switching with new heavy-duty Ⓢ Shutlbrak Switches... safe operation with dead front, safety-type enclosure... safer

maintenance with fuses concealed behind doors that open only when switch is in "off" position... greater simplicity of maintenance due to accessibility and design... more efficient power transmission with High Efficiency Feeder Ⓢ Busduct carrying current from transformer station to switchboard with a minimum of voltage loss... and greater flexibility by providing for future additions when the need arises.

You'll solve these and many more power problems by including the Ⓢ Shutlbrak Switchboard in your *new* electrical system. This heavy-duty, safety-type switchboard with quick make and break switches fitted with Ⓢ Kamklamp (pressure type) Fuseholders is available in a full range of capacities: 30 to 1200 amps., 250 volts, AC or DC; and 600 volts AC, 2, 3 and 4 poles. Consult your nearest Ⓢ Representative for details.



BEFORE



Frank Adam Electric Co.

ST. LOUIS 13, MISSOURI

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

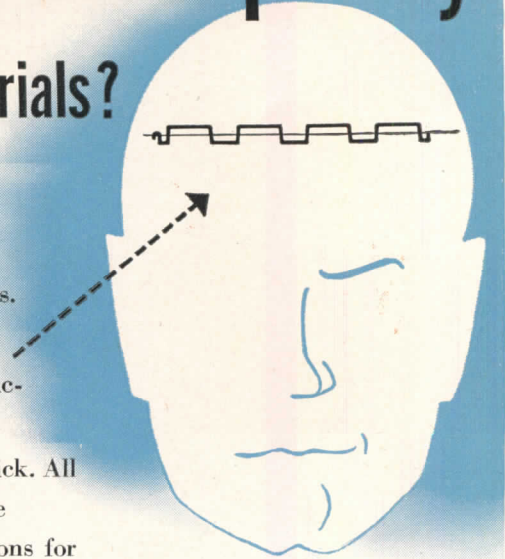
Do you think contemporary deserve contemporary materials?

Each era has expressed its thinking in its own materials.

Steel is the distinctive material of this era.

Steel sheet formed like this is in its strongest structural shape.

This is the shape of a Robertson Q-Unit. Q is for quick. All Robertson Q-products have *Speed* of erection. They are modern building materials. They meet today's conditions for they reduce to a minimum the uncertainties of field erection.



Q-PANEL

A Q-Panel is fundamentally a Q-Unit engineered to meet the modern idea that walls should be hung, like curtains, now that steel framework has assumed the loadbearing function.

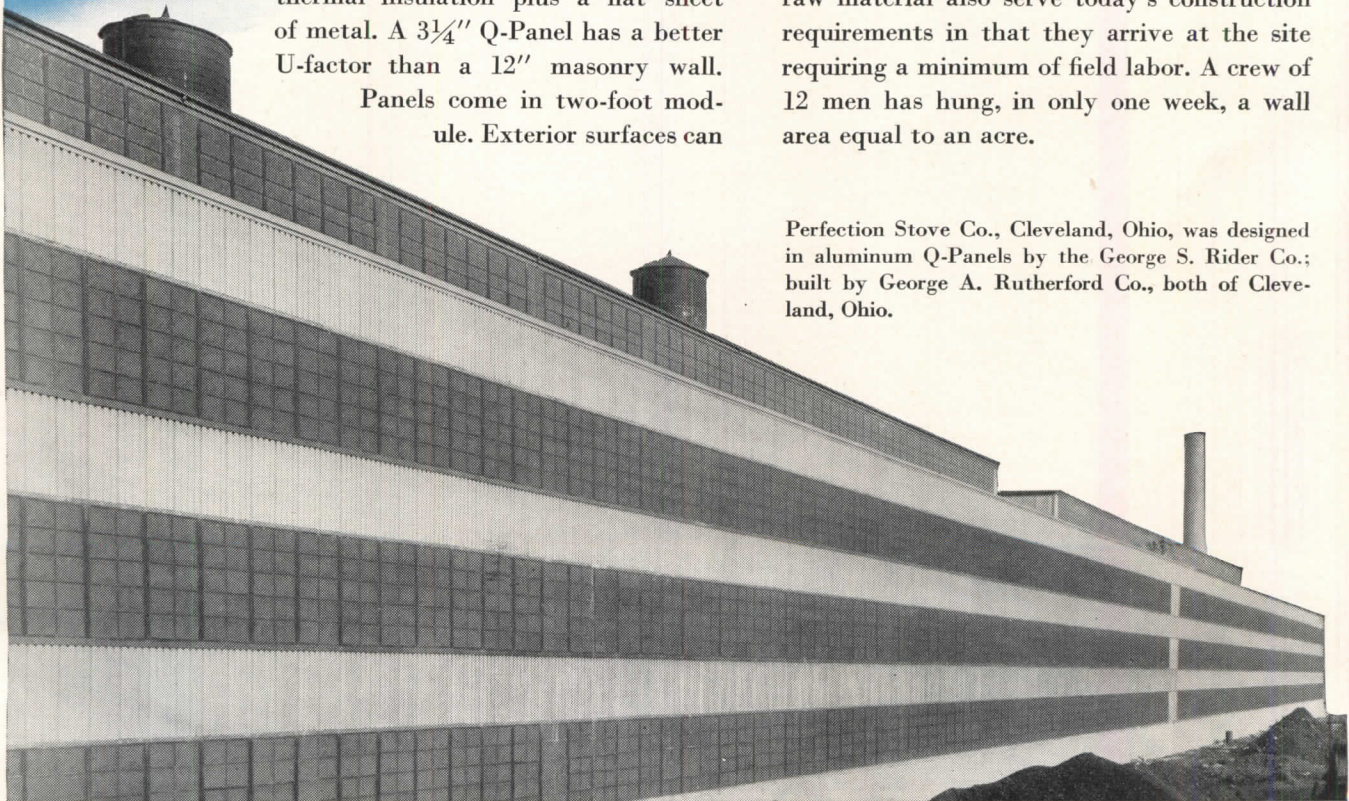
Q-Panel uses a steel Q-Unit plus thermal insulation plus a flat sheet of metal. A 3 $\frac{1}{4}$ " Q-Panel has a better U-factor than a 12" masonry wall.

Panels come in two-foot module. Exterior surfaces can

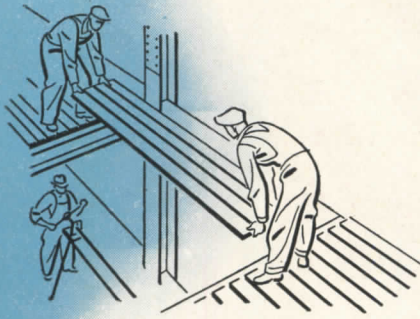
be flat or fluted or combinations of both, achieving contrasts in light and shadow. Exteriors can be metal coated steel, stainless or aluminum.

Q-Panels are a medium for modern appearance, capable of great variation. Q-Panels as raw material also serve today's construction requirements in that they arrive at the site requiring a minimum of field labor. A crew of 12 men has hung, in only one week, a wall area equal to an acre.

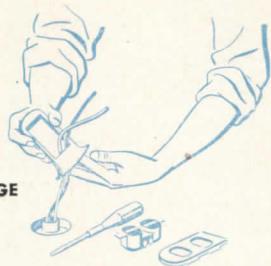
Perfection Stove Co., Cleveland, Ohio, was designed in aluminum Q-Panels by the George S. Rider Co.; built by George A. Rutherford Co., both of Cleveland, Ohio.



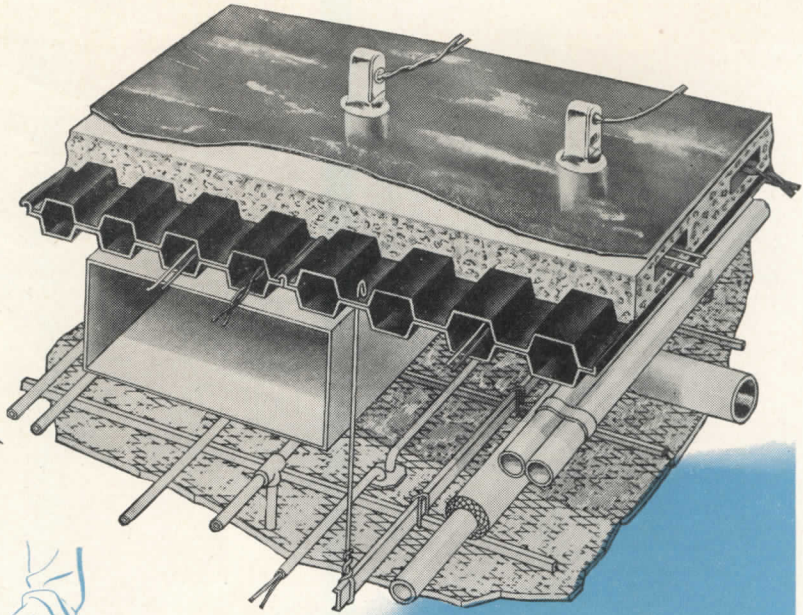
thoughts



QUICK-IN



QUICK-CHANGE



Q-FLOOR

● Q-Floor is steel subfloor. It is a Q-Unit engineered to be a floor in this era when floors should be living, working arteries; not merely Stone-age ledges for load carrying.

Q-Floor is engineered with a raceway crossing the steel cells in such manner that wires for any conceivable electrical service can be pulled to the exact spot where an outlet is needed. This permits an outlet on any exposed six-inch area of the entire floor. To establish an outlet an electrician merely drills a small hole. The job can be completed, literally, in minutes, without the mess of trenches. Q-Floors save an enormous amount of drafting work because outlets and partitions can be located after tenants move in. By treating floor as a facility, a Q-Floor building is provided

with permanently flexible floor layouts, protected from electrical obsolescence for as long as it stands. To see Q-Floor Fittings, visit any General Electric construction materials distributor's.

Q-Floor reduces construction time 20 to 30%. Two men can lay 32 sq. ft. in half a minute. Construction is dry, noncombustible. No preset inserts required. No other floor materials offer you such flexibility of design.

Robertson Q-Panels and Q-Floors are contemporary building materials. They do everything earlier materials did and they satisfy those extra demands peculiar to today's buildings.

For general information call a Robertson representative. For literature, write

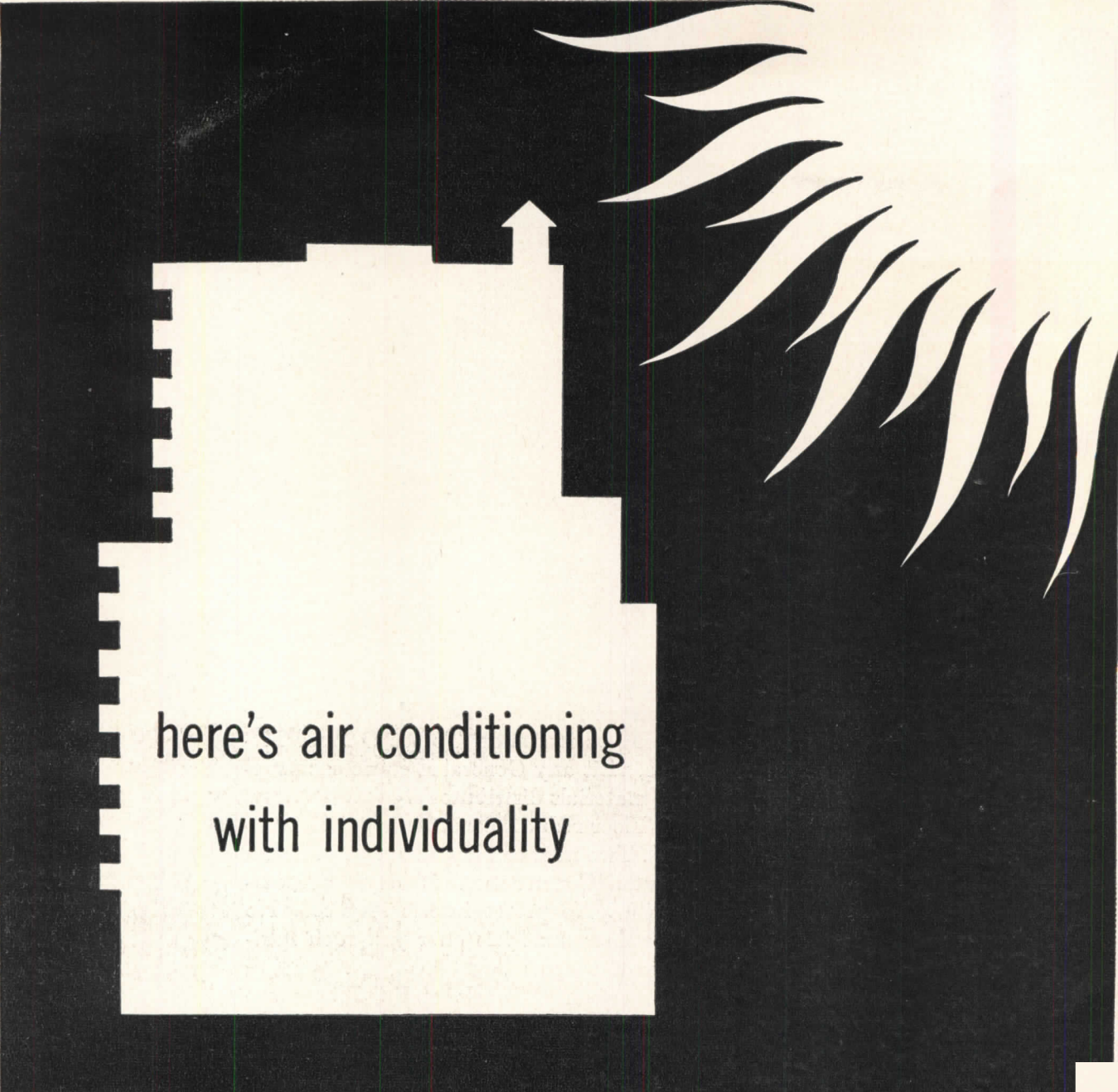
H. H. ROBERTSON CO.

2404 Farmers Bank Building
Pittsburgh 22, Pennsylvania



Offices in 50 Principal Cities
World-Wide Building Service

Close-up of Q-Panel



here's air conditioning
with individuality

Now it's possible to plan ideal indoor weather for every room in any multi-story building regardless of its location, variable occupancy, or alternate exposure to sun and shade. It may be exposed longer to the sun than others . . . may get the full blast of icy winter winds. Yet the Carrier Conduit Weathermaster System permits complete control of temperature and humidity in individual rooms at any

season of the year. A turn of the individual knob gives the occupants *exactly* the kind of weather they want.

This revolutionary year-round system supplies outside air continuously. Use of small-diameter conduit instead of bulky supply and return ducts saves *rentable* floor space . . . and often a story height in new buildings.

The Carrier Conduit Weathermaster System is the latest product

of the engineering skill that *created* air conditioning . . . and has led the way to every important advance.

For years, Carrier engineers have teamed up with architects and their consulting engineers to provide the utmost in efficient and dependable air conditioning. Write for the booklet "Air Conditioning for Multi-Room Buildings." Carrier Corporation, Syracuse, New York.



AIR CONDITIONING • REFRIGERATION • INDUSTRIAL HEATING

Handmaiden to

KENCORK
®
floors and walls



"APRIL SHOWERS" BY A. RATTNER — COLLECTION OF MR. AND MRS. ROY R. NEUBERGER

Whether to enhance, a fine painting with quiet flattery or to infuse a subtle aura of modernity into your newest interior, we believe Kencork deserves your most earnest consideration. Those architects who know Kencork consider it supreme among interior building materials for its aesthetic values as well as its practical advantages.

You will admire the leafy tans and golden browns on walls and floors—the exquisite, subtle patterns—perfect backgrounds for modern furniture and fabrics. Cork is also well known as a truly practical building medium. And Kencork is *all cork*—with all of cork's unique properties—baked into square and rectangular tiles of tans and browns. As a natural insulator against heat and cold, as a quiet, shock absorbing floor covering, Kencork is building an ever widening reputation among architects throughout the nation.

To many architects and builders the word Kencork is almost a synonym for luxury. Yet, often, interested customers are pleasantly surprised to learn how moderate in price a luxury like Kencork can be. See your flooring dealer for full details—or ask us for a descriptive color folder. David E. Kennedy, Inc., 71 Second Ave., Brooklyn 15, N. Y. — 350 Fifth Ave., New York 1, N. Y. — Ring Building, 1200 18th St. N. W., Washington 6, D. C. — 1211 N.B.C. Building, Cleveland 14, Ohio — Bona Allen Building, Atlanta 3, Ga. — Merchandise Mart, 222 West North Bank Drive, Chicago 54, Ill. — Kansas City Merchandise Mart Inc., 2201-5 Grand Ave., Kansas City 8, Mo. — 452 Statler Building, Boston 16, Mass. — 1440 11th St., Denver 4, Colo. — 1812 Industrial St., Los Angeles 21, California.

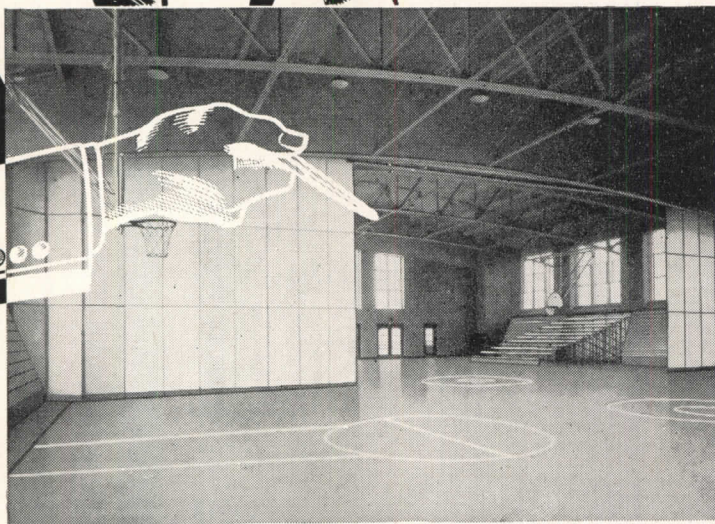


SINCE

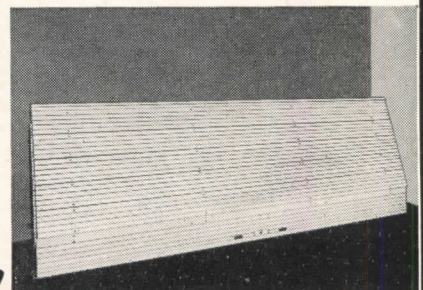


1909

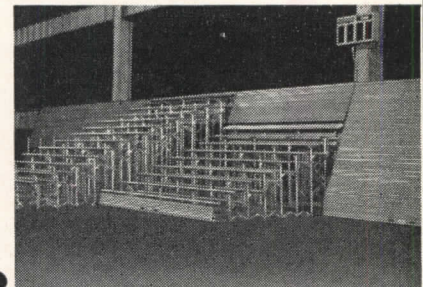
Since 1909 Horn Folding Bleachers and Folding Partitions have been specified by Architects for school installations from Coast to Coast. Installed as a combination these units create three gyms in one. Each installation is engineered to specifications.



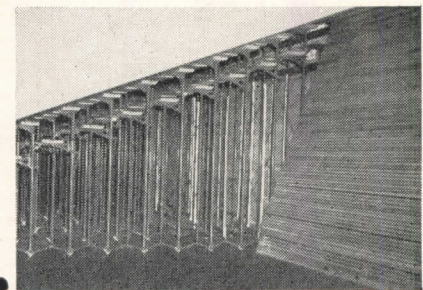
Horn Folding Partitions are manually or electrically operated



1. HORN FOLDING BLEACHERS with the new "Safe-Seat" seat board construction offer greater safety, beauty and utility. Compact and sturdy Horn Folding Bleachers are approved in all states.



2. STEEL BRACING offers mobility and safety through the years. Automatic locking-patented folding arms—each seat is supported directly from the floor.



3. USED IN COMBINATION Horn Folding Bleachers and Folding Partitions will give schools the use of three gyms. Specify HORN in your building plans.

INSTALLATION

A complete factory installation service is another Horn feature. Service is guaranteed.

SALES

Horn Brothers Company maintains offices in all principal cities from Coast to Coast. A collect telegram to the Fort Dodge office will bring our representative without delay.

ENGINEERING

The Horn Bleacher is Engineered to meet all local and state requirements. Note that wood riser boards are not required since all bracing is of steel. This insures best working conditions during all seasons. Elimination of riser boards also makes for a more comfortable seat since it is possible to have full eighteen inches foot board to seat board, and the spectator may sit with his legs under the seat the same as a chair.

● LOOK for the Horn classification in your issue of SWEET'S CATALOG. Complete details are presented. Let our Engineering Department solve your seating and partition problems.

FREE! Just off the press is the third edition of the 48 page booklet "MODERN SCHOOL PLANS." Send for your copy today!



Please send a copy of "Modern School Plans."

Name.....
 Address.....
 City..... State.....
 Name of Firm..... Title.....
 HORN BROTHERS CO.
 FT. DODGE, IA.

SINCE



1909

HORN BROTHERS COMPANY
 DIVISION OF HORN INDUSTRIES
 FORT DODGE, IOWA

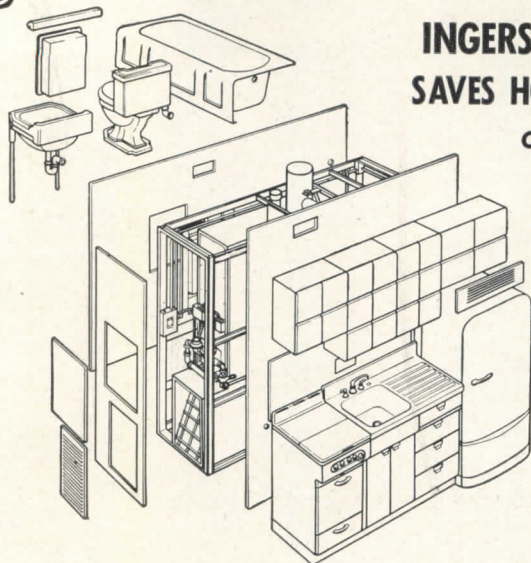
NO. 1 OF A SERIES

The PROFESSIONAL BUILDERS' BULLETIN

An "Idea Department" from the Engineers of Ingersoll



PRODUCT OF
BORG-
WARNER



INGERSOLL UTILITY UNIT SAVES HOURS OF DETAILING

**One Specification Provides
All Home Utilities**

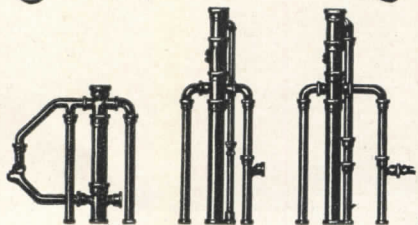
The Ingersoll Utility Unit simplifies the professional builder's problem in small-home design. Exacting details are eliminated. One specification provides for all plumbing and utilities—including all fixtures, appliances, controls and fittings. It is assembled by skilled A. F. of L. mechanics. The Ingersoll Utility Unit provides a well-designed, skillfully engineered installation that makes it easy to meet building schedules.

**104 LEADING DISTRIBUTORS
ADDED IN LAST 3 MONTHS**



**Units, Parts and Service
Available Everywhere**

New Ingersoll wholesalers include such industry leaders as Hajoca Corp., of Philadelphia; W. A. Case & Sons, of Buffalo and Tay-Holbrook, Inc., of San Francisco. The addition of 104 firms to Ingersoll's already widespread coverage, makes the Ingersoll Utility Unit readily available from coast-to-coast and assures adequate service.



New Ingersoll Flexibility Makes Unit Adaptable to Any Code Requirement

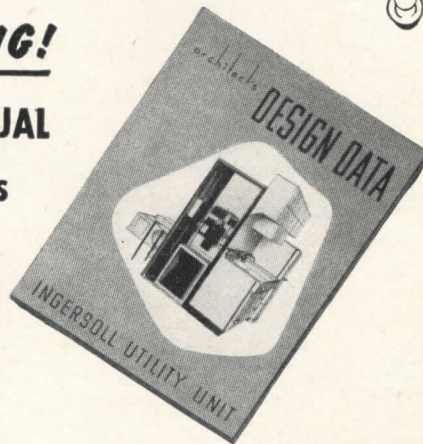
A choice of four stack and vent assemblies and five types of undergrounds give the Ingersoll Utility Unit the flexibility necessary to meet the most exacting code requirements. Adaptability to various designs and floor plans is provided by a choice of cabinets and types of heating plants.

The Ingersoll Utility Unit now meets 96 percent of all codes. A choice of oil or gas heating plants and other variations make the Unit adaptable to any small home, with or without basements.

Ingersoll's sales engineering force of specialists in small-home utilities is ready to consult with you at any time. Ask your Master Plumber whenever you desire the advice of these Ingersoll engineers.

COSTS YOU NOTHING!

NEW DESIGN DATA MANUAL for Professional Builders



New Credit Controls Point-up Advantages of Including Appliances In Small-Home Mortgage

Consumer credit controls, effective Sept. 20th, have spurred investigation by home-buyers into the advantages of buying a home in which stove and refrigerator can be included as part of the mortgage.

Under Federal Reserve Regulation W, down payments on appliances may not be less than 20 percent. Balances under \$1,000 must be paid in 15 months. Credits over \$1,000 with minimum monthly payments of \$70 may be extended to 18 months.

The result of increased down payments and larger monthly payments has enhanced the sales appeal of homes with appliances already installed as an integral part of the house.

It's new and up-to-the-minute, a complete manual with more than 30 illustrations and diagrams, including floor-plans, plumbing layouts, heat-loss formulas, types of fixtures for various jobs. Compiled with the help of leading architects and builders, *Architect's Design Data* contains material you can use every day.

**Write for yours today!
INGERSOLL UTILITY UNIT DIVISION**

Borg-Warner Corporation
Dept. M12, 321 Plymouth Court
Chicago 4, Illinois

PLYWOOD

for Beauty and Strength



Three of the largest manufacturers of motor cars have recently used Plywood for interiors and functional furniture in rebuilding offices and salesrooms.

As streamlined and beautiful as any car on the road, the new interiors are paneled and

furnished in veneered Plywood, built to specification by Plywood, Inc.

Manufacturers—men who know the importance of structural strength and lasting beauty—continually turn to Plywood, Inc. for modern interiors.

Plywood Inc.

PLYWOOD TACOMA
Tacoma, Wash.

SAN FRANCISCO PLYWOOD
San Francisco Cal.

PLYWOOD LOS ANGELES
Los Angeles Cal

Contact Your Nearest Divisional Branch:

PLYWOOD DETROIT
Detroit, Mich.

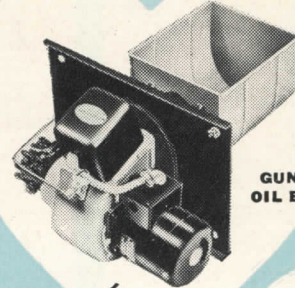
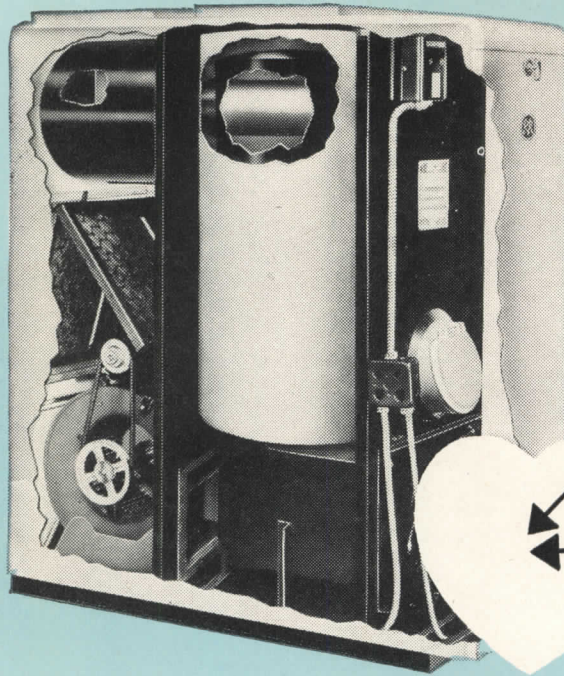
PLYWOOD GRAND RAPIDS
Grand Rapids, Mich.

PLYWOOD DAYTON
Dayton, Ohio

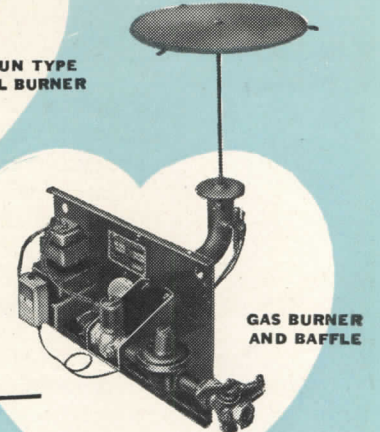
CLEVELAND PLYWOOD
Cleveland, Ohio

New Two-Fuel Winter Air Conditioner

—for either oil or gas!



GUN TYPE OIL BURNER



GAS BURNER AND BAFFLE

—the **RICHMOND** furnace with "2 hearts"
easy to stock . . . easy to install . . . easy to change-over!

For Gas:—As a Gas Winter Air Conditioner, *complete* unit (in two sizes) approved by A G A for all types of gas, including LP, and for installation anywhere in the United States; from Atlantic City to Denver, at sealevel or a mile high.

For Oil:—As an Oil Winter Air Conditioner, oil burners for both size furnaces listed with Underwriter Laboratories under CS-75.

Richmond gives you both oil and gas burners, the heart of the heating system, each on a mounting plate for easy, fool-proof installation or quick change-over. Switch from oil to gas (or vice versa) can be made in less than an hour.

By stocking only two furnaces (AS 12 and AS 23) you have four conditioners—saving you up to 50% on your furnace storage and inventory costs—and you are ready for either oil or gas installa-

tions. Furnace unit, only 23" wide, is shipped assembled and internally wired in one carton (Weights less than 395 lbs.). Burner units packed separately.

Because of the easy storage, easy installation and easy change-over, this new Richmond Winter Air Conditioning unit is truly—
A Unit Designed With The *TRADE* In Mind.

FOUR CONDITIONERS—TWO FURNACES

AS 12: Output-Gas: 72,000 Btu. Oil: 75,000 Btu.

AS 23: Output-Gas: 92,000 Btu. Oil: 105,000 Btu.

Whiter-white Richmond Enameled steel jacket—23" wide x 47" deep.

Steel base and channels—no "grouting" needed.

*Furnace unit illustrated: #AS 23.

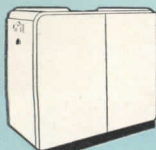


RICHMOND RADIATOR COMPANY
AFFILIATE OF REYNOLDS METALS CO.

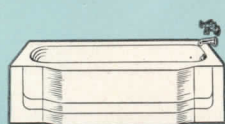
When we started back in 1867 Two-Fuel was either coal or wood—but . . . "We've come a long way since then."



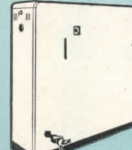
Plumbing Fixtures:



Enameled Cast Iron Ware



Vitreous China



Perma Gloss

Heating Equipment: Oil & Gas Winter Air Conditioners

Gas Boilers

Radiators

CLIP AND MAIL COUPON TODAY

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

AR-12

Gentlemen:

I am interested in the New Richmond Two-Fuel Winter Air Conditioners. Please send me full details. No obligations, of course.

Name.....

Company.....

Address.....

GOOD-LOOKING METAL DOORS

Immediately Available at Low Cost!

Fenestra Fireshield Swing Doors combine attractiveness with durability. Here are quality metal doors that you can recommend with confidence for many uses—for entrances, exits, stairwells, communicating doors, etc.—for apartments, stores and other commercial buildings, and factories, to mention a few.

IMMEDIATE SHIPMENT—standardization of types and sizes enables your building supply dealer to carry ample stocks to meet your needs for many door uses.

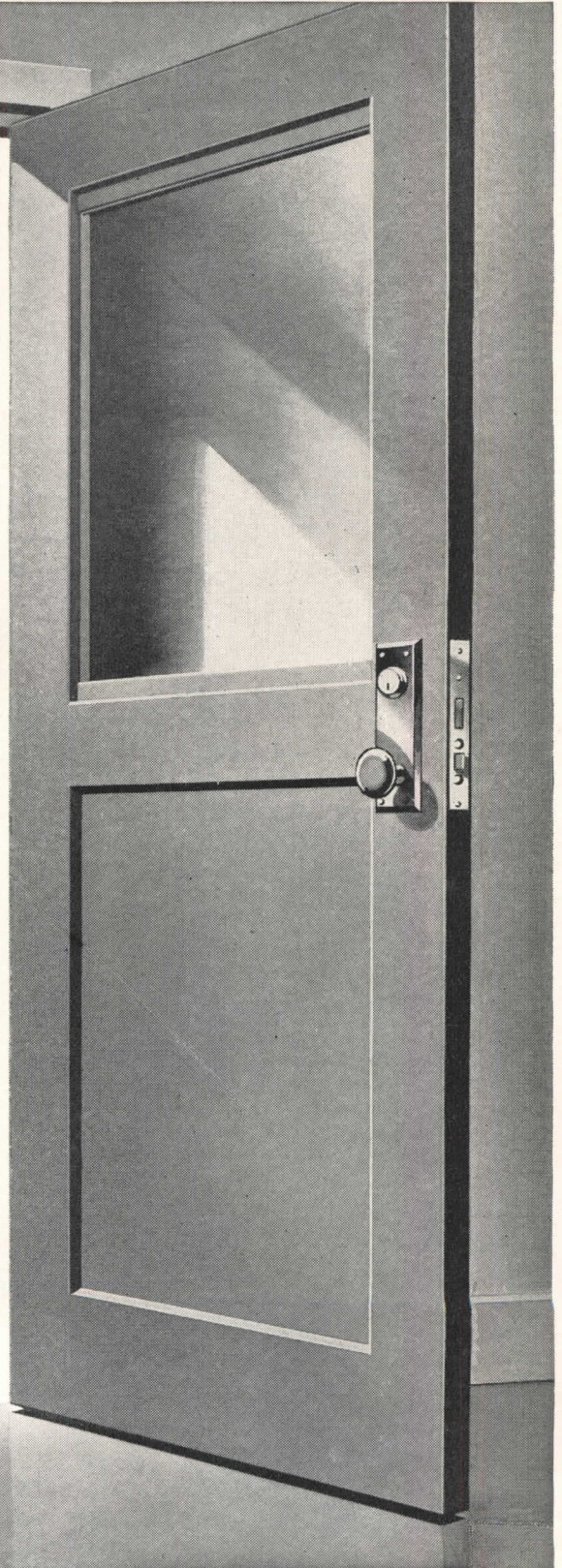
WHY LOW-PRICED—these doors are standardized in six sizes most commonly used for single swing doors. That streamlines production, means lower cost. You get a sturdy metal door for far less than many doors now on the market. Installation costs are reduced, too—swing doors come to the job complete with frames and hardware machined, fitted, ready to assemble.

UNDERWRITERS' LABEL—Fenestra Fireshield Doors are also available with Underwriters' B Label.

For full information on these doors, as well as counterweighted doors, call the nearest Fenestra office. Or write to Detroit Steel Products Company, AR-12, 2252 East Grand Blvd., Detroit 11, Mich.

Fenestra

**FIRESHIELD SWING AND SLIDE
METAL DOORS**



SEARCH LEADS TO 1000-FIXTURE ORDER FOR FRINK *L-I-N-O-L-I-T-E* SERIES 22

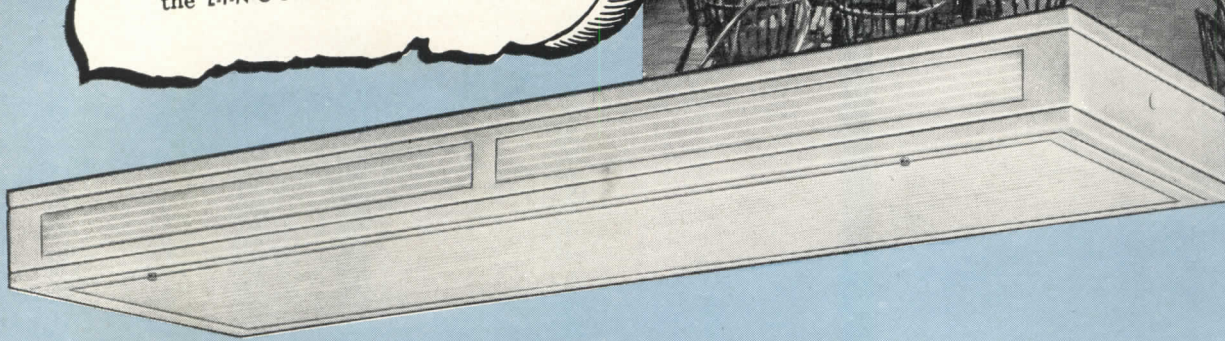
WANTED

by BRAUN in California

C. F. Braun & Co., engineers and constructors at Alhambra, California, sought a fluorescent lighting fixture which would be suited to their own needs, and adaptable to other types of installations. After studying the products of various fixture manufacturers, they selected the L-I-N-O-L-I-T-E Series 22 fixture.



EXECUTIVE STAFF DINING ROOM at C. F. Braun and Co. demonstrates L-I-N-O-L-I-T-E Series 22 in large, high ceilinged rooms.



L-I-N-O-L-I-T-E SERIES 22... one of Frink's fifteen expertly engineered standard designs. Glass panels with maximum transmission and shadow-free diffusion are framed to minimize dirt accumulation. Starters accessible without removing lamps. Ballasts accessible without dismantling fixture. Available for 2, 3 or 4 lamps. Hinged glass or louver bottom.

IN THIS ISSUE!

See the article on the unique Louver-all Ceiling manufactured by Frink for the Metropolitan Museum of Art on Pages 137 to 142.

FOUND

at FRINK in New York

A thoroughly practical fixture; highly efficient in operation; completely adaptable for ceiling or hanger mounting, singly or in continuous runs; and with unique features (see description above) for easy, economical maintenance and installation.

P.S. Braun placed an order for 1000 units!



ENGINEER'S OFFICE—Fixtures blend with smart interior. All L-I-N-O-L-I-T-E fixtures are handsomely designed and made with craftsman-like attention to every detail.



HOW YOU CAN FIND complete lighting satisfaction. The Frink PLAN-O-LITE sample packet forcefully demonstrates the advantages of planned fluorescent lighting. It gives you 8 custom-designed PLAN-O-LITE layouts and engineering data for typical Frink installations, with photos of the results. FREE for the asking while supply lasts. Write today to Dept. 12-AR.

THE FRINK CORPORATION

27-01 BRIDGE PLAZA NORTH, LONG ISLAND CITY, N. Y.



Designed in **PLASTER** for outstanding beauty

Architects Neild and Somdal chose plaster applied by the Werner-Barrack Plastering Company for Shreveport's new Jordan and Booth store. Plaster is economical, and enables architects to achieve commercial interiors of outstanding beauty.

RED TOP

T. H. REG. U. S. PAT. OFF.
PLASTER

- ADAPTABLE • FIRE-RESISTANT
- BEAUTIFUL • LONG LASTING



United States Gypsum

For Building • For Industry

Gypsum • Lime • Steel • Insulation • Roofing • Paint

A New Advancement in the MOST MODERN WAY of FACTORY LIGHTING



the **SHIELD** minimizes **EYE FATIGUE**

14° MORE shielding

more LIGHT with greater **Brightness Control!**

A New Aid to Better Work, Fewer Accidents, Happier Employees, Through Better Seeing Conditions

Comfortable Seeing Conditions require that adequate Brightness Control must accompany the higher levels of illumination now being demanded by industry. Latest development in the solution of this problem is Longitudinal Shielding

which is a feature now available in the Benjamin Twin Lamp Lite-Line System.

Placed between the lamps, this shield provides an additional 14 degree zone of shielding at the workers' eye levels. It minimizes glare without materially affecting the effective illumination on vertical and horizontal working areas.

There are many other refinements in "Lite-Line 40" design and construction which safeguard against energy wasting glare. Among them are the light diffusing Porcelain Enamel reflecting surfaces and the design of the reflector contour. These help make possible the attainment and maintenance of higher levels of illumination with greater seeing comfort.

BENJAMIN
TRADE MARK

"Lite-Line 40"

SYSTEM OF FLUORESCENT LIGHTING

DISTRIBUTED EXCLUSIVELY BY ELECTRICAL WHOLESALERS



FREE DATA BULLETIN

BENJAMIN ELECTRIC MFG. CO., Dept. Q1, Des Plaines, Illinois
Without cost or obligation, please send Lite-Line Data Bulletin "LS"

Name _____ Title _____
Firm _____
Address _____
City _____ State _____

Loyalty to Quality Products

ALWAYS PAYS

MANY lumber dealers have handled Upson Products for 35 years.

Hundreds have handled Upson Products for more than 25 years. Thousands more have handled Upson Products for more than 15 years.

Practically without exception in city after city—town after town across the country, you will find that the oldest, most successful, most respected dealer in the community sells Upson Products.

Through the years, these men have built stable, profitable businesses by unwavering determination to give the customer the most his money will buy. Their never-failing loyalty to quality has made it possible for us to keep our own quality standards at the highest possible point.

Our long association with so many quality-conscious dealers is an asset we prize beyond price.

So again at Year's End, as is our custom, we wish to publicly express our warmest appreciation.

THE UPSON COMPANY

Lockport, New York



1ST

A. O. Smith is **FIRST** to give architects and builders a glass-lined water heater that cannot rust or corrode under any water condition.

Permaglas

TRADE MARK REG U. S. PAT. OFF.

A SMITHway WATER HEATER*

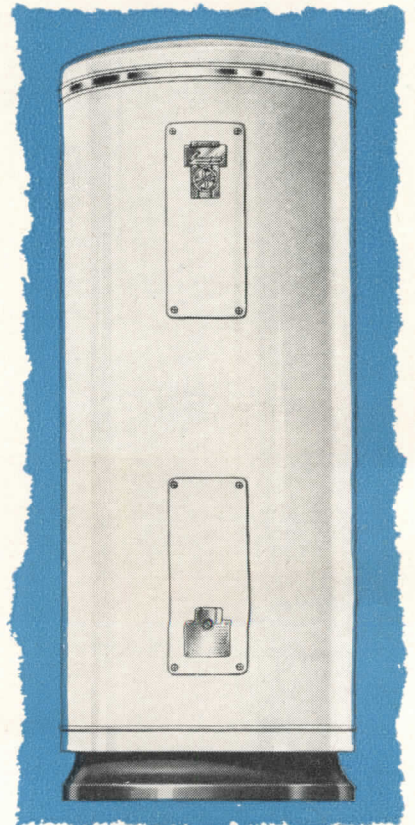
NO SPECIAL ATTACHMENTS or accessories are necessary in the glass-fused-to-steel tank of a *Permaglas* Water Heater. Glass, which **CANNOT** rust or corrode, needs no rust protection. Conclusive tests . . . and hundreds of thousands of installed *Permaglas* Water Heaters . . . prove that this glass will not crack or break under operating conditions.

Another outstanding "*Permaglas*" first: a high temperature limit control is standard equipment on all "*Permaglas*" electric models. Other equally desirable features in models for all types of gas.

"Permaglas"
Dealers



Display
This Emblem



A. O. SMITH CORP.
Dept. AR-1248
Water Heater Division
Kankakee, Ill.

Send complete specifications on SMITHway Water Heaters:

Gas Electricity Both

Name _____
Firm _____
Street _____
City _____ State _____

A. O. SMITH Corporation • Atlanta 3 • Boston 16 • Chicago 4 • Dallas 1
Houston 2 • Los Angeles 14 • Midland 5, Texas • New York 17
Philadelphia 5 • Pittsburgh 19 • San Diego 1 • Seattle 1 • Tulsa 3
International Division: Milwaukee 1 • Licensee in Canada: John Inglis Co., Ltd.



*Manufacturers also of better zinc-lined *Duraclad* and *Milwaukee* Water Heaters

K&M "Century" Asbestos Corrugated for long life without maintenance...



The "new" roof on this industrial building is actually more than 3 decades old! A coal operator installed these "Century" Asbestos Corrugated sheets on a coal tippie 33 years ago before he re-used them here.

for modern architectural effect...

Beauty in typically modern style is brought to this store with a facade of "Century" Asbestos Corrugated. This beauty will last without any painting or other expensive upkeep.



You've probably noticed that "Century" Asbestos Corrugated is growing in popularity for decorative motifs...inside and outside...for industrial plants, stores, restaurants, theaters. There's a rugged attractiveness in the simplicity of the corrugations and neutral light-gray coloring.

And perhaps it's no news to you that "Century" Asbestos Corrugated is thoroughly practical from the structural point of view. It actually toughens with age. Never needs to be painted. Can't rot, corrode, catch fire, or succumb to termites.

NEW "TOP-SIDE" FASTENERS CUT ROOFING COSTS

On top of all this, you can specify the new "TOP-SIDE" Fasteners, and cut a big slice off the cost of roof installation over steel purlin construction. Exclusive with "Century" Asbestos Corrugated, these new fasteners permit roofing to be done entirely from atop the roof...eliminating entirely the costly labor and scaffolding normally required beneath. This feature, alone, is worth looking into—write us for full details.

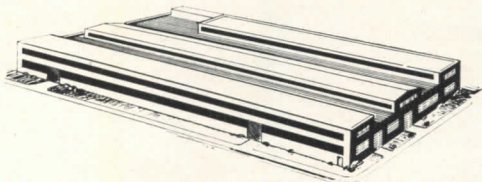
Original
manufacturers of
asbestos-cement shingles
in this country

KEASBEY & MATTISON
COMPANY • AMBLER • PENNSYLVANIA



Rotary's *Oildraulic* is the most practical elevator for 2, 3, or 4 stories

**Recent installations
in these modern buildings**



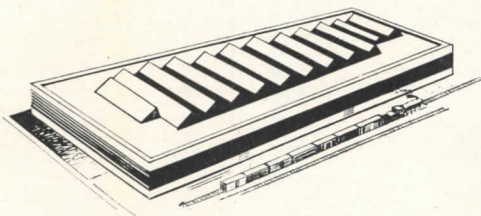
*The Carborundum Co., Niagara Falls, N. Y.
Alexander D. Crosssett, Architect*



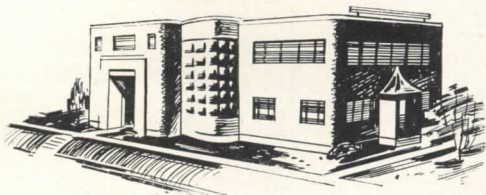
*Johns-Manville Corp., Manville, N. J.
Shreve, Lamb & Harmon, Architects*



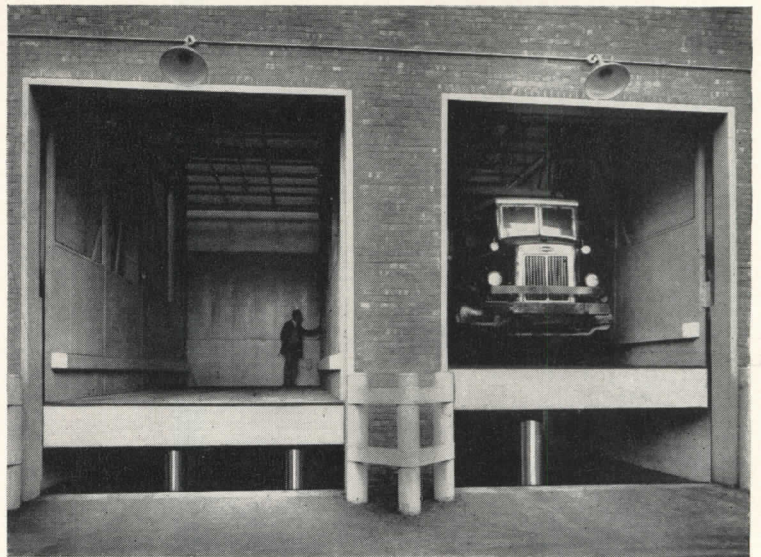
*Dr. Pepper Co., Dallas, Texas
Thomas, Jameson & Merrill, Architects*



*Kroehler Manufacturing Co., Dallas, Texas
Inge-Hayman, Architects*



*Logan Engineering Co., Chicago, Ill.
V. L. Charn, Architect*



IT'S PUSHED UP . . . NOT PULLED UP!

You don't need a penthouse. You don't need a heavy shaftway structure. You don't need a special machine room.

You can simplify your plans and streamline your building designs. The Oildraulic Elevator requires no costly, unsightly penthouse because it's pushed up from below by a powerful hydraulic jack . . . not pulled from above. This also makes possible a lighter shaftway structure . . . no need for heavy load-bearing supporting columns. No special machine room is required, either, for the compact Oildraulic power unit. Other features that please building owners are smooth operation, accurate landing stops, rugged car construction, and economical service. Mail the coupon below for complete information and Architect's Preliminary layout data.

Rotary* **Oildraulic* Elevators**



ROTARY LIFT CO.
1108 Kentucky, Memphis 2, Tenn.

Send complete Architect's Data on Oildraulic Elevators to:

Name _____
Address _____
City _____ State _____

*Reg. U. S. Pat. Off.



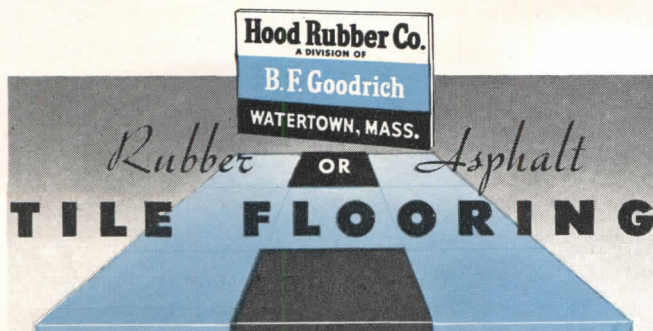
Installation study No. A-35
 New Office Building
 United Air Lines
 Chicago, Ill.

UNITED AIR LINES Uses
HOOD
 ASPHALT TILE

From coast to coast, whenever the need is for a floor that will last . . . a floor that will be colorful and of pleasing design . . . a floor that will be economical, more and more of the country's leading architects, builders, contractors and corporations are using Hood Asphalt Tile.

Most recent in this long list of installations is the new United Air Lines building in Chicago designed and built by the Austin Company. Throughout this smart, modern new building, Hood Asphalt Tile is being used to do the job *better!*

See Sweet's or write today . . . see for yourself why the country's foremost architects, always seeking an economical, longer-lasting floor for on-ground or below-ground areas, choose Hood Asphalt Tile.



- * SMOOTH AS SILK
- * ALL 17 DEGREES - 6B TO 9H - UNVARYING AS THE STARS
- * ARTISTS PREFER KOH-I-NOOR FOR ALL DRAWN WORK - LIGHT, HEAVY, THIN, THICK, TONES, AREAS, SHADING!
- * AND THERE IS ECONOMY IN KOH-I-NOOR SUPER-QUALITY. NO GRIT. LESS BREAKAGE. LESS TIME-LOSS.
- * YOUR DEALER HAS



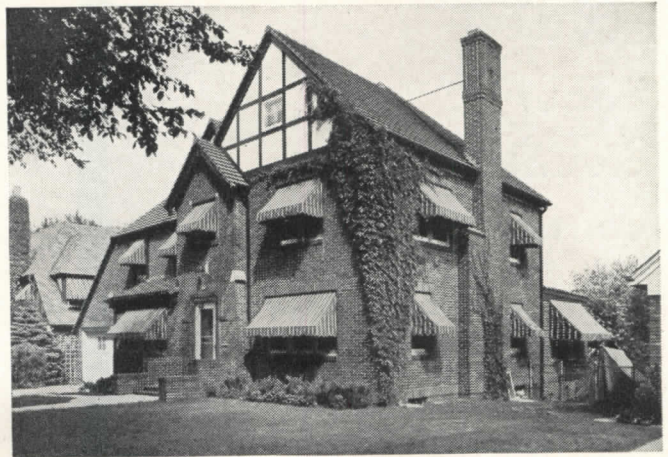
REPORT from WRAY M. SCOTT

"...we installed Webster Baseboard Heating in our residence in 1947. The system operated the full heating season of 1947 and 1948 with absolutely no evidence of wall smudging or streaking. We are more than pleased with the comfort and cleanliness of Webster Baseboard Heating..."

Wray M. Scott, President and Treasurer of Wray M. Scott, Inc., leading Omaha, Nebraska, heating contractor, makes a practice of investigating and thoroughly testing interesting and important new developments in heating. In 1947, he arranged to install Webster Baseboard Heating in the living room, dining room, four bedrooms, hall and stair landing of his own home. We reproduce above an excerpt from Mr. Scott's letter giving in full his comments on Webster Baseboard Heating.

Mr. Scott is not alone in his experience with Webster Baseboard Heating. Hundreds of home owners have had similar satisfactory experience with this unique post-war Webster development. Leading heating contractors in many U.S. cities have found genuine perfected Webster Baseboard Heating to be a most satisfactory solution for their customers.

Leading heating contractors right now are building their 1949 business plans around Webster Baseboard Heating. Let the Webster Representative in your locality give you further details.



Residence of Wray M. Scott, Omaha, Nebraska. Mr. Scott is treasurer of the Heating, Piping and Air Conditioning Contractors National Association.

Address Dept. AR-12

WARREN WEBSTER & CO.

Camden, N. J. : : Representatives in Principal U. S. Cities
In Canada, Darling Brothers, Limited, Montreal

Webster BASEBOARD HEATING

can you
teach
beauty ?
cleanliness ?
confidence ?



— not from books, perhaps — nor by word of mouth
— but example can do it — and environment. Consider this when you design a school.

Marble is permanent and this enduring quality teaches its own lessons.

Its beauty is deep-grained, inimitable
the very essence of creative environment. It will not harbor germs,
and only the simplest attention is necessary to keep it clean.

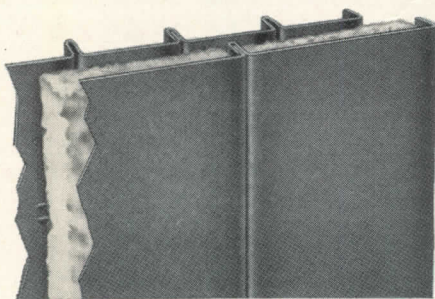
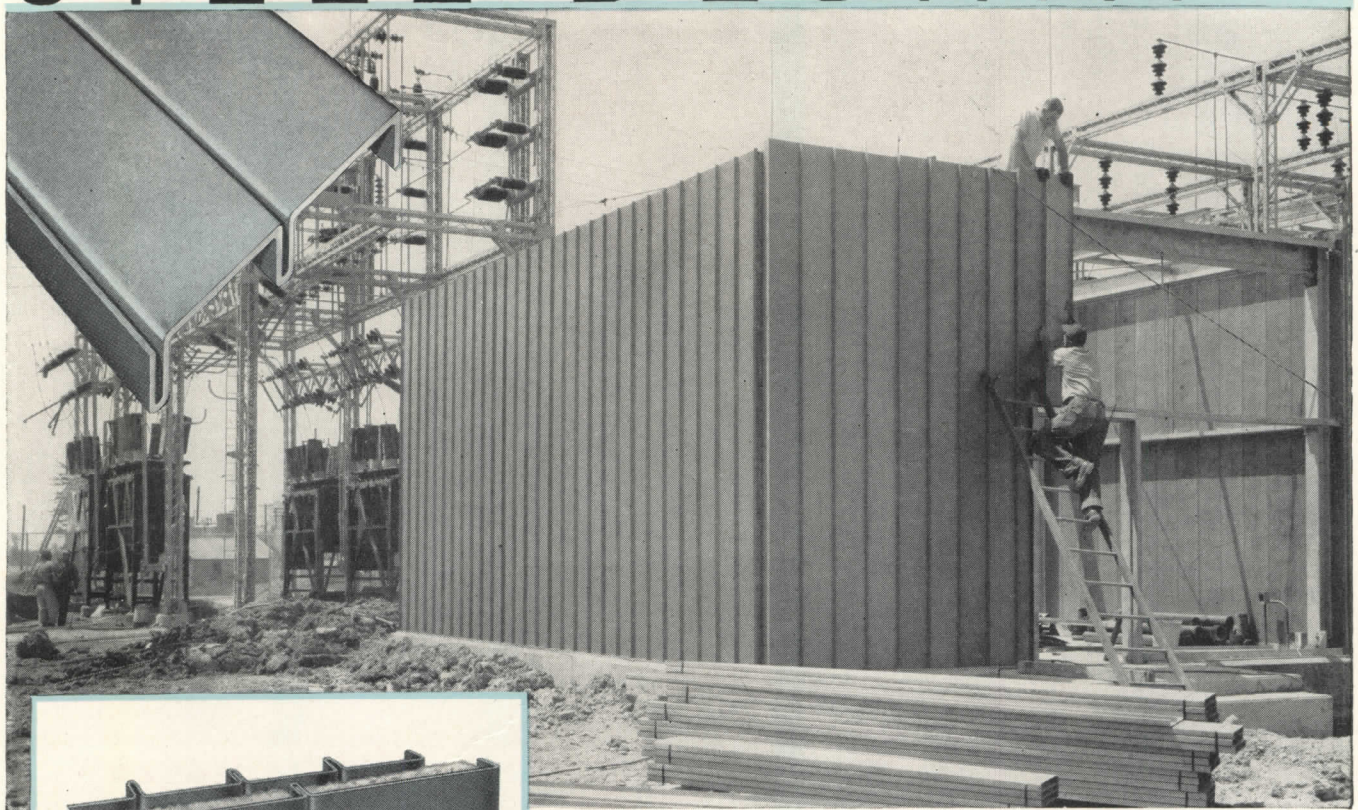
Availability of Foreign and Domestic Marbles described in "Marble Forecast 1948-1949." Write now for your copy. Address Institute's Managing Director, Romer Shawban, R. A.



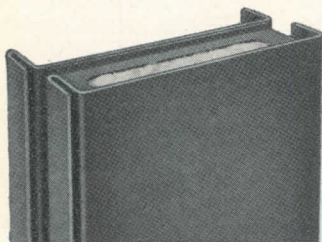
**Marble Institute
of America, inc.**

108 FORSTER AVENUE, MOUNT VERNON, N. Y.

STEEL DECK . . .



INSULATED STEEL WALL
(FIELD CONSTRUCTED)



INSULATED STEEL WALL PANELS
(PREFABRICATED)

INSULATED STEEL WALLS

Mahon Insulated Steel Walls are Available in Two Types as Illustrated Above. Heat Transmission Coefficient "U" Equivalent to 18" Solid Masonry Wall.

Illustration shows construction of the Twining, Michigan, Transformer Sub-Station for Consumers power Company, Jackson, Michigan.

for ROOFS and WALLS!

Here is another typical application of Mahon Steel Deck in modern construction. The walls of the transformer station illustrated above are Mahon Prefabricated Insulated Steel Wall Panels . . . the roof is Mahon Steel Deck insulated and waterproofed. The inherent advantages of Mahon Steel Deck, and Mahon Insulated Steel Wall Construction, continue to gain favor with architects and builders in the industrial and commercial field. See Mahon Steel Deck and Steel Wall Inserts in Sweet's for complete information . . . you will find that Mahon Steel Deck, due to its basic design, lends itself to a broader range of uses in modern construction.

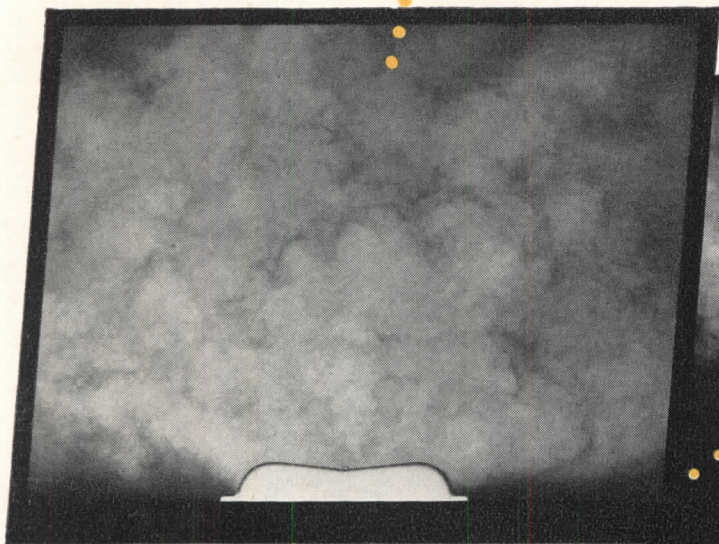
THE R. C. MAHON COMPANY
HOME OFFICE and PLANT, Detroit 11, Michigan • WESTERN SALES DIVISION, Chicago 4, Illinois

Representatives in all Principal Cities

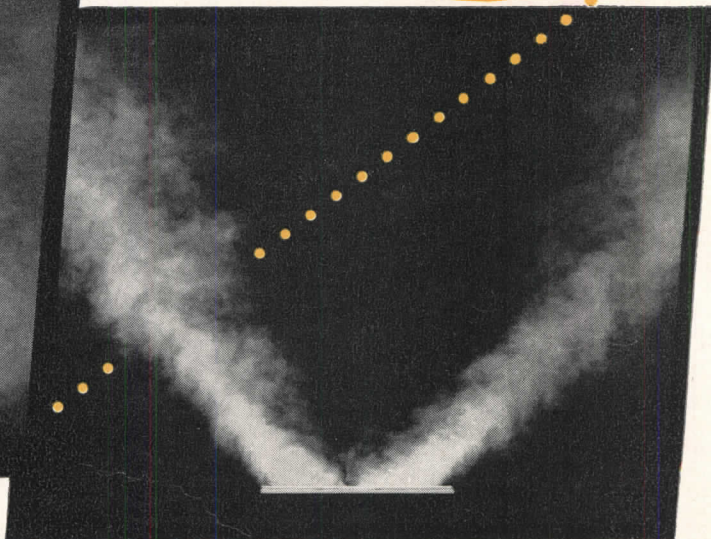
Manufacturers of Steel Deck for Roofs, Sidewalls, Ceilings, Floors, Partitions and Doors. Also Roof Sumps and Recesses, Rolling Steel Doors, Grilles, and Underwriters' Labeled Rolling Steel Doors and Fire Shutters.

MAHON

Which is True Diffusion?



HONEYWELL REGISTER



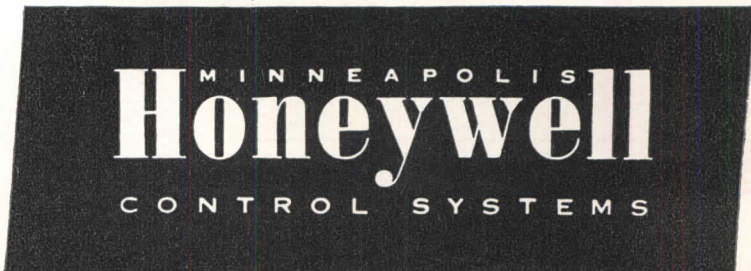
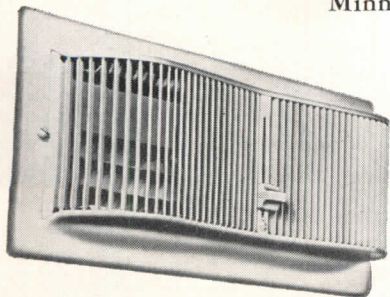
CONVENTIONAL REGISTER



YOU be the judge. It's not necessary for us to tell you that the photograph at the left is a smoke pattern cast by the Honeywell Air Diffusion Register, and that the one on the right is that disbursed by the conventional type of forced air register.

These actual unretouched photographs (except for blacking in the base and pointing up the registers) were taken under room conditions and show exactly how air is diffused from each type of register. In both cases the louvres were set for the maximum spread. Instead of disturbing air blasts with drafts and cold spots, the unique design of the Honeywell Register diffuses a gentle, even blanket of air to every corner of the room. Diffusion vanes are adjustable to provide complete coverage for every shape of room.

Remember, when you specify the Honeywell Register, installation costs are drastically cut; branch quadrants for all velocities under 800 f.p.m. are eliminated; labor and materials saved more than cover the slight initial extra cost; and one man, not two, can quickly balance the entire system. Specify the Honeywell Air Diffusion Register for both high and low wall installations. Give your clients the benefit of *true* diffusion. Minneapolis-Honeywell, Minneapolis 8, Minnesota. In Canada: Leaside, Toronto 17, Ontario.



73 BRANCHES FROM COAST TO COAST WITH SUBSIDIARY COMPANIES IN: TORONTO • LONDON • STOCKHOLM • AMSTERDAM • BRUSSELS • ZURICH • MEXICO CITY

WE NEED THE FACTS ON HOUSING

PROGNOSTICATION does not pay! (Much — and for a while, at least.) The statisticians seem to have proved that early in November. But election statistics are in a different realm from housing statistics and are much more reliable and acceptable. And housing statistics are vitally needed by those who have the temerity to prognosticate housing needs. We need to know what we have in dwelling units — their number, size, condition and quality; their rate of obsolescence, loss, replacement and expansion, and a host of other important facts.

Because we now have guesses, estimates, samplings, spot-surveys and polls instead of undisputed statistical knowledge of the housing situation, we have no reliable guide to future housing needs and ways of meeting them. We see but a partial, vague picture — often emotionally painted — depending on the protagonist's or prognosticator's purposes in presenting it. True, we do know there is a tremendous need for more housing — and always the demand for better housing — and that new dwelling units are being produced now at a rate of over 900,000 per year, but such generalities are not enough to use as a basis for the building industry's own planning or for the realistic discussion of housing legislation.

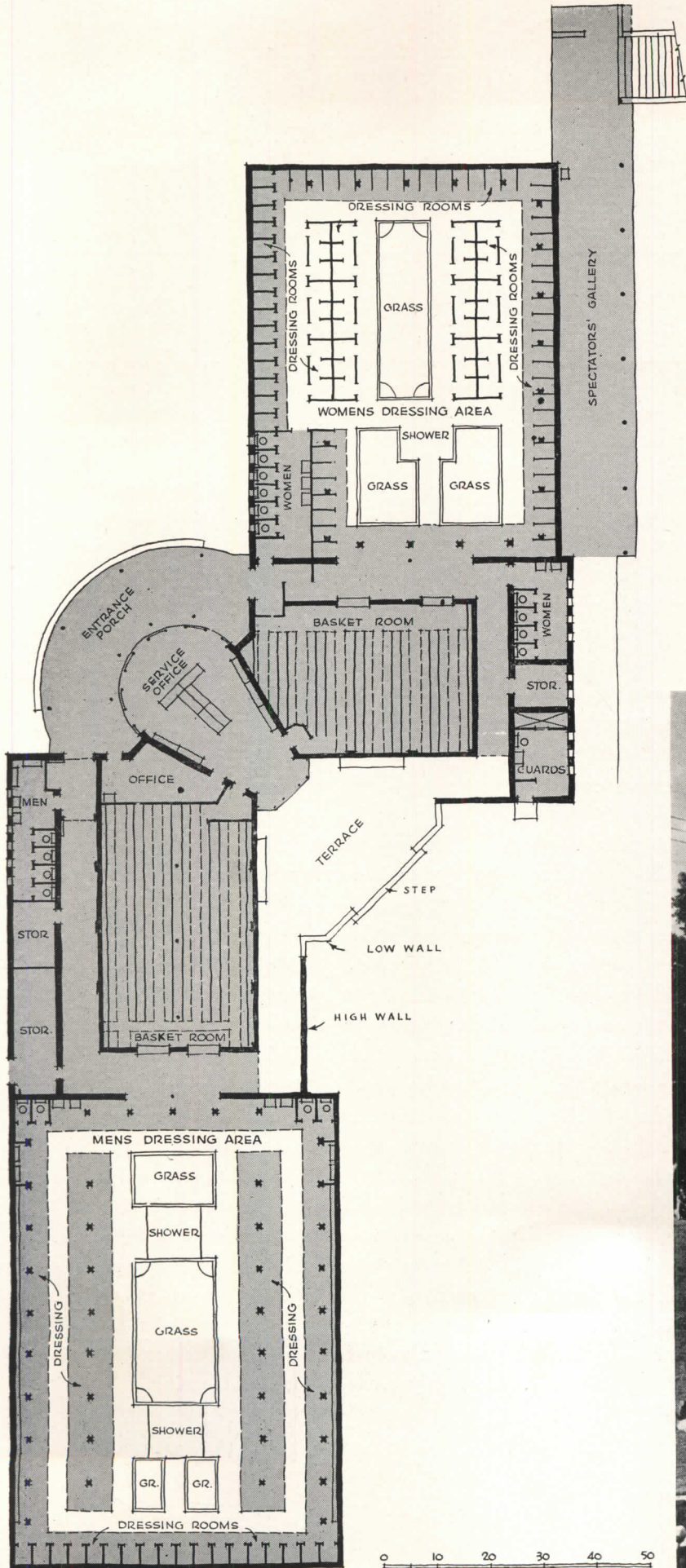
There will be housing legislation, if the political prognosticators who were right in November are right again, use their political prerogatives, and fulfill their campaign promises in the next session of Congress. Almost before the full results of the election were published, Mr. Ellender, co-author of the Taft-Ellender-Wagner bill, was quoted in the newspapers as saying he would introduce a new housing bill early in the next session of Congress. And others, too, are anxious to present their bills to expedite, subsidize, regulate or control housing.

But without reliable statistical information on the present supply and future needs of housing in relation to population and income, such legislation will lack both a realistic basis and a recurring check on accomplishment in terms of meeting needs.

Therefore one of the prime requisites for all housing legislature is the early passage of a bill to authorize and obtain a full census of all the pertinent facts about housing. And the Bureau of Census is the logical agency for collecting useful information that is accurate, authoritative and periodically obtained. The 1950 Census and each subsequent Census should include this vitally needed Census of Housing.

Kenneth K. Stowell

EDITOR



A rare example of municipal enterprise, Zilker Park pool is unspoiled, even has some ledges like the old swimming hole. The municipal bath house, faced with creamy Austin stone, is simple, direct; handles the heavy capacity of 5000 bathers at a time; has a special compact basket system, open-sky dressing courts, easy supervision, maintenance. Finished 1946 for \$180,000



A CITY GLORIFIES ITS "OLD SWIMMING HOLE"

Municipal Bath House and Park at Austin, Texas

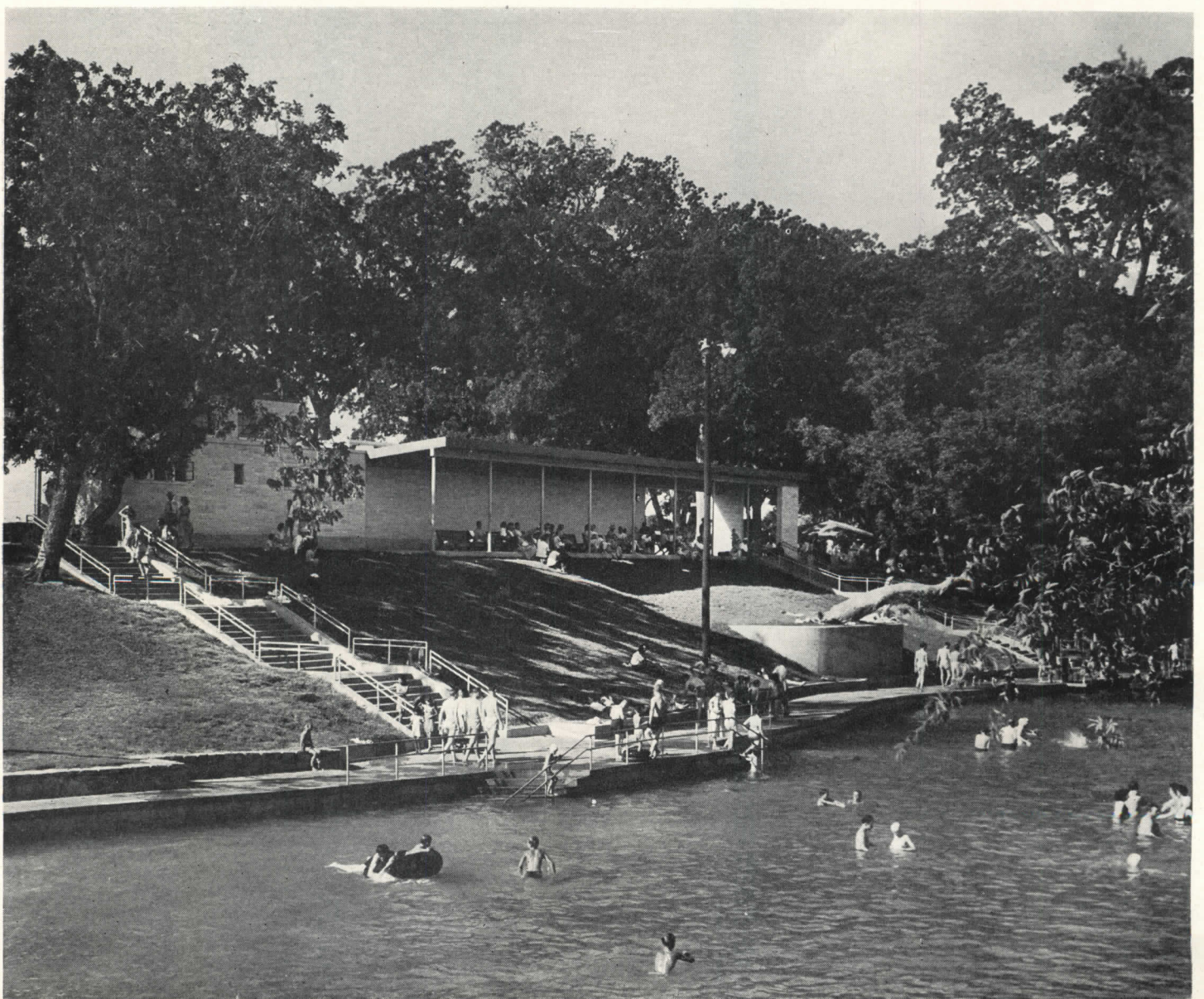
*Dan J. Driscoll, Architect**

WHEN Dan Driscoll, Austin architect, first entered municipal plans to develop the fine possibilities of Barton Creek for swimming, these plans were not far along. There had been some thought of developing a facility directly on the highway, surrounded by commercial concessions. It was Driscoll's skilled campaign of persuasion that was largely responsible for the type of development seen in accompanying photographs. The site was moved away from the highway and under mag-

nificent pecan trees; Driscoll and his associates put uncalculated extra hours into the design to produce a unique bath house which, incidentally, shows some influence of associate Nagel's attendance at Harvard. The people of Austin love their park, keep a zealous eye on it. Municipal authorities have reason to be proud. The

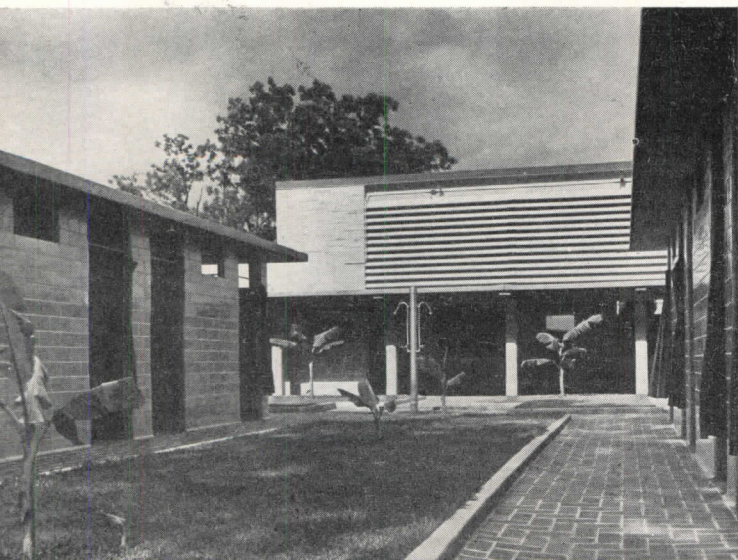
** Chester E. Nagel, architect, shared in developing design; useful help was given also by Temple B. Mayhall, Delmar Gross (architects), J. E. Motheral (director of Public Works, City of Austin).*

Mears Studio Photo





Below, view in women's dressing court, looking toward basket room with its ventilating shutters, all movable, which show also in the central part of the general view seen above. Parking facilities extend some distance beyond the building. The central tower is designed to create a sense of opening, rather than a dominant mass; it has a glass-block bulkhead, clear glass windows commanding the view, frosted glass above



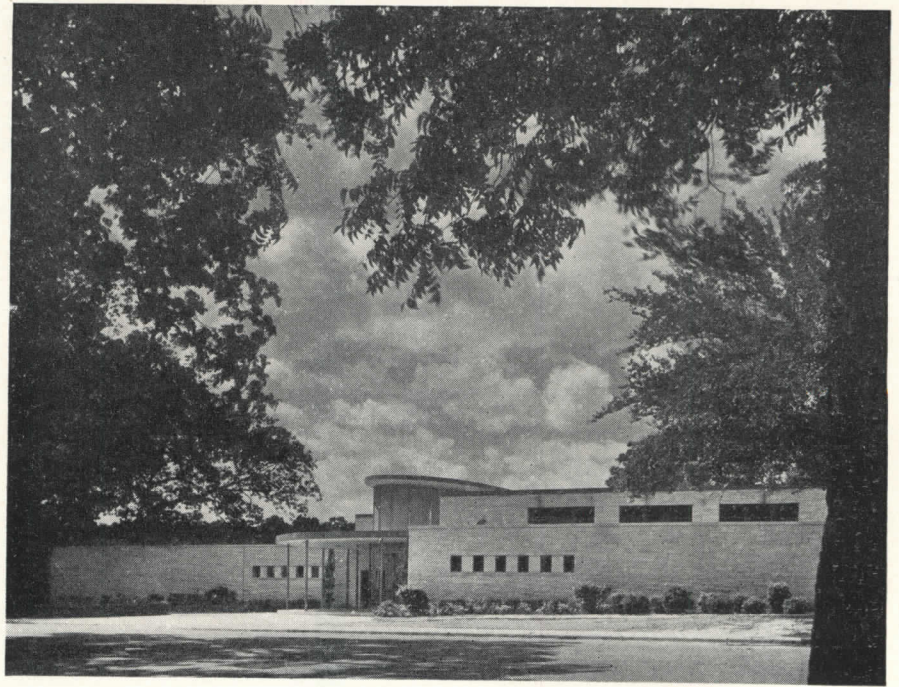
bath house is situated on the north bank of a spring-fed stream at its source. The normal flow of the spring is about 60,000,000 gallons daily at a temperature of 68 degrees. A low-water dam creates the pool which is 1000 feet long. Zilker Park extends on up over a slight bluff, where a neatly kept picnic ground overlooks the river. The park is a ten-minute drive from downtown Austin and is named after Col. A. J. Zilker, the pioneer citizen who donated it.

The building is placed away from the highway, surrounded by ample parking. It is so situated as to avoid removal of the numerous giant pecan trees on the site, and to leave room, on the river side, for a porch giving a limited number of spectators a shaded view of the pool.

The building has a very high capacity, providing for a maximum of 5000 bathers by means of a unique (architect-designed) basket hanger system, hangers occupying only 7 inches front to back (page 92).

Open-sky dressing areas, both for men and women, especially characterize the building, arranged in patios where sunlight and fresh air automatically provide the major sanitation and de-odorization measures.

The bath house is entirely free of concessions which, experience has proved, can foul a pool with paper, bottles, refuse; later a pavilion is to be erected 500 feet downstream but overlooking the pool.



Mears Studio Photos

Requirements set by City of Austin Recreation Department

STUDY of plans and photos will reveal the aptitude with which the architect met special requirements set by the Recreation Department of the city.

1. The service office to offer a good view of the approach from the park, of entrances to public rest rooms and bathers' quarters, of bathers going to and from the pool; easy access to basket rooms.

2. Basket rooms to be arranged for easy attendance by one person during slack hours, by locking the sliding service doors and passing baskets directly over the counter to patrons and receiving them through rear windows as bathers pass to the pool.

3. Maximum number of people to be accommodated in minimal space; operation and maintenance costs to be reduced to a minimum.

4. Toilet facilities, open to all users of the park, near the entrance, to be closed off from dressing area during non-bathing hours (see plan, p. 86).

5. Provision of a limited number of private dressing rooms for both men and women.

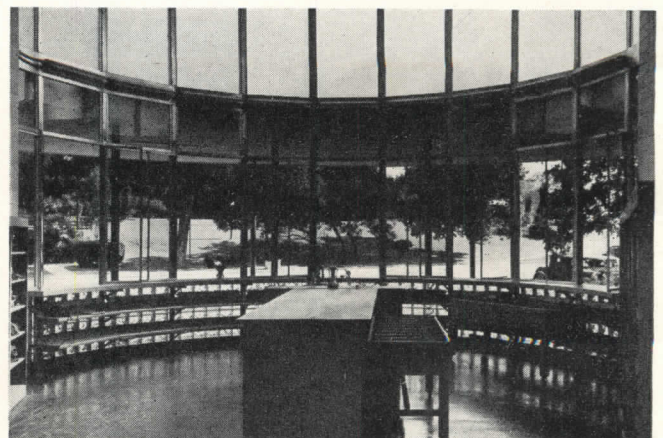
6. Separation of swimmers from dressed public as much as possible.

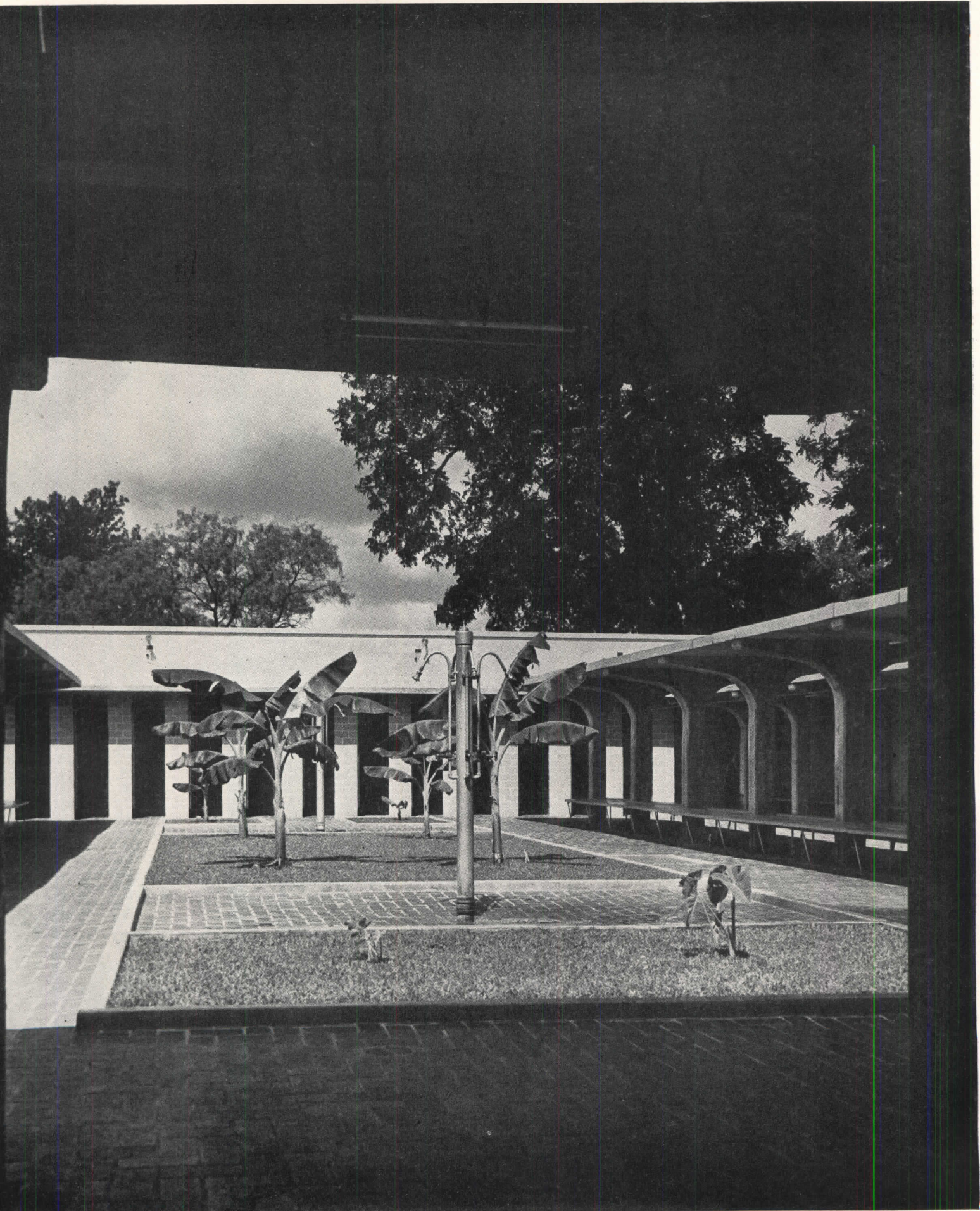
7. Basket rooms and dressing areas to be extremely well ventilated and open to sunlight where possible.

8. A separate room, and ample storage for suits, towels, etc. of lifeguards and for gardener's equipment.

9. Materials of high permanence, low absorption.

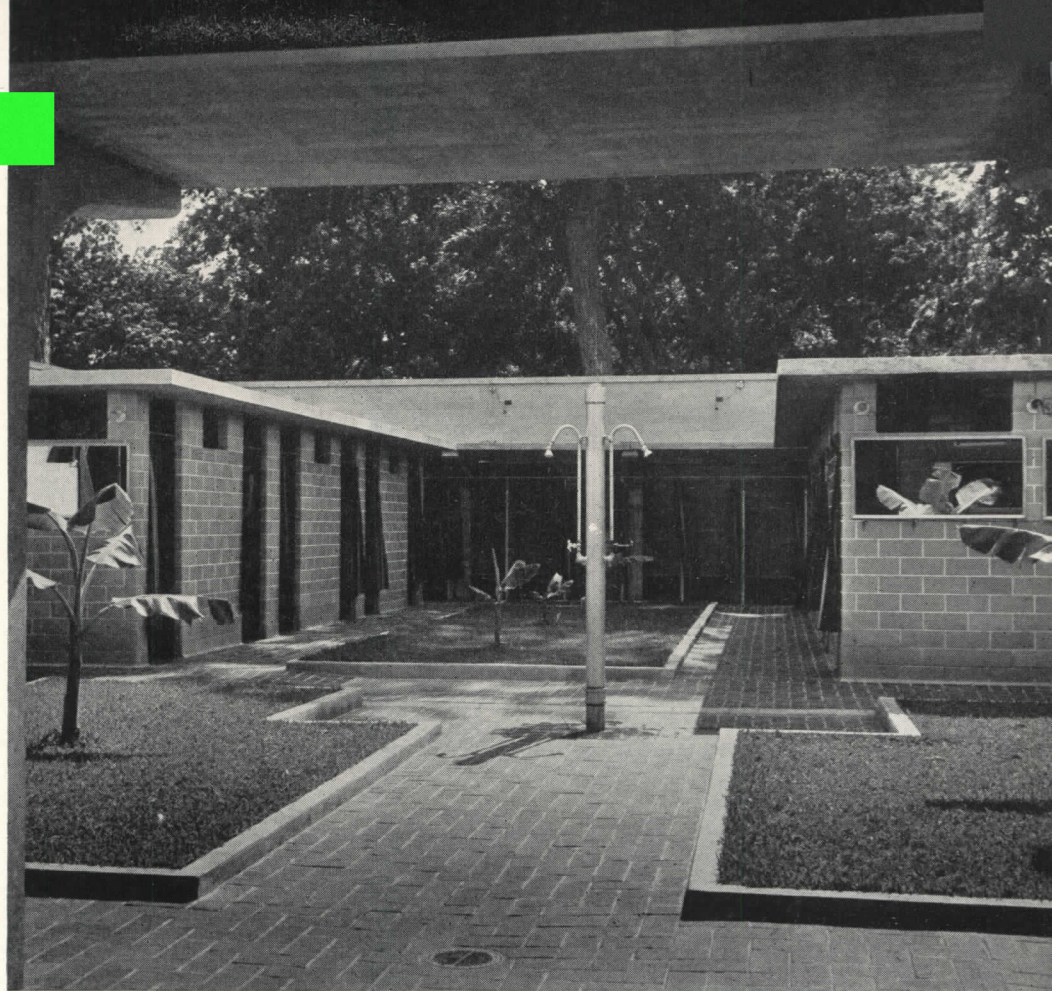
To the right of the building, as seen in the upper pictures on these two pages, Zilker Park continues onward and upward. On the upper level is a fine picnic area cooled by the river air, which is important in the Austin climate. From inside the central tower room, seen below, attendants can easily reach all checking areas, and a single attendant can manage all supervision during less active periods





Sanitation and

Public Safety



Mears Studio Photos

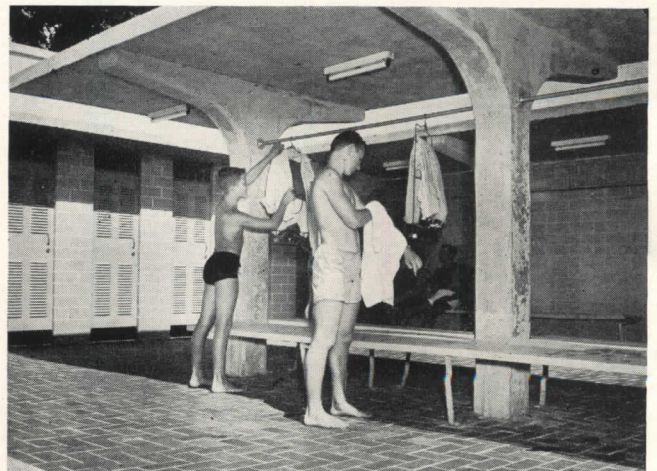
ANY floor or walk surfaces were eliminated that would become slick and hazardous when wet. On concrete walks, a pea gravel finish was produced integral with the concrete. Pea gravel (maximum diameter $\frac{1}{2}$ in.) was sprinkled over the cement topping and tamped into the wet surface. After the cement had taken its initial set, the excess was worked from the surface by means of a broom and water. With a little practice this was found easy to accomplish and gave the walks their slip-proof surface with handsome coloring.

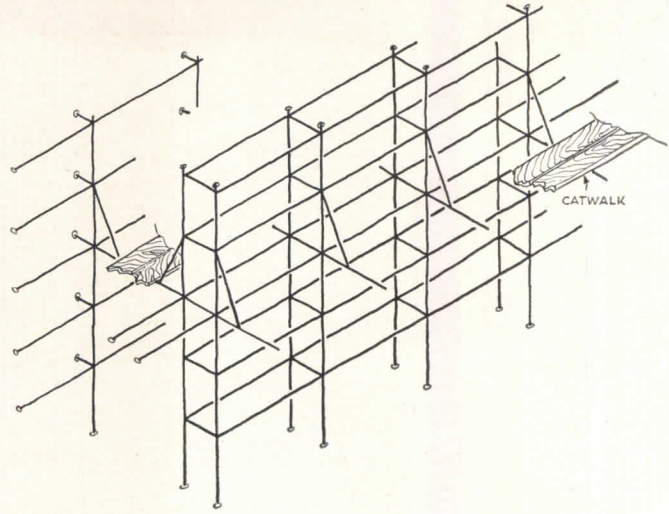
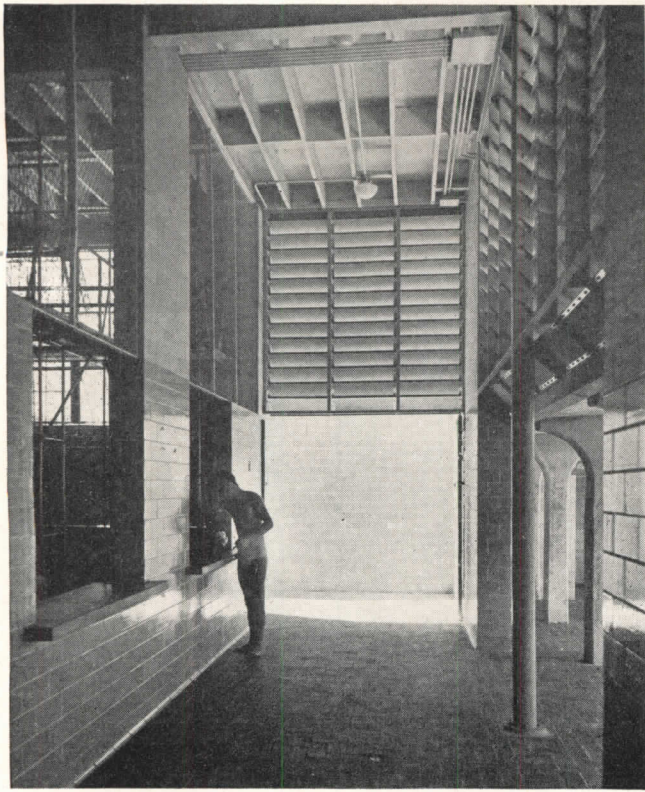
Floors in dressing rooms were made of red shale brick, hard burned and low absorbent. The roughness due to wire cutting was sufficient to give traction.

All interior walls were given a glazed tile base and glazed tile wainscot to a height of 7 ft., with particular care given to providing glazed tile wherever the public might come in contact. All mirrors, in particular, were mounted on glazed tile, "the only surface," says the architect, "from which the perennial lipstick can easily be removed."

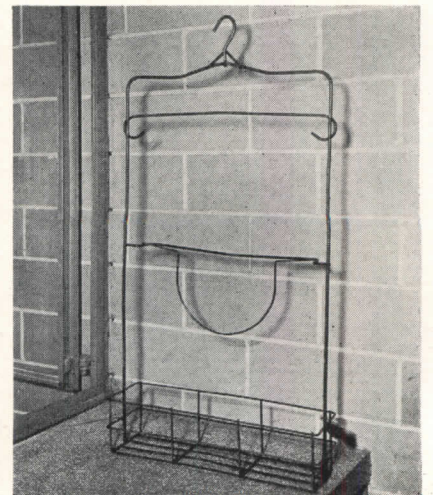
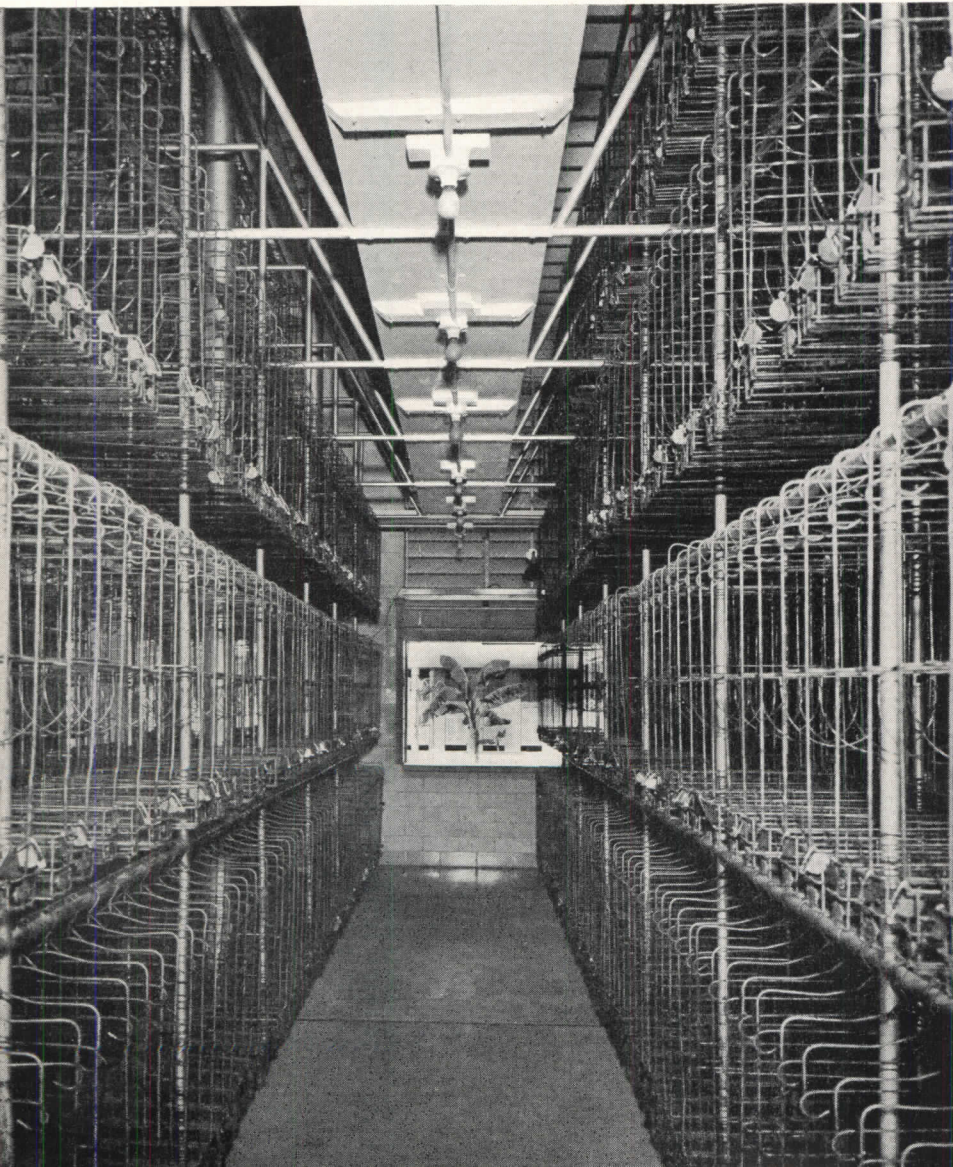
All areas were given ample numbers of floor drains. Dressing rooms also received gutter drains along walls, to permit quick washing with germicidals and a high-pressure waterhose flush. "Past experience," says the architect, "shows that attendants will not use brooms or mops, but will use a hose, so we designed the building accordingly."

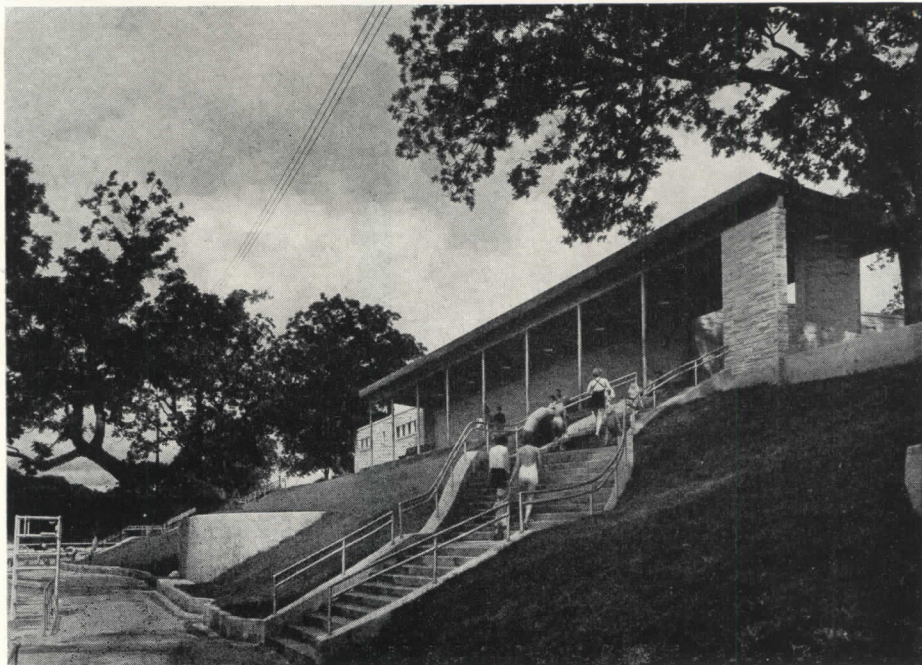
Open-sky dressing areas are self-cleansing in large part through sunshine, self-deodorizing through free movement of air. Left (opposite page), men's court provides most of its dressing space along benches under concrete canopies (see also photograph below) while women are given individual dressing rooms with washable curtains. Architects emphasize plentiful provision of drains and hose-flushable surfaces





Enormous capacity was assured in basket rooms by the specially designed basket (below) providing non-wrinkling storage at 7-in. depth, and by the special catwalk (drawing, top, and larger photograph) for overflow crowds. For maximum ventilation, all outside walls were provided with steel sash above a height of 7 ft. (all sections opening), and all interior partitions with wire mesh. For additional air circulation, large fans take the hot air accumulations from under main office ceilings and force it through the basket rooms. Air motion is essential to prevent the musty odor too commonly associated with public baths.





The architects would have liked to give a more decisive S-curve to this stair leading from bath house to pool; were prevented by cost considerations. Note care with which retaining wall has been built around existing tree. Lower view gives good impression of glorified "old swimming hole" in use. Even the architects who promoted this concept have been compelled to watch their step. Some citizen telephones the minute anybody has touched a bush or a tree, so completely has this civilized version been sold to the people of Austin



BEVERLY HILLS

1929



A brief illustrated summary of the comprehensive study and report of the firm of Harland Bartholomew and Associates, City Planners, shows the recommended solutions to the twin problems of —

TRAFFIC AND PARKING IN BEVERLY HILLS

ALMOST completely surrounded by the sprawling metropolis of Los Angeles is Beverly Hills, home of many glamorous movie stars. It has the same unglamorous problems which beset nearly all the other American cities — traffic and parking. But as a segment of a larger community, Beverly Hills is confronted by these twin headaches in a greater degree than the average independent city of 30,000 persons.

Four major highways from the Los Angeles business district and the Hollywood area pass through Beverly Hills toward the Santa Monica-Malibu Beach area — Sunset, Santa Monica, Wilshire and Olympic Boulevards. Each carries very heavy traffic, most of it not destined for Beverly Hills.

The city was originally residential. Its population of 674 in 1920 had grown to about 28,700 by 1947. Though a community of fine single-family residences, Beverly Hills is strategically located for a major shopping center, its "Triangle." Retail sales increased from \$6,000,000 to \$100,000,000 in the past 14 years. The retail stores are of a "quality" character, dependent almost exclusively upon automobile trade. There is 1 car for every 2 persons (the national ratio, 1 to 5).

Major Streets. Beverly Hills is primarily interested in maintaining the high character and beauty of the residential areas. The large business center here causes a certain amount of conflict as it attracts traffic and parking space has been inadequate.

The street problem is two-fold: (1) through traffic must be accommodated; (2) the residential areas must be protected from heavy traffic. The solution is to choose and suitably improve a few strategic thoroughfares for the heavy, fast, through traffic. A new channel to carry east-west traffic will be necessary. "Minor" streets must

be planned to minimize through traffic movement by using traffic control devices, lights, signs, etc.

As a basis for the planning of an adequate and properly integrated street system for the future, automatic recording traffic counters were used to determine both average and peak loads and times. The street system must be able to accommodate satisfactorily the peak hour movement of vehicles — present and future.

In Beverly Hills, volumes on the major traffic arteries build up to a peak at about 8 a.m., and until 4 p.m. the volumes remain fairly uniform. After 4 p.m. a sharp increase occurs during the evening rush hours. Between 4 and 6 p.m., the streets are required to carry 30 per cent more traffic than at any other time.

In the Triangle Business District, a different condition is found. Here, traffic volumes are relatively light before 10 a.m., after which there is a rather constant traffic movement until 6 p.m. with only a slight increase during the evening rush hours. The same roadway capacity is needed all day within the Triangle Business District. The preponderant traffic movement in Beverly Hills is on the through east-west highways. (See peak flow diagram, page 98.)

The major street system for the Beverly Hills of the future was designed on the basis of a 100 per cent increase in peak hour traffic. Major thoroughfares will provide adequate and convenient through arteries. Revisions recommended include the traffic control system of lights and signs, prohibition of curb parking during rush hours, channelization of several important intersections to reduce congestion due to turning movements, elimination of left turns at a number of intersections, and installation of 4-ft. medial strips on Wilshire and Olympic Boulevards.



BEVERLY HILLS—1948

A new major street is recommended in the western portion of the city to facilitate the movement of north-south traffic. The proposed Santa Monica Freeway will become the dominant east-west artery. Most streets can continue to be minor residential streets to be used solely for access to the property they serve.

Freeways: Santa Monica Freeway. As the major solution to the problem of traffic movement in the Los Angeles metropolitan area, a system of freeways has been proposed. Studies and plans are now being made by the State Highway Department. These freeways would be limited access highways, all crossings being eliminated by separating the grades. Access would be by ramps with the places of access limited. Such streets can carry large volumes of fast-moving traffic with maximum safety. Rights-of-way 200 to 300 ft. in width are needed in most cases. Such highways should provide three lanes in each direction, with opposing traffic separated by medial strips.

A freeway through Beverly Hills is proposed by the State in the general vicinity of Santa Monica Boulevard. The necessity for this freeway is conclusively proven by studies of traffic flow. It would, of course, be desirable to locate this freeway outside of rather than within Beverly Hills. It cannot go north of Beverly Hills because of the topography. Other possible locations were carefully considered and analyzed but were found difficult or undesirable.

A location along Santa Monica is undoubtedly the most logical and desirable. It will directly serve both the industrial and the business areas and disturb the minimum amount of existing development, particularly residential. It will serve as a buffer between residential and the more intensive uses.

The Bartholomew report contains two alternate preliminary designs for this freeway, one to accommodate rapid transit, one for buses. Under these plans, the freeway would be depressed, with wide landscaped areas along each side. The possibility of covering the highway through the Triangle was considered, but the expense could not be economically justified. Furthermore, the possibilities of providing underground parking immediately south of the freeway within the business district would be more advantageous.

A convenient transit station is proposed at Canon Drive with adequate parking spaces. Only a comparatively few north and south streets are recommended to be carried across the proposed freeway which thus would be an effective barrier to traffic movements through the residential districts north and south.

A minimum number of traffic interchanges are proposed within Beverly Hills, the most difficult and expensive being at Wilshire Boulevard. This is necessary to accommodate the many turning movements.

A service drive would connect the residential streets north of the freeway. South of the freeway, a wide major



Spence Air Photo

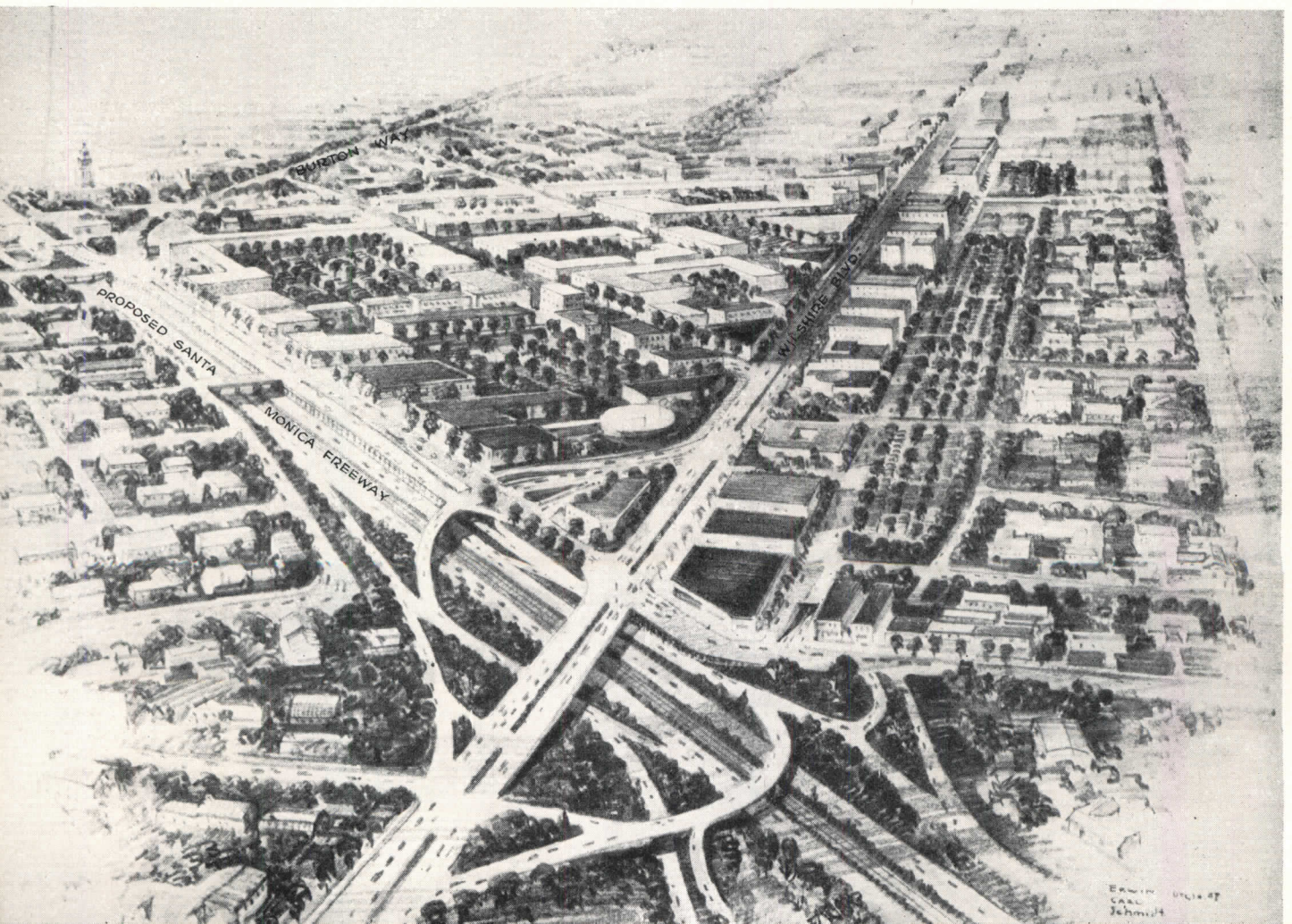
Left: the present business district, the Beverly Hills Triangle. Below: the same district as it would appear with the proposed freeway and traffic arteries. Opposite page: the new plan for the Triangle indicating traffic routes and parking areas

street is proposed as a distributor street serving the business district and the industrial area. Rail service to the industrial area could be continued under either plan.

The proposed freeway will afford the only satisfactory means of accommodating the large volume of east-west traffic that will be passing through the city. The freeway should accommodate about 4500 vehicular movements in each direction during the peak hour, relieving other streets. The rapid transit facilities of the freeway will assist Beverly Hills as well as the entire metropolitan area.

Parking. Beverly Hills is not alone a unique residential area, it possesses a business district of unusual distinction, stores and shops of unusually high quality serving the entire western half of the Los Angeles metropolitan area and beyond. The business of these specialty stores depends almost exclusively upon automobile trade. Adequate parking facilities are thus extremely important if this area is to maintain its present character.

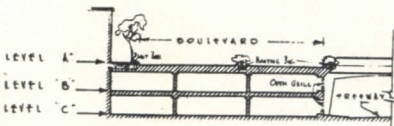
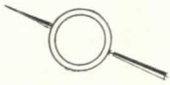
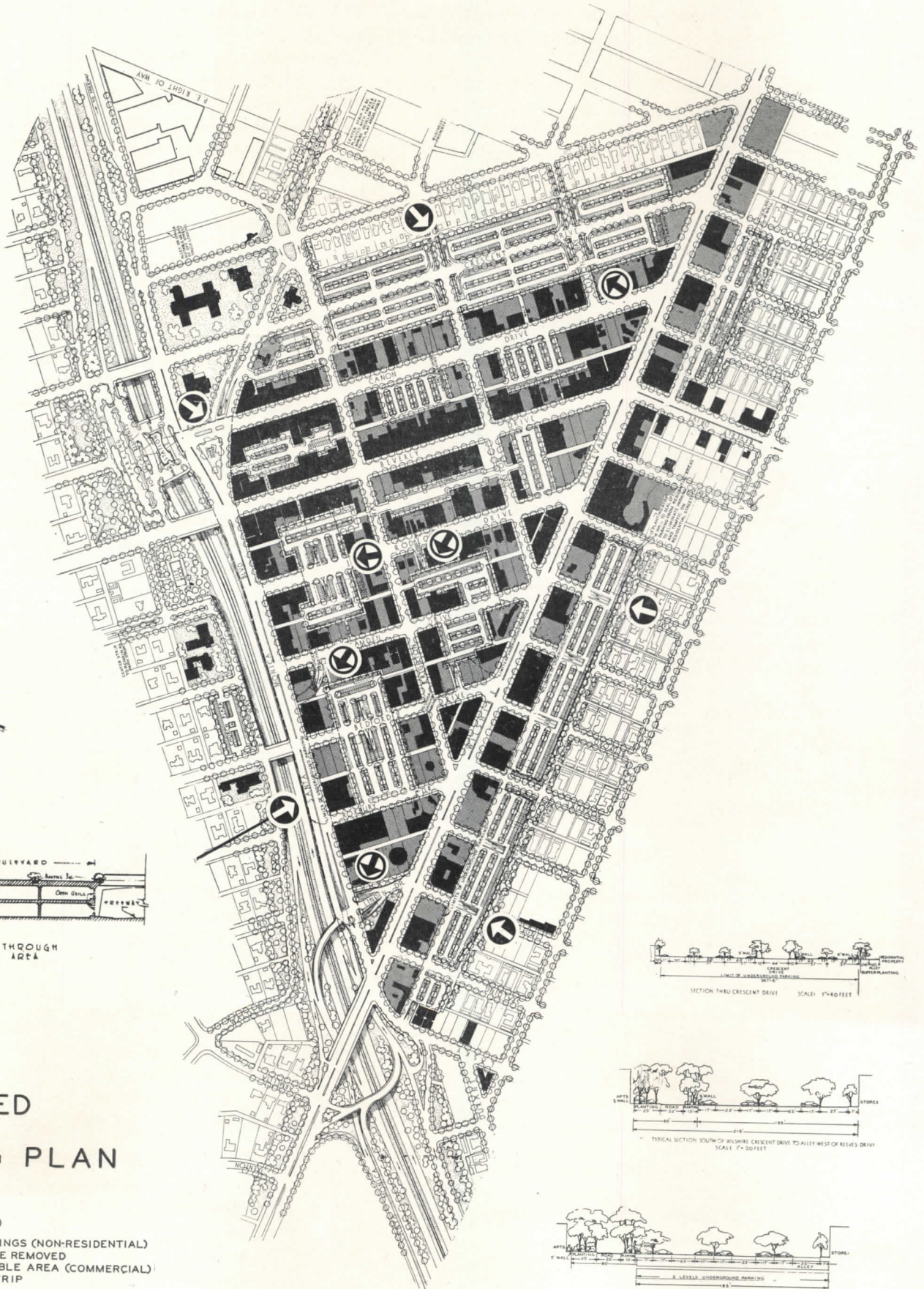
The thorough parking survey, including field checks and questionnaire surveys, was conducted to determine



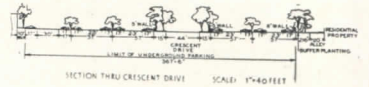
ERWIN JULIA 47
CAL
Schmitt



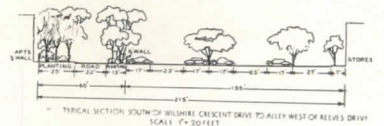
ARROWS AND DASH LINES INDICATE UNDERGROUND PARKING AREAS



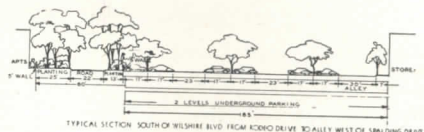
SECTION THROUGH PARKING AREA



SECTION THRU CRESCENT DRIVE SCALE: 1"=40 FEET



TYPICAL SECTION SOUTH OF WILSHIRE CRESCENT DRIVE TO ALLEY WEST OF REJUS DRIVE SCALE: 1"=20 FEET



TYPICAL SECTION SOUTH OF WILSHIRE BLVD FROM KODKO DRIVE TO ALLEY WEST OF SPALDING DRIVE

PROPOSED PARKING PLAN

LEGEND

-  EXISTING BUILDINGS (NON-RESIDENTIAL)
-  BUILDINGS TO BE REMOVED
-  FUTURE BUILDABLE AREA (COMMERCIAL)
-  BUFFER PARK STRIP

the characteristics of the use of curb and off-street parking facilities as well as the attitudes and preferences of customers and employees. Information was secured both by observation and by interviews. Questionnaires used were of three types — one for business establishments, one for employees, and a questionnaire card for general distribution.

The results of the parking survey brought out several interesting facts:

50 per cent of space-time is used by employees. Of the estimated 27,493 cars parking in the Triangle daily, 3214 cars, or slightly under 12 per cent are those of employees. This 12 per cent, however, occupies approximately 50 per cent of the space-time used, or 30 per cent of the available space-time. Employees now use space

proper use of present parking space (i.e., close-in areas are used predominantly by employees to the exclusion of customer use); (2) there is improper distribution of parking space (evidenced by a growing shortage of such space on the most intensively developed streets); (3) at least 1200 curb parking spaces on residential streets have been forced into use because of insufficient available area within the business Triangle; (4) all parking space is privately owned and hence there is no assurance of its retention for parking purposes in the future.

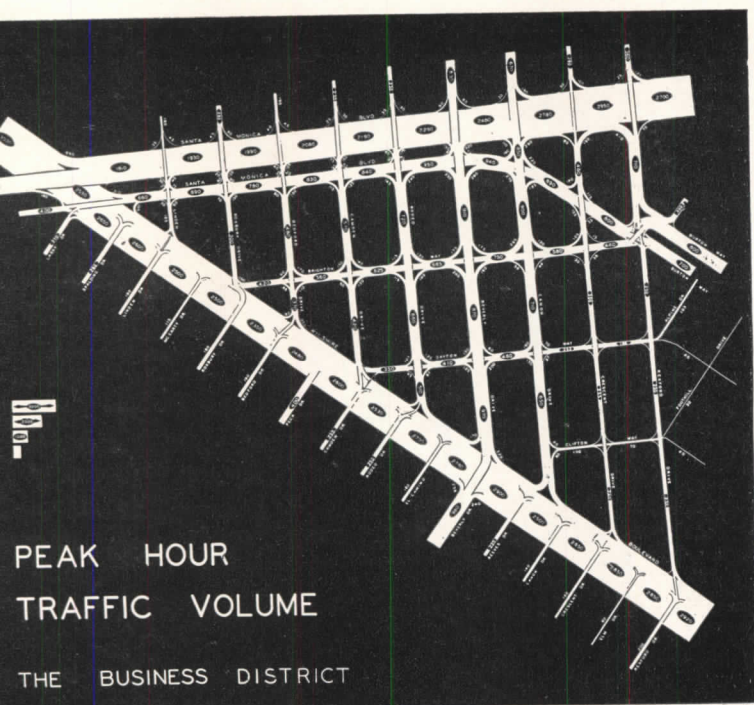
The comprehensive parking plan proposed in the Bartholomew report has been designed to eliminate all business parking on the residential streets adjacent to the business district, provide a buffer strip of parks and park-like parking areas between the commercial development and the residential sections, provide adequate parking spaces suitably located within the business section and the buffer strips for both customers and employees to serve present and estimated future needs.

On the north of the Triangle, the proposed Santa Monica Freeway (which would be depressed and landscaped) will provide the needed buffer strip to separate commercial from residential sections. South of Wilshire, parking areas would be bordered by walls and a tree-shaded park strip to provide a definite separation between commercial and residential use.

Present and future parking requirements would be satisfied by the provision of the 13,650 parking spaces included in the plan; 1670 parking spaces would be at the curb and 11,980 spaces would be available in surface and underground facilities. No parking garages above the ground are proposed as studies of local parking habits indicated they would not be popular. It is contemplated that spaces at the curb and on the surface of the off-street facilities will be used for customer parking, while the lower level will be used for all-day parking.

An unusual feature of the parking plan is the sub-surface parking structure underneath Santa Monica Boulevard and forming a part of the south boundary of the proposed Santa Monica Freeway. The vertical wall of the parking structure facing the freeway would be of grillwork construction to admit light and air to the parking floors and thus eliminate the necessity for mechanical ventilation of the structure.

Zoning. In order to maintain the integrity of the residential development, and to contain the business district within its present boundaries and under proper regulation, the Bartholomew report devotes attention to land use and zoning. A new zoning ordinance is presented. The ordinance also would regulate the intensity of commercial development by prescribing building height limits and by requiring provision of off-street parking space when new buildings are erected.



that should be devoted almost exclusively to customer parking.

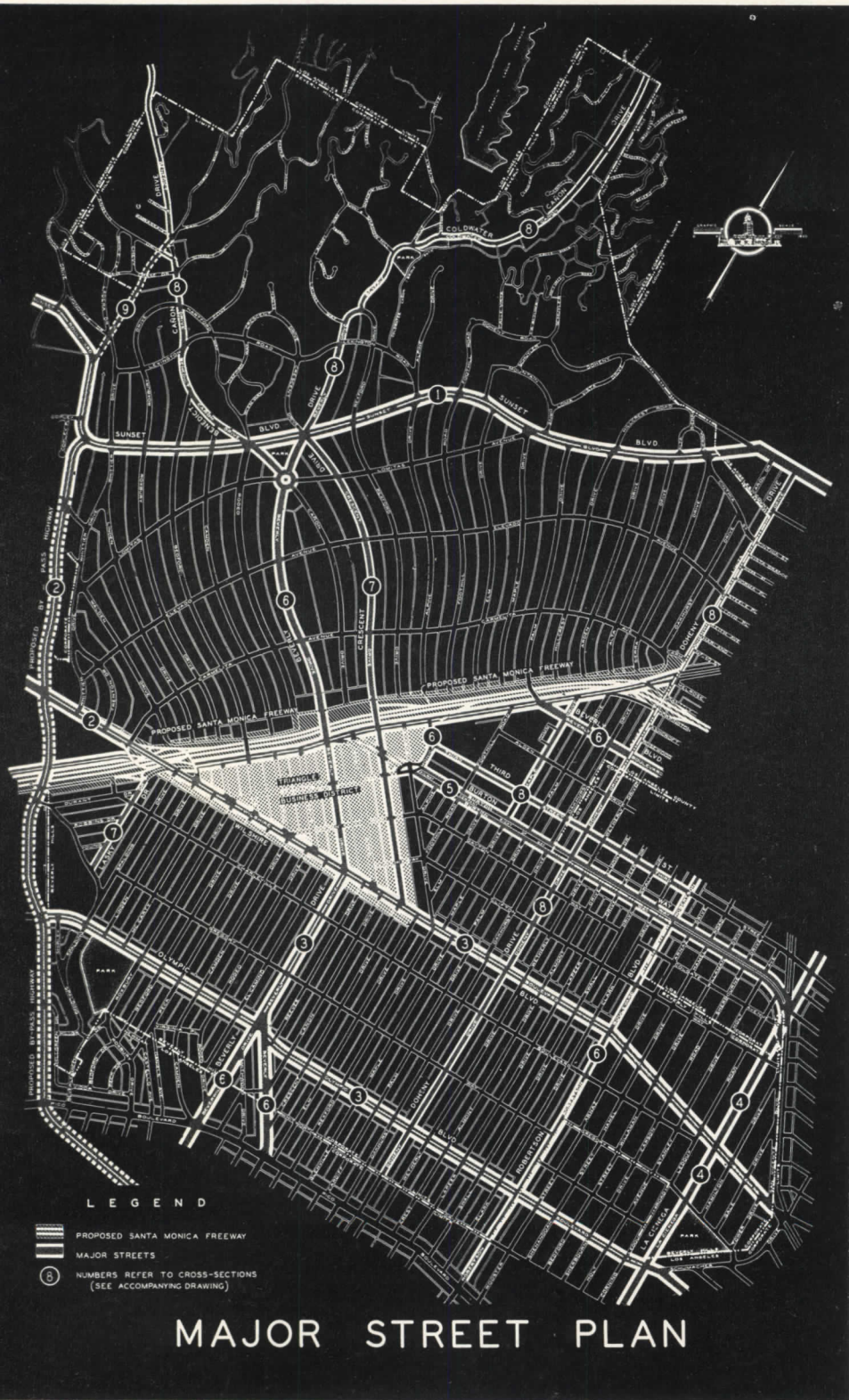
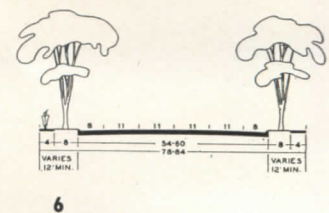
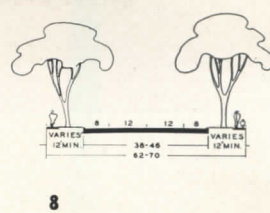
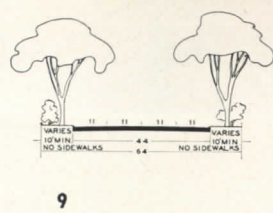
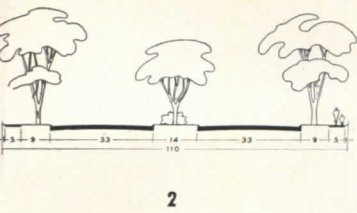
71 per cent of parkers use space in the "inner" Triangle. Of the 27,493 cars parking daily, approximately 19,500, or 71 per cent, park in the portion of the Triangle between Wilshire and Santa Monica Boulevards.

55 per cent of short-time parkers are shoppers. Business calls account for 28.5 per cent, medical-dental calls, 14.5 per cent.

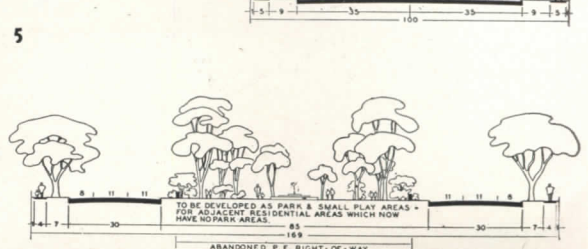
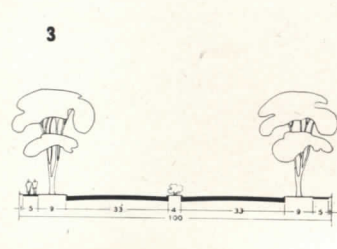
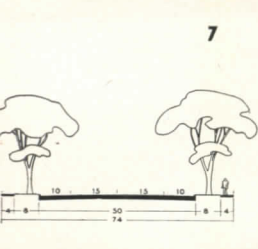
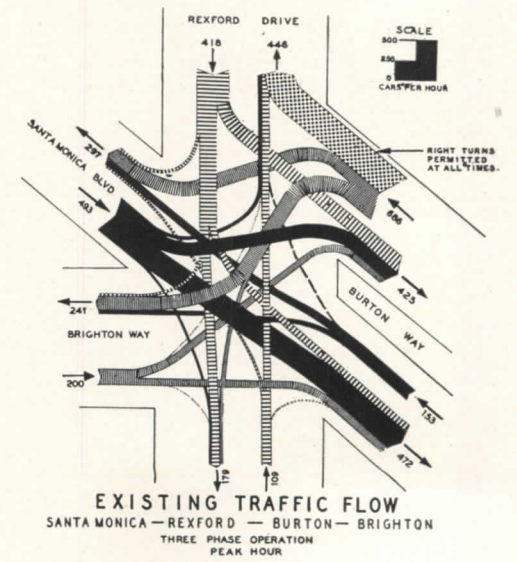
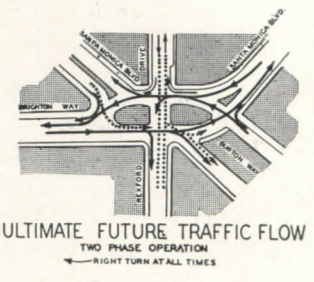
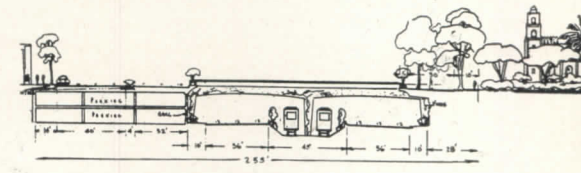
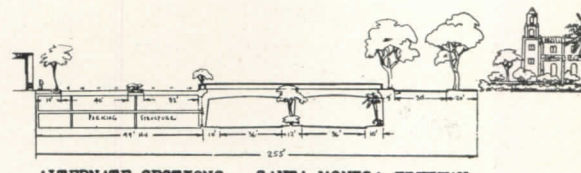
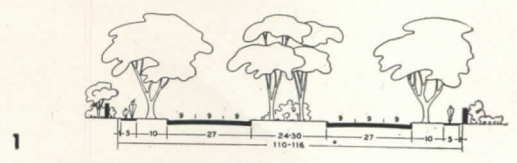
The parking survey disclosed considerable variation in parking space requirements for different business uses. Analysis of parking spaces required for 1000 sq. ft. of floor area showed an average need for one parking space for each 248 sq. ft. of floor area. The commonly accepted standard for parking space is that one automobile required 250 sq. ft.

The significant facts with respect to *present* parking space as disclosed by the survey are: (1) there is im-

Above, left: graphic chart showing volume of traffic during peak hour. Opposite page: street plan showing sections of various streets (numbered) and alternate sections of proposed Santa Monica Freeway. Also existing and ultimate future traffic flow



MAJOR STREET PLAN





Julius Shulman Photos

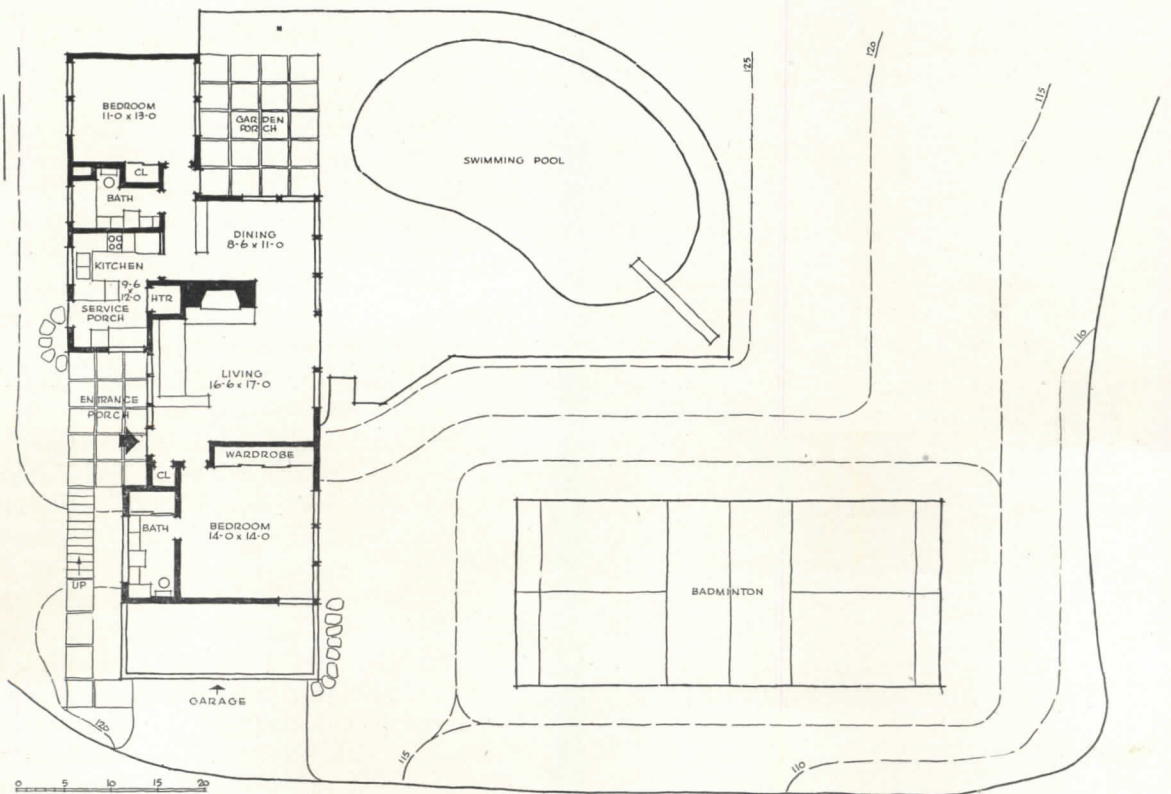
BACHELOR'S RESIDENCE IN THE HOLLYWOOD HILLS

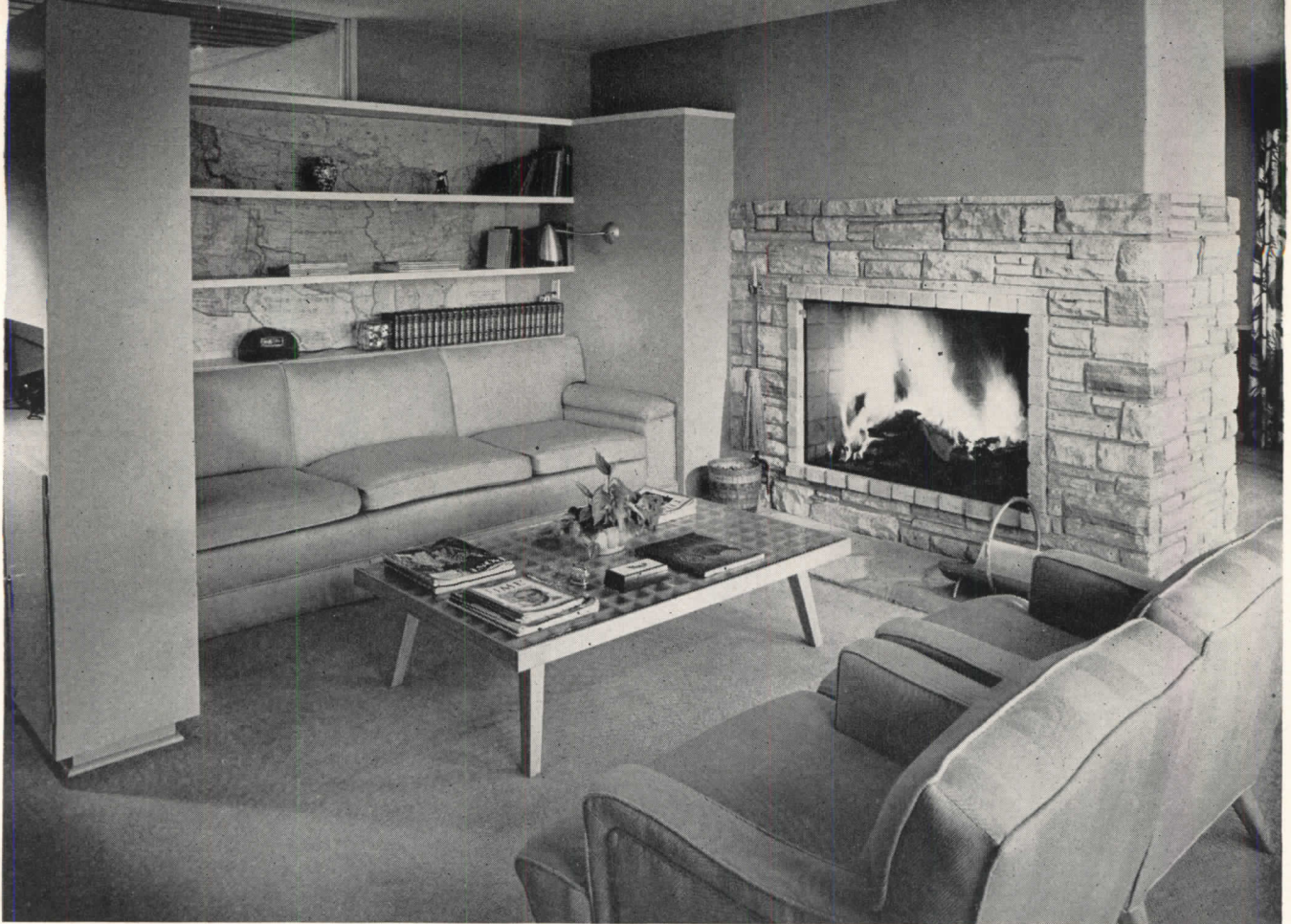
Residence of Mr. Richard A. Hartje, Los Angeles

Rolf Sklarek, Architect

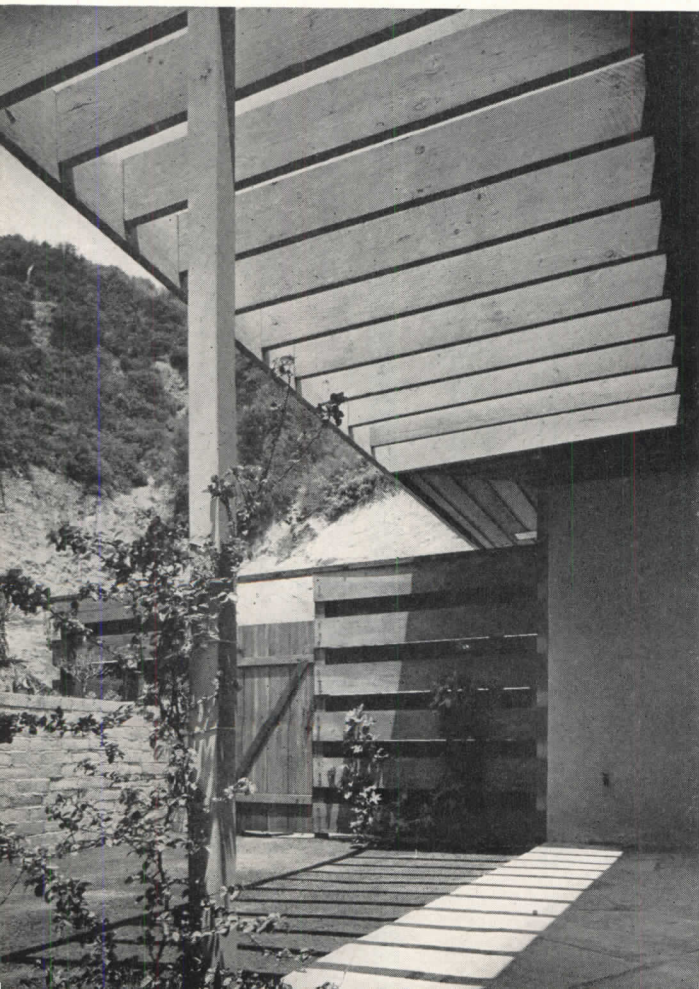


MAGNIFICENTLY situated high in the Hollywood Hills, overlooking all of Los Angeles and extending its view to the ocean beyond, this unusual small house was planned both around its setting and around its bachelor owner's liking for swimming, badminton and informal weekend entertaining. Every room in it, therefore, is oriented toward the view and the broad terrace accommodating the swimming pool and badminton court, and the walls on that side of the house are almost wholly of glass. Privacy was no problem — the owner bought the entire valley and hilltop and installed a private road to serve both his own home and those portions of the property which he intends to sell. The house is set about





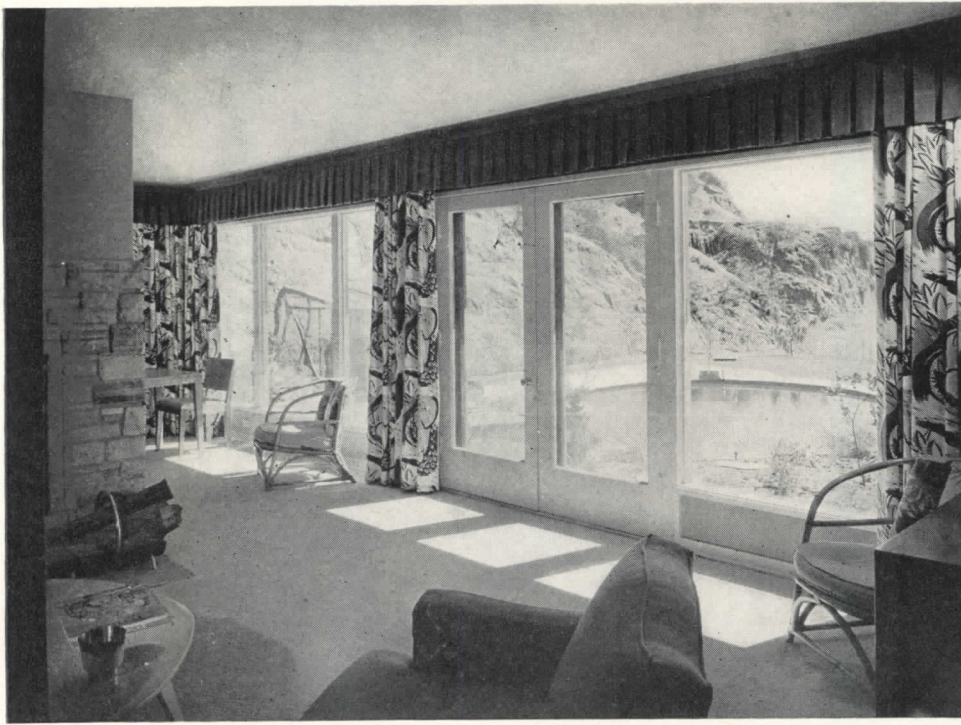
Left: the main entrance porch, looking toward the service porch. To increase the apparent size of the house (only 1200 sq. ft. in area), two pergolas were added, one here, the other outside the guest bedroom



15 ft. above the level of the road, and turns its back on it.

The plan of the house itself reveals a number of thoughtfully worked-out details. Built-in cabinets shield the living room from the entry and form a secluded nook for the couch. The fireplace serves as a dividing wall between the living and dining areas. The master bedroom, which has its own bath, is accessible directly from the main entrance; the guest room is at the opposite end of the house, with its bath so placed as to make it a convenient dressing room and shower for the pool. The forced air heating unit is installed in a closet behind the fireplace, opening to the kitchen. The garage, which topography demanded be located on a lower level, is connected with the main entrance by concrete and flagstone steps.

Construction is of wood stud and plaster, with a composition roof laid in the Bermuda manner over wood strips installed parallel to the ridge. Except for the small portion over the garage, the house is built on concrete slab directly on the ground. Exterior is white stucco with gray trim; the roof is white, reflecting the sun's heat and emphasizing the house's simplicity.



Colors were kept quiet for the sake of the view, but walls away from the view are occasionally accented by maps (opposite page) and wallpaper such as in master bedroom (below). Wood tacking strip for carpet is laid directly in concrete slab of foundation

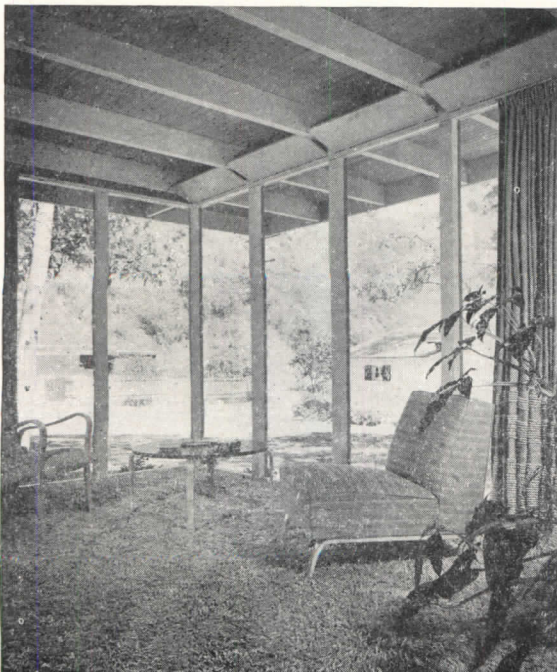




Julius Shulman Photos

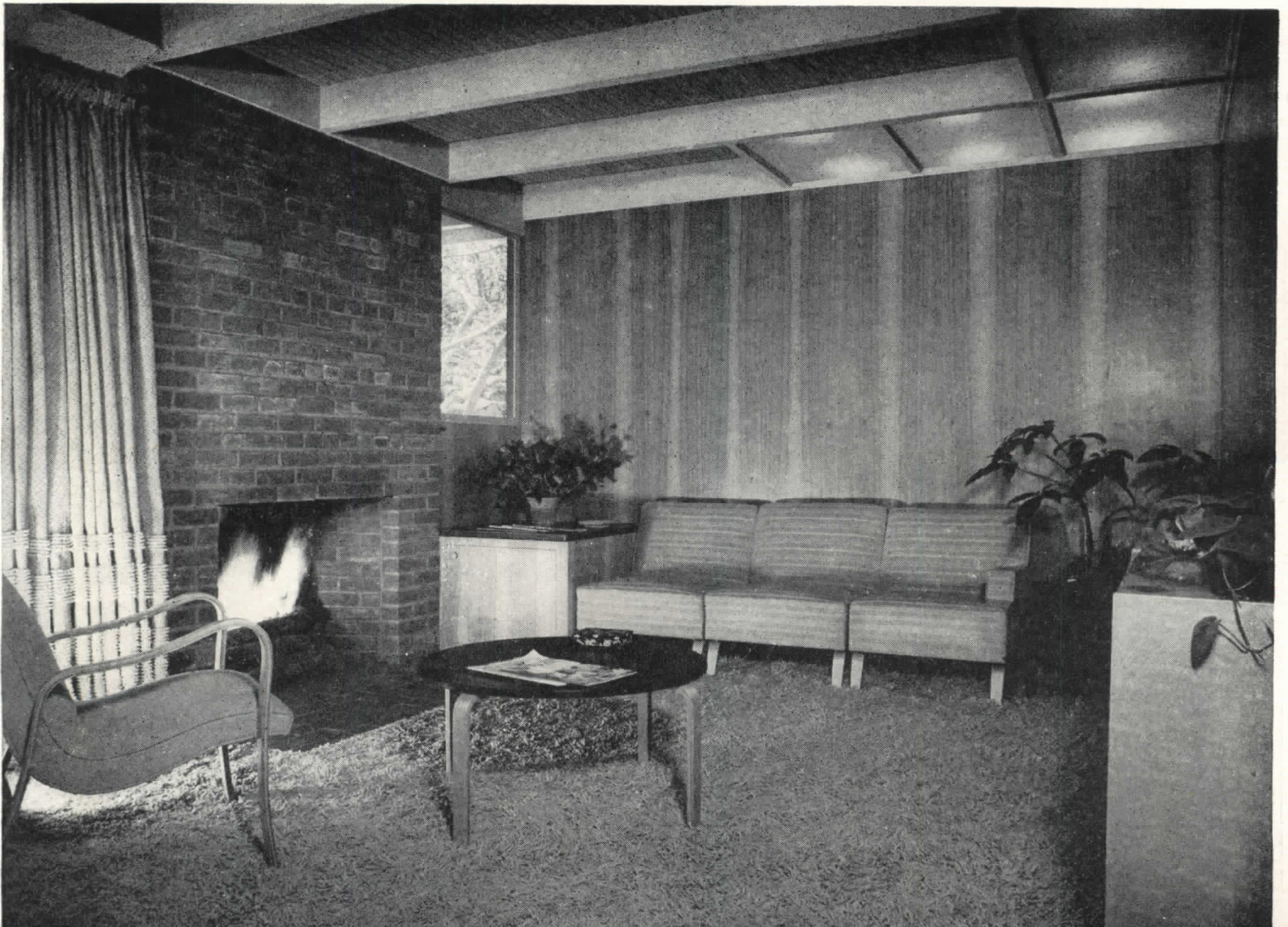
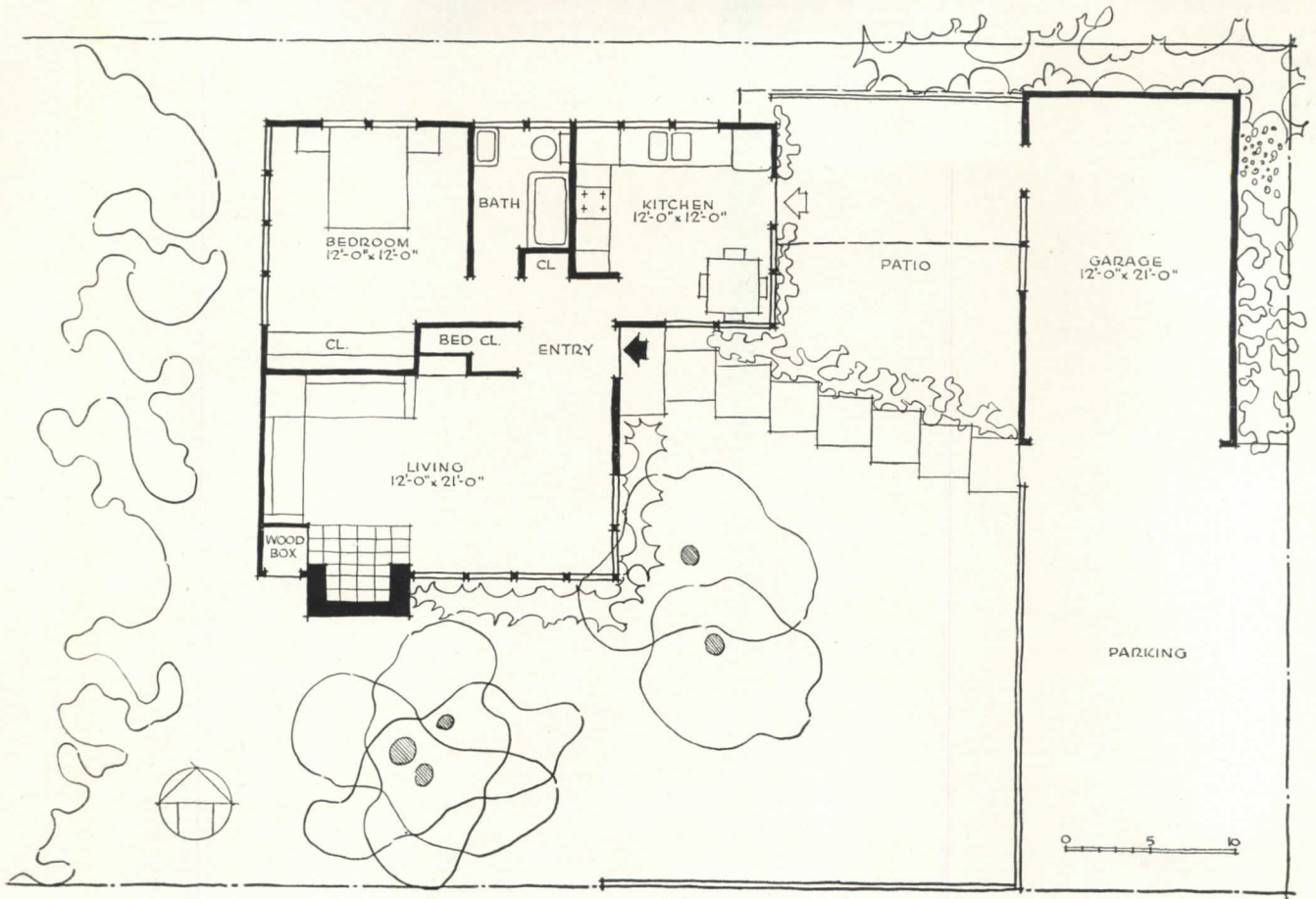
COMPACT HOUSE IN CALIFORNIA CANYON

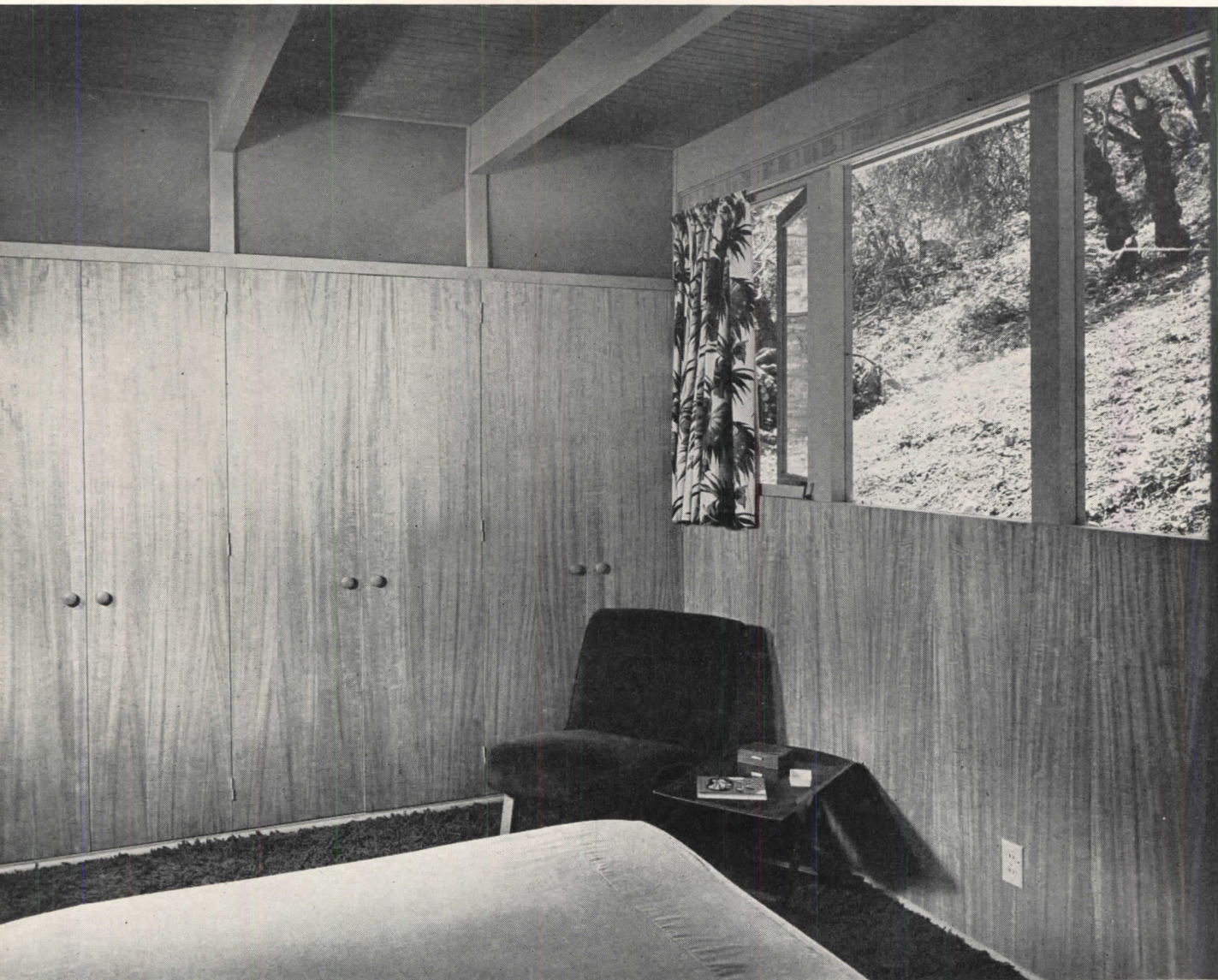
Rodney Walker, Architect



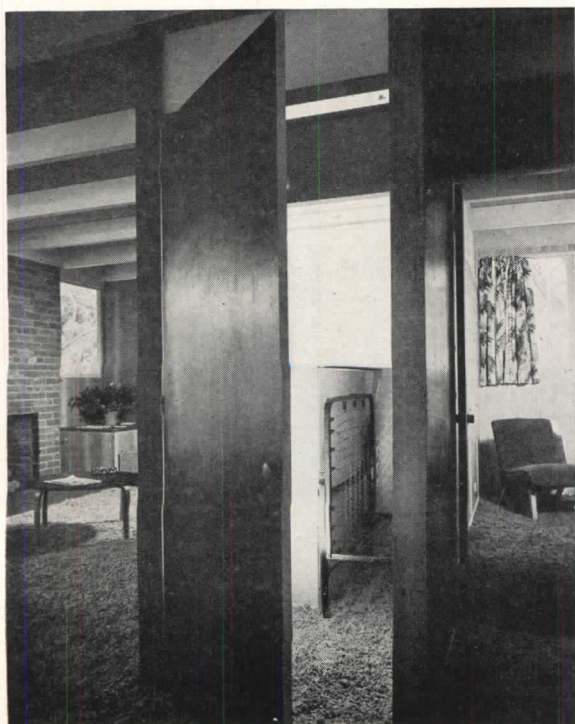
THE site of this small, all-plywood residence in California is long and narrow, fronting on a busy boulevard, and extending back to the foot of a wooded hill. The house, consequently, is placed lengthwise on the lot, shielded from the boulevard in part by the garage. Privacy will be increased further by a fence, not yet built, extending from the entrance steps at the inner corner of the garage across the front of the lot and half way up the south side.

The structural scheme (see detail on page 107) is a 3-ft. module setup with posts, braces, fireblocks, sills, headers and plates cut to size and grooved or drilled with a template before erection. No door or window frames are used; stationary glass is slipped into the grooved posts and puttied with a calking gun, eliminating vertical stops. Note the hinged ventilating boards between the ceiling beams in living room.

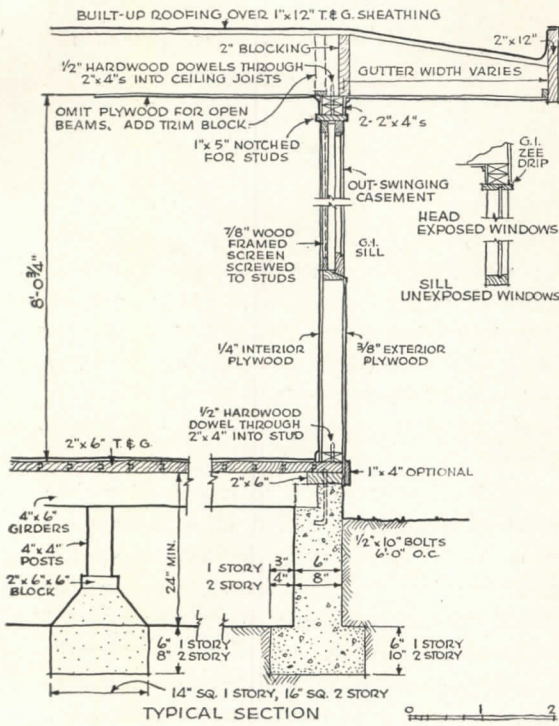




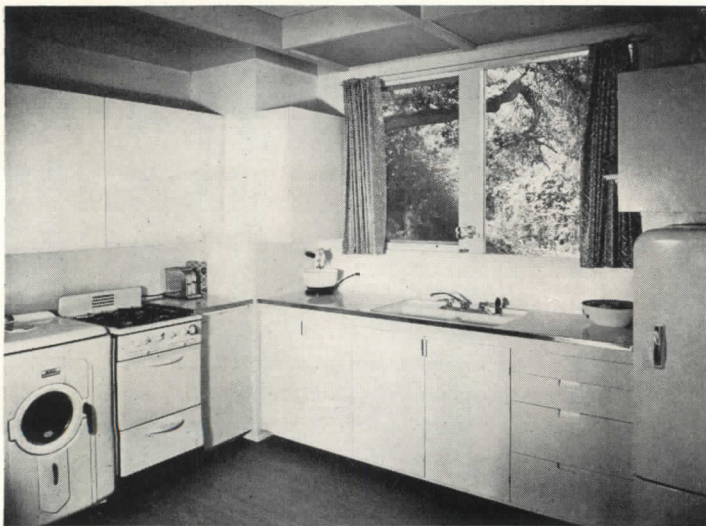
Julius Shulman Photos



The single bedroom is placed at the rear of the house for maximum privacy, with its windows looking up the steep hill into the woods. One whole side is given over to a built-in wardrobe with indirect lighting above serving both it and the bedroom. A rollaway guest bed is stored in a specially designed niche in the entry closet (left), accessible also from the bedroom closet



The typical section (above), developed by the architect for either one- or two-story houses shows the simplicity of construction and absence of any superfluous trim. The breakfast area (right, below) overlooks a small paved patio between the house and the garage



CONSTRUCTION OUTLOOK FOR 1949

By **Thomas S. Holden**

President, F. W. Dodge Corporation

and **Clyde Shute**

*Assistant Vice President and Manager,
Statistical and Research Division*

ELECTION results dispelled the illusion that there is any accurate method of forecasting the actions and decisions of millions of people free to vote as they choose. The same freedom exists with respect to buying goods and services, to planning, altering or postponing construction projects.

We, therefore, take occasion to restate the position F. W. Dodge Corporation has invariably assumed in presenting each November a statement on the construction outlook accompanied by construction volume estimates for the ensuing year. In our view, such estimates are not prophecies or predictions; they merely represent our judgment, based on such information as we assemble and appraise to be significant, as to a safe basis upon which executives in construction industry enterprises may make forward plans.

According to our analysis, election day found the American economy at or near the peak of a postwar boom. While such inflationary aspects as vastly increased money income, shortages of many categories of goods and services, and rising prices, wages and costs of production and construction have been conspicuously present, the boom has been unique in a very important respect. It has not been accompanied by a boom psychology. There have been no significant speculative excesses in security prices, real estate or commodity inventories. This postwar boom has, therefore, not generated the forces that usually cause severe reversals. The sanity and cautious optimism of the vast majority of people have held inflationary forces in check while enormous production on farms and in factories has moved rapidly in the direction of balancing the supply of many goods and services with the enormous demand.

As late as October it appeared to us and to a majority of the 112 leading economists who participated in the outlook survey we then conducted, that the most likely picture in 1949 would be about this: moderate declines in wholesale prices of commodities in general, in cost of living, industrial production and employment: in short, a flattening of the boom, with further progress toward stabilization a little below 1948 levels, all without the prospect of serious price deflation and the major problems of business adjustment that always accompany rapid price declines.

Approximate market balance, with a tendency to lowered prices, has appeared principally in consumer goods lines: farm products, foods, hides and leather products, textiles and textile products. In most capital goods lines, deferred demands and backlog orders still prevail; this is reflected in the price trends of metals and metal products, which continue slightly upward.

Similar mixed trends are reflected among the construction materials. Lumber has been plentiful and wholesale prices of lumber have been falling. Most other non-metallic construction materials have been in adequate supply, with competitive pricing. Building products fabricated of metal continue in tight supply, tending upward in price, tending to limit total construction volume.

The Democratic victory points to increased rather than decreased governmental action in economic affairs. There is likelihood of early legislation in the fields of public housing, public health, federal aid to education, enlarged social security coverage. Federal expenditures for such purposes, added to the already high federal budget, to increased military expenditures, to foreign economic aid, and, possibly, to rearmament assistance to friendly foreign governments would tend to create additional inflationary pressure on commodity prices and construction costs. However, actual expenditures for new social programs are not likely to be very large in the next calendar year.

There will be battles in the 81st Congress between forces pushing for lavish expenditures and those aiming to hold the federal budget in bounds. Consideration will undoubtedly be given to price control legislation. The election result increases the probability of further wage increases in key industries.

On the basis of our appraisal of the climate in which the construction industry will function next year, our 1949 estimates indicate an anticipated decline in those nonresidential building classifications which are predominantly private: commercial, manufacturing, religious, and social and recreational buildings. Bases of these anticipated reductions are the following facts: buying resistance is being felt in some of these lines already, equity financing has become increasingly difficult, mortgage credit has tightened, confidence of many potential private investors has probably been shaken in some degree by the results of the national election.

The same factors are likely to affect the volume of private residential building. The home builders responsible for record housing production in 1948 now rather generally realize the necessity of producing and offering for sale houses with lower price tags than those attached to a large proportion of the 1948 output. This will be particularly difficult of attainment if renewed inflationary forces should tend to further rises in material prices and building wage scales. A moderate slowing down of activity during part of the year would facilitate market adjustment.

Needs for rental housing continue very great. Recent

TABLE 1: ESTIMATED PHYSICAL VOLUMES OF BUILDING—37 EASTERN STATES

(on the basis of F. W. Dodge Corporation's contract records)
 Figures in millions of square feet

	*Estimate Year 1948	Estimate Year 1949	Percentage Change
Commercial buildings.....	104	95	- 9%
Manufacturing buildings.....	109	93	-15%
Educational and science buildings.....	70	77	+10%
Hospitals and institutional buildings.....	36	40	+11%
Public buildings.....	6	6	0%
Religious buildings.....	21	17	-19%
Social and recreational buildings.....	22	19	-14%
Miscellaneous non-residential buildings.....	19	19	0%
Non-residential buildings.....	387	366	- 5%
Residential buildings.....	468	429	- 7%
New floor space incidental to heavy engineering projects.....	1	1	0%
Total building floor space.....	856	796	- 6%
*10 months actual, last two months estimated			
Dwelling units:			
Dodge coverage basis.....	375,000	349,000	- 7%
B. of L.S. over all estimate basis.....	950,000	884,000	- 7%

TABLE 2: ESTIMATED VOLUMES OF BUILDING AND ENGINEERING CONTRACTS

(in accordance with 37-states contract statistics; figures in millions of dollars)

	*Estimate Year 1948	Estimate Year 1949	Percentage Change
Non-residential building.....	\$3,675	\$3,490	- 5%
Residential building.....	3,700	3,440	- 7%
Total building.....	\$7,375	\$6,930	- 6%
Public works and utilities.....	2,280	2,500	+10%
Total construction.....	\$9,655	\$9,430	- 2%

*10 months actual, last two months estimated

NOTE:

These dollar figures differ from those of the over-all 48-state estimates of governmental agencies in three important particulars.

1. These figures cover 37 states; current volume in the 11 western states appears to be approximately one-third of 37-states volume.
2. These figures virtually represent work started; government over-all figures

are estimates of work put in place; trends shown by contract statistics generally tend to anticipate trends shown by work-in-place figures.

3. Government over-all figures include estimated volume of low-valuation projects and projects in rural and semi-rural areas beyond the range of Dodge coverage.

legislation may stimulate this type of activity. Even if the next Congress should authorize a government housing program involving subsidies, it may not be large enough or effective soon enough to offset probable decline in private building of single-family houses. We have estimated a moderate decline in single-family houses and apartment building equal to the 1948 rate, with the net effect of a moderate decline in total new dwelling units. Housing production, even at the reduced rate we anticipate, would go far toward ending the acute phase of the housing shortage.

Educational buildings, hospitals and institutions, and public works and utilities projects all seem likely to increase, in view of the status of authorized programs and appropriation commitments. Maintenance and repair work and farm building, which are not included in the estimates, are more likely to decline somewhat than to increase, we believe.

Estimates of 1949 building activity are presented in

terms of physical volume (new floor space in square feet) in TABLE 1. Solely for the purpose of combining estimates of heavy engineering construction with estimates of building volume, a second table of dollar figures is added, since there is in general use no other common unit of measurement for these two major divisions of construction activity.

For translation of physical volume figures into dollar figures, an assumption about average unit costs of 1949 building projects is necessary. The figures of TABLE 2 assume average building costs approximating 1948 averages, an assumption involving major uncertainties. Marked change in the purchasing power of the construction dollar could alter these dollar estimates radically even if the volume estimates prove reasonably close. On the same assumption the dollar increase estimated for public works and utilities is intended to indicate a corresponding increase in physical volume of heavy engineering work.

RECREATION BUILDINGS

ARCHITECTURAL RECORD'S

BUILDING TYPES STUDY NUMBER 144



THE PLANNING OF RECREATIONAL CENTERS

By F. Ellwood Allen and Weaver W. Pangburn *

THE modern community recreation center, as exemplified on the following pages, seems to merit the designation "community building" to an even greater degree than any other structure in the large category of buildings serving the public. Schools, churches, clubs, etc., are all to some extent specialized in that primarily they serve a certain limited age group, creed or interest. The recreation center, on the other hand, is specifically dedicated to serving a very wide range of interests and ages, and to being attractive and useful to "all of the people, all of the time."

By its very nature, therefore, the approach to the problems of designing such a building is a complex one, involving first a study of the individual community, in order to discover precisely what recreational facilities are needed; and second, the planning of a structure which shall serve these varied and often widely dissimilar activities with maximum efficiency in operation and minimum waste in initial cost and maintenance. This article will attempt to outline some of the major considerations, along these lines, with which the planner will be confronted.

* The F. Ellwood Allen Organization, Park and Recreation Planners. Antonin Raymond and L. L. Rado, Architects of the Projects.



The natural tendency on the part of many communities, when faced with the need for establishing some kind of central recreation facility, is to attempt to utilize their existing school plant for this purpose. In some communities the school may meet the need; but in the majority of cases it has not been designed as even a supplementary community center, and its existing facilities are not adaptable to a diversified recreation program. Ideally, a well-rounded recreation program must have a building with facilities serving the many recreational interests of the people of the community, built on a site located near the center of the community and, preferably, large enough for a variety of outdoor facilities.

For a quick, bird's eye view of the basic components of a recreation center, as well as a few approximate figures relating certain specific facilities to the community's population, we quote from a handbook of the National Recreation Association.

Following are the standards for neighborhood recreation areas and facilities, as prescribed by the National Recreation Association:

1. There should be a community recreation building or center within a half mile to a mile of every home, the distance depending on population density and ease of access.
2. Such a building, or center, should be provided for at least every 20,000 of the population.
3. It should be generally and regularly available for the recreational use of the entire community throughout the year.
4. It should provide most of the following facilities:

Gymnasium, with seats for spectators, lockers and showers, suitable for basketball, volley ball and other floor games, gymnasium classes and dances, socials, holiday celebrations and similar activities.

Assembly hall or auditorium with stage, and preferably with removable seats, for concerts, lectures, movies, dra-

atics, rallies, banquets, recreation demonstrations and community gatherings.

Room for informal reading and quiet table games, where an individual may drop in for a few minutes or spend an evening with one or more friends.

Room equipped for various types of *arts and crafts activities*.

Social or play room for small group parties, square dancing, play rehearsals, and other activities involving fairly small groups.

Room for *table tennis*, billiards, darts, shuffleboard and active table games.

Two or more club or multiple use rooms for club and committee meetings and hobby groups of all kinds.

Refreshment stand or snack bar.

Kitchen for preparing meals and simple refreshments and also for cooking and canning classes.

Office for the director.

Essential service rooms and facilities including ample storage spaces for equipment and supplies.

As a guide in making a survey of recreational facilities, whether planned or existing, the Association offers the following suggestions:

An appraisal of a city's indoor recreation resources must take into account not only the multiple use recreation buildings but all buildings that have facilities regularly available for community recreation use. The specific interests of different communities vary, but experience has shown that in general the indoor facilities required to serve these interests are similar. Local conditions or needs may make desirable special features such as a music room, pistol range, bowling alleys, dark room or library.

The following standards represent the indoor facilities that should be available for community recreation use in every city, regardless of the type of building in which they are provided:

A *gymnasium* for each 10,000 of the population or less.

A *auditorium or assembly hall* for each 20,000 or less.

A *social room or play room* for each 10,000 or less.

An *informal reading and quiet game room* for each 10,000 or less.

An *indoor game room* for each 10,000 or less.

A room equipped as an *arts and crafts workshop* for each 10,000 or less.

A *club or multiple use room* for each 4000 or less.

An *indoor swimming pool* for each 50,000 or less.

Function and Design

The nature of a community recreation building, and its use, is such that the most meticulous analysis of the recreation program and the supervisory problems entailed in keeping it moving smoothly must precede design. The program itself will spring from the needs and desires of the people of the community, who will be the users of the facilities. But the supervisory and administrative problems are of equal importance. The recreation building must mean many things to many people at the same time; its director will face a continual stream of operational problems including scheduling of facilities, distribution of supplies, supervision of activities, direc-

tion of personnel, maintenance, etc. Good recreation design must, therefore, not only provide the right facilities, but also arrange them in relation to one another so effectively that the active direction of the program can function with maximum convenience and efficiency.

Unit Planning

As in the case of an intelligently conceived, long-range school building program, the recreation center should be planned as a whole, even though lack of available funds may prohibit the complete construction of the



Sketches by Leavitt

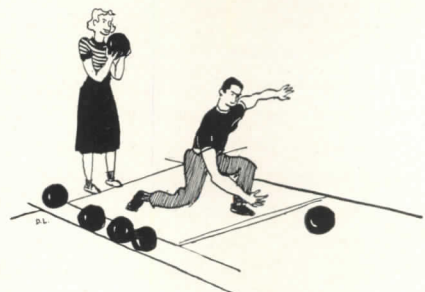
building designed to meet all present and future needs. In such a case, rather than build an inadequate structure, it is desirable to design the building so that unit construction is practical.

In planning for unit construction, a schedule of priorities should be set up based upon the most urgent community need and the unit designed to meet that need built first. Expandability of the project should be anticipated in the original design so that as activities increase and additional funds permit, units may be added without requiring basic changes and extensive alterations.

Choice of Facilities

Great care should be taken in properly relating the choice of facilities to the particular needs of the community; the more so because these needs will not remain constant. Not only do the interests of people vary with their age, background, experience and opportunities, but many persons — unaware of their potential interests and abilities because of limited recreation experience — will find themselves using the facilities more and more as the scope of their interests and participation and the measure of their skills increase.

Selection of facilities will also be somewhat influenced





by consideration of whether the program shall be partly or wholly self-supporting. Fortunately, in many cases the most popular facilities — such as bowling alleys, a dance floor, basketball courts, snack bars, etc. — are also the ones which may be used to provide income.

Particularly if the facility is an expensive one, the number of expected participants will considerably affect the decision on whether or not to include it in the program. A dark room for a camera club, for example, may appeal to relatively few individuals but they will be intensely interested in it and it will represent a comparatively small outlay of total funds. A gymnasium built simply for basketball, on the other hand — especially if not designed for large spectator crowds — takes a great deal of space and represents a large investment for relatively few participants.

In order not to waste money on duplication, due weight must be given to the availability to the community of such facilities as bowling alleys, movies, etc., whether of a public, semi-public or commercial nature. The only condition under which duplication might be considered is in those cases where desirable community facilities, operated at cost, might reach many more individuals than when operated commercially for profit.

One of the more popular and constructive features of any recreation center, and one which would also rate a high priority, is the crafts room. With more leisure time at their disposal, people are discovering the pleasures of developing creative skills of one sort or another. A real need for properly equipped places where they can learn something of the arts of wood-working, ceramics, metal-working, weaving, etc., has followed. Few homes have sufficient space available for a work shop, and few owners the funds necessary to equip them, but when space and tools are owned cooperatively the cost is not prohibitive.

In assigning priorities to certain facilities, it should be borne in mind that some of them offer intangible values which must not be underrated. The lounge room, for example, though it has no income-producing importance, invariably helps to make the center a success. Its informal welcome and the opportunity it affords for casual sociability are essential factors in the recreation program. A stage, with proper lighting and other equipment may seem an extravagant item; but a well-produced theatrical performance, with its hours of intimate companionship in rehearsal, its development of satisfying creative ability, its tangible evidence of accomplish-

ment and its entertainment of large audiences will often be found to make returns justifying the initial outlay.

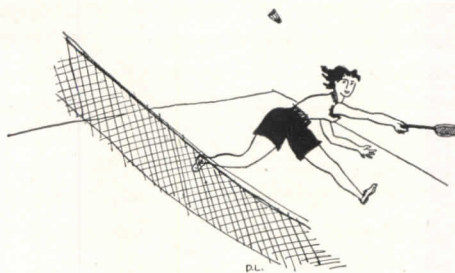
Other units of the recreation building which will usually merit serious consideration in the initial selection of facilities are:

Club and committee rooms. Frequently the club idea, based on common interests among the members, promotes close and congenial fellowship; and invariably the efficiently run recreation program involves many committees which require places for meetings.

The library. This may be anything from an incidental collection on the shelves of the lounge to a large and fully modern service designed for constant use by the whole community. Associated with the library idea is the sound-proof room for the playing of records, a feature which has proved attractive to the young people and is accepted as worth while.

The swimming pool. Due to relatively heavy initial and operating costs of indoor pools it is not surprising to find outdoor pools more numerous. The ideal pool, however, is one designed for year-round use, and there is a definite trend in that direction at the present time.

Storage and service facilities. In the operation and administration of a community recreation building, the provision of adequate and correctly located storage and service facilities often spells the difference between a



smoothly running plant and a constant headache. Among service facilities to be considered are a check room for hats and coats available to multiple use and lounge units, the room for issuing recreation equipment, and the utility repair room for the custodian, equipped with tools for the emergency repair of the building's mechanical, electrical and sanitary equipment.

Multiple Use of Facilities

As a feature promoting economy as well as maximum use of all facilities provided, the principle of multiple use deserves special mention. The term, of course, simply implies the planning of facilities with such flexibility that a given room or floor area may be put to various uses, either at different times or at the same time.

Perhaps the best example of the multiple use facility is the gymnasium as it appears in a well-designed recreation center. By contrast with the usual school or college gymnasium, this room has to serve a far broader program than merely the playing of basketball and the use of standard gymnasium apparatus. When built on a generous scale as a combined gymnasium-auditorium

with a good stage and dressing rooms, it may serve such varied additional uses as volley-ball, paddle tennis, deck tennis, shuffleboard, badminton and indoor baseball; also organized games for children, dances, banquets, lectures, concerts, hobby or garden shows, trade exhibits, movies, etc.

Some of the multiple uses above mentioned suggest the need for having kitchen facilities and adequate, ingenious storage space nearby.

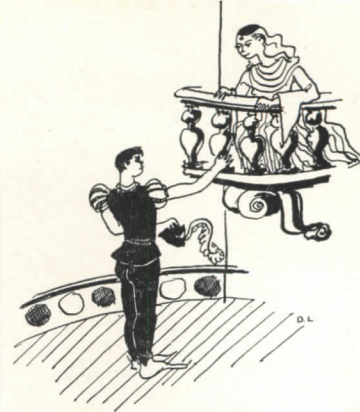
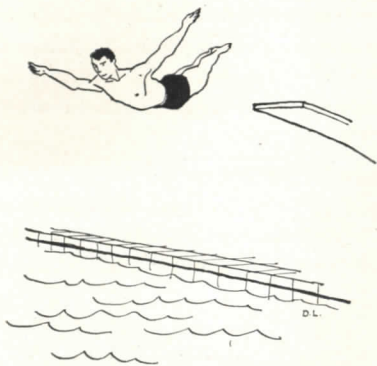
The lounge, too, may be used for a number of different purposes, but it should be recognized that the multiple use idea can be carried too far for efficiency unless the basic character of the various facilities is respected and preserved. For example, trying to combine pool tables and table tennis in a room primarily intended for such quiet games as cards, chess and checkers will not work. However, these quiet games usually can be assigned to rooms used for reading without adverse affect.

The whole principal of multiple use, as a matter of fact, needs to be constantly related to the amount of money available and the degree of perfection required in any particular facility. The combined auditorium-gymnasium mentioned above could never attain the perfection or efficiency afforded by separate facilities. It would be unreasonable to expect the same satisfactory acoustics in a gymnasium as could be attained in an auditorium or concert hall designed with that special characteristic as a major requirement. Where patronage is large or funds are ample, separate units could be justified; but in the much more numerous cases where those factors are lacking provision for multiple use will offer a practical compromise.

Size and Number of Facilities

As to the size and number of required facilities, too large and too many is as bad a fault as too small and too few. Admitting the difficulty of striking a precisely correct balance between these two extremes, it will none the less be found that a careful and detailed study of the community's interests will result in much more intelligent planning in this respect. In general, it seems wise to plan the building for something short of peak crowds — something closer to average patronage — in order to assure the most efficient use of the plant most of the time; and to find ways of utilizing any space which tends to remain idle — for example the stage or library can serve quite adequately for occasional club or committee meetings.

Standard data on dimensions of the various facilities is readily available elsewhere and will not be considered



here, but the following observations, based on experience, may prove helpful.

To do certain things satisfactorily, certain minimum dimensions are necessary. If the gymnasium or its equivalent is to be right for basketball, volley ball, badminton, etc., the floor must not be less than 50 ft. wide, 75 ft. long and 20 ft. high. For competitive play, a gymnasium length of 90 ft. is desirable. Plays can be produced on makeshift and small stages but it is desirable for good results, and necessary in most productions, to have a stage 40 ft. wide by 24 ft. deep with a proscenium 24 ft. wide and at least 12 ft. high to its arch. If the interest in drama is keen and the funds permit, it is desirable to have a stage loft two and one half times the height of the proscenium opening. However, a space 10 to 12 ft. above the top of the proscenium will suffice.

The number of locker and dressing rooms, showers, and toilets depend on the capacity of the building and whether there is a playfield. If gymnasium, playfield and auditorium are included, there will be more such facilities than in just a recreation and social building. It is common to allow 8 sq. ft. of dressing room space per locker up to a load of 40, with larger allowance per locker if more of a load.

For a building serving a population of 20,000 people or less, four to six club rooms should prove sufficient. Two of these might be 12 by 16 ft., the other 20 by 30. Lockers and cupboards should be provided for storing the records and equipment of each organization. Folding partitions in the club rooms have been found to afford a very useful degree of flexibility.

Bowling alleys should be provided with adequate space for a few spectators; 110 ft. is a desirable length. Six alleys should be the minimum in any building, and eight to ten is desirable; where too few alleys are provided, the waits between turns is too long and results in public loss of interest in the facility.

If additional units of the building are to be constructed, from time to time, the facilities in all major service units such as dressing rooms, showers and lockers, heating and other utilities, must anticipate the loads to be added or be readily susceptible of enlargement.

Ease of Circulation

Ease and speed of circulation are of special importance in the recreation center. Part of the problem is to provide adequate and convenient passageways, but to do so without creating a condition which would interrupt or



interfere with the appropriate use of any of the facilities; another part is to avoid devoting too much footage to them. There is a useful parallel in hotel design: the modern hotel, with relatively narrow corridors, and small lobby space, still achieves vastly improved circulation by comparison with the older types which had poor returns from a far greater investment of total available area.

Storage Space

Adequate storage not only makes for convenience but it also reduces the service otherwise required of custodial personnel. It is a corollary of the multiple use of facilities. The gymnasium-auditorium after use for a big dinner must be cleared quickly for the next use. Hence the advantage of rolling the chairs under the stage and stowing the tables in a sizable room located for the purpose at the end of the stage, or taking both to the floor below on an elevator built under the stage. A listing of the major facilities requiring storage follows:

- Club rooms — built in closets and cabinets for supplies, records.
- Dressing rooms — permanent lockers or baskets.
- First aid room — supply closets, supply cabinets.
- Office in lobby — cabinets, shelves for supplies.
- Recreation — equipment room — shelves, closets.
- Craft room — shelves and cabinets for supplies, tools.
- Stage — property room adjacent or below.
- General service and heating room — supplies, fuel, tools.
- Each floor — closets for cleaning supplies, toilet supplies, mops, brooms, etc.
- Snack bars — shelves, closets.
- Kitchen — preserving units, cabinets, closets, shelves.

Maintenance

Maintenance is a matter of first importance in the community recreation center; the building will have hard use, yet must be kept attractive and serviceable at all times. Good design pays big dividends here.

The gymnasium floor must be built of wood, but many of the floors elsewhere may be hard surfaced or have resilient flooring. Washable materials — permitting quick and thorough cleaning — should be used for walls and floor of locker and dressing rooms. Permanent lockers should be set on concrete bases or suspended

from the ceiling — never mounted on legs. The kitchen should be designed so that it can be hosed down. Exterior materials must also be selected with a view to reducing maintenance and replacement costs.

Costs

Finally, there is the always imperative question of building cost — how much building will the community get for how much money? And how much money ought the community to spend at this time? The following generalities may be found useful:

A long-range plan, involving unit construction, will inevitably permit the design of a more ambitious project than would be the case of complete and final construction of the building were to be decided upon. A short term plan is seldom justified and usually means a short-sighted plan which fails to consider increasing populations, increased public interest in the center, etc. The virtual impossibility of making substantial additions to a recreational building not originally designed with that in mind, is too obvious to architects to need further mention here.

Where unit construction is decided upon, the building committee can study preliminary plans and cost estimates, come to some decisions on whether the cost of certain units is worth the necessary immediate outlay, and thus allocate priorities with a fair knowledge of what they are doing. The campaign to raise funds for the new building will also find much useful material in this phase of the architect's work.

Another item which needs early settlement is whether the community, having provided the building, will expect the building for the most part to carry itself. Where this is the case, the committee must be sure to include the kind of facilities that will pay their way, and also work out the kind of policies on charges, rentals, etc., which will produce yet still retain the club-like atmosphere of the center.

As to operating costs — which like building costs must vary greatly — the following rule may at least serve as a guide: A building costing \$500,000 would require for annual operation about 8 to 10 per cent of the initial cost. As the cost of the structure increases, operating costs diminish proportionally as the cost of the building is less.

A few of the publications on community recreation building published by the National Recreation Association, 315 Fourth Avenue, New York 10, N. Y.

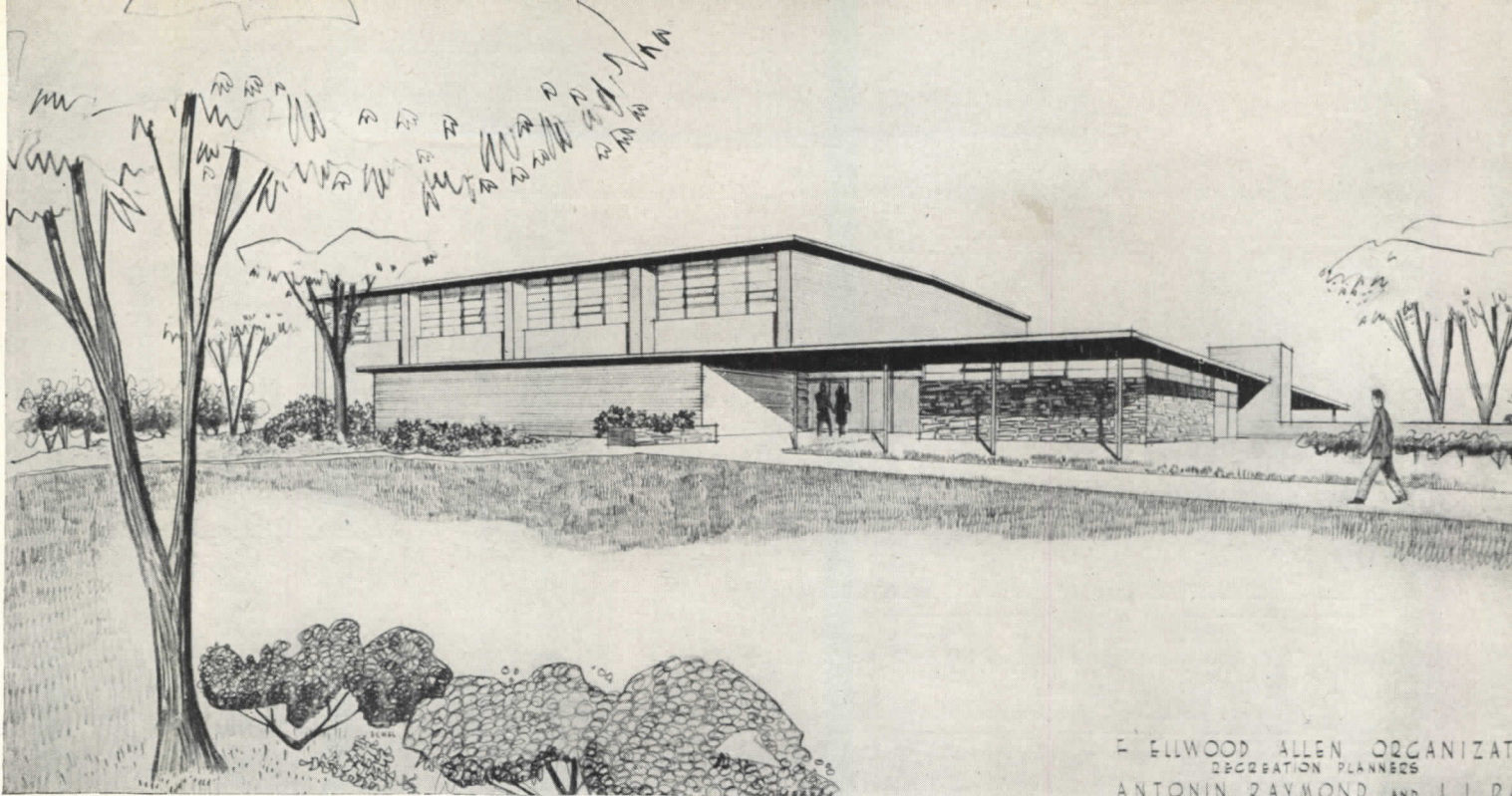
Planning A Community Recreation Building. The important principles and features of a wisely planned building.

Recreation Areas — Their Design and Equipment. Containing 169 illustrations, diagrams and plans of areas and buildings, this volume is a guide to the planning of playgrounds, playfields and athletic fields.

Selected Bibliography on the Design and Equipment of Recreation Areas and Structures (MP 161).

Standards for Neighborhood Recreation Areas and Facilities. Basic principles for the provision of recreation space and standards for outdoor space and indoor facilities. Agencies concerned with recreation are discussed and methods of cooperation indicated.

Standards for Municipal Recreation Areas. A description of the various types of municipal recreation areas and a summary of the standards that have been proposed by many authorities.

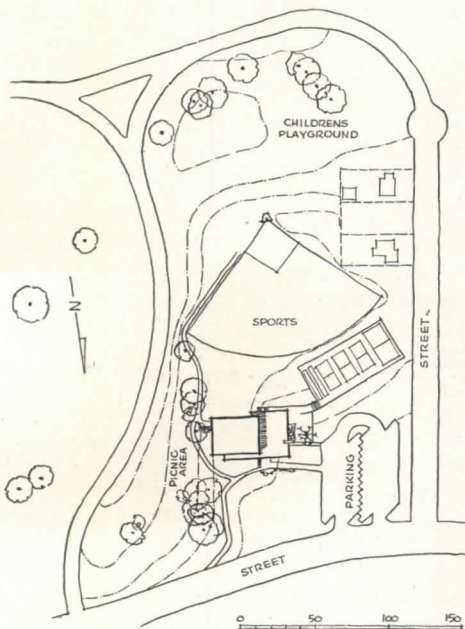


F. ELLWOOD ALLEN ORGANIZATION
RECREATION PLANNERS
ANTONIN RAYMOND AND L. L. RADO

NEIGHBORHOOD RECREATION CENTER, SUMMIT, N. J.

Antonin Raymond and L. L. Rado, Architects

F. Ellwood Allen Organization, Park and Recreation Planners

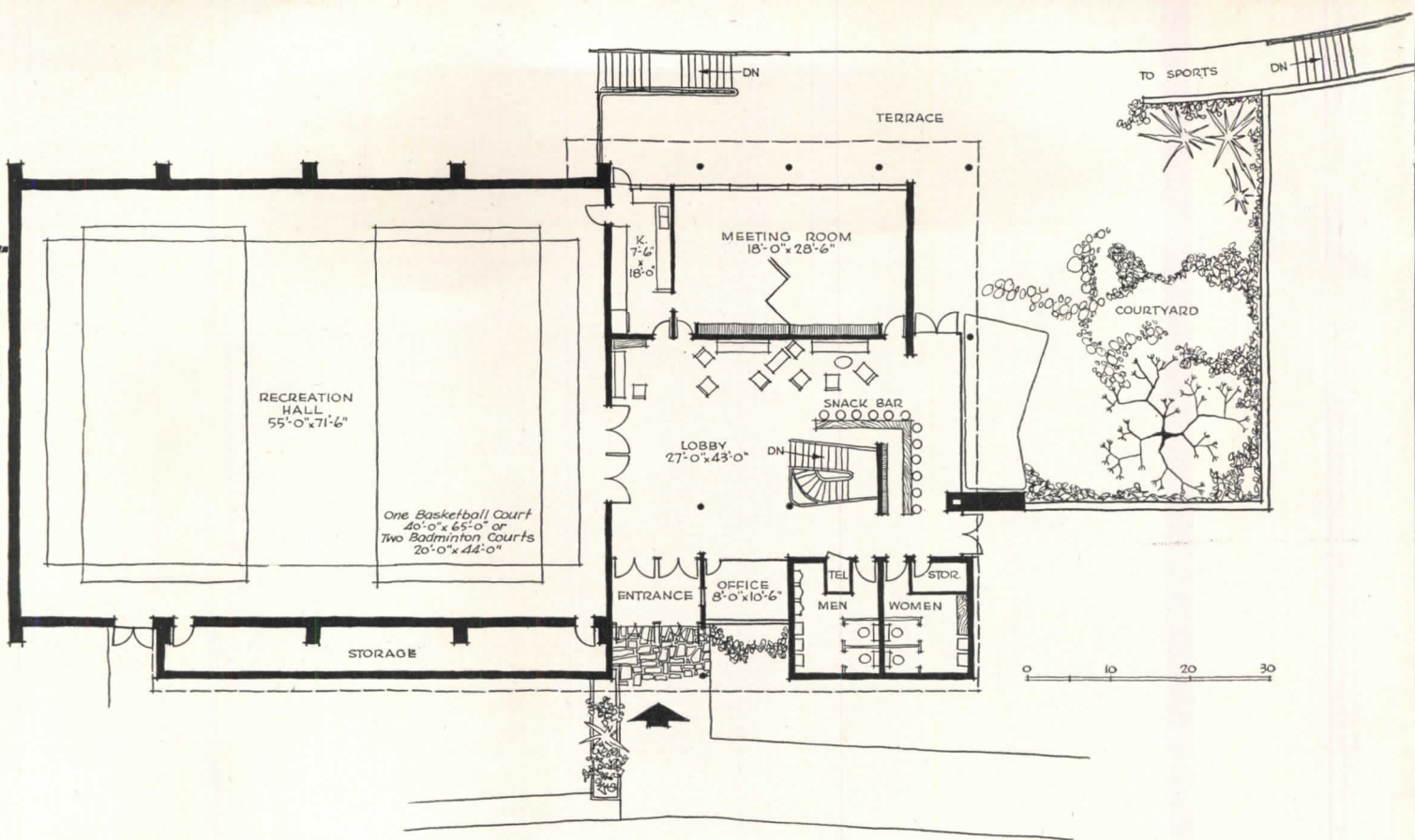


RECREATION CENTERS need not — often should not — be designed to serve entire communities; nor need they be in any way connected with the employee problems of industry. As in the case of the Summit Center, shown here and on the following two pages, a project of this sort may result simply from the special need of a neighborhood.

This particular center, two schemes for which were drawn, is designed to serve a locality of about 3000 population, comprising a portion of Summit. On occasions the major facilities will be used for functions involving the entire community, but the more limited participation determined the size of the plant.

The new structure will owe its existence, in large measure, to the fact that a neighborhood school, including an auditorium, gymnasium and other facilities, was sold for industrial research purposes, thus depriving the neighborhood of its principal recreational and social facility.

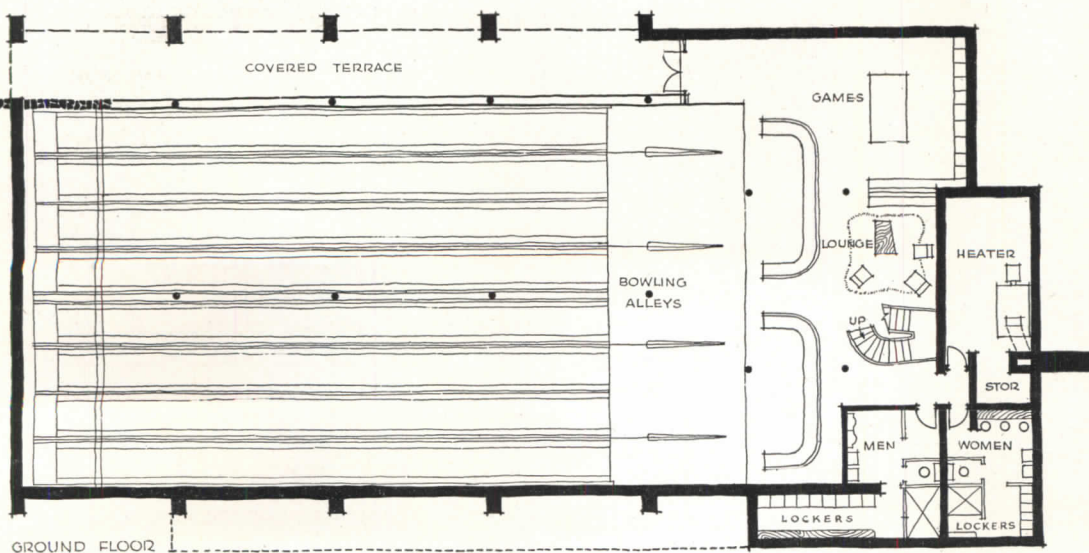
The plans drawn for the new center are of special in-

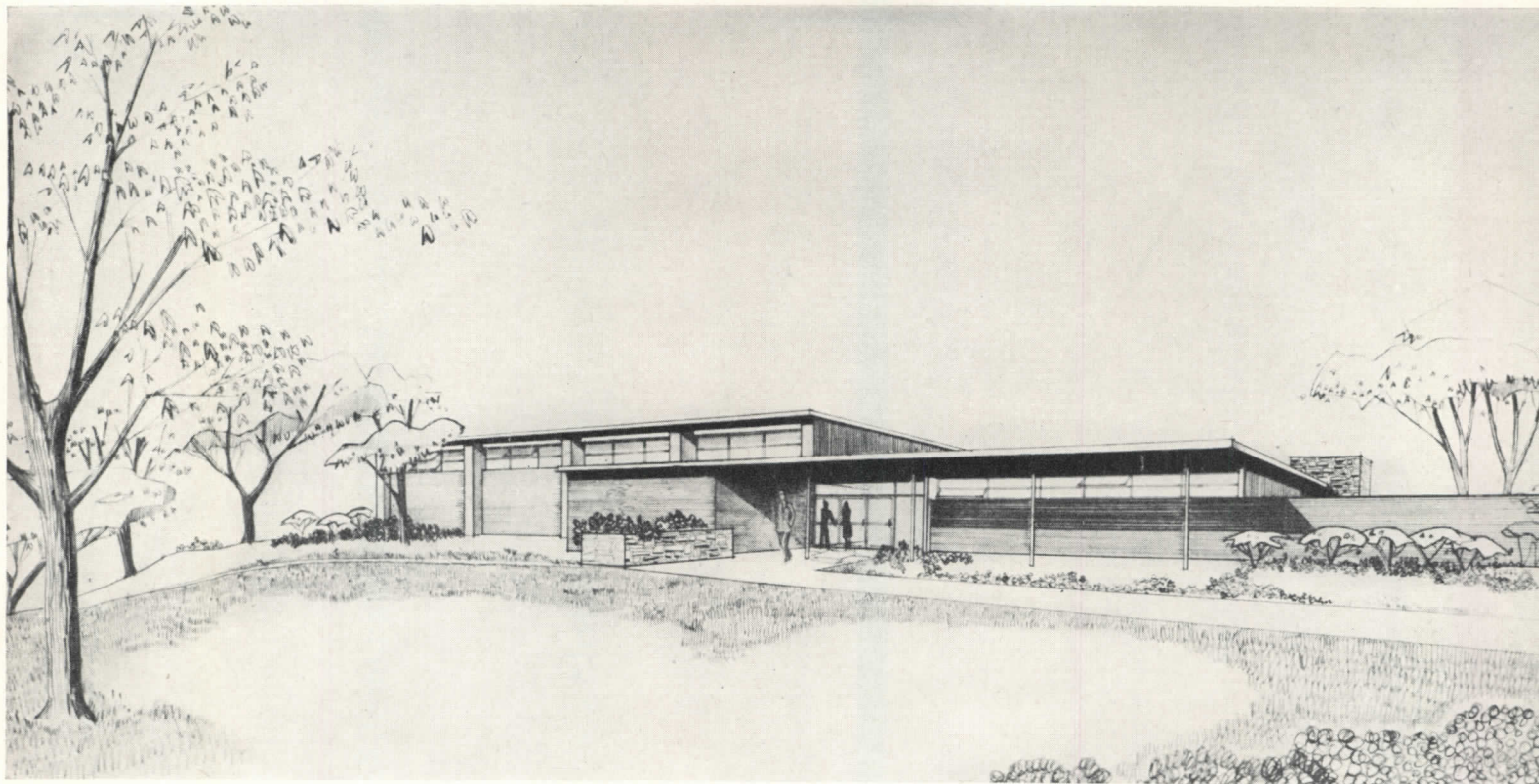


terest, by comparison with those shown on subsequent pages, because of the more modest size of the plant. Thinking in terms of city planning, and the application to recreational facilities of a systematic scheme similar to those developed for educational and public health facilities, the smaller of the two buildings for Summit might be considered as economically feasible for the small neighborhood planning units into which a city might be divided. The larger building is suited to a peculiar local situation.

Again, in terms of a recreational center for an entire community, the larger structure might be taken as an indication of what the small town — little more than a village — might successfully undertake to provide. These generalizations do not, of course, refer to the specific facilities afforded by the Summit Center; these have been provided because they reflect major local interests which, in other localities, might be different.

The larger of the two schemes, shown in perspective on page 115 and in plans on the page to the left, pro-



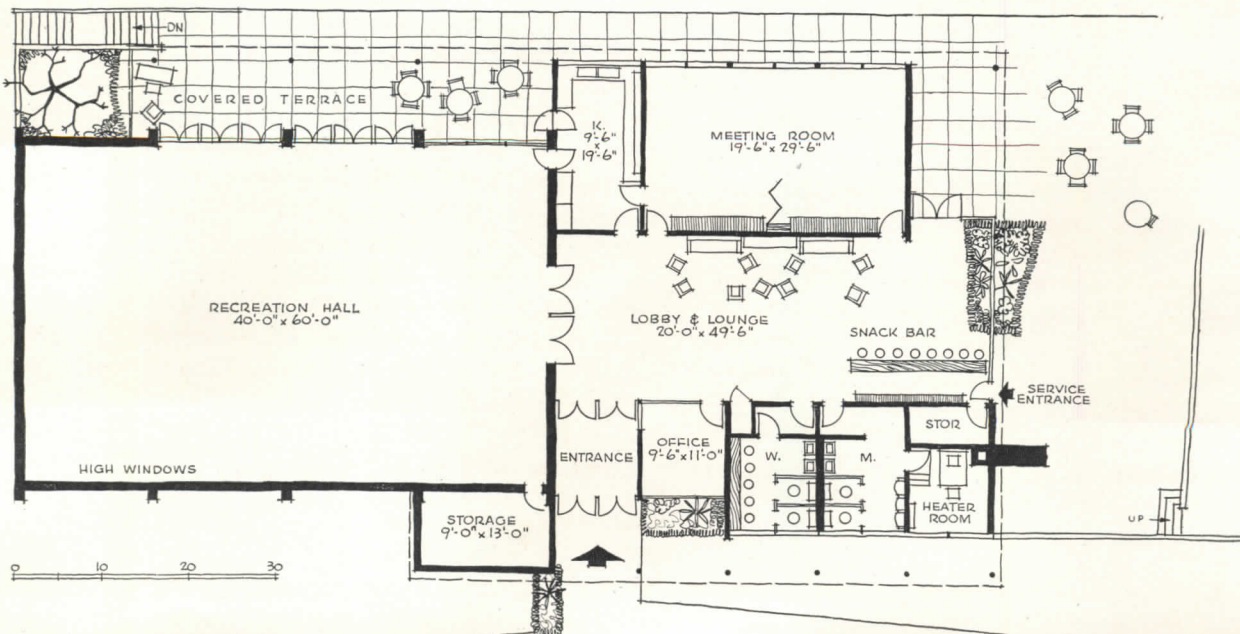


vides two major indoor facilities: a standard basketball court, with all the attendant multiple uses which these dimensions allow; and an eight-lane bowling alley at a lower level taking advantage of the slope of the ground. Kitchen, snack bar, clubrooms and the usual services complete the plant. It is worth noting, with reference to the small neighborhood or community, that almost all facilities are in a high degree income-producing.

The smaller alternative scheme for Summit, shown on this page, might be considered as setting something like

a minimum standard for public recreation buildings, so far as facilities are concerned. The bowling alley is omitted, and the recreation hall is smaller. The emphasis is on the social aspects of recreation rather than on the athletic. The recreation hall is, however, large enough for many active games, even though not adapted to accommodating many spectators as the games themselves use all the floor area.

The project is planned for the Board of Recreation Commissioners, Summit, N. J.





Rendering by Leavitt

THE COMMUNITY CENTER FOR HICKORY, N. C.

Antonin Raymond and L. L. Rado, Architects

F. Ellwood Allen Organization, Park and Recreation Planners

A TOTAL lack of central community or recreational facilities in this Southern manufacturing town of 19,000 persons, and a corresponding public interest in a center designed to supply these elements, formed the basis for a successful drive for funds. A local manufacturer's offer to match, dollar for dollar, whatever the town could raise brought the final total up to about \$800,000.

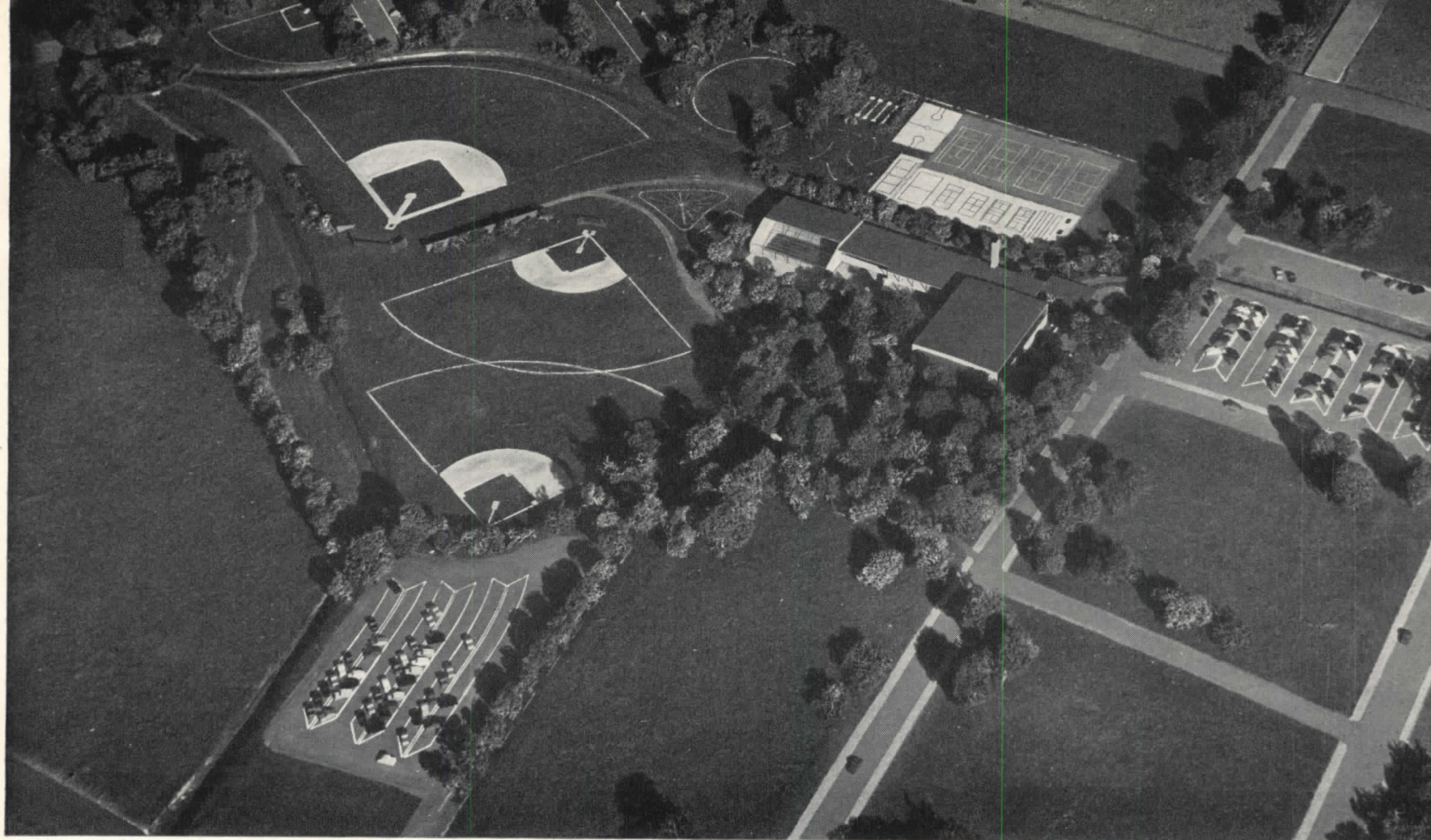
A long-range study of the community and its environs was made which indicated its potential future population and the center has been planned to meet the future as well as present, demands upon its facilities. A 20-acre site near the center of town was purchased, within walking distance of most residents.

The ample size of the property made possible the development of an outdoor area which, as shown on the plot plan and model photograph on the facing page, matches the indoor facilities with provision for all types of outdoor recreation. The game courts for volley-ball, paddle tennis, shuffle-board, table tennis and badminton

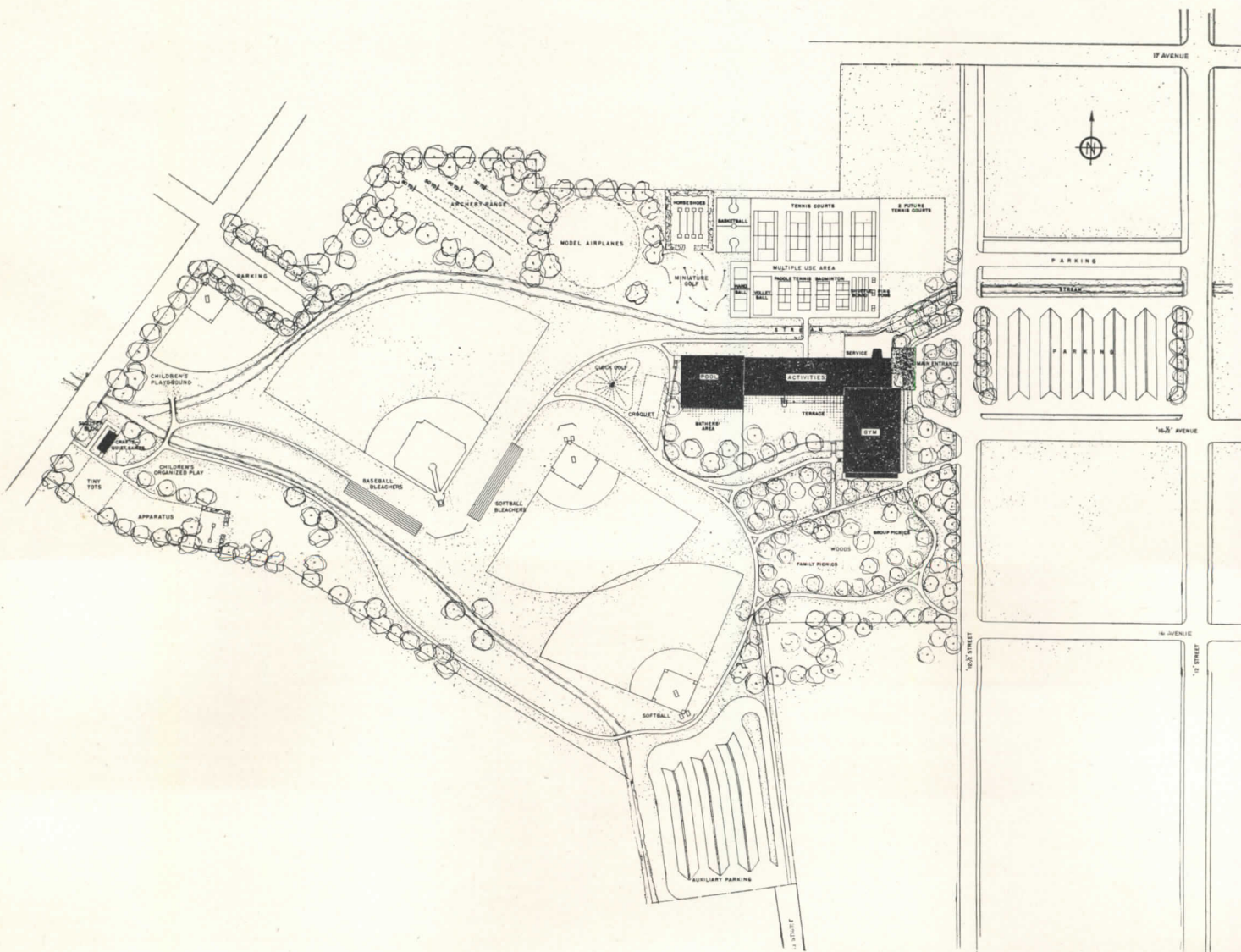
will be hard-surfaced so that when the area is cleared of game equipment it may be used for outdoor dances, roller skating or other events — an application of the multiple use principle to outdoor facilities.

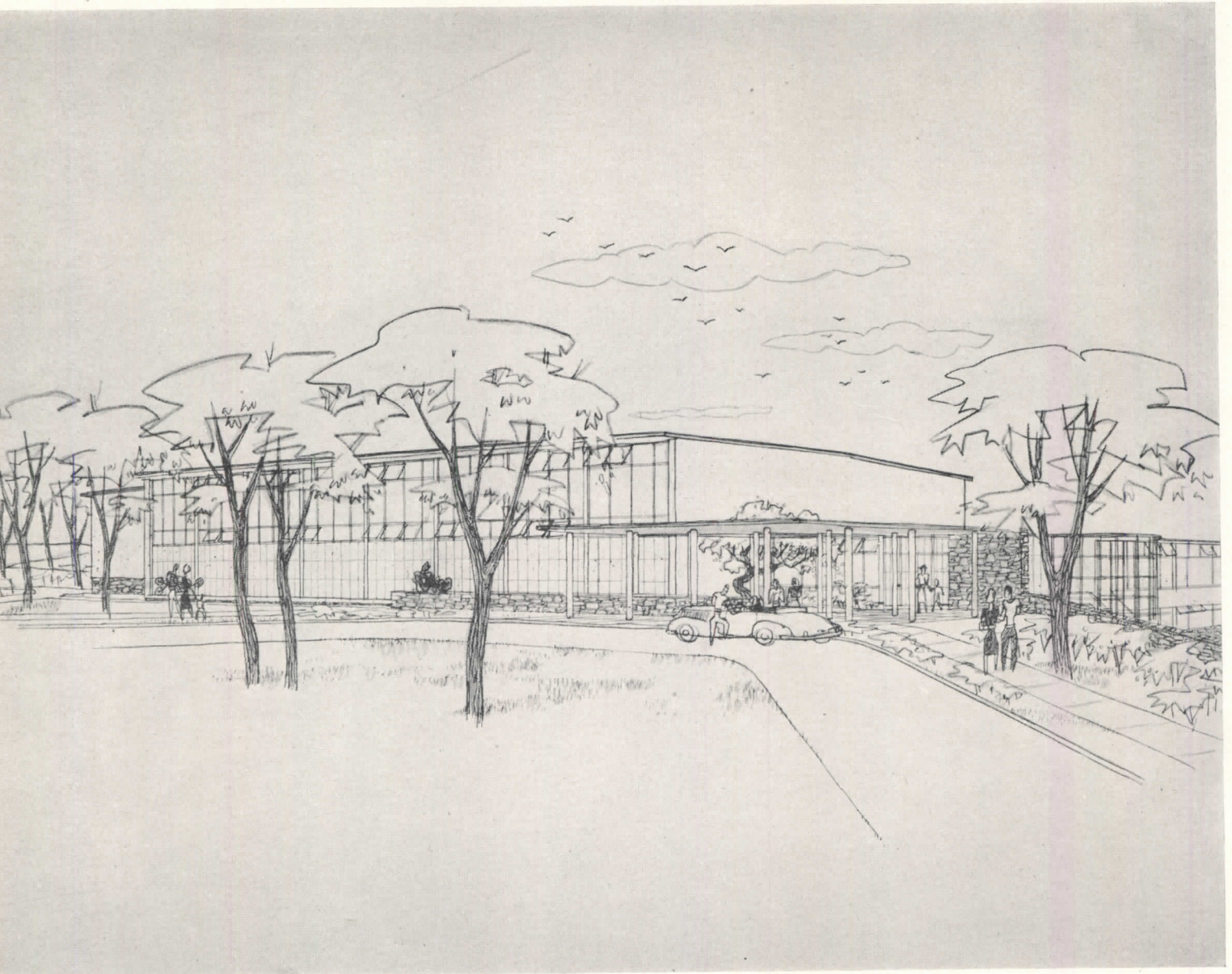
The cost of maintaining this extensive plant in a relatively small community was given careful consideration. The objective decided upon has as its goal the retaining of the non-commercial, community character of the center, while reducing to the greatest possible extent the burden on the community of maintenance costs. Thus, as in other successful centers, it is planned that those facilities which will involve heavy construction or operational costs must produce income; but there will be many units and facilities free for general use, and even the income-producing facilities will be available to children at lesser rates, or, as in the case of the pool, will have certain free periods for children's use.

The community center is sponsored by the Hickory Community Foundation and the Hickory Recreation Commission.

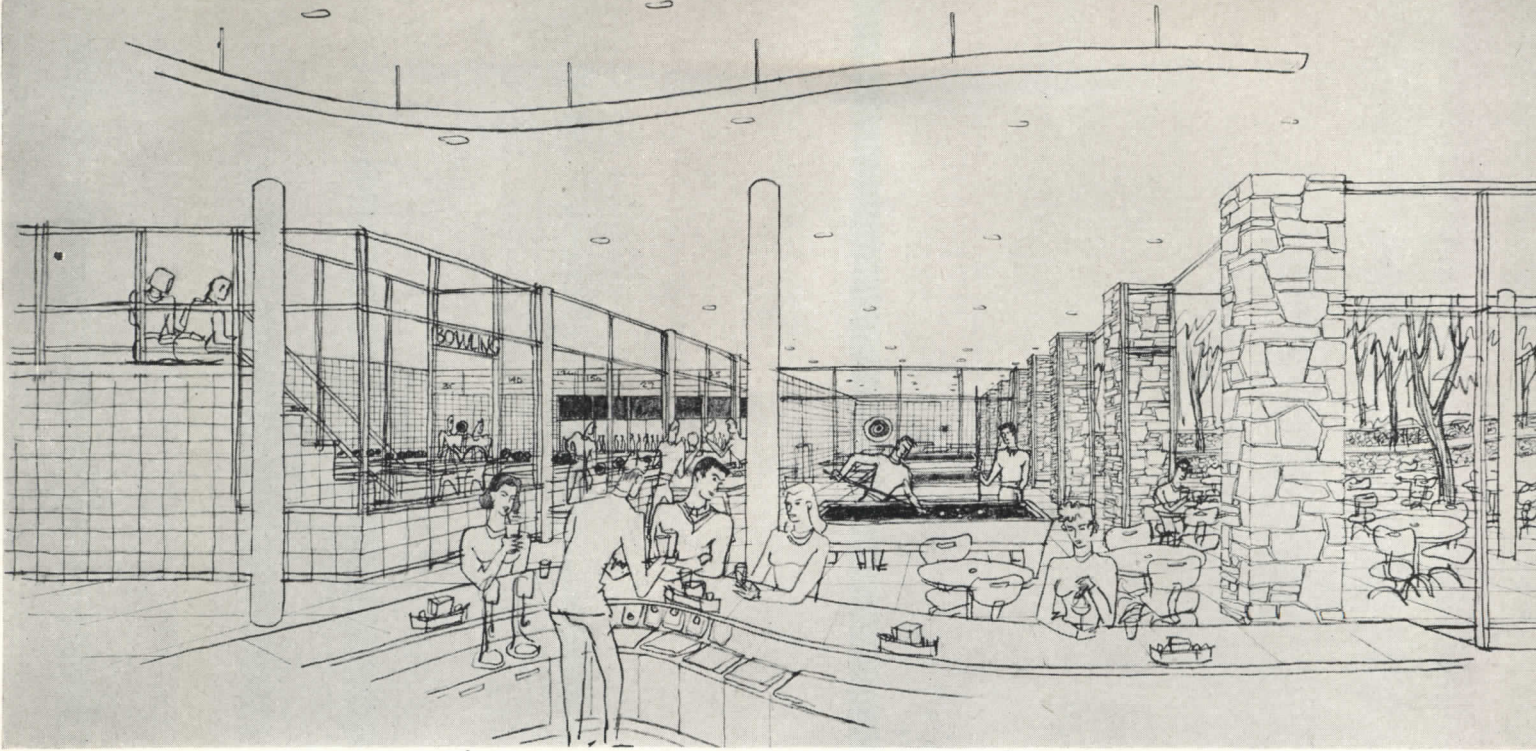


Louis Checkman Photo

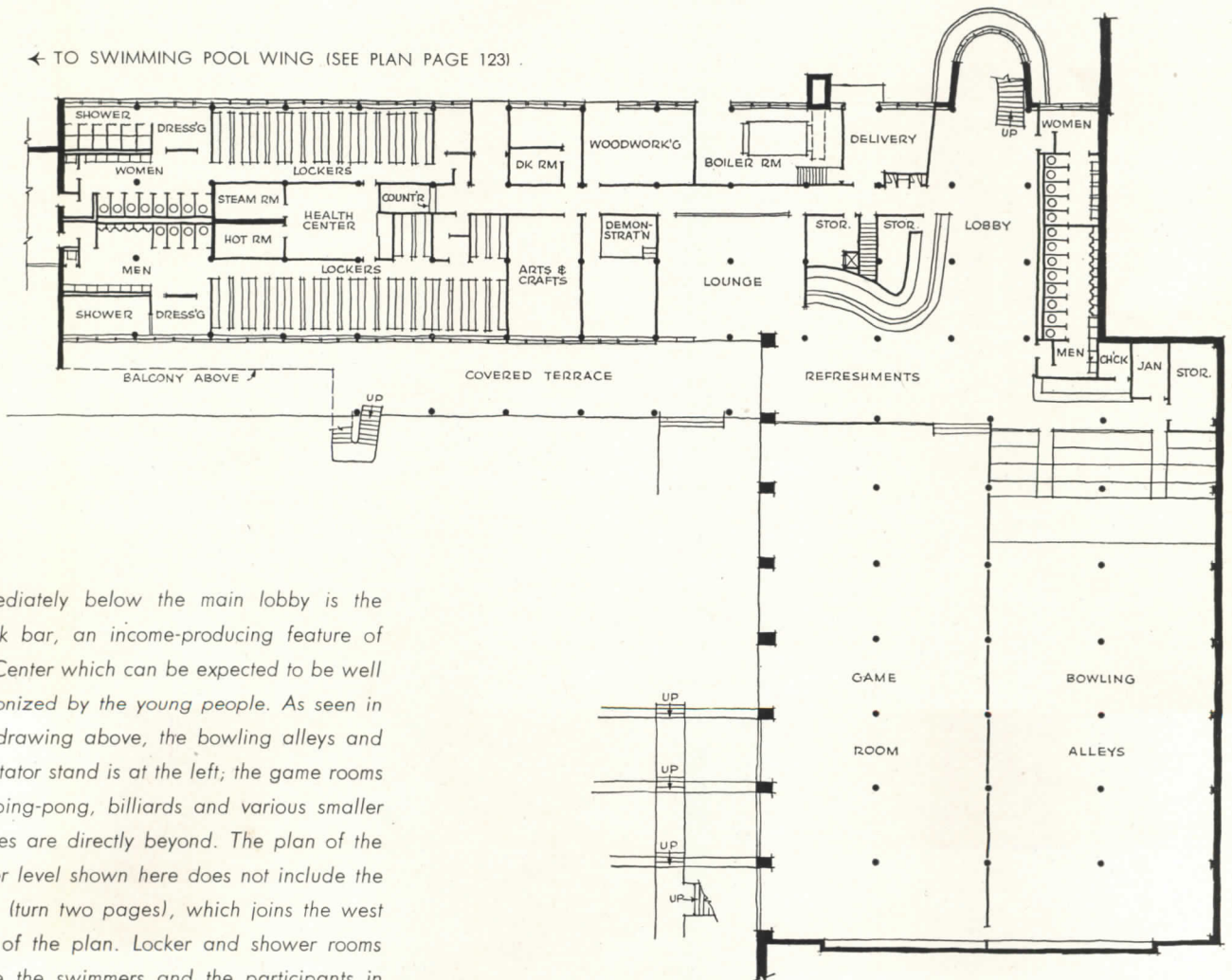




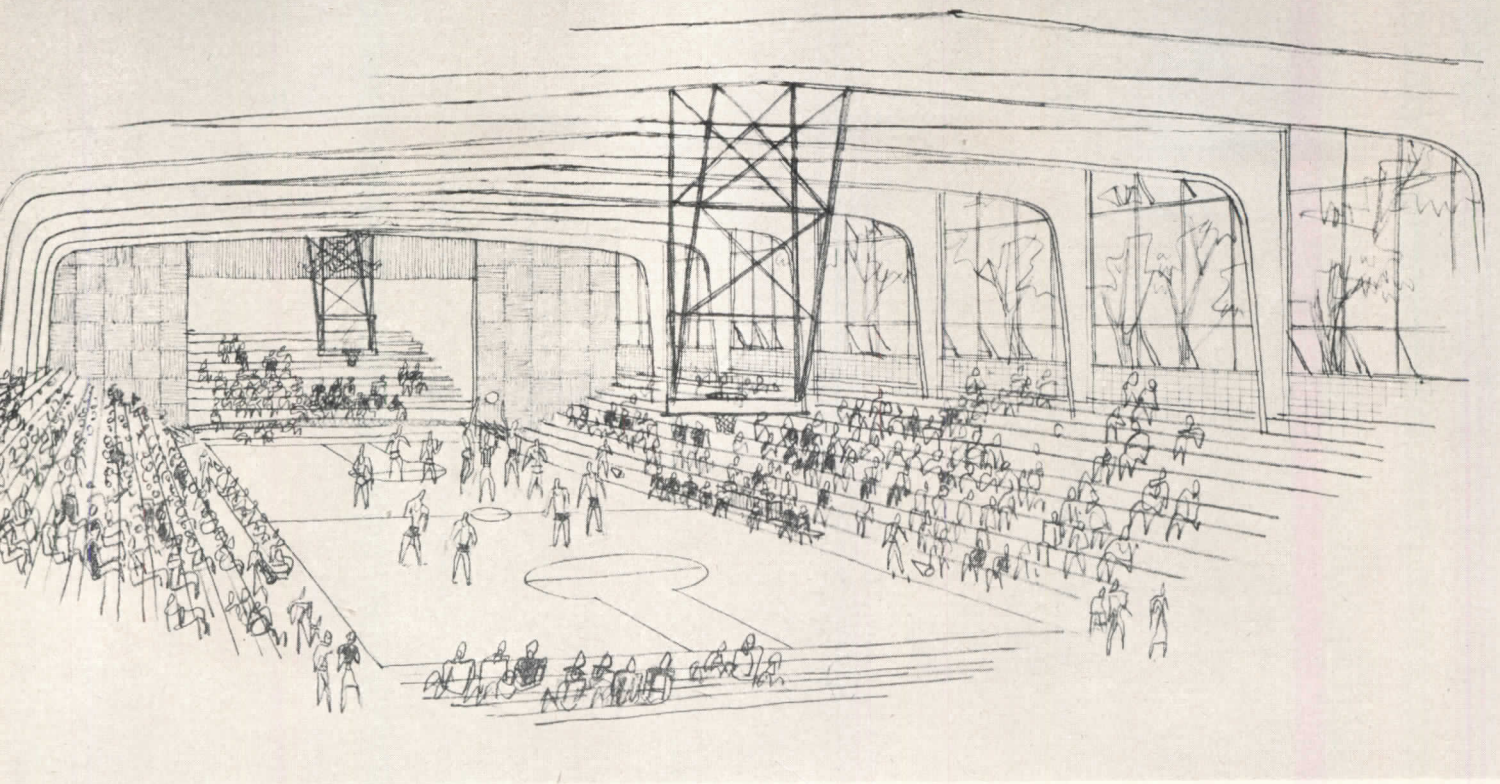
In the design of the Hickory Community Center, architects Raymond and Rado took particular care to suppress any suggestion of institutionalism and to keep the character of the building warm, welcoming, human in scale, intimate and relaxing. The approach to the main entrance, shown in the drawing above, despite the large mass of the gymnasium, has somewhat the hospitable atmosphere of a private club, not at all the forbidding monumentality of so many "public" buildings. This aspect of the design could be a deciding factor in the popularity, and therefore the success, of the Center



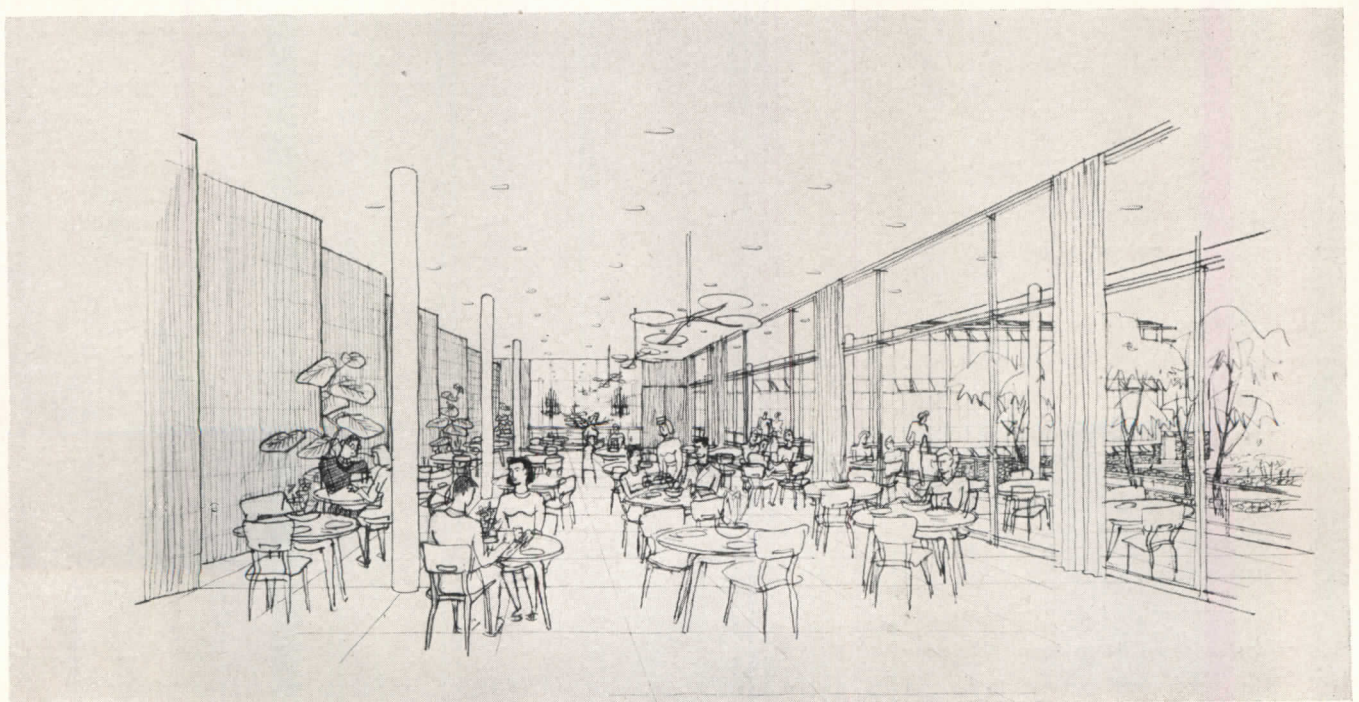
← TO SWIMMING POOL WING (SEE PLAN PAGE 123)

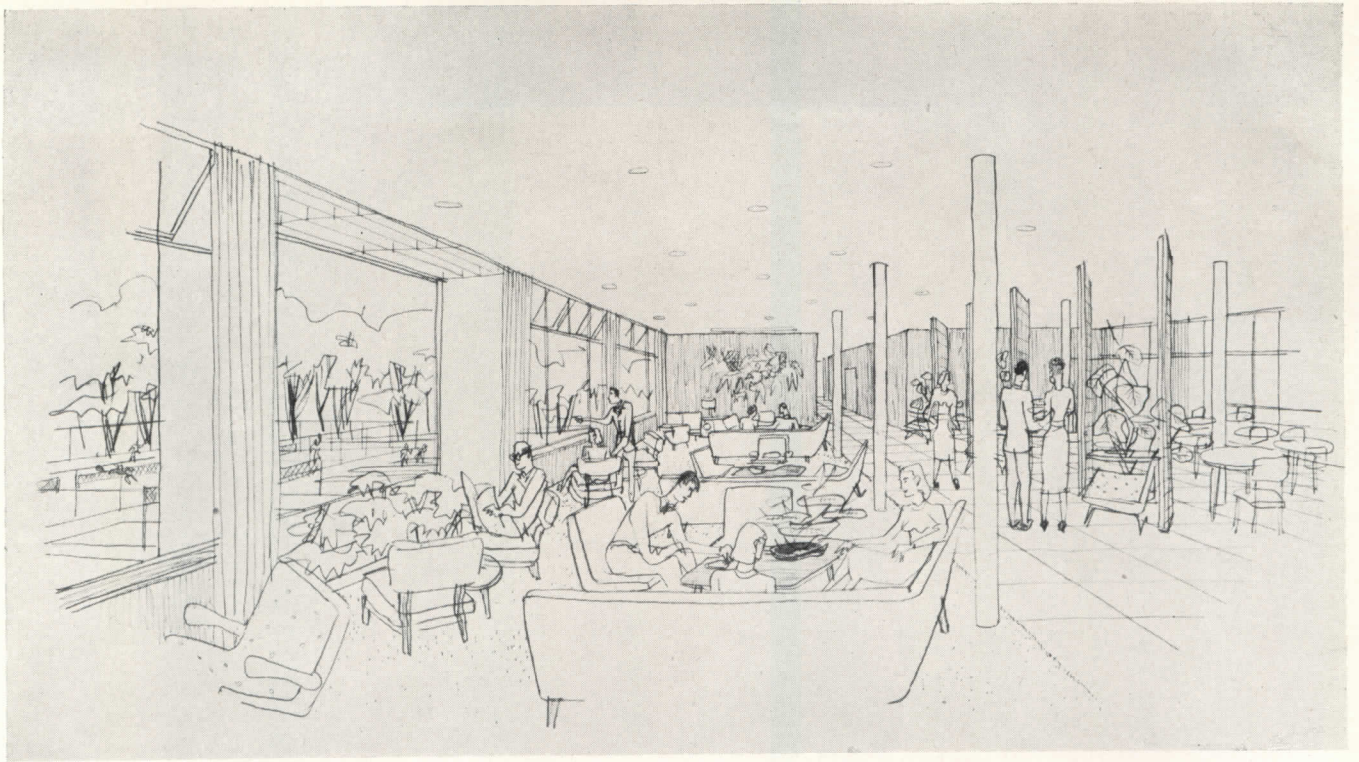


Immediately below the main lobby is the snack bar, an income-producing feature of the Center which can be expected to be well patronized by the young people. As seen in the drawing above, the bowling alleys and spectator stand is at the left; the game rooms for ping-pong, billiards and various smaller games are directly beyond. The plan of the lower level shown here does not include the pool (turn two pages), which joins the west end of the plan. Locker and shower rooms serve the swimmers and the participants in outdoor activities, with a small stairway behind the snack bar giving access to the gym

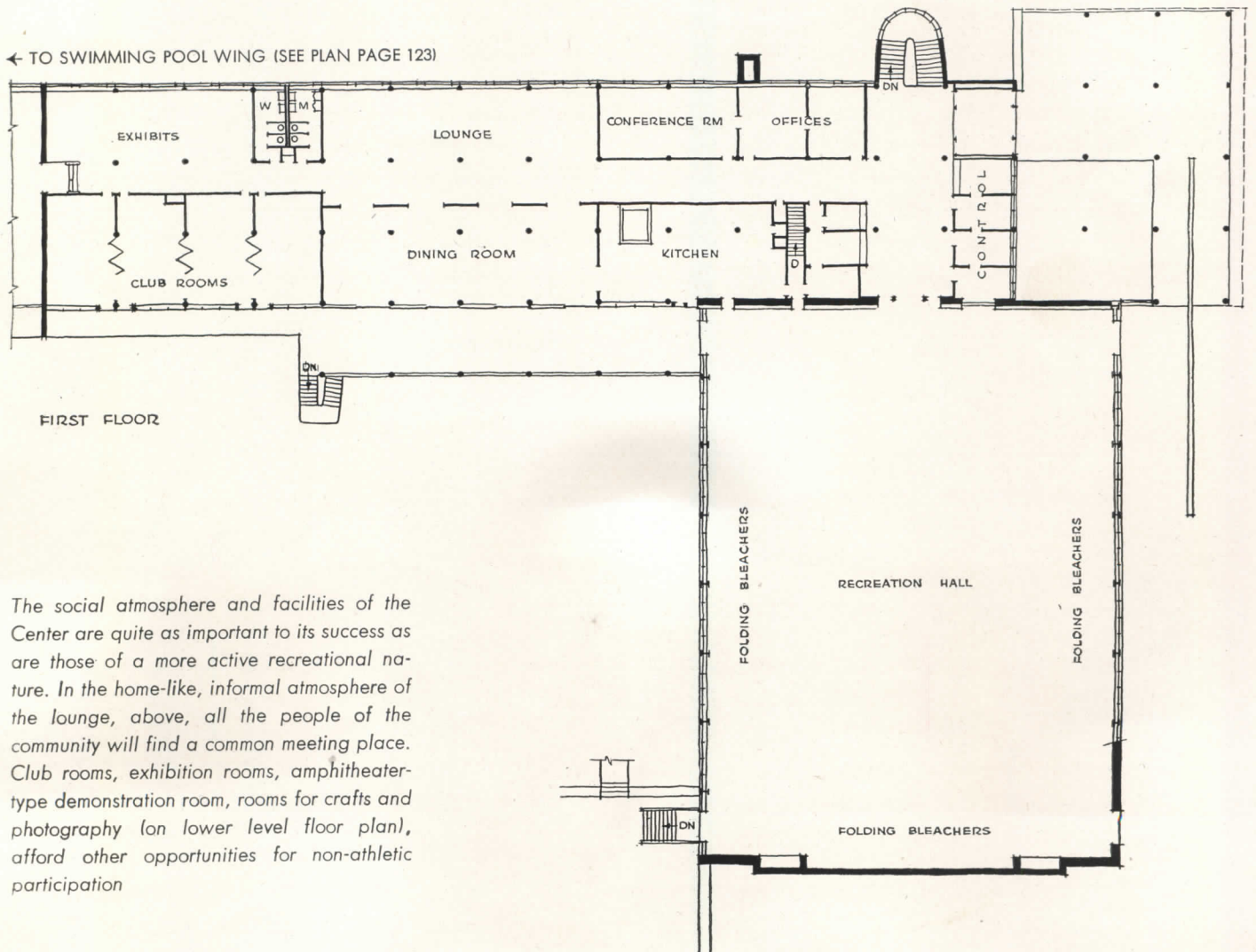


The recreation hall, off the main lobby, has ample playing space for a regulation basket-ball court, with folding seats affording a total spectator capacity in excess of 1800. The hall is adaptable to a variety of other games and functions; as seen in the plan at right, the kitchen is conveniently adjacent for the serving of large banquets. The dining room, shown below, has a normal seating capacity of 100, and opens on a terrace balcony to the south where an additional 100 may be served

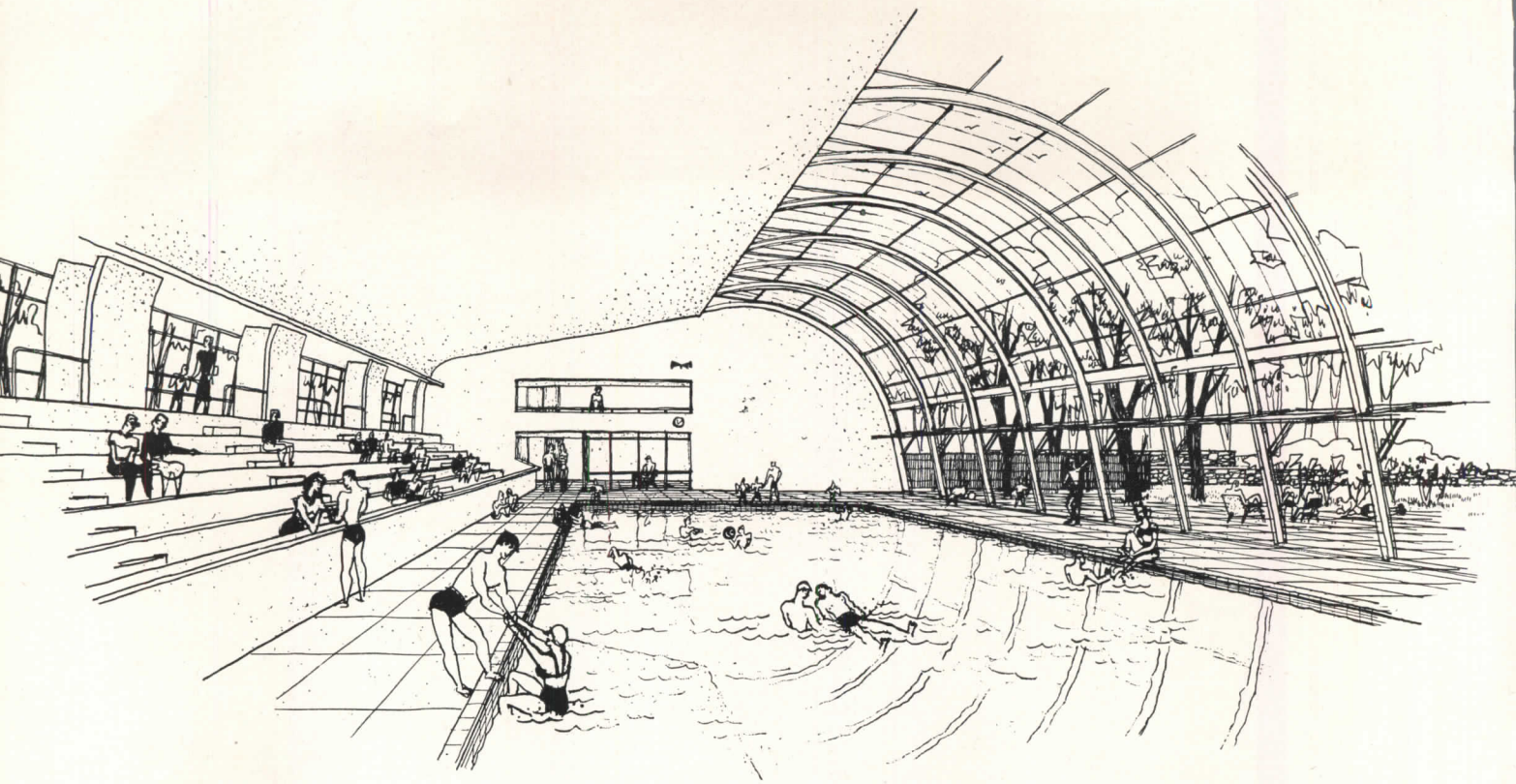




Renderings by Leavitt



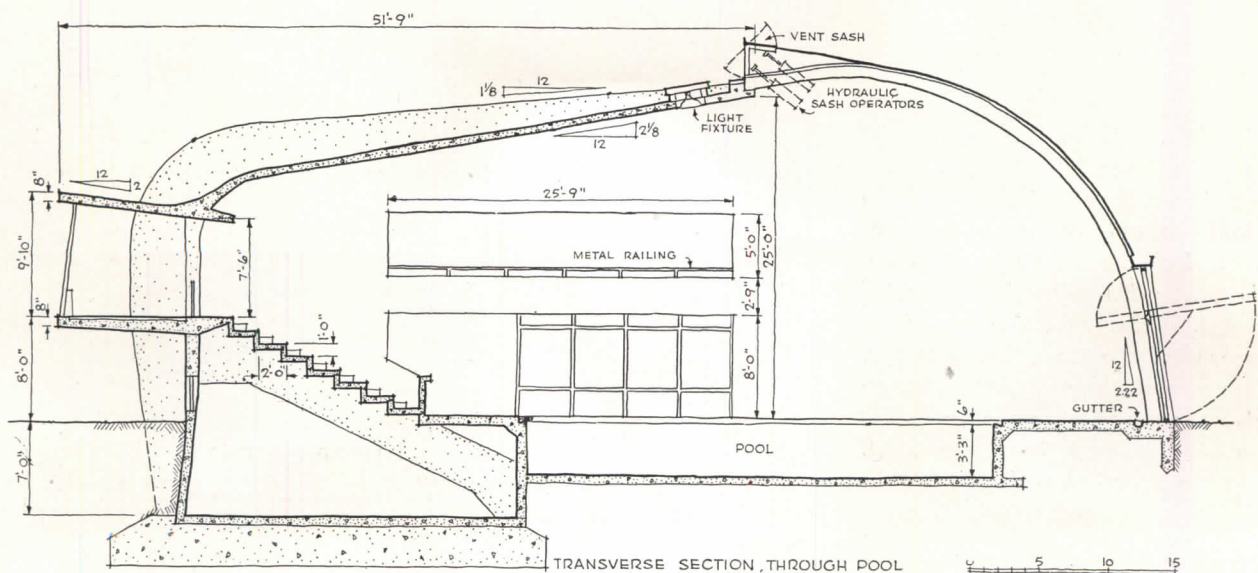
The social atmosphere and facilities of the Center are quite as important to its success as are those of a more active recreational nature. In the home-like, informal atmosphere of the lounge, above, all the people of the community will find a common meeting place. Club rooms, exhibition rooms, amphitheater-type demonstration room, rooms for crafts and photography (on lower level floor plan), afford other opportunities for non-athletic participation

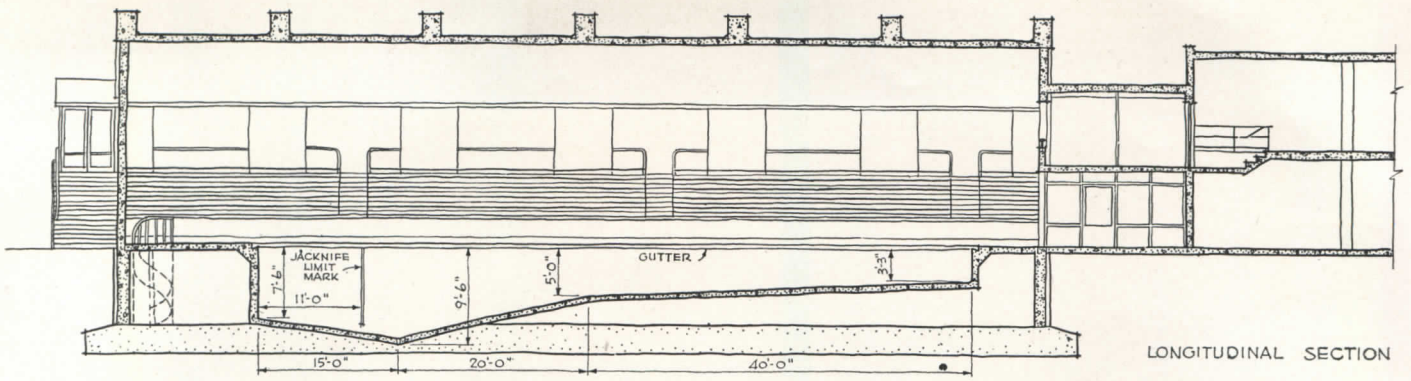


Rendering by Leavitt

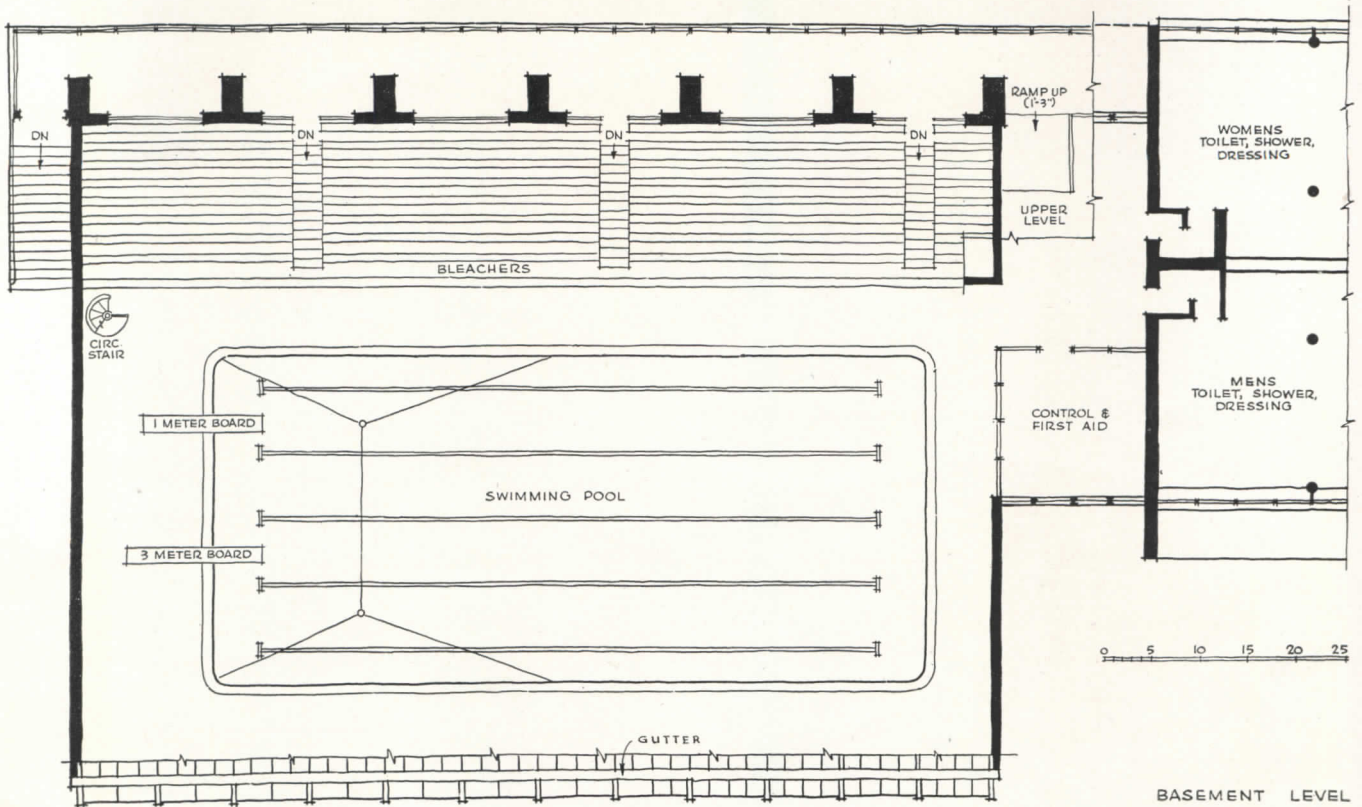
Undeniably an expensive feature of any recreation center, a swimming pool is also one of the almost indispensable items where no similar facility is available to the community. Fortunately, it is also a facility which can produce substantial income through admission tickets to swimmers, and to spectators at aquatic events. The Hickory Community Center pool is the regulation 35 ft. wide by 75 ft. long,

and provides a seating capacity of 400 in the gallery. A feature of the pool is the pivoted lower tier of glass which makes it simple, in warm weather, to open the south side of the building fronting on a broad, enclosed terrace for sunbathers. The pool has in effect all the features and advantages of an outdoor pool in summer and of a bright, warm indoor pool in inclement weather

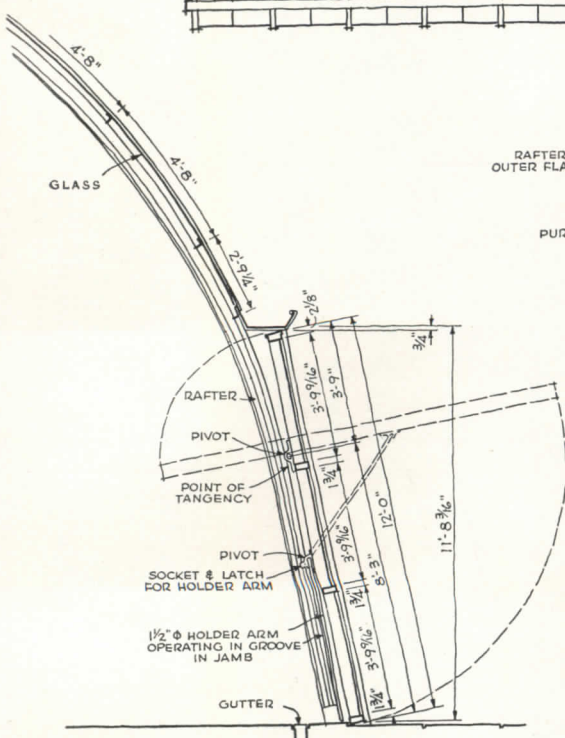




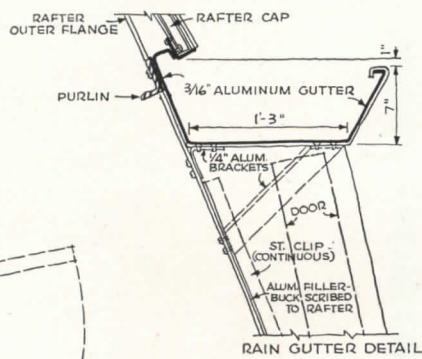
LONGITUDINAL SECTION



BASEMENT LEVEL



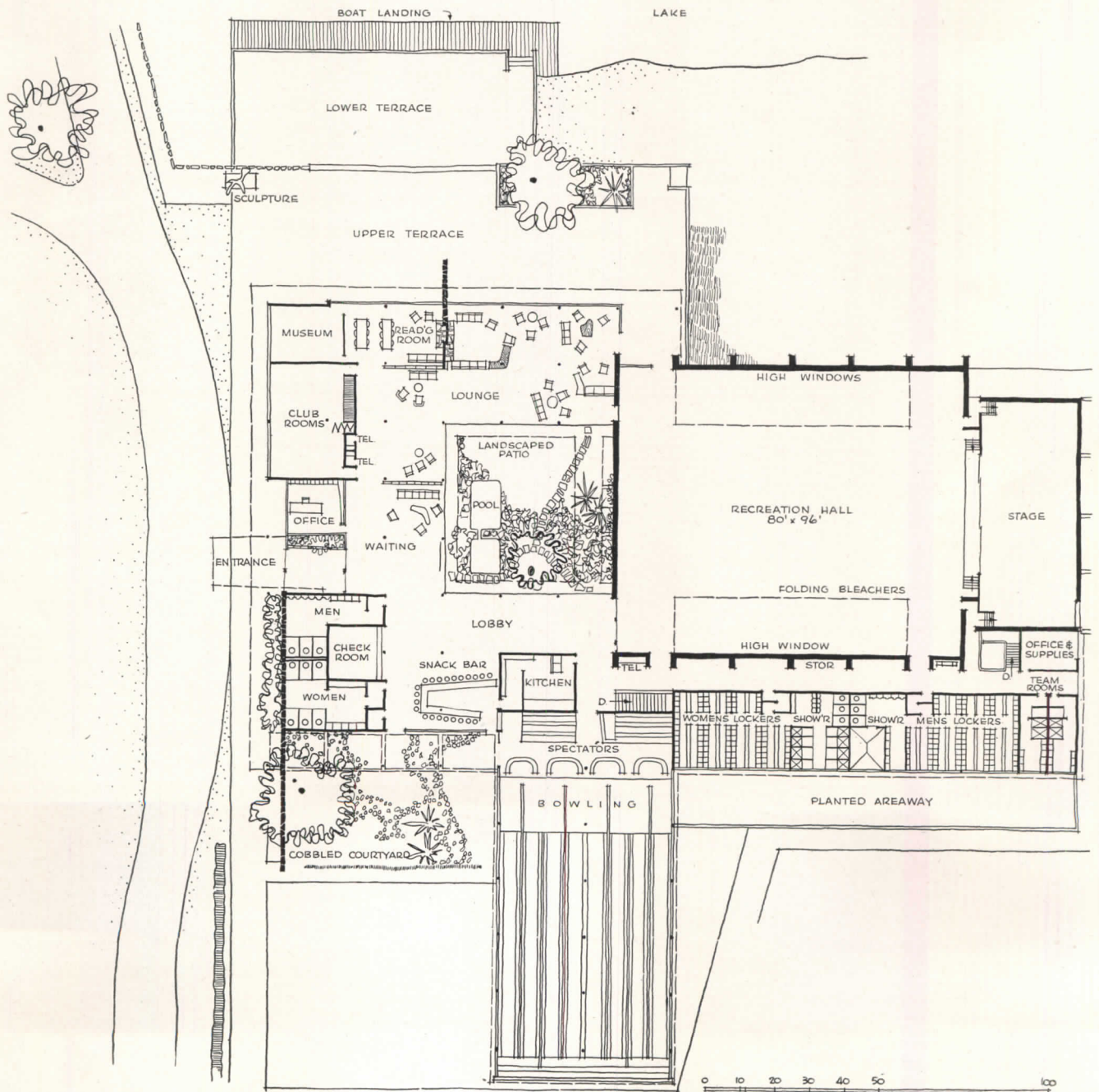
SECTION THROUGH GLASS ENCLOSURE



RAIN GUTTER DETAIL

As shown in the plan and section above, the pool unit connects with the western wing of the main building; at the lower level, the pool is conveniently near the locker rooms, and on the first floor level is accessible to non-swimmers via a corridor from the lounge. The concrete pool building represents a basic change in structural material compared with the recreation hall wing of the Center, which is steel. This change is admirably reflected in the dramatically flowing lines of this building's characteristically concrete architecture

Above and at left are details of the glass south wall of the pool building, one of the most notable features of which is the pivoted sash shown open in the drawing on the opposite page. The advantage of this detail over conventional doors or sliding sash merits consideration



A RECREATION CENTER AT BLOOMINGTON, ILL.

Antonin Raymond and L. L. Rado, Architects

F. Ellwood Allen Organization, Park and Recreation Planners

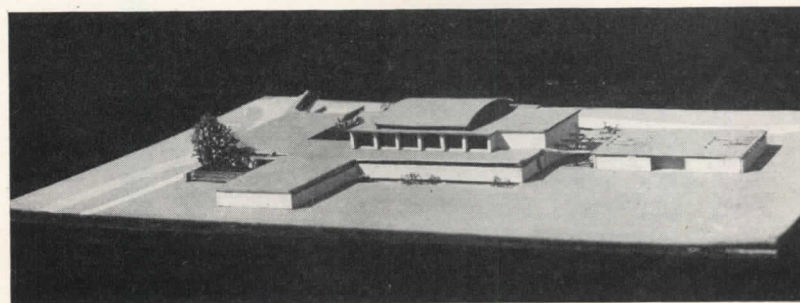
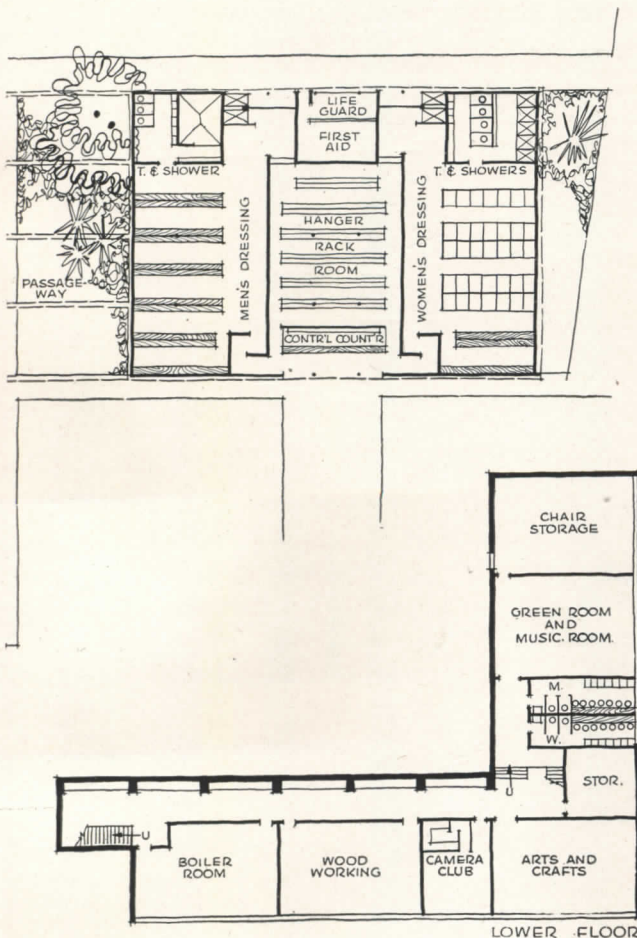
THIS Center, unlike the one shown on the previous eight pages, was designed primarily to serve the employees of the State Farm Insurance Companies, and the question of raising public funds did not arise. Although Bloomington is a good-sized university town, attractive recreational facilities are conspicuously deficient for the great majority of the companies' employees, many of them young women fresh from farms and villages. This dearth of facilities serving leisure interests is a principal cause of a serious employee turnover.

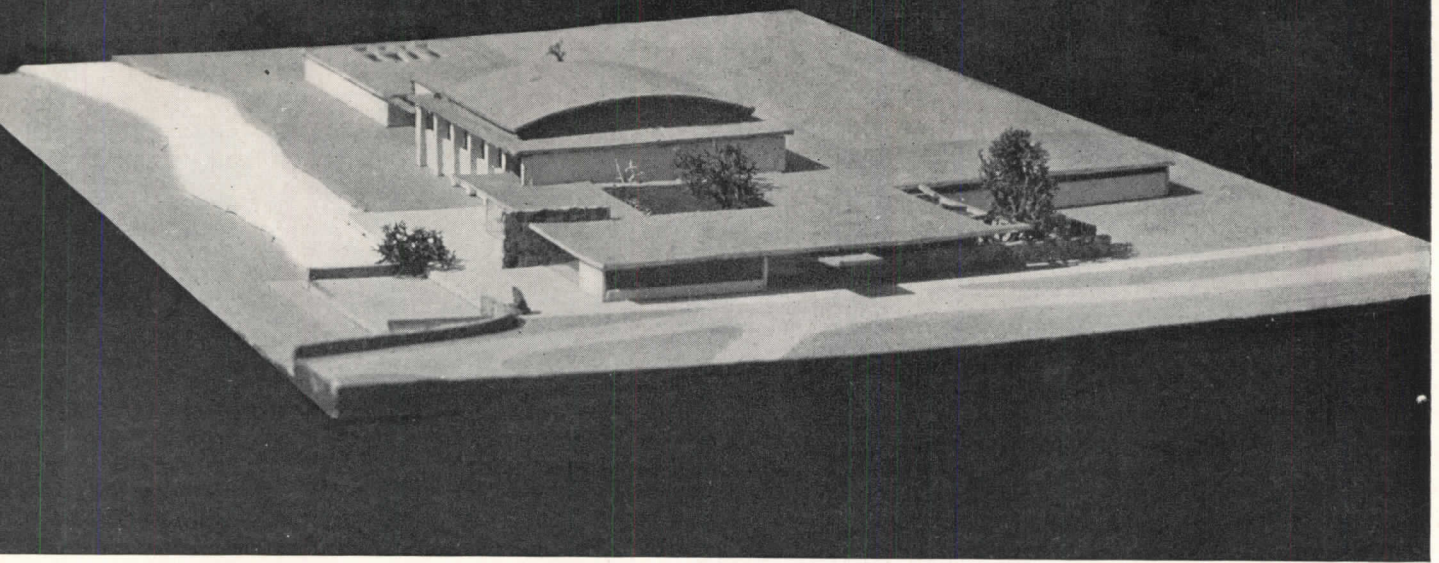
To meet this situation, the Companies asked the employee organization to make recommendations as to the kind of facilities that would provide for the major recreational interests of the employees. These recommendations, together with a searching, independent study

by the planners, formed the basis for the design and determined what facilities would be included. Special attention is drawn to this phase of the pre-design research; the desires and preferences of the men, women, and families who were to use the Center were sought and followed. The more paternalistic approach, in which the officers of the Companies which are to pay the bill might have dictated what should go into it, would have been of much less value in securing the ultimate objectives of the project.

A property, some 33 acres in extent, was purchased at the edge of town, since a central location was in this case of less importance than an attractive site of ample size. The building will overlook a body of water which will afford swimming, boating, etc., and there is adequate space for all outdoor activities. Most employees, their families and friends — the Center will not be restricted to employees' use — will reach it by automobile, and it is planned to be extensively used on weekends.

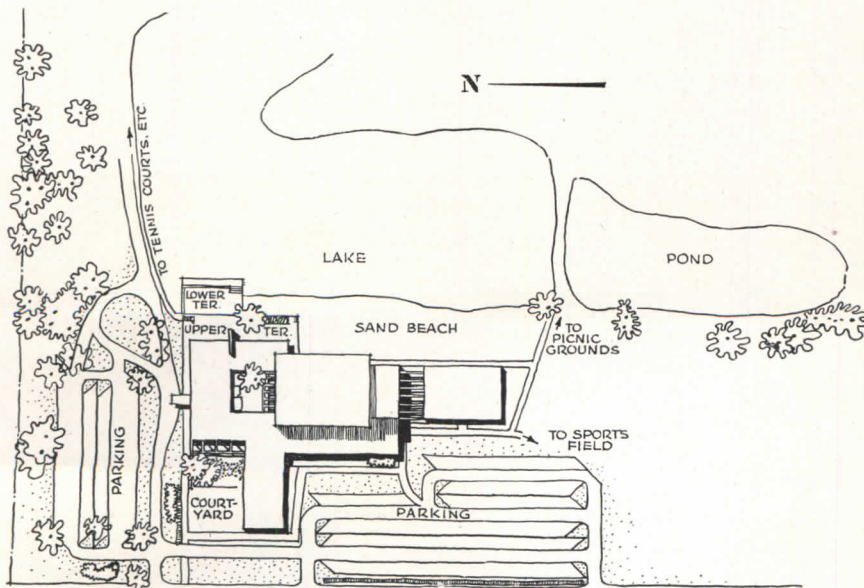
As reflected in the plan shown here, bowling and music were two of the most widely popular interests for which facilities were needed. The recreation hall has a stage suitable for concert use. Separate from the main building is an annex for swimmers, providing dressing-rooms, showers, drying facilities, etc. For other views of the model, see the following two pages.



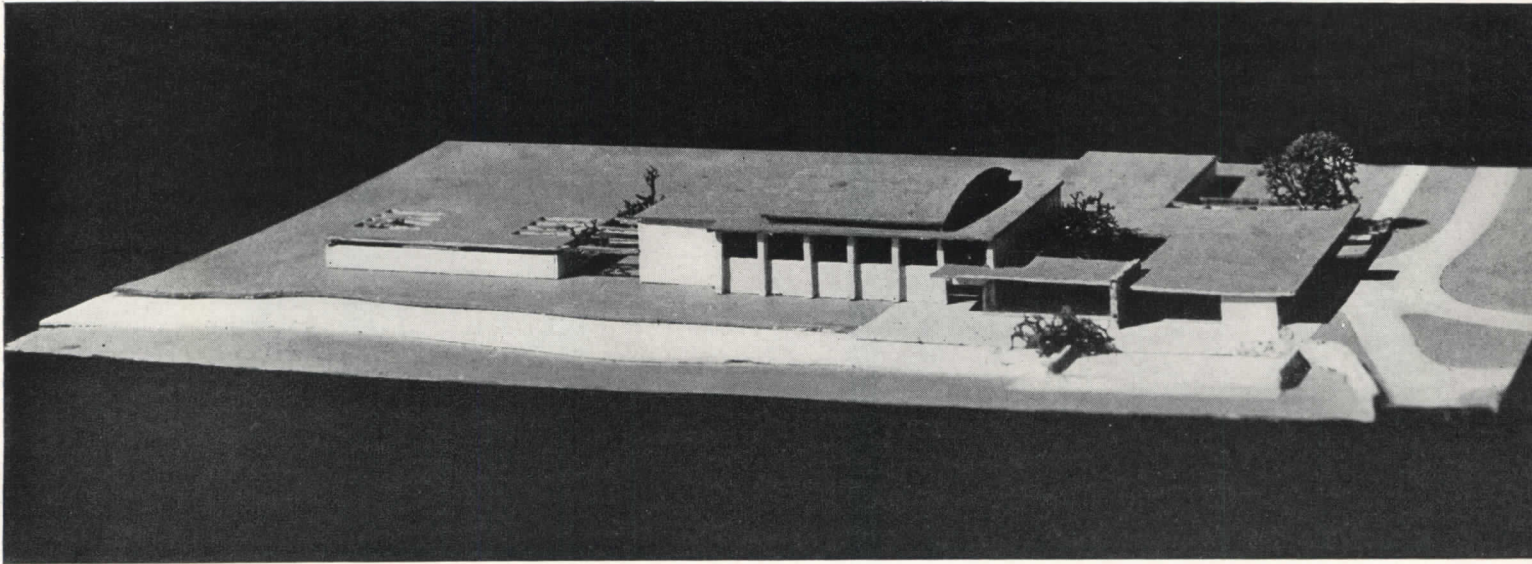
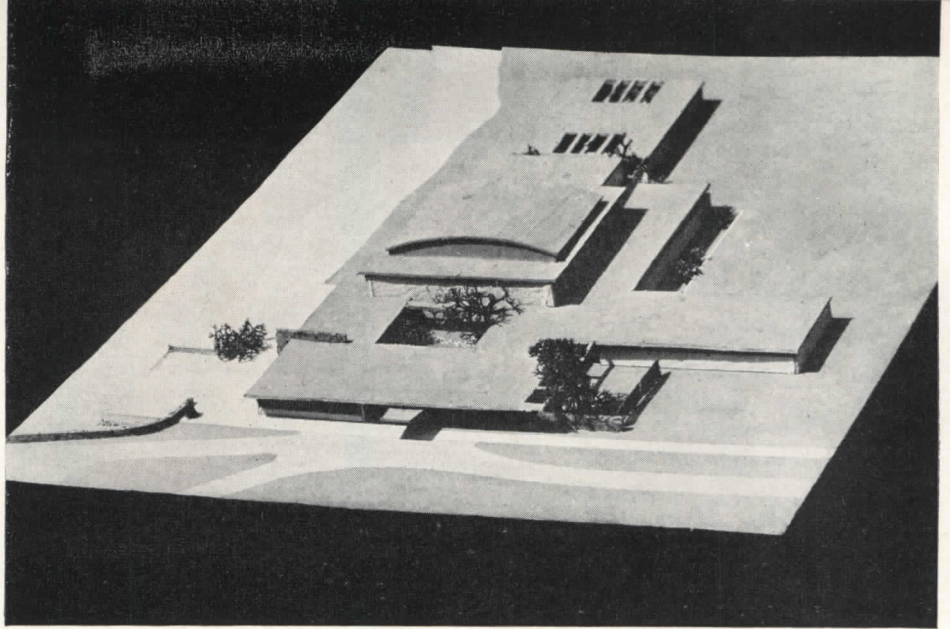


The photograph above shows a view of the Center as it might be seen from the hill north of the lake, looking southwest toward the entrance front and the lakeside. Only a part of the extensive property is shown in the plot plan below, but certain of the more important features are highlighted. The spacious terraces, extending to the water's edge and ending in a boat landing, take full advantage of the lakeside site, while a gently rolling topog-

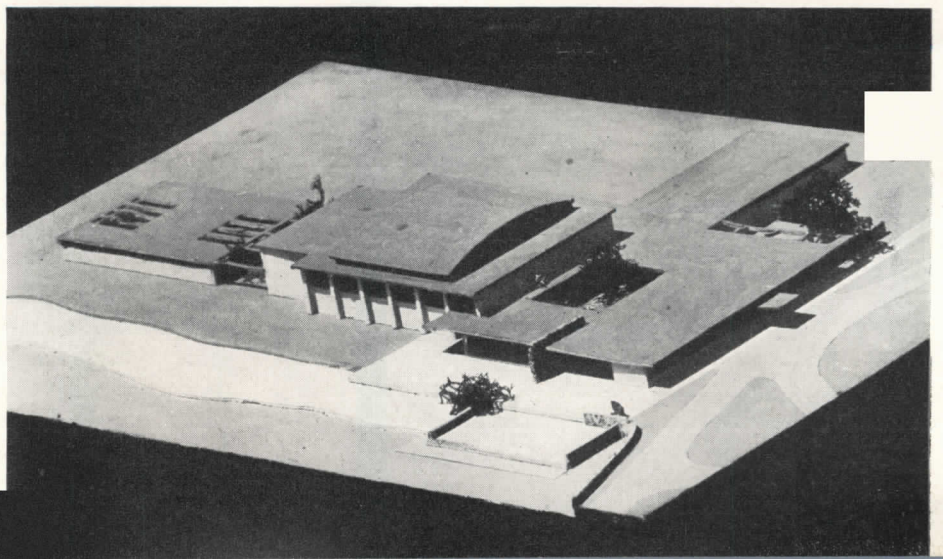
raphy lends itself to an interesting layout of outdoor facilities. Note the emphasis on adequate parking, with provision in the two lots for a total of 203 cars, 70 cars being accommodated in the area north of the entrance and 133 in the main parking area west of the building. The latter parking space is nearest to the picnic grounds and sports field to the south. It is convenient also to the main building and to the bathing facilities



At right, looking toward the main entrance, this view shows the entrance leading to the lobby, the bowling alley wing at right, the lounge and terraces at the left, the recreation hall in the center, and the bath house beyond. Note the open garden patio which serves as an outdoor lounge and reading room



In the photographs above and at right there is clear indication that again the architects have worked towards the creation of an environment which would be as friendly and intimate as possible in a project of such considerable size





ELECTRONICS PLANT WITH PRECISE CONTROLS

Western Electric Company's Allentown, Pa. Plant Consolidates Advances

in Atmosphere Control, Flexibility and Lighting

The Austin Company, Designers and Builders

IN ELECTRONIC TUBE manufacture, where a bit of dust or a touch of perspiration would spoil the work, the plant designer must not merely accommodate a manufacturing operation, but also contribute to it. The concept of a "controlled conditions" factory is not new (Austin engineers say they built the first of this kind 18 years ago), but the new Allentown plant for Western Electric does represent a consolidation of engineering advances toward the most precise controls. No "house of magic," it does embody the combined experience of Western Electric's plant engineers with that of the Austin Company to gain not only this control but also the utmost in flexibility for an amazing variety of plant processes, all of which are subject to continual change.

The plant occupies a 50-acre landscaped site in a country location, with recreation areas, parking lot,

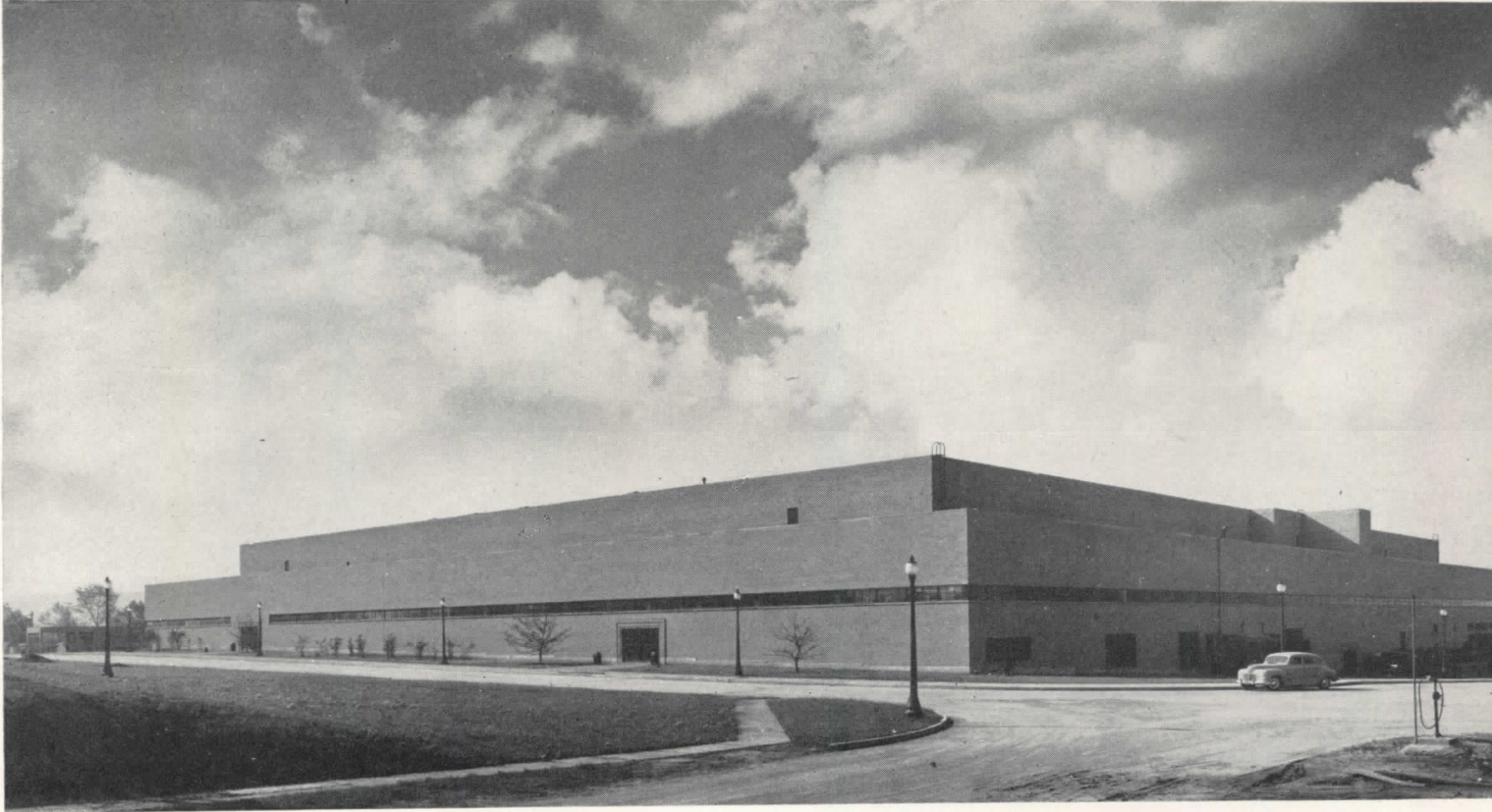
and rail siding. Main buildings include the administration building, manufacturing building, powerhouse and gas generation building.

Flexibility. Manufacture is housed in a two-story, 375 by 450 ft. structure, with a full ground floor beneath the main floor. Clear spans of 100 ft. provide four 325-ft. aisles in the main manufacturing area. Special process departments and employee facilities are arranged around the perimeter, in a 25-ft. lean-to section where the wider range of air conditioning requirements can be met.

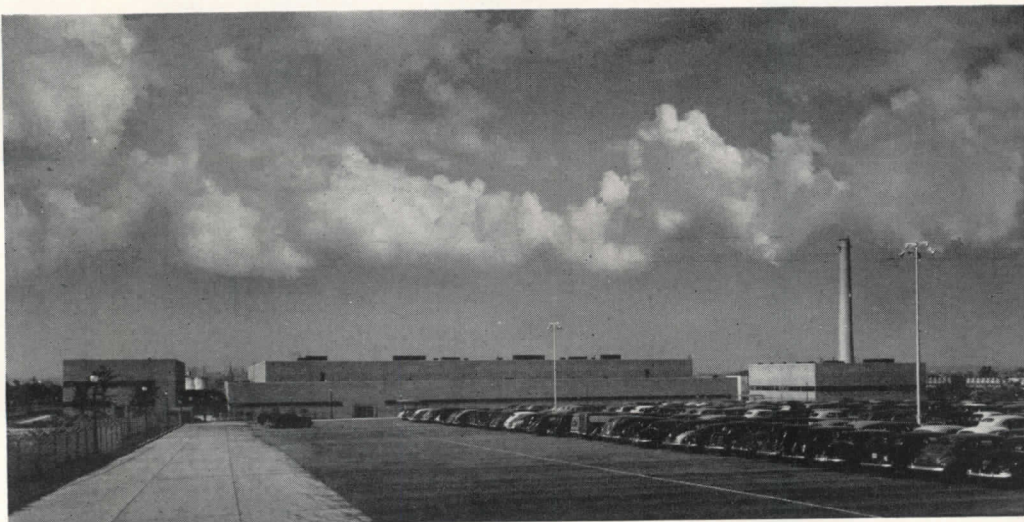
Within these manufacturing aisles one of the major design problems was the wiring and service lines to reach some 5000 machine locations, any of which might be changed at any time. This led to the use of a new-old idea adapted from mill construction, the "packed" wood

Main manufacturing building comprises a central manufacturing area 325 by 400 ft., with clear 100-ft. spans. Around the periphery is a 25-ft. lean-to section for special processes

Richard Averill Smith photos



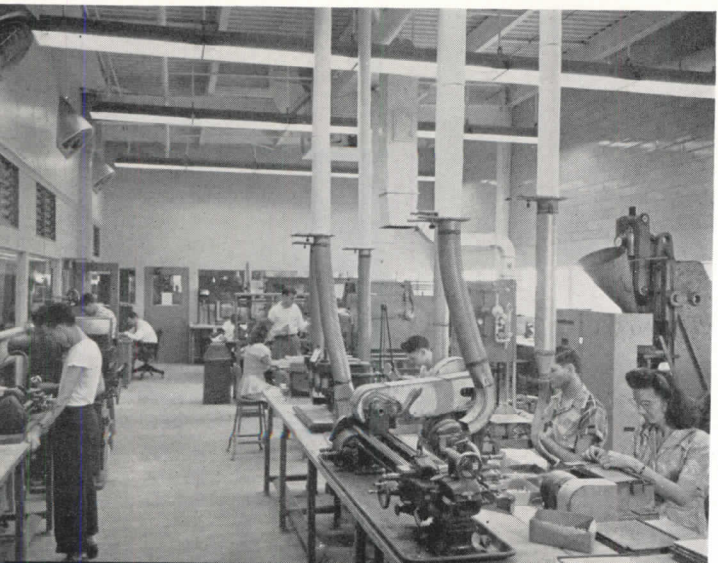
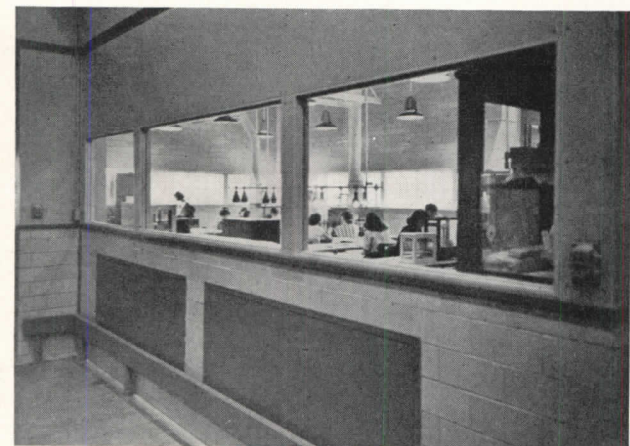
Plant occupies a 50-acre site two miles east of Allentown, Pa. Blacktop parking area has space for 600 cars. Buildings in background are administration building, plant and power-house



Richard Averill Smith Photos



Second floor engineering offices in office building (top, left) have 75-ft. clear span. Manufacturing building has 100-ft. clear span, in four 325-ft. aisles (top, right). Below, smaller view shows sealing off of the cathode coating department in the lean-to section, because of explosion hazards — louvers are closed with sheet steel. Larger photo shows air conditioning ducts and exhaust louver to main room



floor. The floor consists of 3 by 6-in. timbers laid on edge, with a 1-in. strip maple flooring on top. These timbers, supported by steel beams, and spiked together with spikes reaching into the third timber, carry heavy floor loads but still permit easy connections to pipe lines. Wiring and service piping of a dozen kinds run in a maze of mains and branches just below the main floor, at the ceiling of the ground story. Connections can be dropped down vertically to any location on the lower floor, or run upward through the floor by the simple means of boring a hole.

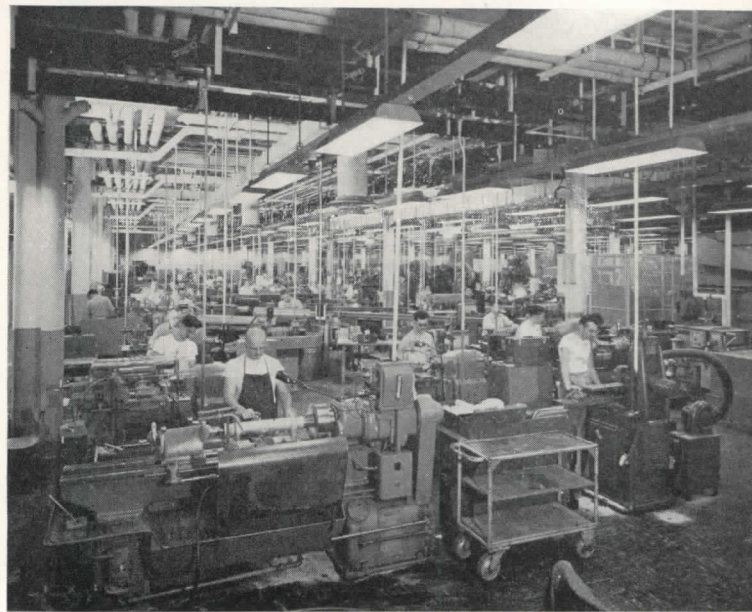
The Building. Part of the job of atmosphere control is performed by the building itself. It was designed to seal off the interior and insulate it against solar heat. Heat of processes makes the problem of cooling far more serious than that of heating.

Walls are designed for a 12-hour lag in transmission of solar heat. They are 13½ in. thick — an 8½-in. outer brick wall, a vapor seal, 1-in. fiber glass insulation, another vapor seal, and 4 in. of glazed tile on the interior.

Windows too enter into the *sealing*. They are limited to a 30-in. vision strip, of two thicknesses of solar glass.

The roof is designed for a 4-hr. heat lag — a sheet of structural steel, 2 in. of fiber glass insulation, and 20-yr. bonded roofing.

Air Conditioning. To prevent relatively dust-laden outdoor air from seeping into the building through doorways, the air conditioning equipment maintains an

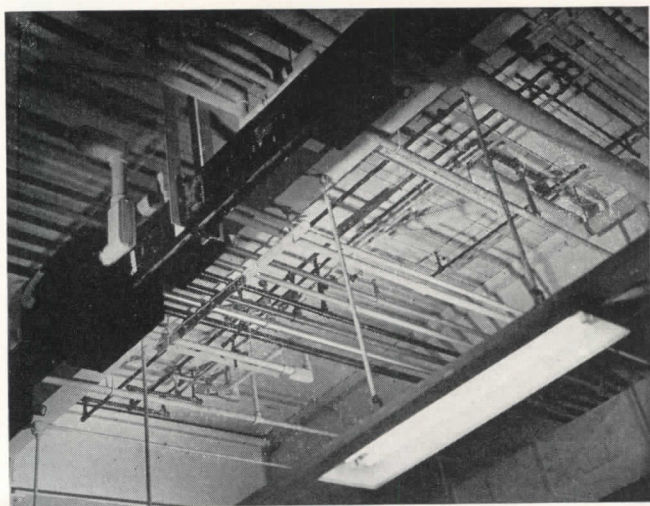


Manufacturing aisles on main floor have "packed" wood flooring, 3 by 6's laid on edge, with maple surfacing; this floor can be bored easily at any point for any one of a dozen or more types of wiring or service piping. The ground floor (right above) gets these same services from above, with vertical lines dropping down from the same distribution line (shown below) that serve the main floor just above

indoor pressure slightly higher than the outdoor pressure. And within some areas of the peripheral lean-to section pressure is kept greater or less than in adjacent areas. In the chemical treating rooms, for example, a lower pressure is maintained to prevent fume-laden exhaust from circulating to other areas. And a greater pressure is maintained in the cathode coating room, which has more rigid air purity requirements than other areas.

The amount of air needed to maintain a positive pressure relative to outdoors is indicated by a static pressure regulator, to guide the attendant in the monitor room. Outdoor temperature is automatically compared to indoor temperature by a wet and dry bulb differential controller. The instrument decides whether it is more economical to admit fresh air into the building or cool that already inside. While the temperature of air blown through the diffusers is normally controlled by an outdoor master thermostat, a manual control is provided to ease the load on the equipment in case of sudden weather changes.

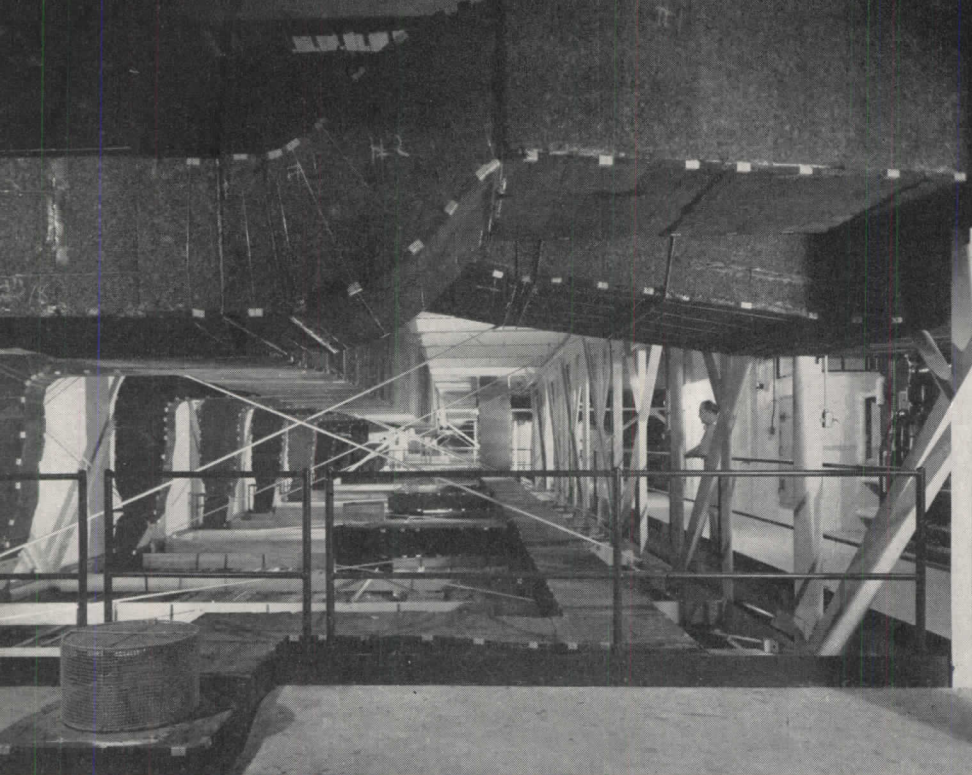
All of the air conditioning equipment for the main floor is located in a huge mezzanine, which extends through the welded steel roof trusses over the central portion of the plant as one vast plenum chamber. Six identical units, evenly distributed, serve the general manufacturing area, while four similar units, located in the four corners of the mezzanine, meet the highly diverse needs of individual rooms around the perimeter. Four additional units have been located on the lower



floor, which is served by an independent duct system.

All air for cooling this building and a nearby office building is chilled by water, which is cooled, at the rate of 3,720 gallons per minute, in the powerhouse. The installation is rated at 2,310 tons of ice per day. Air for heating is passed through steam coils in the air conditioning units.

Lighting. The wide range of lighting requirements is met by individual bench lamps and integral machine



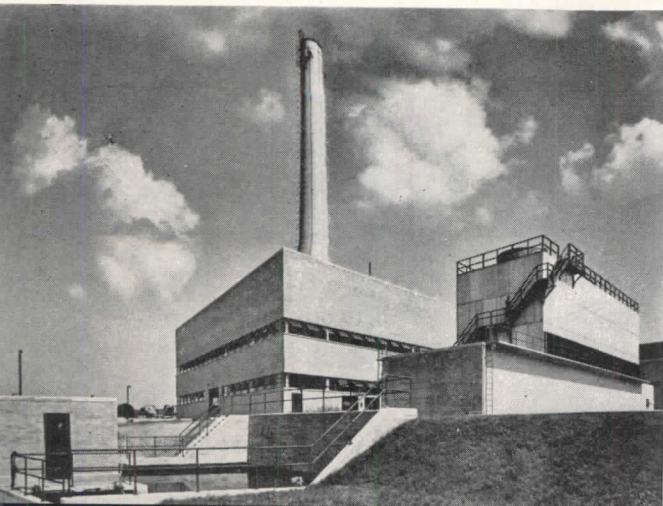
One of the four smaller air conditioning systems, on the mezzanine floor between the steel roof trusses. This is one of four that serve the special departments in the lean-to section. Six similar units, also in the truss mezzanine, serve main section



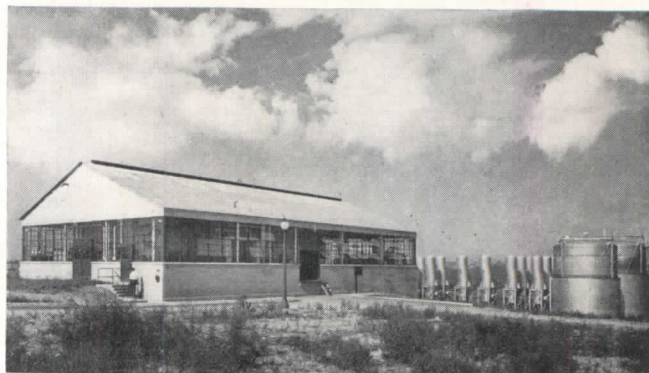
lighting, supplementing semi-continuous, recessed troffer fluorescent lighting, on 12- or 13-ft. centers in the suspended metal acoustic ceiling, 18 ft. above the floor. This installation maintains a general lighting level of 45 foot-candles. The ground floor is likewise illuminated by semi-continuous fluorescent units, to a general level of 25 foot-candles.

Administration Building. The administration building, two stories and part basement, is also a steel frame structure, 75 by 225 ft. The second story has clear span, welded steel trusses 75 ft. long, on 25-ft. centers. This building, too, is completely air conditioned, with comparable lighting, acoustic treatment, and every possible provision for flexibility in the office areas.

Cafeteria, above, occupies one corner of main manufacturing building, kitchen in lean-to section. Cafeteria has 11,000 sq. ft.



Below, gas generating building. Left, boiler house is seen behind cooling tower, and acid neutralizing tanks where wastes are processed



RADIANT AND CONVECTION HEATING COMBINED

John M. Morse*

RADIANT or convection heating? This question has been debated for some time with no apparent resolution. Some heating engineers have suggested a compromise — utilizing the advantages of both systems. Generally, the choice has been determined by the requisites of each individual heating problem.

The answer proposed by our firm for several one-story houses having large areas of glass walls and concrete floor slabs is designed to take some of the advantages of a convection system such as rapid response and combine them with the "warm floor" advantage of a radiant panel in an economical system.† This was done by guiding hot air through the floor slab and releasing it to the room at the windows, forming a curtain of warm air in front of the glass.

Advantages

Such a system, by providing an additional amount of convected heat, allows more total heat output than is possible with ordinary floor radiant systems. It uses one medium of heat transfer for economy. It has the usual advantages of convection heating in fast pickup and control of air temperature, air circula-

tion, air cleaning, and humidity control. The forced current of air across the glass tends to eliminate condensation on the glass and uncomfortable cold air drafts along the floor. The use of the slab as a carrier of the warm air puts all ductwork out of sight and eliminates cold floors.

Three houses have been designed with this new heating system. The Mercer Island house, which has been occupied since December 1947, has a plan that lent itself well to an underfloor, distributing header duct in a straight line along one side of the wings, with outlet grilles under the opposite windows and regularly spaced lateral ducts run between. Orientation or room planning requirements may not always allow such regularity.

The Bellevue house, still in the drawing stage, is for a 100 ft. sq. lot in a controlled suburban development. Planning for space and view has been integrated with planning for the heating plant: the house plan becomes a long rectangle to spread views from the rooms out over the site and to give a straight run for the heat-distributing header and short runs for the laterals.

The Lake Stevens house, with construction work started this fall, is an example of the adaptability of this system to a more spread-out and free plan. In

this house the distributing header runs down the approximate center of the plan, and the branches and laterals serve the wings.

Heating Plant

Any usual utility room model of hot air furnace is acceptable. Since all hot air ductwork may be underfloor, one consideration in selection of the heating unit may be its height and the location of duct outlets, with a view to conserving room space. Another consideration would be the type of control possible for regulating bonnet temperature, air duct velocity, fan operation, etc. In the Mercer Island house, for instance, the high ceiling makes desirable a rather steady fan operation to eliminate air stratification, and the furnace unit must have a built-in temperature control to accomplish this.

A standard room thermostat is used

* Bassetti & Morse Architects, Seattle, Wash.
† Consulting engineer was Richard M. Stern, Seattle.

Mercer Island House plan shows heating system layout for distributing hot air through laterals (such as in photo, right) under floor slab before the air is released to the rooms

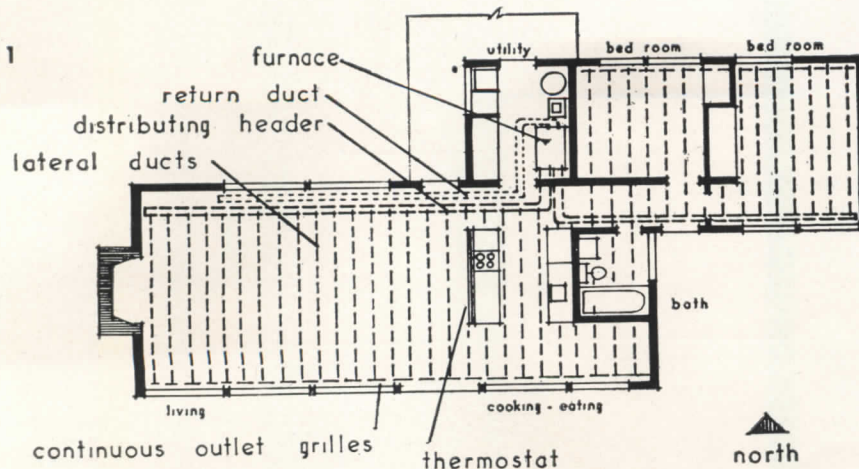


Photo by the author

for house temperature control. Fuel may vary: in the first two houses, oil was used, and in the third, a heat pump connected with an old existing well was installed.

Ducts

The plan shown in Fig. 1 and the foregoing brief outline give some idea of the type of ducts to be expected. In addition to provisions for distributing and supplying warm air, return ducts are required to channelize or induce the flow of return air to the furnace. Generally, the more compact plan will demand less return ductwork. Underfloor return ducts may be desirable for the sake of getting them out of the way — their floor warming value would be negligible.

The material and construction of the ducts are matters about which there may be much difference of opinion, there definitely being room for still more new ideas and for improvement. Structurally, functionally, and economically, the choice of duct construction is a tough problem and some systems tried to date seem far from solving it.

The problem is to construct voids in the floor structure through which hot air may be forced without undue friction, in a manner that will warm the

floor surface uniformly, and with the voids connected to a long grille or grilles in window stools — all this in a structure that is adequately strong, lasting, reasonable in cost and easy to install.

The method used in the houses described was predicated on a poured concrete slab as an inexpensive floor; thus it was necessary to make long horizontal voids in the concrete. Some sort of formwork was required; so for the laterals, stock, galvanized, 3-in. round downspouts were used 18-in. on center, buried in a 5-in. slab. Their life in the slab would not be all-important as the voids would remain. They are tough enough to stand up under ordinary concrete pouring, they are quickly placed, their cost is not excessive, the smooth metal wall gives good air passage and heat transfer.

Headers and branches, being larger and sometimes requiring insulation, present a less easily solved problem. In the Mercer Island house rectangular sections of preformed asbestos duct were used (see Fig. 4). Cutting these for lateral connections was easy, but the single-wall uninsulated type (11½ by 11½ in. cross-section) used for returns lacked proper resistance to deflection during pouring; and the substantial span of a thin slab over an unstructural material required steel reinforcement. For a different header in one of the other houses, poured concrete itself was formed as a duct.

Grilles

Hot air grilles may be continuous, cut to size from stamped steel sheets — especially applicable where horizontal

air discharge and attendant very low velocity is required. Manufactured grilles set in the floor or window stool for a vertical spread up the window are being used in the Bellevue and Lake Stevens houses.

Mercer Island House

Construction Cost* (October 1947):

1. Furnace & controls	\$685
2. Above-floor ductwork at furnace (including outside cold air duct)	125
3. Underfloor header & return ducts material (preformed asbestos)	225
4. Underfloor lateral ducts (galv. downspouts)	45
5. Continuous grilles, supply & return (stamped steel)	10
6. Labor on # 3, 4, & 5	160
7. Additional concrete (besides ordinary slab)	30
	<hr/>
	\$1280

*This compares with an estimated \$1000 installation of conventional overhead hot air. Cost for the bedrooms isn't included. Cost savings could be effected by restudy of construction item No. 3, proposing, for example, poured concrete ducts (see Fig. 3).

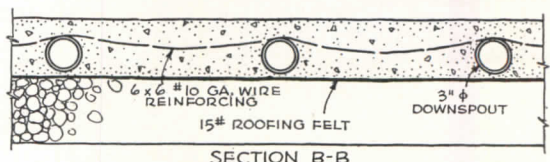
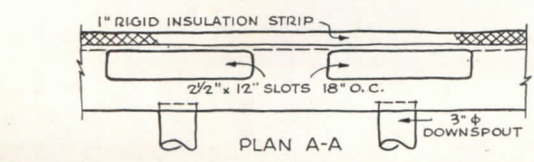
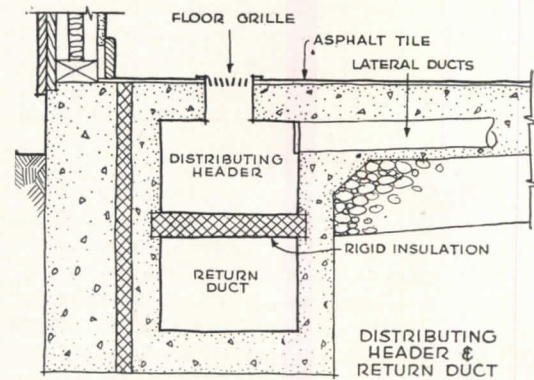
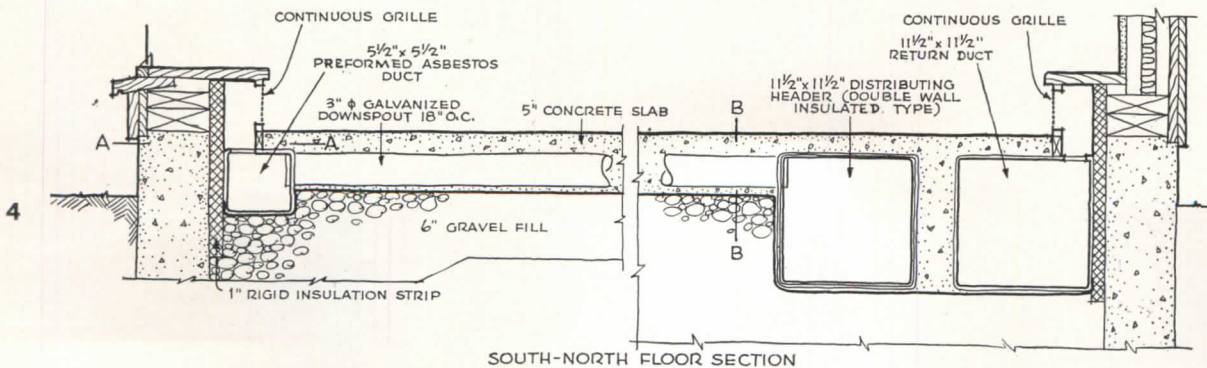
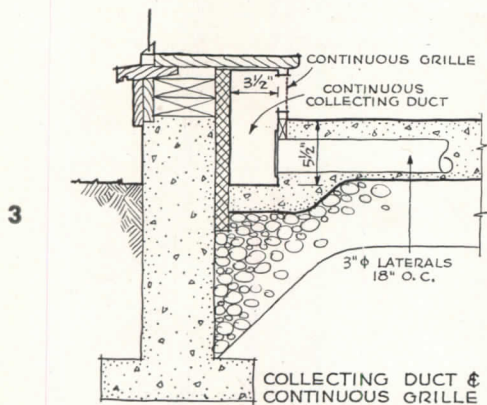


Fig. 4: details of underfloor distribution system for Mercer Island House: Fig. 3: formed, poured concrete duct designed as substitute for preformed asbestos (Fig. 4, left). Fig. 5: section of distributing header and return duct for Bellevue residence

MUSEUM LIGHTING STUDIED IN LABORATORY

By *Laurence S. Harrison*

Business Administrator, Metropolitan Museum of Art, New York City

ONE of the most important areas of planning for the proposed reconstruction of New York's Metropolitan Museum of Art is, of course, the application of modern lighting techniques to the exhibition of art objects. It is axiomatic that good seeing is the primary requirement in any field of visual education. To the Metropolitan Museum, the problem is not a simple one. Its ten curatorial departments represent

a vast collection of many classes of material ranging from the archeologies through Medieval, Renaissance, Far and Near Eastern to Modern European and American cultures.

The determination of proper intensity levels, as well as color tonalities and angles of presentation is complicated by factors, esthetic and other, which have not as yet any quantitative weight in applied lighting calculations. Nor do

they seem susceptible of the same kind of determination as do factors governing commercial or industrial installations. The chief reason for such complication is that, in the field of art appreciation as well as art creation, each individual is entitled to his own criteria.

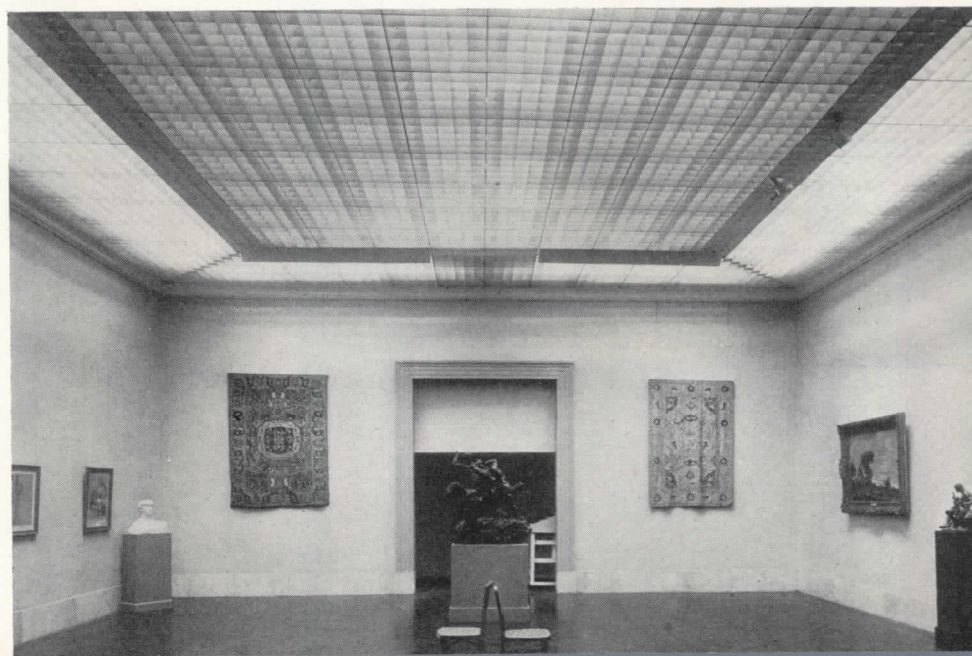
Since the mission of any historical art museum (and there are many of the Metropolitan's character) is chiefly to preserve the products of individual expression, this fact, as a principle, cannot be denied, nor should any attempt be made to change its aspects. This is to say that common denominators of opinion as to what kind of lighting makes objects look "best" are discernible neither among laymen nor even among the experts. The reasons for this, as will appear, make the task of prescribing for the artificial lighting of museums a risky one to say the least.

LIGHTING VS. TRADITION

It is also to say that whatever is proposed must not be forced into adoption, but rather weighted carefully against curatorial or esthetic concepts on one hand and the realities of museum economy on the other. Certainly, for example, theatrical lighting or standards deemed suitable for mass selling appeal, though they may be necessary to retail merchandising, are to be used with extreme caution in showing works of art which, as historical documents, should suffer no distortion, and, as objects of



A view of the louvered ceiling in one of the test galleries. This installation gives about three times the light the Museum has at night in other galleries. Color of light is also tested. Upper view shows a test of 6500° K fluorescent lighting on paintings with predominant blues and pastel shades. This lighting is good for them, not so good for reds and greens.



beauty, need no distortion. As a matter of fact, one of the most critical questions to be answered is just how far may available modern lighting means be employed to dramatize art objects without distorting their appearance?

To those responsible for museum economy and for maintaining, if not increasing, public interest, these realities are uncompromising. Most of the ranking art museums of this country sadly lack either capital or operating funds or both. Most of them have long needed modernization of their lighting systems.

Consequently, with the exception of a few, individual gallery installations, in which occasionally brilliant ideas have been tried out, there is no existing example of an entire museum installation in which completely satisfactory applications of the most recent lighting techniques may be seen in this country. The museum field is, therefore, one in which an architect or an engineer, unless he adopts strictly traditional standards, simply cannot be sure, without a full-scale sample demonstration, that what he proposes to specify will be accepted. The risk of extras exceeding a contract price is, under these conditions, too high. This situation, of course, poses the question of the validity of retaining traditional concepts of museum lighting in the light of present day developments.

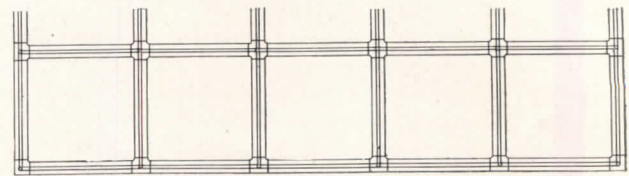
ARTIFICIAL VS. DAYLIGHT

No competent illuminating engineer will take the position that daylight, when available, is not the most desirable for human vision. But, at the latitudes of the cities in which most of our museums are located, under average weath-

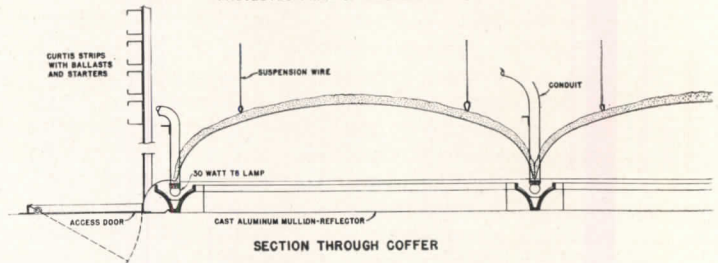
er conditions from October to May — which are the months of peak attendance — adequate daylight is not available and supplementary artificial light is required for 75 per cent of the time during public visiting hours. More important is the fact that such supplementary light is required on a highly intermittent basis. The result is actually an immeasurable lack of uniformity of both light intensities and color values on gallery walls and floor areas. For example, on a bright, sunny morning, the east wall of a top lighted gallery may remain in comparative gloom with brilliant intensity on the west wall. The

reverse would occur in the afternoon. Moreover, the frequent and intermittent obscuring of sunlight by clouds and the lack of sufficient manpower to monitor adjustable skylight louvers, where used at all, imposes a severe task on the adaptive processes of the public's eyesight, or, when too severe, kills the enjoyment of visitors while the condition obtains.

It is argued that these changes of light are indispensable to the esthetic enjoyment of great paintings, tapestries, sculptures, etc., and that to maintain a rigid uniformity of lighting values in a gallery would be oppressive and monotonous. The validity of this viewpoint must be admitted if the authority of individual criteria, as stated before, is accepted. Right here, however, is the area of controversy in which certain curatorial opinion has come to grips with the already discernible trend toward fully artificial lighting in the future. The architect or illuminating engineer would do well to recognize this situation and not to discount it, because the preservation of these changes of

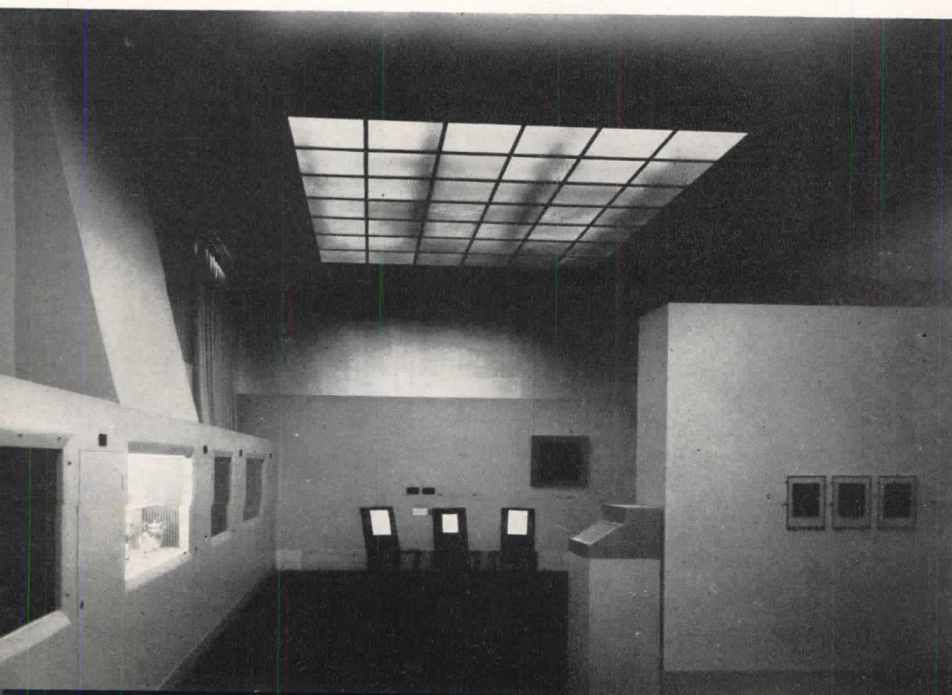


PROJECTED PLAN OF MODEL CEILING



SECTION THROUGH COFFER

Detail of coffered ceiling used for lighting another test gallery. This is a test installation designed merely to test deep coffers with fluorescent lamps in square pattern (see photo opposite page)



Artificial skylight with light polarizing screen. Note extremely low brightness of ceiling itself relative to that of white paper sheets pinned to backs of chairs

natural light are felt to be a fundamental requirement in gallery lighting by many curators of distinction and their associates in the field of fine arts, both here and abroad.

It is surely no offense to esthetic ideals to say that if it be too costly to serve all of the people, it becomes necessary to serve only the majority. An "experienced" curator of historical paintings, let us say, or one whose authority and connoisseurship respecting great art has become recognized, has the same attitude toward these masterpieces as had the original owners or their succeeding collectors who, through the centuries, have lavished the care upon them which has made them available to us. These people saw and admired these great works every day with the same stimulus which sought their possession in the first place.

They also had the privilege, as has the curator, of viewing them under the continuous symphony of color and shade which natural light plays daily from dawn to evening. It is understandable that to them, the changing aspects of the great paintings, sculpture, or tapestries had special meanings. These meanings were and are, without doubt, emotionally moving, but there can be no denial of the fact that such spiritual significance, if it could be so characterized, was and is, personal to the curator, the artist or to anyone who, knowing great paintings, haunts the gallery continually.

These, however, are not a majority, nor does there appear to be any course of instruction by which such reactions might be assured to the uninitiated. Even if there were, and Mr. and Mrs. Smith could be persuaded to revisit the museum often enough to catch the evanescent splendor of some luminous aureole on a Rembrandt or an El Greco, they could, as a matter of principle, say that they didn't like the way it looked and be just as right as the curator was.

All this is meant to state that uniform lighting would by no means strip great works of art entirely of their esthetic qualities any more than does the mistreatment they now get from the gloom in which the public is too often expected to view them. Perforce, a museum *must* use artificial light if its collections are to be seen at all, on all floors, and at all

hours of the day. Most of the long-established art museums show evidence that lighting installations have, in the past, been planned with tolerance rather than enthusiasm. The result has been, in many instances, a characterless mixture of both natural and artificial light which cannot be argued for on any grounds — esthetic or practical. The two do not mix to the advantage of either. Any daylighted gallery, so situated as always to require some artificial light will, if the latter is designed properly, look its handsomest at night.

It must be said, however, that incandescent light has been and is, for museums, much too costly to operate in a system designed to achieve the foot-candle levels and shadowless diffusion of clear, sunless daylight. The practical ability of modern fluorescent lamps economically to approach daylight values, their complete reliability, length of life and versatility being at present established, it now appears fair to test the proposition as to whether the overall benefits of fully artificial lighting may not outweigh its esthetic deficiencies.

There is a strong case for it in probable evening openings. The museum of the future must recognize more broadly its obligation to the industrial and office worker who has no opportunity to visit its galleries except at the sacrifice of weekends which quite properly belong to outdoor pastime. Already certain ones are opening their doors from one to nine P.M. daily. This means, of course, that the margin of daylight hours, which now redeems the depressing inadequacy of museum artificial lighting, will be reduced to a point at which poor attendance after dinner hour can almost be guaranteed unless the lighting problem is solved.

Then there is the question of the in-

vestment and maintenance costs of skylights relative to simple roof slab construction. Counting the loss of investment income at 4 per cent in lieu of depreciation estimates, the present-day added annual cost of glass skylights installed and maintained is approximately \$550 per 1000 sq. ft. of roof area.

In the case of the Metropolitan Museum, there is no point in converting existing top-lighted galleries to solid roof construction, but such conclusions as are reached would certainly govern the design of additional wings.

A LIGHTING LABORATORY

With design problems related to the foregoing in mind, the Museum's Architects, Messrs. Robert B. O'Conner and Aymar Embury II, requested the trustees of the Metropolitan Museum to authorize an experimental program. Accordingly, a testing laboratory was designed and built by the Museum using only commercial equipment and open-market material. Valuable counsel and much of the basic calculations of lighting elements were rendered by Dr. Ward Harrison and Mr. James Ketch of the General Electric Company's Nela Park Laboratory. The effective co-operation of the Museum's curators and their professional staffs has provided, in the discriminating selection of objects for test, impressive demonstrations and cues to the solutions being sought.

These galleries, located in the south wing of the Museum, are not open to the public, but are now employed by the departments of the Museum for test installations, the recording of staff and membership reactions and the ultimate writing of specifications. It should be emphasized that no attempt was made to install the "ideal" gallery but rather to make available a reasonable choice of

A XVIth century Flemish tapestry lighted by coffered ceiling detailed on opposite page, with all lamps lighted. Note uniform distribution of light up and down



systems — i.e., incandescent, fluorescent, diffuse and concentrating — with sufficient flexibility to obtain three to four levels of intensity, as well as adjustment to color values.

From the standpoint of occupancy, two distinct classes of space exist in most museums. Top-lighted, second floor galleries, directly below skylights, require either the separate or simultaneous transmission of daylight and artificial light. Such galleries are usually used for paintings, prints, water colors, drawings, rugs, tapestries or other wall mounted material.

First floor galleries must depend almost wholly on artificial light, with or without side fenestration. Here again, good seeing is burdened with tradition. Window glare is, elsewhere, one of the most bothersome problems of the illuminating engineer. In a museum, windows take up needed wall space which, as those who have tried to raise building funds fully realize, is hard to come by. Moreover, any attempt to make shadow areas around and below windows useful by artificial light is hopeless because of the window glare, and if it be so designed as to avoid artificial sources of glare as well, such an attempt must seriously dilute, if not cancel, the effect of any changes of natural light in the rest of the room. If case material is exhibited in window-lighted space, care must be exercised to avoid the annoying and obscuring specular reflections from case glass. The number of cases which may be shown and the most desirable layouts thereof, are hence limited and restricted. If cases are artificially lighted internally, there is no point to window lighting anyway, except for occasionally

relieving the psychological impediment in any closed space.

The experimental galleries, designed primarily to cover the specific conditions at the Metropolitan Museum, assume the use of daylight through ceilings only. Test gallery K-29, being top-lighted, is equipped with a baffle or louvered ceiling, at a height of 16 ft., consisting of 30-in. square removable sections having oblong, aluminum cells, with a shielding angle of 53°, in the center of the room, suspended below a conventional T-bar grillage with clear glass lights. These latter are "blacked out" with wallboard panels, laid on top of the glass, when necessary, to create fully artificial conditions. Around the periphery of the room, extending a little over six ft. from the walls, a system of directional louvers was installed with fins parallel to and slanted 20° toward each wall in order to permit a relatively high-level concentration of light, from special, Curtis parabolic, fluorescent strips or from various forms of concentrating incandescent units, to be projected on the walls.

The chief virtues of this arrangement are: its extremely low brightness, concealment of fixtures, ability to change circuits and rearrange units without disturbing the ceiling's appearance. The behavior of this construction with daylight from above is highly satisfactory, and without doubt there are certain galleries which eventually may require adaptations of this type of louver ceiling.

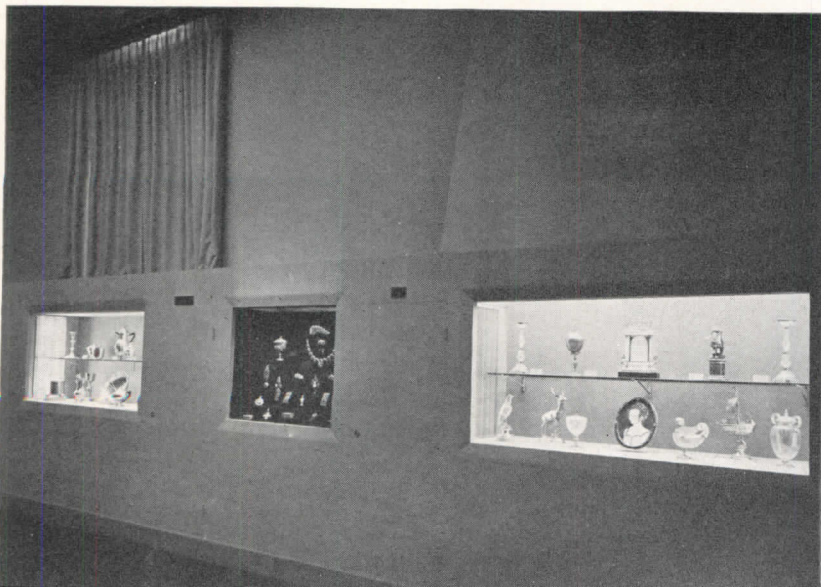
Provision has also been made to test combinations of primary colors by means of adequate glass filters and rheostat controls so that wide adjustment in

tonality, or color composition, of *white light* may be used to project on rugs, tapestries and textiles. (There is no requirement for any single color projection.)

The method of adjustment of color composition consists of an initial concentration over the wall of approximately 50 foot-candles of fluorescent light of 6500° Kelvin which carries enough blue so as to obviate the need for separate blue filters. With a tapestry in place, for example, R-40 spots with red, green, and amber filters are focussed on the object and the proper combination of tones adjusted by dimmers, until, as the curator may dictate, the proper "balance" between the colors which make up the fabric itself is secured.

When such adjustment has been completed, and the described combination of lamps switched on simultaneously, it is almost impossible to detect what color adjustment has taken place, or that any liberties at all have been taken with the "white" light on the tapestry. Until one color of the several contributing light sources has been switched off, the effect becomes brilliant without suggesting exaggeration. The scheme provides efficient means for obtaining qualities of light which can otherwise only be obtained from natural light, but under control rather than accidentally. Since an initial concentration of "seeing" light is used first, a *minimum wattage* of color filtered incandescent light is needed. The usual inefficiency of building up of white light by mixing primary colors is, therefore, not present.

The second test gallery, K-24, is equipped with two types of ceiling treatment as may be required for first or ground floor spaces. The height in this gallery is also 16 ft. The first form of treatment resembles in general character the indirectly lighted coffer system designed by Saarinen for the Cranbrook School at Bloomfield Hills, Michigan. In this case, the coffers, each weighing 30 lbs. and mounted together closely with about 1/2 in. separation at the spring lines, are precast of plaster with steel wire armatures for ready suspen-



Contrast between artificially and naturally lighted cases. Unit on right, lighted by daylight from above, contains miscellaneous crystal and metal work

sion from ordinary, angle-iron stringers secured to the ceiling. Furring steel was used for bracing. The coffers are 38 in. square and conduit wiring at each intersection, accurately centered by a wooden template, serves 30-watt, T-8, 4500° Kelvin, fluorescent lamps. These are installed along each line between coffers and around the perimeter of the assembly.

The plaster coffers have an oval section employing only two radii and curve at each corner. They are finished with high reflecting paint. Reflectors with crosses, tees, and ells are of cast aluminum alloy, painted inside with a high reflecting finish. They completely hide the lamps and, in place, resemble simple mullions or ceiling sash. They may be removed, cleaned, replaced and lamps renewed without tools.

The characteristics of this particular design are such that if only those lamps are lighted which run in one direction, the entire coffer uniformly reflects their light with hardly any discernible indication over the coffer that all lamps are not energized. The switching on of the lamps running normal to the first group therefore serves only to increase the intensity of the light reflected from the coffers. At maximum value, the intensity directly below the assembly and five feet from the floor is 40 foot-candles.

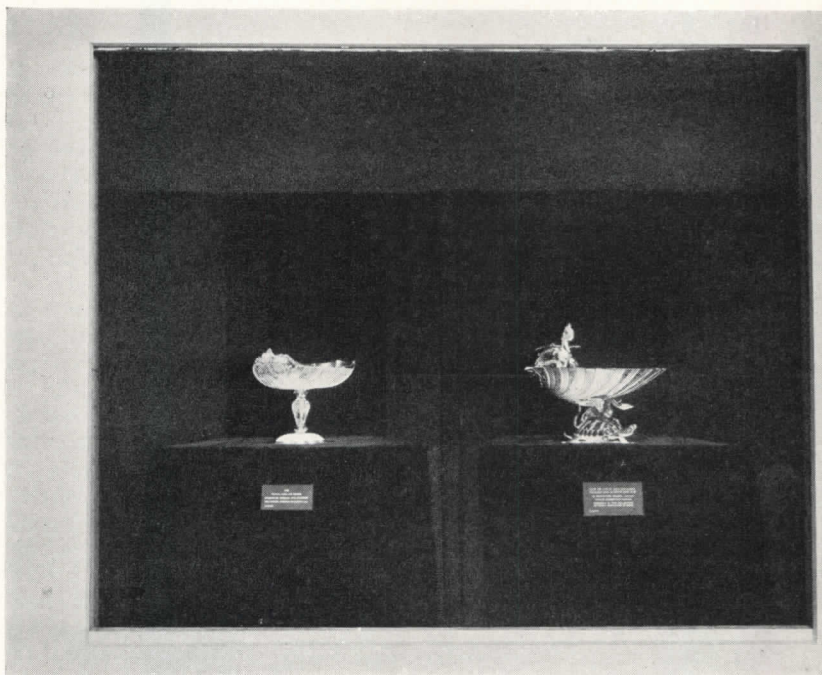
An important feature of these reflecting coffers is their lateral distribution of light. One photograph shows a Renaissance tapestry hung on an adjacent wall over which there is less than 15 per cent difference in light intensity on any point over its entire surface. It is obvious that this type of ceiling has relatively high brightness. Its efficiency also depends on the number of lamps around the perimeter which deliver to the coffers a little more than half their initial output, relative to the number of lamps within the perimeter which deliver their full initial output. This ratio of "outside" to "inside" lamps varies with the size of an assembly of coffers and also with the length of the assembly, the width remaining constant.

Installed at a ceiling height of 18 ft. or more, this ceiling should prove to be a handsome and, for indirect lighting, a remarkably efficient installation for general lighting purposes. This model of 20 coffers, arranged in a 4 by 5 assembly,

Case showing jewelry, enamels and reliquaries, top-lighted through plastic louvering, with concealed spot. Note low source and background brightness



European silver in directionally louvered case; 100 f.c. of 4500° K. fluorescent light at center of deck, delivered from sides and top



When Benvenuto Cellini designed the cup at the right, this top-and-bottom lighting had not been thought of, and not all curators like it



having 49 lamps and 1470 lamp watts, has maintained an average of 35 foot-candles over 576 sq. ft. of floor area during the past three months or with less than 2.6 watts per sq. ft.

The other type of ceiling treatment consists of conventional ceiling sash of 1-1½ in. T-bars glazed with a light-polarizing screen of Polaply plastic sheets "sandwiched" between ¼-in., obscure wire-glass and ⅛ in. thick, clear picture glass. This material does not distort color. It produces maximum polarization at a 57° angle of incidence. In order to increase its inherently low transmission efficiency, in the polarizing plane, a surface of high reflectivity was painted inside the housing within the hung ceiling above the sash. With successive rows of simple, fluorescent strip installed about 18 in. above the glass, this scheme takes some advantage of the interchange of reflected light between the top surface of the glass and the painted interior and, in this manner, as much light as possible is passed through the polarizing film at the required 33/57° angle.

This assembly has two promising results. Its partially polarized light, falling on highly specular surfaces, helps to reduce glare, and suggests its use in galleries showing period furniture having unusual burls or grains, intricate inlays or marquetry designs, below highly polished and obscuring surfaces. Its second result is a sharp cut-off beyond 45°, so that the brightness of this type of ceiling is phenomenally low within normal line of sight.

In order to obtain fair, comparative

values between these two ceiling treatments, forty-five 40-watt lamps were installed above the polarizing ceiling sash. The assembly, with 1800 lamp watts, has also maintained approximately 35 foot-candles over 576 sq. ft. of floor area, or with 3.1 watts per sq. ft.

The remaining features in the gallery are devoted to experimental, case and feature lighting designed primarily for the development of means to control source brightness as well as to reduce relative brightness of surrounds; in other words, to subdue art objects' "competition".

CONCLUSIONS

During the few months in which this testing laboratory has been in operation, several general conclusions have become established. The first is that response to the color composition of light is fully as important a consideration as are the presentation and volume of light. Another is that "seeing" in a museum gallery should be pleasant and satisfying as well as educational. This is to say, for example, that extraneous glare and brightness, if intelligently controlled, may be stimulating rather than injurious to the visitor. Christmas tree lights can hardly be denied to young and tender optic systems on the ground that glare is poison to the eye. A bland diet may be beneficial but it is not much fun, and art curators of impeccable scholastic integrity, which is to say all of them, have long accepted the discreet use of the spotlight as a necessary adjunct to exhibition methods.

This does not mean that concentrating sources of light should be applied indiscriminately. On the contrary, every effort should be made, when desirable, to achieve bold contrast and "sparkle" on an object, but with least consciousness in the observer as to how they are being obtained.

A third and most important conclusion is that *visible fixtures in gallery spaces are definitely a thing of the past*. The advent of the commercial fluorescent lamp, less than 15 years ago, crystallized a concept which had been developing in applied lighting for many years. This concept holds that "good

seeing," which is the objective of all artificial lighting, is best served by a "system" which includes all elements and surfaces contributing to optic sensation in a given area. The amount of light is, therefore, not as important as are the brightnesses of light sources, and of the objects and their surrounds, which are being illuminated.

The fluorescent tube is not a decorative device in terms of traditional fixtures, and there is hence no incentive to have it exposed when its performance, in terms of good seeing, is better for being out of normal line of sight. The museum gallery of the future will have no fixtures, but rather luminous surfaces to provide seeing.

Lastly, it has also become clear that the fluorescent lamp of 4500° Kelvin gives, by far, the most neutral, balanced and accurate light for color response. It is far superior to any other production phosphor yet developed for color matching, but like a "pure" musical tone, it needs overtones. As a diffuse background for incandescent concentration, it seems to have outstanding properties for gallery walls.

One specific decision has thus been reached, based on the last-described general conclusion. Through a series of demonstrations and resulting study by the Museum's Director, Francis Henry Taylor, and the Curator of Paintings, Theodore Rousseau, Jr., a basic specification for the artificial lighting of paintings' galleries has been derived. Designs are completed for a sample installation employing special shielding and light obscuring methods incorporated into traditional ceiling sash to reproduce the desired effects as established by test. The new gallery is now under construction for opening to the public sometime in the spring of 1949.

Should experience with this scheme be found satisfactory and the design prove to be within construction cost limits, one important step will have been taken toward the final objective of this program. If the ultimate results, in glass, metal, plastics or whatever materials may be indicated, can be achieved at a cost in money which museums can either afford to spend or raise, then this laboratory will have justified itself.

A special experiment with recessed lighting on a XVIIIth century Dutch painting; 4500° K. fluorescent light, from the bottom and sides, emphasizes Vermeer's original lighting of the subject and provides faithful response to the original colors



WEST COAST INNOVATIONS IN SWIMMING POOL DESIGN

Based on data by Paddock Engineering Company

DURING the past few years a new approach to swimming pool structural design and procedure has developed on the West Coast through the use of pneumatically applied concrete, commonly known as gunite. This method is rapidly supplementing form-poured structures for private as well as large public swimming pools in that section of the country.

The reasons for this change are fairly obvious. Pneumatically applied concrete is, generally, much denser, heavier and stronger than form-poured concrete. As the use of forms is entirely eliminated, great savings are effected, especially with present high costs for labor and lumber. Since gunite is shot directly against grade, no over-excavation or back filling is required.

In designing a swimming pool to be constructed of gunite, it is usual practice to design the lower portion of the swimming pool wall in the form of a vertical radius curve, thus eliminating the cantilever footing usually designed for form-poured construction. This type of wall section makes possible the use of a thinner wall and considerably less reinforcing steel to obtain the same resistance to the stresses encountered.

Another great advantage is the saving in construction time. Under ordinary construction procedure, a form-poured, vertical wall swimming pool usually requires four to six months to install under ideal conditions, while a comparable gunite structure can be installed in approximately six to eight weeks.

Underwater Lighting

For underwater lighting, concentration of between one-half and one watt per sq. ft. of pool area is generally satisfactory, depending on how the lights are to be used. If for effect only, this concentration can be decreased; however, for public pools where underwater lights are used for night swimming, it is advisable to keep the wattage fairly high.

The wet niche type of light (see detail, top of page 144) affords a great number of advantages over other types in that it is more easily accessible for repairs. This is easily accomplished with the wet niche light by merely removing it from its niche, placing it on the deck of the pool and proceeding with the necessary changes.

In the case of a dry niche light, it is necessary to drain the pool below the light lens before any gasket changes can be made. Also in case of damage to the lens, the pool would have to be drained in order to make the necessary repairs. In some instances, where the equipment room is adjacent to the pool wall in which the lights are located, the entire filter equipment might be flooded because of a damaged lens or faulty gasket installation. With wet niche lighting, the unit is completely immersed in water which tends to keep the equipment cooler, thus giving longer life to the lamp.

Underwater lights are usually centered 30 in. below the water's surface, and on pools 50 ft. in width or less, the side wall lights should be staggered with reference to those on the opposite wall to provide even lighting.

Swimming Pool Chlorinating Equipment

Swimming pool chlorinators should have the following characteristics:

1. The chlorinator should be of the vacuum type because of the safety feature. In case of leaks within the machine, air from the outside is drawn in rather than allowing the gas to escape.
2. It should be of the solution-feed type because it allows complete mixing of the chlorine and water before it enters the pool.
3. A manually operated machine is

usually specified because of the great saving in initial cost. A fully automatic chlorinator is not considered necessary because there generally is, and should be, an attendant present to operate the chlorine equipment and check the concentration of chlorine in the pool at all times.

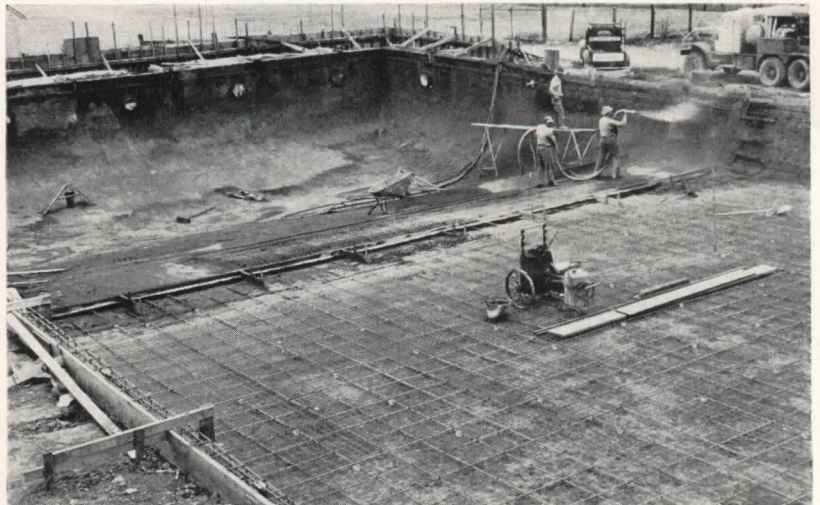
In addition to the foregoing, the chlorinator specified should be of ample size not only to take care of all normal operating requirements, but also to have sufficient reserve capacity for break-point chlorination or extra heavy dosage when required by abnormal conditions.

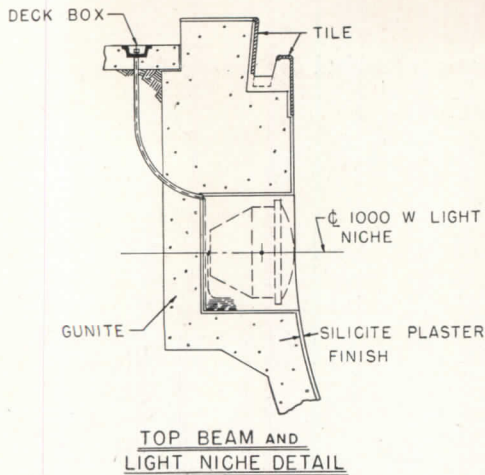
All chlorinators, regardless of type, should be adequately vented so that in case of water failure or stoppage, any escaping gas will be carried to the outside so that the chlorinator can be accessible for repair.

Swimming Pool Filters

Recently, considerable attention has been focused on a new type of filter for swimming pools, using diatomaceous earth as filter media. These filters have the advantage of providing the required filter area in much less space than that occupied by the conventional, rapid, sand pressure filter. They also produce an effluent of high clarity. Various types of elements such as carborundum, wire mesh and porous plastic have been used to support the diatomaceous earth. An analysis of records kept over a two year

Gunite being applied in construction of 60 by 100 ft. swimming pool. Note copper dam expansion joint and beam (center of photo) and steel wire reinforcing





Detail illustrates use of wet niche light and the type of overflow gutter employed

period was said to indicate that diatomaceous earth installations may be successfully used for large public swimming pools where a thoroughly trained and competent operator is available at all times. The initial cost is reported somewhat greater than that of pressure sand filters, and the maintenance cost considerably higher. The greater initial cost is sometimes offset by the saving in floor space. Use of diatomaceous earth filters is not recommended for average private pool or for small public pool installations at this time.

Some of the basic points for proper filter design are as follows:

1. Filter tanks should be constructed of high grade tank steel with dished head, and should be welded both inside and out. Proper attention must be given to the correct thickness of the steel. Tanks should be designed for a minimum working pressure of 50 lb. and a safety factor of 4. Standard manholes and openings should be provided. The tanks should be supported by adjustable screw jacks to allow for unevenness or slope in filter room floors and they should be high enough to allow proper circulation of air underneath the tanks.

2. Underdrains should be constructed so as to give proper distribution through the tank at approximately 6 in. intervals. Materials used for the underdrains should be either cast iron or brass. Nozzle type orifices for underdrains have some disadvantages in that they have a tendency to become plugged where hard water occurs, and also when they are placed in the upper side of the underdrain header, they can be partially closed off by the filter rock. Orifices on the under side of the underdrain laterals are much simpler and usually give much more satisfactory results, since they can-

not be covered by the filter rock and they are less subject to stoppage by alkali deposits.

3. A simplified face piping arrangement is desirable for pool filter plants. More elaborate piping arrangements serve no purpose for this type of installation and greatly increase the cost. Standard screwed or flanged fittings should be used, depending upon the size of the filter plant. Coagulant and alkalinity feeders should be constructed of heavy cast iron, using brass interconnecting pipe between them and a suitable pressure differential device such as a venturi tube or an orifice plate. Proper flow-regulating valves should be installed in the interconnecting piping to prevent a too rapid feed. Gauges showing influent and effluent pressures and a sight glass to indicate backwash effluent should also be present in all filter plants. It is advisable on larger filter installations to install rate-of-flow meters so as to be able to check filter and backwash rates as well as pump capacity. Without this type of instrument, it is very difficult to keep an accurate check on the condition of the equipment. A strainer should be placed ahead of the pool circulating pump in all installations to protect the pump impeller.

4. Filter media should be composed of well rounded particles of rock and sand which are properly graded, starting with 1½ in. rock on the bottom and grading to silica sand with effective size of about ½ mm. Filter media should be free from limestone, clay and such matter.

Pool Fittings

Much can be said about individual characteristics of pool fittings. The essential points, however, are simplicity of design with effective distribution of water. On large pools, the inlet fittings usually should have some means of regulating flow so that even distribution of incoming filtered water can be obtained.

Main outlet fittings should be of sufficient size so as to keep the velocity of the water near them at a very low rate. In

most cases, the open area of the grating should be two to five times the area of the connecting piping.

Vacuum cleaner outlet fittings should be placed at intervals, wherever possible, so that every portion of the pool can be reached with a section of hose 50 ft. or less in length.

No-leak flanges may or may not be placed on pool fittings, depending upon the density of the concrete in which they are encased. Where very dense and compact concrete or gunite is installed in the pool, no-leak fittings are of little value. However, if there is some question as to the manner in which the concrete is placed, no-leak fittings may prove valuable in preventing leakage around pipes.

Two general types of gutter, the flat rectangular type and the angle type, are most widely used. The angle type gutter has some advantages over the rectangular type in that it provides an open area on the vertical side of the gutter which allows for drainage even when leaves or other debris are covering the horizontal section of the grill.

Swimming Pool Vacuum Cleaners

In the design of vacuum cleaners, two major factors should be considered:

First, the size of pool and the pump capacity from which the vacuum cleaner will be operated.

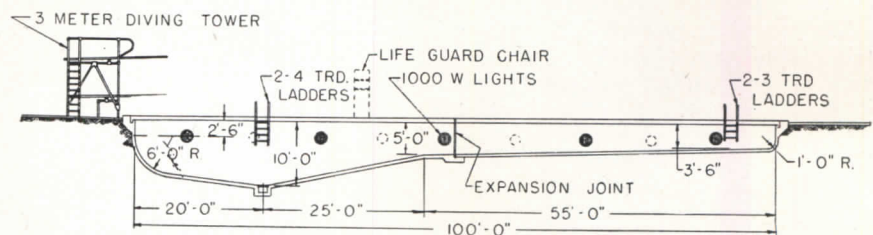
Second, the general shape of the pool, whether it is vertical-wall, poured-concrete construction or whether it is a gunite type pool in which portions of the wall are curved.

Usually the vacuum cleaner used on vertical-wall pools should be either the three or four wheel suspension type in which the orifice of the cleaner remains at a uniform distance above the pool floor, insuring uniform suction.

The two wheel type cleaner is more suitable for radius-type pools where curved sections are encountered between the pool wall and the pool floor.

Very large pools are cleaned with the tow-type vacuum cleaner, necessitating two operators, one on either side of the pool, who tow the vacuum cleaner back and forth across the pool floor.

Curved wall in lower portion of gunite pool eliminates usual cantilever footing



PIPING IN MADISON SQUARE GARDEN ICE ARENA

Madison Square Garden in New York has installed a new arena floor which incorporates an unusually large, concrete-embedded piping system to freeze ice for hockey games and ice shows. The new floor, which had to be — and was — completed in the record time of four weeks, featured the application of some 3000 threadless fittings in connecting about 13 miles of concealed refrigeration piping, spaced on 4 in. centers and laid under a terrazzo floor.

Black malleable fittings were used to connect, by silver brazing, 20- and 40-ft. lengths of 1¼-in. standard weight, galvanized wrought iron pipe.

According to the chief engineer at the Garden, Howard Post, the original base of the arena floor was used. This base consisted of fire-resistant hollow tile, reinforced concrete slab on structural iron, and corkboard — each of these components being about 4 in. thick. With this base as a foundation, the new work involved, first of all, laying two new layers of waterproofed tar paper over three layers retained from the old floor, and overlaying the tar paper with zinc sheeting. The galvanized wrought iron pipe formed the next section.

Requirements for the fittings were as stringent as those for the pipe. The threadless fittings are designed to permit use of the full pipe wall thickness, and, consequently, the full strength of the pipe, as no metal is lost by threading. There is said to be less pressure loss due to friction and turbulence in a piping system using *Flagg-Flow* brazed fittings than in a similar system using threaded fittings. The fittings had to withstand tremendous weights and considerable vibration, and they had to carry chromated brine for the freezing process.

Work on connecting the pipe was begun at the shop, where considerable prefabrication was done; 20- and 40-ft. lengths of pipe were joined by brazing with the threadless fittings. Even at this early stage, extensive testing of the pipe joints was undertaken in a "suds" test, where the joints were covered with soapy water, and air at 100 p.s.i. was forced through the pipe, causing air bubbles in the soap if leaks were present.

At the shop, too, the 40-ft. lengths of pipe, with their brazed fittings, underwent the first of a series of eight different handlings before they were finally laid on the arena floor.

There were some 20-ft. lengths prepared and sized on the spot at the Garden; these were used to connect gaps

between 40-ft. lengths. Pipe, resting crosswise on 2-in. concrete supports which ran the length of the arena floor, was connected by the brazing technique when both the pipe and fittings were heated and silver alloy applied to complete the joint.

As soon as the first head of pipe was installed, hydrostatic pressure tests began, combined with the day-to-day exposure of pipe and fittings to ordinary stresses and strains. Lengths of pipe, 116 ft. long, were attached to each of two headers located on either side of the arena floor.

Hydrostatic pressure of 100 p.s.i. was then applied to the pipe attached to each header, as header installations were completed. With all the piping exposed as it was prior to the concrete pouring, there was sufficient opportunity for any weaknesses to show up.

Out of about 6000 joints made with the threadless fittings, only 181 were found to leak, and the majority of these were on the pipes prefabricated at the shop. According to the engineers, these were due chiefly to the eight different handlings these pipe lengths were subjected to. As these minor leaks showed up in the course of several days testing on the site, they were — with the exception of only three joints — easily repaired in short time by the reapplication of heat to the pipe and fitting. The three bad joints were replaced with new ones.

With the pipe installed on its supports, the arena floor was then ready for the next step of pouring the concrete. Some 3½ in. of base concrete were poured in and around the pipe, with wire screen imbedded in this base to form a bond for the terrazzo bed or scratch coat (¾ in. thick). The pipe was laid 1½ in. below the finished terrazzo floor. Before the job was considered complete, however, a sealing compound was applied over the



Operator applies silver alloy to braze threadless joint with piping in place

terrazzo floor as a finishing process.

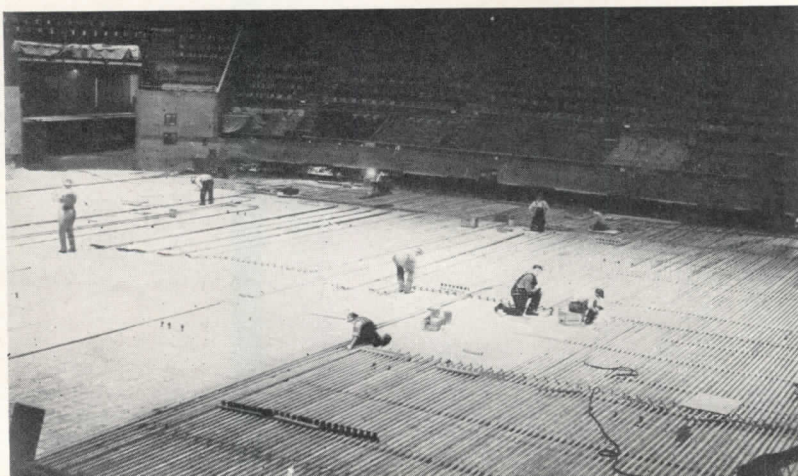
The arena floor takes a ½ in. coating of ice for hockey, and up to 1¼ in. of ice for the ice-skating shows. Possibly the most critical requirements, for pipe and threadless fittings, are the extremes of temperature the installation is subjected to before, during, and after an ice show; they range from 10° F to 70° F.

Ordinarily, the average working pressure of the highly concentrated cold brine recirculated through the entire piping system is 39 p.s.i., which is not an excessive burden for the pipes and fittings, in view of the continuous hydrostatic tests of 100 p.s.i. made during the installation.

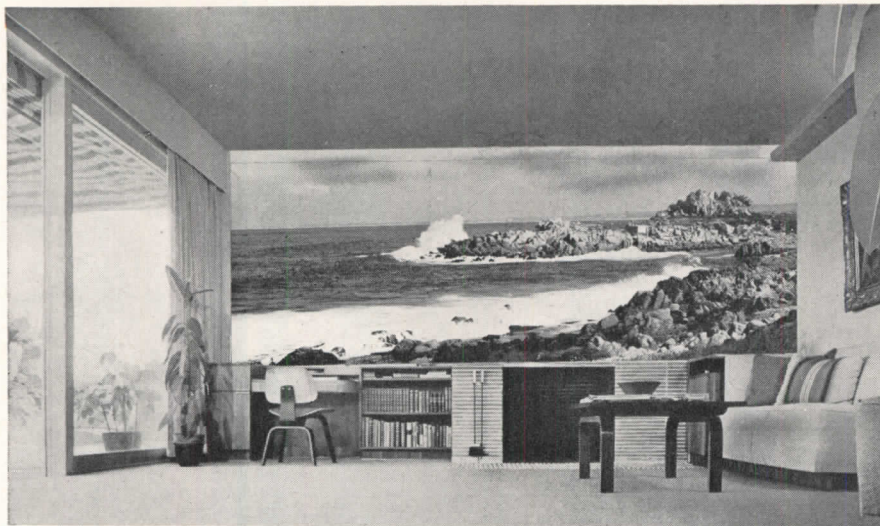
Besides the special needs of refrigeration for ice games, the arena floor — and all that is underneath the surface — has to withstand tremendous weights and strains during conventions, prize fights, exhibits, and especially during the circus.

Charles S. Leopold of Philadelphia, as consulting engineer, following discussions with Lionel Levy, architect, New York, specified the equipment for the job, which included the *Flagg-Flow* threadless malleable fittings made by Stanley G. Flagg & Co., Inc., Philadelphia.

Pre-joined pipe lengths are laid over zinc sheets; remaining joints are brazed



PRODUCTS for Better Building



Photographic murals come in black-and-white, sepia, and are installed like wallpaper

PHOTOGRAPHIC MURALS

Through development of a special photographic reproduction process, enlargements for use as wall murals are now available at a surprisingly low cost, and can cover areas up to 6 ft. 8 in. by 15 ft. These *Foto Murals* are made by a new screenless process which is said to maintain all the quality of the original negatives.

Original *Foto Murals* are selected by a Subject Advisory Board consisting of the following: Julius Shulman, architectural photographer; Hubert A. Lohman, landscape photographer; Raphael S. Soriano, architect; Don Loper, American Institute of Decorators; John H. Denson, in charge of production.

The *Foto Murals* are produced in natural sepia or black-and-white, and can be installed like wallpaper by a competent paperhanger.

The manufacturer is building toward a library of 200 murals and is planning regular releases of six new murals every 90 days. Each mural is made up of 6 40 by 60 in. panels. *Foto Murals* of California, 672 S. Lafayette Park Place, Los Angeles.

MODEL PARTS

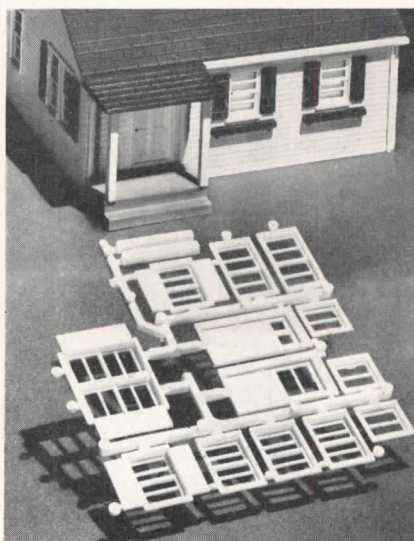
Scale-model builders will now find available *Tenite* plastic castings of doors, door frames, windows, shutters, etc. for use in model house building. The castings are sold separately for houses of individual design or may be bought in kits with milled plywood bricks, siding, shingles, etc. in $\frac{1}{4}$ - or $\frac{1}{2}$ -in. scale for assembling into several styles of houses. The

pieces come in white, to be painted later as desired. *Architectural Model Materials*, 4726 N. Winchester Ave., Chicago 40, Ill.

LIGHT WEIGHT ROOF PLANKS

Reinforced roof planks are now being made with the light weight material *Durisol* which consists of chemically-treated wood shavings combined with Portland cement and molded under pressure.

The roof planks are reinforced with steel rods, cement-coated on the top side and tongue and grooved on the long edges. The planks are available in $3\frac{1}{4}$



Model house parts are made of plastic

and $4\frac{1}{4}$ in. thicknesses (including $\frac{1}{4}$ in. cement coating), 16 in. widths, and in various lengths up to 8 ft. The manufacturer claims that the roof plank provides in one fireproof material: (1) roof deck for built-up roofing, (2) good insulation, and (3) a sound-proof ceiling.

A new *Durisol* plant at Beacon, N. Y. has been roofed with 40,000 sq. ft. of the reinforced planks. Installation cost has been reported to be 75¢ per sq. ft., including unloading and hauling to the top of the roof. The material cost is 45¢ per sq. ft. ($4\frac{1}{4}$ in. thickness). The *Durisol* plank ($4\frac{1}{4}$ in. thickness) weighs only 17 lb. per sq. ft.; thus its application is expected to effect savings in steel beams or other framework. *Durisol, Inc.*, 420 Lexington Ave., New York, N. Y.

PLASTIC PARTITION BLOCKS

Plastic partition blocks resembling glass brick, but said to weigh only one-fifth that of the glass counterpart are



Plastic blocks form interior partitions

available for use in the home, store or business office.

The blocks are made with interlocking lips, permitting non-load bearing walls to be built without the use of adhesives or clamps. In offices and stores this permits the use of temporary wall partitions that could be quickly assembled or taken down.

The blocks are $7\frac{3}{4}$ in. square, almost 4 in. thick, and weigh slightly more than a pound each. The two faces of the blocks have *facets* molded into the inside surfaces so that the finished block diffuses light.

Mastic cement or wood strips placed between the blocks can be used to make a permanent wall. Temporary installations are said to require only wood framework for bracing. The new blocks are recommended for interior installations only, at the present. Tests are re-

(Continued on page 176)

three mistaken ideas about Sound Conditioning...

mistake #1 THAT SOUND CONDITIONING IS EXPENSIVE...

The fact is: The cost of Acousti-Celotex* treatment in many installations hardly exceeds the cost of the usual surface that it replaces. And where a suspended ceiling may be specified, Acousti-Celotex sound conditioning can often be added for only a few cents more a square foot.

mistake #2 THAT SOUND CONDITIONING IS A LUXURY...

The fact is: Letters and figures from thousands of different applications show that, far from being a luxury, Acousti-Celotex sound conditioning is a sound investment . . . because it increases output, cuts down errors, and reduces employee turnover.

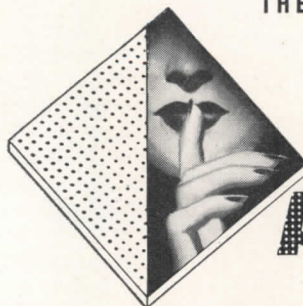
mistake #3 THAT THE USE OF SOUND CONDITIONING IS LIMITED TO SPECIFIC AREAS...

The fact is: More and more architects are specifying *overall* use of Acousti-Celotex sound conditioning for truly modern buildings—offices, hospitals, schools, banks, and other structures. Incidentally, *more sound conditioning has been done with Acousti-Celotex products than with any other material.*

YOU ARE INVITED to submit your acoustical problems to a trained sound technician—your nearest distributor of Acousti-Celotex products. His judgment gives you the benefit of the accumulated skill of a quarter century in sound conditioning . . . and experience in installing millions of square feet of Acousti-Celotex products. Write us today for the name of your nearest distributor in the United States or Canada. Sound conditioning is a sound investment.

* REG. U. S. PAT. OFF.

THE CELOTEX CORPORATION, CHICAGO 3, ILLINOIS



ACOUSTI-CELOTEX
TRADE MARK REG. U. S. PAT. OFF.

Sound Conditioning

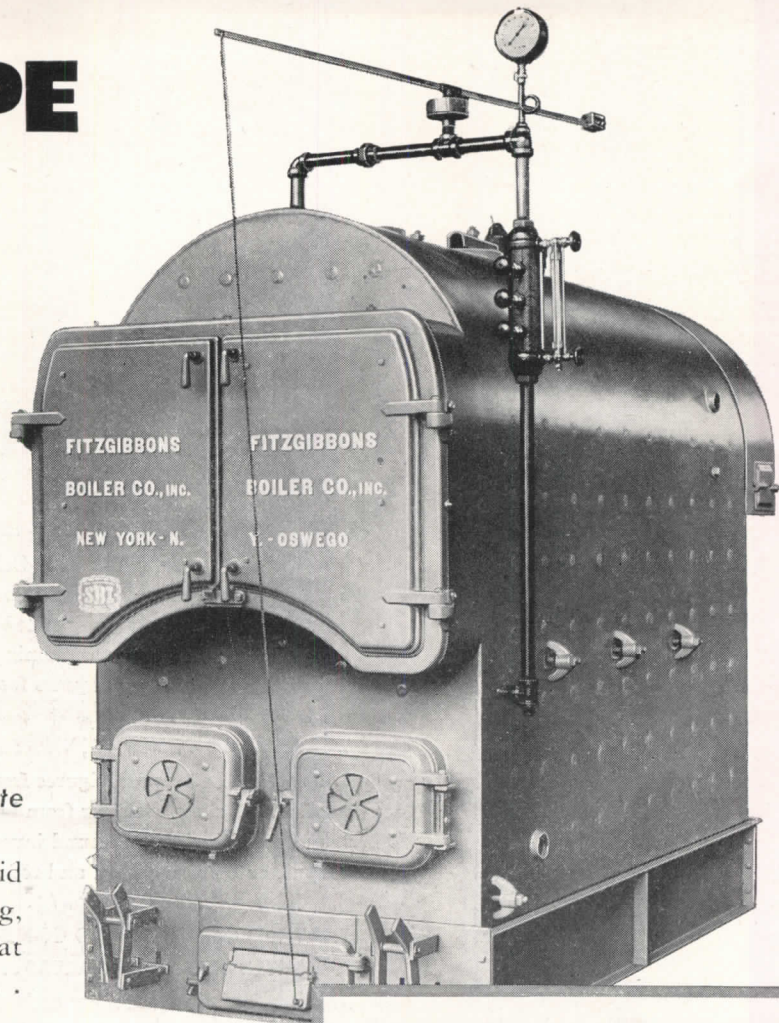
PRODUCTS FOR EVERY SOUND CONDITIONING PROBLEM

THE FITZGIBBONS BOILER

REG. U.S. PAT. OFF.

"D" TYPE

*Isn't this
what you're
looking for
in a boiler?*



*Are you looking for the ultimate
in fuel economy?*

The "D" Type with its rapid circulation, quick steaming, and scientifically designed heat transfer, will provide it. . . .

*Looking for highest adaptability
to firing with oil, gas, stoker or coal?*

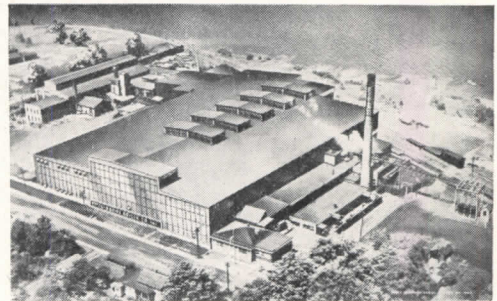
The "D" Type has that too, with its generous furnace volume and grate area. . . .

Looking for low cost maintenance?

The "D" Type is easy to clean and service. . . .

*Looking for a boiler whose superiority is proved
by thousands of installations, where selection is
the result of most critical judgment? You will
find the Fitzgibbons "D" Type Steel Boiler the
choice of discriminating architects and engineers
who want "the best in Steel Boiler Heat."*

*Put the "D" Type Catalog in your files—
get a copy today.*



THE FITZGIBBONS PLANT

at Oswego, New York, modern in every respect, equipped throughout with the latest in cost-saving machinery, administered in accordance with production planning that stresses both excellence and economy, and manned with people among whom the tradition of 62 years of supreme quality in steel boiler building is never forgotten.



Fitzgibbons Boiler Company, Inc.

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

Manufactured at: OSWEGO, N. Y.

Sales Branches in Principal Cities

MEMBER

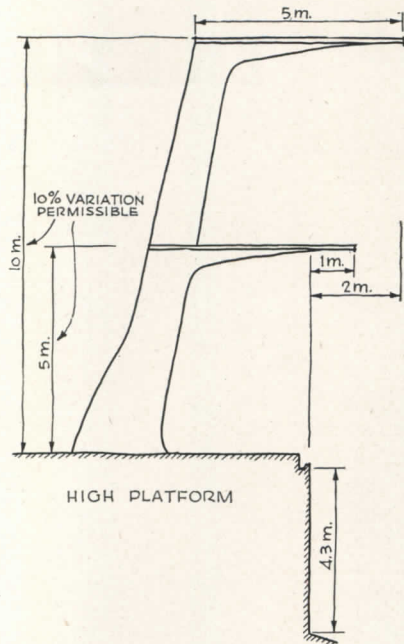


Reg. U.S. Pat. Off.

SWIMMING POOL DESIGN DATA For Competitive Swimming

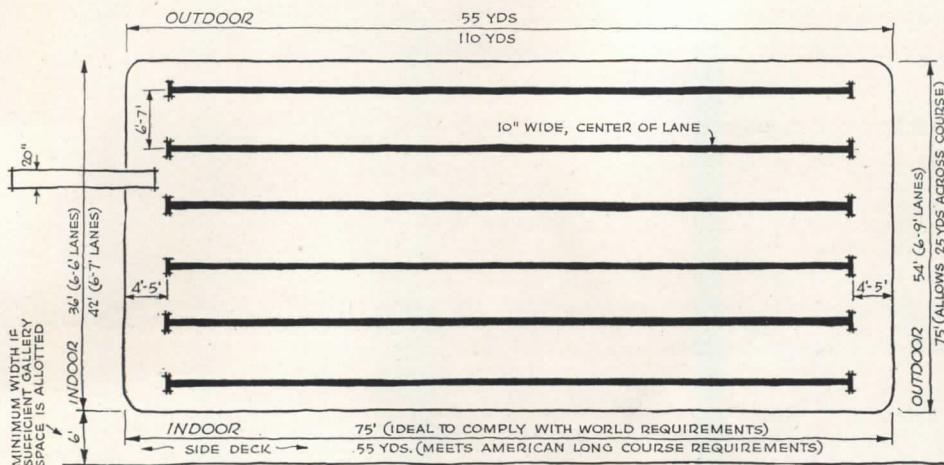
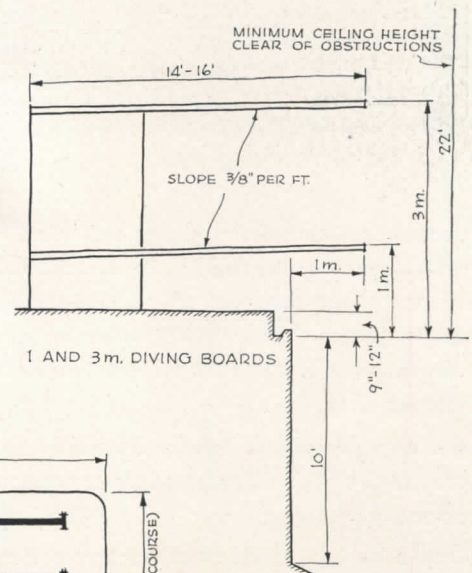
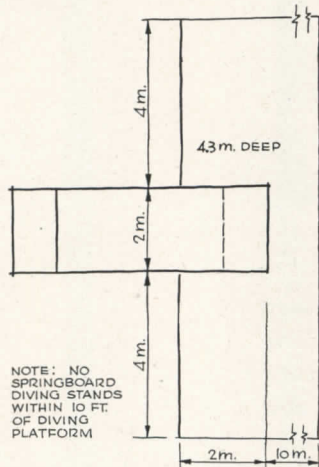
(Based on AAU Rules)

Drawings show dimensional requirements only, for other regulations see notes.



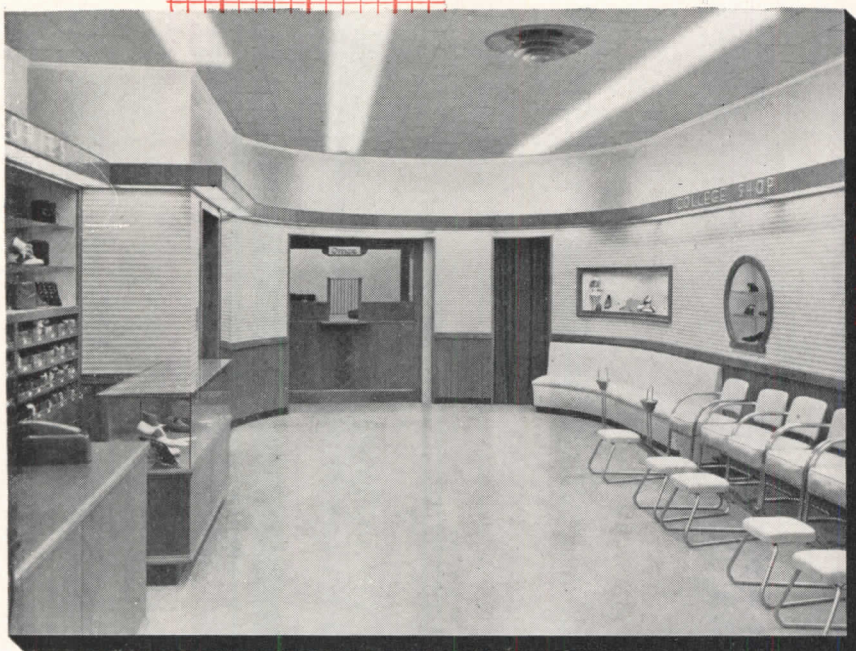
Notes:

- Pool Depths:** 3 ft. (water depth) at the shallow end and descending to greatest depth under diving boards, not less than 10 ft., and under diving platforms, 4.3 meters (outdoor pool). For development of aquatic games, such as water polo, a minimum overall water depth of 6 ft. is recommended.
- Pool Markings:** Besides lane markings on pool bottom, it is recommended that finish distances such as 220 and 440 yds. be indicated on pool deck surface.
- Ladders:** removable or recessed ladders should be installed.
- Gutter Drains** should be provided with shut-off valves so that during competition, water may be maintained "at constant gutter level at the gutter lip."
- High Diving Tower:** the platforms must not move and shall be covered with coco matting. The back and sides of each platform must be surrounded by a hand railing, and each level shall be accessible from the ground by suitable stairs (not ladders).
- Springboards** should be made of wood and covered the whole length with coco matting.
- Starting platform** shall not exceed 2 ft. 6 in. in height from water for indoor competition and in open water not more than 5 ft. In either case it should not be less than 18 in.



OPTICALLY ENGINEERED

FOR INTEGRATED LIGHTING



Modern merchandising proves that store traffic can be stimulated and guided with cleverly contrasted lighting effects. Added foot-candles help merchandising areas attract shoppers across non-selling space. High-intensity spotlighting helps featured displays magnetize the eye. Yet the whole lighting plan must be properly blended to achieve the pleasant atmosphere that makes people like the store.

It's easy when you specify Day-Brite fixtures. Ceiling-mounted, suspended, recessed, cove, perimeter . . . all are optically engineered to function in perfect harmony with each other.

Day-Brite integrated store lighting can substantially increase the sales. Call your nearest Day-Brite representative or distributor.



019



IT'S EASY TO SEE WHEN IT'S

DAY-BRITE

Lighting

Day-Brite Lighting, Inc.,
5465 Bulwer Ave., St. Louis 7, Mo.

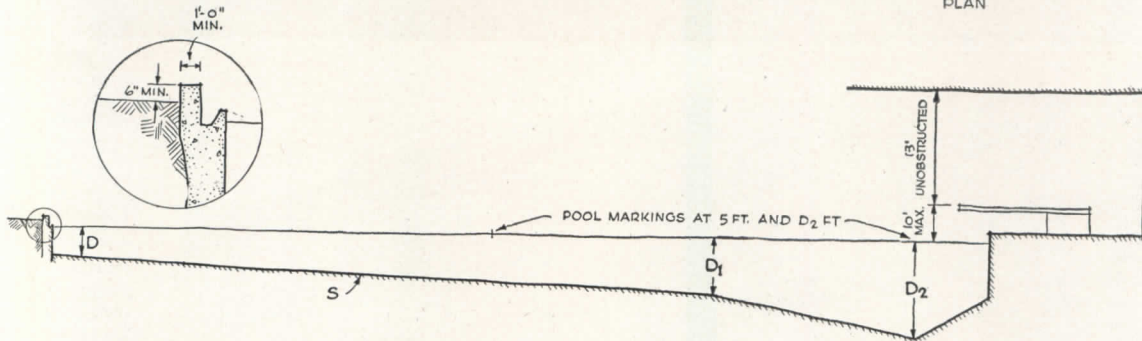
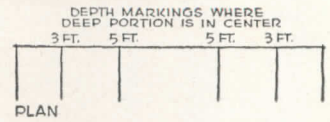
Nationally distributed
through leading electrical supply houses.

In Canada:
address all inquiries to Amalgamated Electric Corp.,
Ltd., Toronto 6, Ontario.

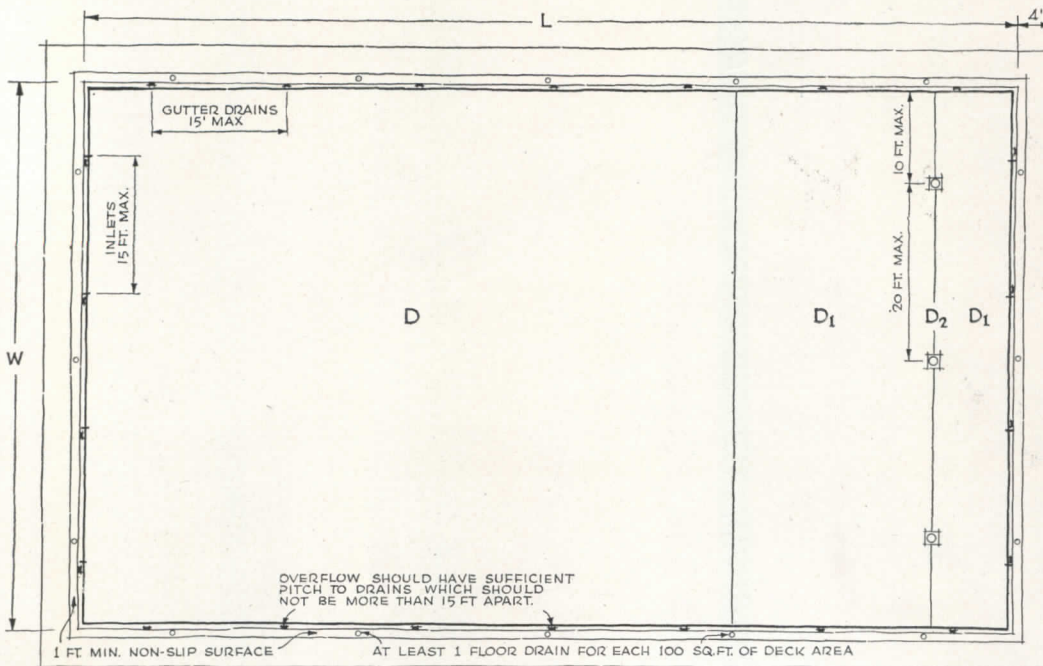
SWIMMING POOL DESIGN DATA

For Health and Safety

(Based on Report of American Public Health Ass'n*)



Curb is shown on section only



LEGEND

- D—no depth shallower than 3 ft.; shallower depths should be confined to wading pools
- D₁—no depth shallower than 6 ft. in deep portion of pool
- D₂—minimum safe water depth of 8 ft. for diving, and for diving platforms elevated 9 to 10 ft. above water, 10 ft. minimum
- L—no length less than 60 ft.
- W—width should be in multiples of 5, 6 or 7 ft.
- S—slope where depth is less than 6 ft. should not be more than 1 ft. in 15 ft.

Notes:

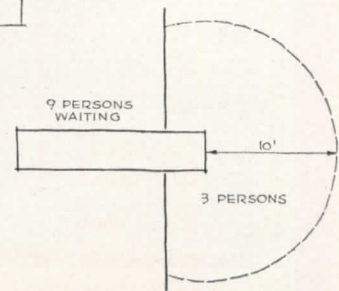
Deck surfaces should have a slope of about 1/4 in. per ft.

Overflow gutter should extend completely around the pool; open, roll-over or semi-recessed types of overflows should be used. Raised edges are not recommended for indoor pools. At outdoor pools where installed to facilitate cleaning, the raised edge should have dimensions shown on section to reduce danger of accidental tripping.

Outlets, Inlets: all pools should have an outlet at deepest point capable of draining pool in 4 hrs. or less. Openings of outlet grating should be at least four times the area of the discharge pipe to reduce suction currents. Where pool is wider than 20 ft., multiple outlets should be provided; where wider than 15 ft., multiple inlets should be used. When outlets are more than 5 ft. from end wall in rectangular pools with spoon-shaped contour, inlets should be placed at both ends of the pool. Outlets should be plainly marked by dark circle, unless outlet is of conspicuous coloring. At large pools with outlets near the center, inlets should be placed at specific intervals entirely around the perimeter of the pool.

Ladders or stairways should be located at one or both sides of deep end. If distance from bottom of pool to deck is more than 2 ft., a ladder or steps also should be placed at shallow end. Treads should be non-slip. Stairs, ladders or step holes should have a handrail on either side at the top leading out over deck. Stairs should not project into pool, but if used, should be recessed into the wall and deck.

* Recommended Practice for Design, Equipment and Operation of Swimming Pools and Other Public Bathing Places. Some sections of the report are being revised, but have not as yet been adopted by the Association.

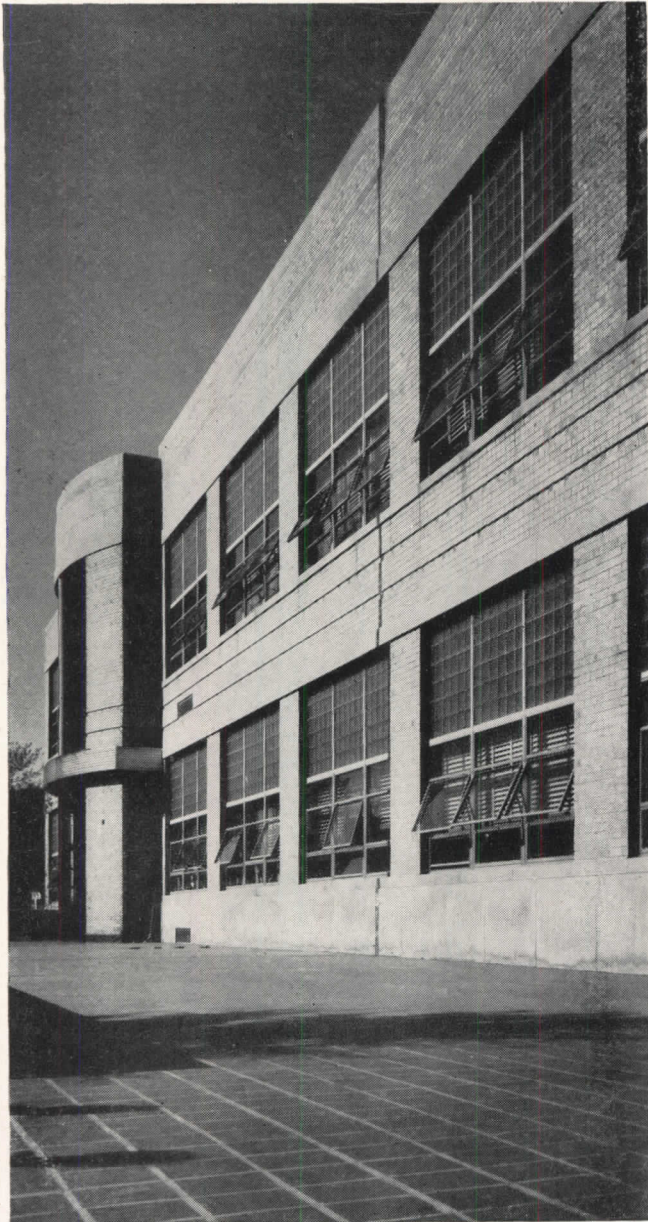


Proportioning Pool Area to Expected Load †

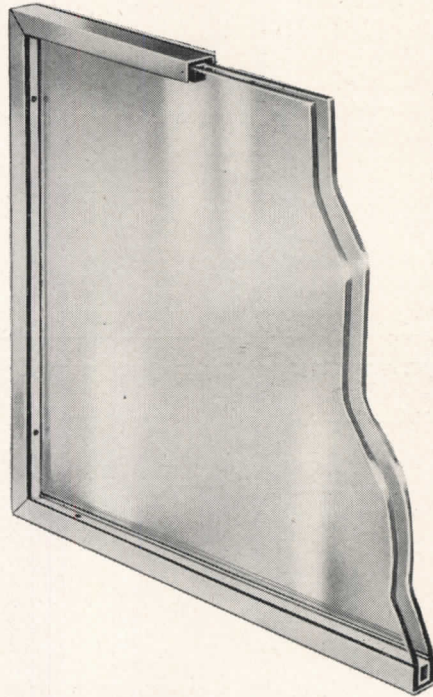
- Allow the following areas for:
- (1) swimmers—27 sq. ft. (assumes 1/3 swimmers on shore)
 - (2) non-swimmers—same as above for indoor and small outdoor pools; at large outdoor pools, allow 10 sq. ft. (assumes 1/2 bathers on shore)
 - (3) diving—area shown in drawing, above, takes care of 12 persons

† Bathing load based on safe bacteriological conditions not included.

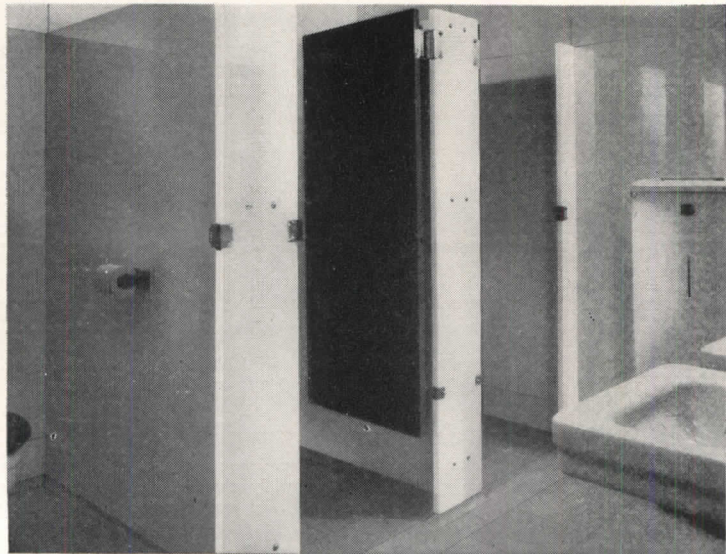
Distinctive uses of Glass



Pittsburgh Corning Glass Blocks can be used in numerous ways to add beauty and practicality to public buildings. They admit daylight abundantly while protecting privacy and shutting off unwanted views. They have excellent insulation properties. They harmonize perfectly with any style of architecture. Fourteen attractive patterns to choose from including the new Soft-Lite Prism B Blocks which facilitate light control on sun exposures. Architects: Overend & Boucher, Wichita, Kansas.



Twindow — "Pittsburgh's" window with built-in insulation, consists of 2 or more panes of Pittsburgh Glass separated by hermetically sealed air spaces, and enclosed in a protecting frame of stainless steel. The 2-pane unit cuts heat loss through windows nearly in half. With 3 or more panes, the insulating effectiveness is even greater. Twindow eliminates drafts near windows, minimizes fogging and frosting of panes. It contributes greatly to increased comfort and economy.



Every modern building has numerous places where colorful Carrara Structural Glass can add beauty and utility. In walls and partitions as shown here, washrooms . . . foyers . . . reception rooms, to name a few. The modern good looks of Carrara last indefinitely. It can be kept sparkling clean with infrequent wipings of a damp cloth. Available in 10 attractive colors. Architects: Janssen and Cocken, Pittsburgh, Pa.

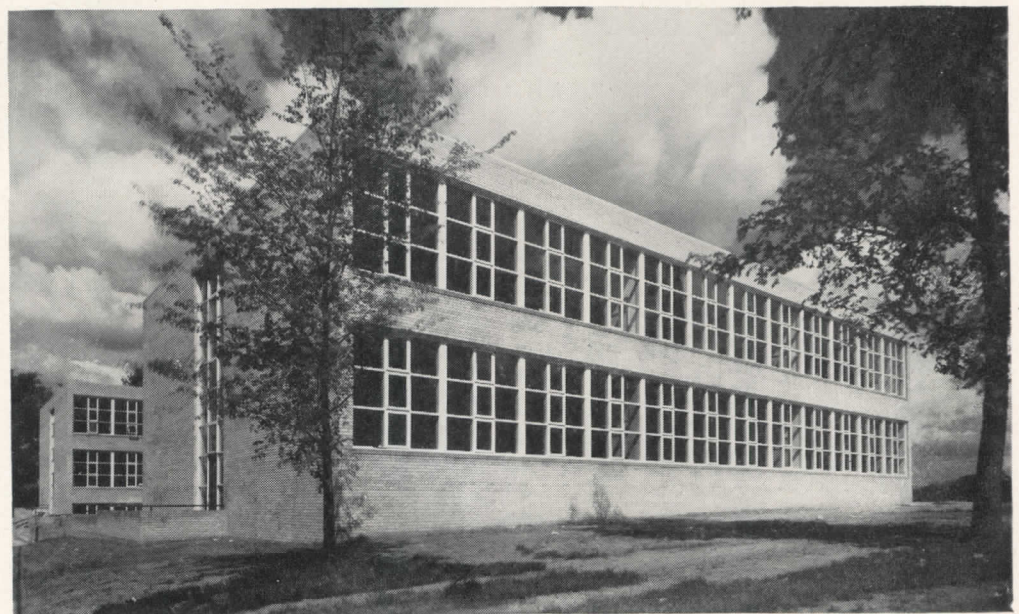
PITTSBURGH PLATE GLASS COMPANY

in **Public Buildings**



Here's a new use of Solex, the heat-absorbing glass — Solex Venetian windows! They are easily handled — easily cleaned. They do not impair vision in any way. And they are water tight and a'r tight when closed. You'll find this new use of Solex highly practical for buildings in warmer climates. Architect: Pamarrow Turner, Miami, Florida.

Windows glazed with Pennvernon Window Glass admit abundant daylight into this modern school building. In addition, Pennvernon provides good, clear vision—has a brilliant, reflective finish on both sides of the sheet. You can depend upon Pennvernon to meet the most exacting sheet glass requirements. Architects: Long & Thorshov, Inc., Minneapolis, Minn.



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

★ Design it better with

Pittsburgh Glass



PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS

PITTSBURGH PLATE GLASS COMPANY

Pittsburgh Plate Glass Company
2360-8 Grant Building, Pittsburgh 19, Pa.

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

Name.....

Address.....

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

FOR SPARKLING WHITE
EXTERIORS . . . STUCCO



To put sparkle in Stucco . . .

ATLAS WHITE CEMENT

The sheer beauty of clean, crisp areas of stucco adds attractiveness and distinction to any building. And Atlas White Cement gives a pure brightness and enduring service to stucco finishes.

A matrix of Atlas White Cement not only enhances the patterns and hues of aggregates used in stucco, but it also sets off better, in contrast or blend, the color values of pigments and aggregates used in Terrazzo, Architectural Concrete Slabs and Cement Paints.

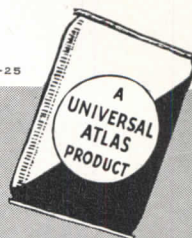
Atlas White Cement complies with Federal and ASTM specifications for portland cement. It has the same advantages for concrete and is used in the same way. Atlas White gives concrete a fresh, pleasing appearance. Cleaning is easy. Maintenance costs stay low.

For further information on the uses of Atlas White Cement, see SWEET'S CATALOG, Section 4B/2 and 13B/8, or write to Atlas White Bureau, Universal Atlas Cement Company (United States Steel Corporation Subsidiary), Chrysler Building, New York 17, N. Y.

AR-C-25

FOR BEAUTY AND UTILITY
ATLAS WHITE CEMENT

FOR TERRAZZO, PAINT, SLABS, STUCCO



"THEATRE GUILD ON THE AIR"—Sponsored by U. S. Steel Subsidiaries
Sunday Evenings—ABC Network

NEWS FROM CANADA

(Continued from page 10)



New Bank of Canada building under construction in Montreal. Fetherstonhaugh, Durnford, Bolton & Chadwick, Architects

cent. Increases in the United States were 47, 6 and 52 per cent, respectively.

Building costs recorded a jump in all countries. Between 1939 and 1947 prices of building materials rose as follows:

South Africa	103 per cent
United States	98 " "
United Kingdom	96 " "
Australia	84 " "
Canada	74 " "
Sweden	70 " "
New Zealand	52 " "

The United States led in increase in building labor wage rates from 1939 to 1947 with 76 per cent. The United Kingdom followed with about 70 per cent and Canada was next with 55 per cent. The remaining countries showed boosts of less than 50 per cent.

Completion Time Unchanged

The Dominion Bureau of Statistics reports that 43,571 dwelling units were completed in Canada in the first eight months of 1948. Those finished in August took an average 6.2 months to build, a figure showing practically no change from the previous two months.

More Houses Built Here

More houses per capita are being built in Canada than in any other country in the world, with the possible exception of Sweden. D. B. Mansur, president of the Central Mortgage and Housing Corporation, recently told the Canadian Association of Real Estate Boards. At the same time he made it clear that despite accomplishments of the past few years there was still a great need for new houses. In 1946 and 1947 there were more new families formed than new houses built.

Comparison of figures issued by the Dominion Bureau of Statistics and the Bureau of Labor Statistics shows that Canada has only a slight edge on the United States. For the first eight months

(Continued on page 156)

ABC's

FOR ERECTING CECO

Steel Casements

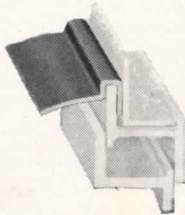


There's a right way to make every steel casement installation job easier and at a saving. But it's all in knowing how. That's why Ceco has prepared a complete and concise Erection Manual for the building industry. Here's a manual containing detailed data on the installation of steel casements. Easy-to-follow directions eliminate guesswork—diagrams show the right way to do the job. Note three examples given here—*How to apply a head drip*—*Testing the fit of ventilators*—*How to glaze*. All the necessary steps for proper installation are covered in Ceco's Manual. It will help you cut costs, do away with window damage, avoid loss of time. Write for free copy today. If you live in one of the western states, ask for special Pacific Coast Edition.

CECO STEEL PRODUCTS CORPORATION

General Offices: 5607 West 26th Street, Chicago 50, Illinois
Offices, warehouses and fabricating plants in principal cities

HOW TO ERECT

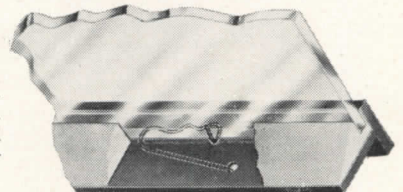


A Before erecting, apply loose head drip by placing it on top edge of casement frame, tapping it lightly to seat in place. No screws or bolts required. Where ventilators do not extend to casement head, no head drip is necessary.

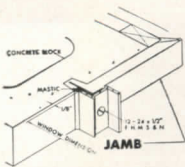


B After erecting, before glazing, test fit of each ventilator by pushing it closed. Ventilator top should touch first while bottom extends about $\frac{1}{2}$ " from frame. Later, when hardware is installed, underscreen operator will draw in bottom of ventilator.

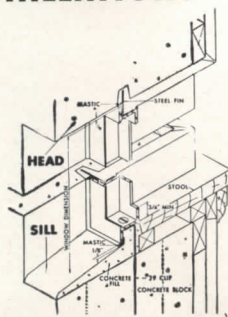
C In glazing, spread steel window putty or compound over glazing rabbets. Push glass firmly into position. Slip glazing clips in place and apply face putty or compound.



ONE OF MANY TYPICAL INSTALLATIONS



Concrete Block Construction with steel fin



CECO STEEL

FREE for you!

CECO STEEL PRODUCTS CORPORATION
5607 West 26th St., CHICAGO 50, ILL.
Please send FREE Manual No. 1014 on how to install metal casements.

Name _____

Address _____

City _____

State _____

In construction products **CECO ENGINEERING** makes the big difference

Michaels

STORE FRONTS



Michaels store fronts, push bars, kick plates and thresholds of extruded bronze, aluminum, stainless steel and other metals meet virtually every requirement. Many stock designs are available. However, Michaels is set up to faithfully reproduce in metal the most intricate creations of discriminating architects. Michaels store fronts are unusually attractive and inviting. Specially designed metal letters of harmonizing or contrasting colors add to the effectiveness of these modern store fronts. Architects and builders are invited to consult us on all their requirements for ferrous and nonferrous building products. A partial list of Michaels products is shown below. If this list does not include the product you need, write us. Chances are we have it or can make it. Complete information on any or all products will be sent on request.

MICHAELS PRODUCTS

Bank Screens and Partitions	Astragals (adjustable)
Welded Bronze Doors	Stair Railings (cast and wrought)
Elevator Doors	Wrought and Cast Radiator Grilles
Store Fronts	Grilles and Wickets
Lettering	Kick and Push Plates
Check Desks (standing and wall)	Push Bars
Lamp Standards	Cast Thresholds
Marquises	Extruded Thresholds
Tablets and Signs	M-I-C-O Parking Meters
Name Plates	Museum Trophy Cases

The MICHAELS ART BRONZE Co., Inc., 234 Scott St., Covington, Ky.

Member of the National Association of Ornamental Nonferrous Metals Manufacturers



NEWS FROM CANADA

(Continued from page 154)

of 1948 Canada started construction of 60,500 new dwelling units, or about 47 per each 10,000 population. During the same period, United States began building 646,000 new units or about 45 per each 10,000 population.

Architects Among Top Earners

Architects and engineers were in the third highest income tax paying group in 1946, according to data released by the Department of National Revenue. They averaged \$5984 in that year and paid an average tax of \$1685. Doctors and lawyers were first and second, respectively, with incomes of \$7466 and \$6528. Poorest paid professional group were nurses with \$1173.

Residential Costs Unchecked

The cost of house construction rose 4.9 per cent in the first half of 1948 compared to 12.6 per cent in the first half of 1947, Central Mortgage and Housing Corporation reports in the current issue of *Housing in Canada*, a quarterly summary dealing with major shelter trends.

The over-all increase in the first half of 1948 comprised a 2.9 per cent rise in the composite index of building material wholesale prices and a 7.6 per cent rise in building labor wage rates. The cost of construction is also influenced by builders' profits and overhead, and workers' efficiency, but these factors are not taken into account in the combined index of materials and labor.

The report states that employment in the building industry has reached a record high, with 295,000 men engaged as of June 5, an increase of 41,000 over the corresponding period last year. At the same time, production of building materials has shown a substantial gain. Increases range from 3 per cent to over 100 per cent compared with the first half of 1947. A few items, notably in the roofing and insulating materials field, are meeting all supply demands, resulting in a cutback of production.

"Real" Shortage Non-Existent?

Canada's housing shortage is a local lack, rather than a national deficit, according to the Financial Post, a leading business newspaper. It produces Government statistics to show that by mid-1948 there was a house or self-contained apartment for every 4.3 persons in the country. This is the lowest figure recorded since the Dominion census was first taken. It compares with 4.4 in 1941, 4.9 in 1921, 5.2 in 1901 and 5.7 in 1881.

(Continued on page 158)

For Light....that's right

PITTSBURGH PERMAFLECTOR LIGHTING EQUIPMENT

When good lighting is a prime consideration, Pittsburgh Permaflexor Equipment will give you the illuminating effects and the design patterns you require to do an outstanding job.

Low installation costs and ease of maintenance are other important features of Pittsburgh Permaflexor Lighting Equipment. We would like to tell you more about these "standard" units which give you "custom" lighting results.

A PERMAFLECTOR PORTRAIT
The Board Room
Federal Reserve Bank
Pittsburgh, Pennsylvania

Pittsburgh Permaflexor Universal Troffers are formed into a rectangular pattern in conjunction with the air conditioning units. The troffers are equipped with hinged Alba-lite glass-panel closures. Multiple switch control provides three levels of illumination.

Electrical Contractor: The Howard P. Foley Company.

PITTSBURGH REFLECTOR COMPANY

OLIVER BUILDING · PITTSBURGH 22, PENNSYLVANIA

MANUFACTURERS OF FLUORESCENT & INCANDESCENT LIGHTING EQUIPMENT

Permaflexor Lighting Engineers in all Principal Cities



WANT THE FULL STORY ABOUT OUR LIGHTING EQUIPMENT?

Send for your copy of Catalog 48-F. It contains complete information, specifications and other data on the troffers used above and other Pittsburgh Permaflexor Fluorescent Units and Companion Incandescent Equipment.

PITTSBURGH PERMAFLECTOR LIGHTING EQUIPMENT IS DISTRIBUTED BY BETTER ELECTRICAL WHOLESALERS EVERYWHERE

(Continued from page 156)

The Post comments, "It is true that the number of persons per family is not what it was in the early days . . . but even after all allowances are made, a house or apartment for every 4.3 persons means that throughout Canada as a whole we are getting close to the point where the housing supply can be termed normal."

Planning Progress Reported

Ontario is the only Canadian province possessing a Department of Planning and Development. The Minister is the Honorable Dana Porter. In addressing a recent conference of the Community Planning Association of Canada (Ontario Division) Mr. Porter announced that, since his Department was formed three years ago, it had approved more than 2000 subdivision plans, comprising nearly 80,000 residential building lots. He stated that 125 municipalities, with in whose boundaries live three million people, are now actively engaged in planning activities.

The Community Planning Association is a citizens' organization which receives some financial assistance from the Dominion Government. It exists to promote public understanding of—and public participation in—planning. During the convention private citizens exchanged opinions with professional planners, municipal officials and representatives of the provincial government. Problems relating to stabilization of land values, rights of property owners, planning legislation and allied matters were discussed in a series of well attended study groups.

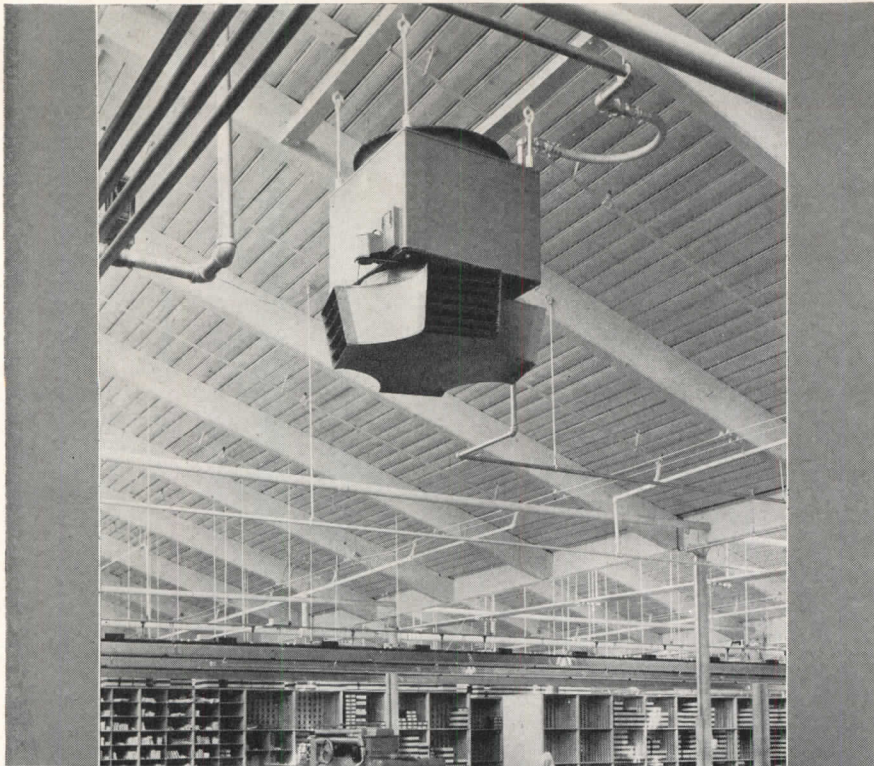
Among other distinguished speakers was Mr. Frederick P. Clark, Planning Director of the Regional Plan Association, New York. He expressed the opinion that planning limited by municipalities is outdated. "Local problems," he declared, "can only be dealt with properly within the framework of a regional plan."

No "Pork Choppers" Here

The Detroit Free Press sheds light on one reason why bricklaying in the U.S. offers emolument sweet enough to attract swarms of Canadian masons (ARCHITECTURAL RECORD, November, 1948).

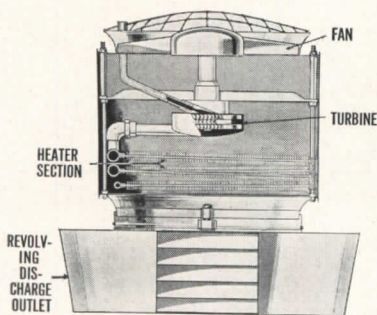
The newspaper says, "Apprenticeships are non-existent in the bricklayers' union unless you have a pull or are a relative of a union pork chopper. With a fine understanding of the law of supply and demand, the union czars have a monopoly for themselves. Lots of people

(Continued on page 160)



Wing Turbine Driven Heater uses exhaust from fan turbine for heating

Where live steam of any pressure is available, it is possible to heat a plant advantageously by installing Wing Turbine Revolving Unit Heaters. The fan is driven by a Wing Turbine and the turbine exhaust is piped into the heater section. Electric motor and electric power are eliminated as the source of power (steam) is also the source of heat. The revolving discharge outlet distributes the heat to the working level, flowing around obstructions and to remote corners. Workers are pleased with the sensation of fresh, live, invigorating warmth. Write for descriptive bulletin or specific details.



L.J. Wing Mfg. Co. 151 W. 14th Street, New York 11, N.Y.

Factories: Newark, N. J. and Montreal, Canada



Wing

**Revolving
UNIT HEATERS**

ONE-PIECE BONDED

What does it mean to you?

ONE-PIECE BONDED means the permanent, approved method of *Stainless Steel Sink* construction that guarantees leak-proof, trouble free satisfaction always.

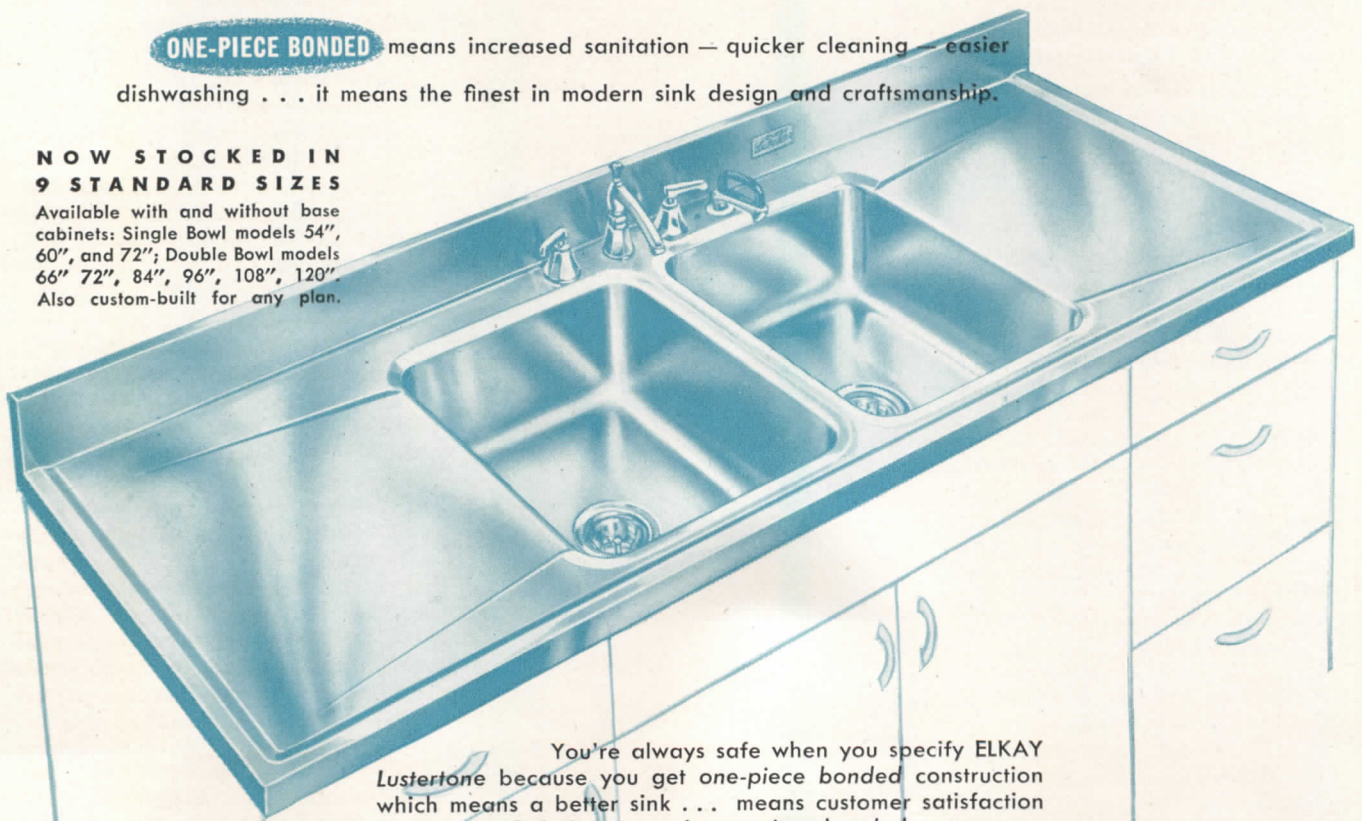
ONE-PIECE BONDED means *seamless* construction of heavier 18 gauge metal that allows all-welded fabrication . . . eliminates joints, crevices and bacteria breeding seams.

ONE-PIECE BONDED means greater beauty. More eye-appeal . . . stronger buy-appeal because the smooth lustrous beauty of ELKAY *stainless steel* provides a finer sink without a blemish — without a distracting seam or joint.

ONE-PIECE BONDED means increased sanitation — quicker cleaning — easier dishwashing . . . it means the finest in modern sink design and craftsmanship.

NOW STOCKED IN 9 STANDARD SIZES

Available with and without base cabinets: Single Bowl models 54", 60", and 72"; Double Bowl models 66" 72", 84", 96", 108", 120". Also custom-built for any plan.



You're always safe when you specify ELKAY *Lustertone* because you get *one-piece bonded* construction which means a better sink . . . means customer satisfaction forever . . . Only *Lustertone* is *one-piece bonded* . . . guaranteed to outlast the home in which it is installed.

the finest sink money can buy . . .



*TRADE MARK

Consult 23a/4 Sweet's Architectural File (1949) or write for detailed information, prices or free estimates.

America's oldest manufacturer of stainless steel sinks

ELKAY MANUFACTURING CO.

1870 S. 54th Avenue · Chicago 50, Ill.

(Continued from page 158)

Modern living

... calls for a Shower Cabinet in the bathroom

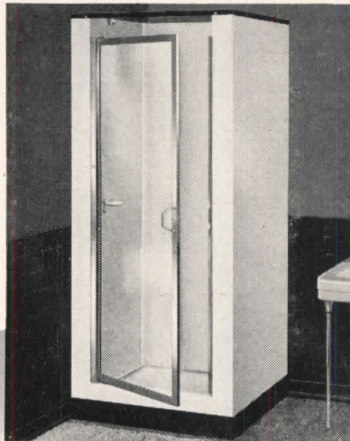
So much personal comfort and satisfaction can be obtained at so low a comparative cost that a shower cabinet has become one of the best values in making homes more desirable to owners and prospective purchasers.

A shower cabinet is a natural companion to the other fixtures in the present day bathroom, and is recognized by architects and builders as one of the strongest features for classifying a home as modern in both the higher priced and lower cost brackets.

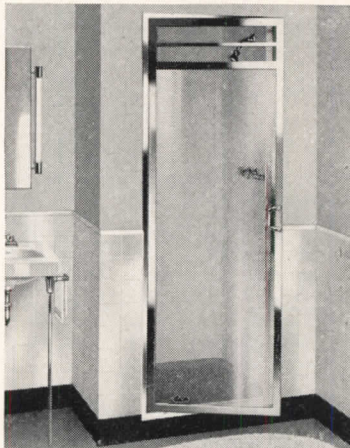
FIAT SHOWER CABINETS

- make houses more saleable.
- make the menfolk happy and are a source of pride to the housewife.
- are in harmony with other modern features in the home that make for easy living.
- add an air of distinction and luxury to the bathroom even when lower priced units are installed.
- **THERE IS A FIAT SHOWER MODEL TO FIT EVERY BATHROOM —**
- the low cost Skipper Shower with Neptune Glass Door.
- the medium priced Cadet Shower with Zephyr Door.
- the highest class shower cabinet ever built, the Commodore, suitable for the finest luxury installation.

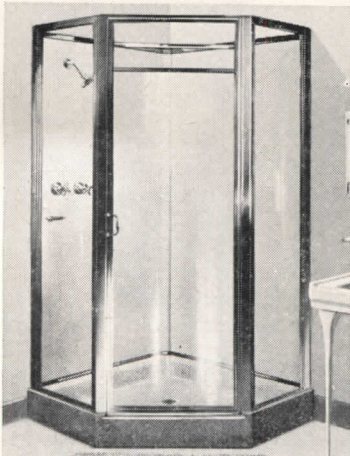
A complete catalog with specifications of all Fiat Shower Cabinets is available in Sweet's Architectural File section 24b/1 and Building File section 6a/6 or write for catalog.



Skipper Shower with Neptune Door



Cadet Shower with Zephyr Door



Commodore — 2000-C



Metal Manufacturing Company

1203 Roscoe St., CHICAGO 13, ILLINOIS
LONG ISLAND CITY 1, N. Y. LOS ANGELES 33, CALIF.

In Canada Fiat Showers are manufactured by Porcelain and Metal Products, Ltd., Orillia, Ont.

want bricks laid; by trimming down the labor supply and limiting the number of bricks that can be laid in one day, the bricklayer increases the demand for his services to such an extent that people will pay him \$27 a day in desperation."

The "pork chopper" dictatorship over apprentices does not seem to exist in Canada. Here anyone who wishes to learn bricklaying or any other trade simply applies to the Department of Labor in the province in which he resides. The Department then endeavors to find an employer who will sponsor him in a training course. No difficulty in placing embryo building mechanics is reported.

NHA Lending Flourishes

Lending operations under the National Housing Act continued at a high level during August, according to a news release from Central Mortgage and Housing Corporation. Loan approvals during the month amounted to \$9,436,280 for 1755 new dwelling units, more than double the total of \$3,426,300 for 732 units in August, 1947.

During the first eight months of the year, NHA loans amounting to \$67,849,620 were approved for 13,028 units as compared to \$36,834,050 for 7702 units in the first eight months of 1947.

Institute Marks Birthday

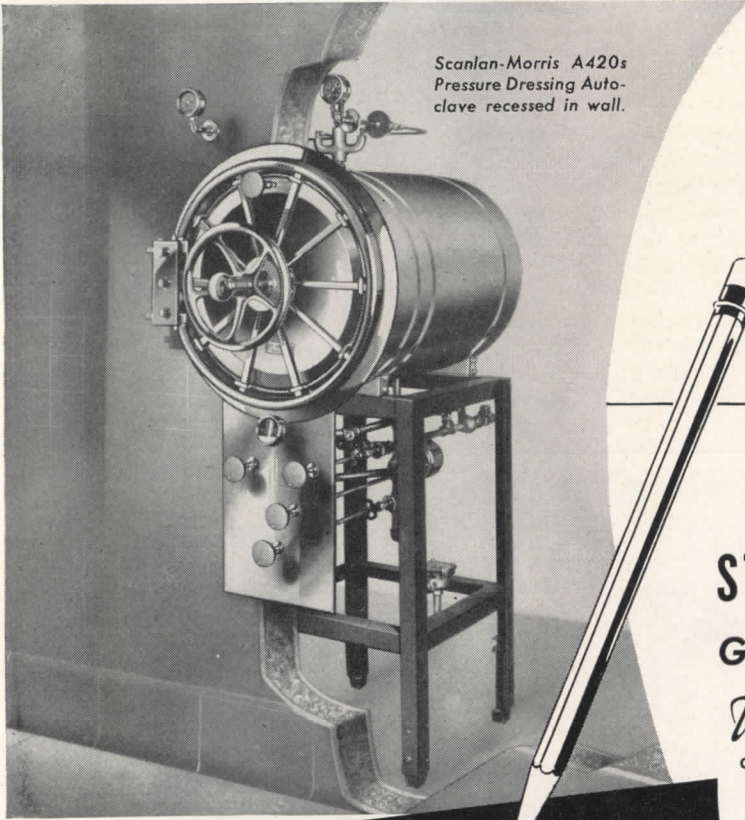
Canada's Institute of Professional Town Planners recently celebrated its first birthday. Formed "to promote the science and art of town and community planning," its membership is drawn from the ranks of architects, municipal officials, engineers, university professors and persons engaged in social studies.

The Institute plans to issue a monthly news letter and a quarterly journal during the coming year. The news letter will serve to keep planners aware of items of current interest. The journal will assist them in charting development schemes for the Dominion's fast growing cities and towns. Information concerning subscriptions may be obtained from Dr. E. G. Faludi, Secretary-Treasurer, Institute of Professional Town Planners, 24 Bloor St. E., Toronto, Ont.

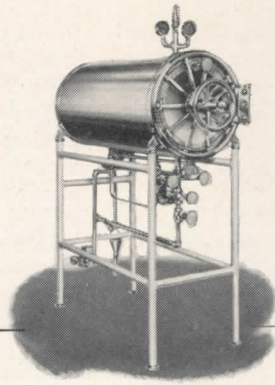
Gets Out of Nail Business

Distribution of Nails by Central Mortgage and Housing Corporation (ARCHITECTURAL RECORD, October, 1948) ceased on November 30. The nails represented an additional supply made possible by diverting some of the tonnage of steel rod normally used in manufacturing barbed wire and fencing. The

(Continued on page 162)



Scanlan-Morris A420s Pressure Dressing Autoclave recessed in wall.



Scanlan-Morris A420s Pressure Dressing Autoclave

**For authentic information on
STERILIZERS FOR HOSPITALS
Get Scanlan-Morris Technical Data**

Which will serve best—exposed autoclaves, recessed autoclaves, or recessed 2-door autoclaves (from unsterile to sterile room)?

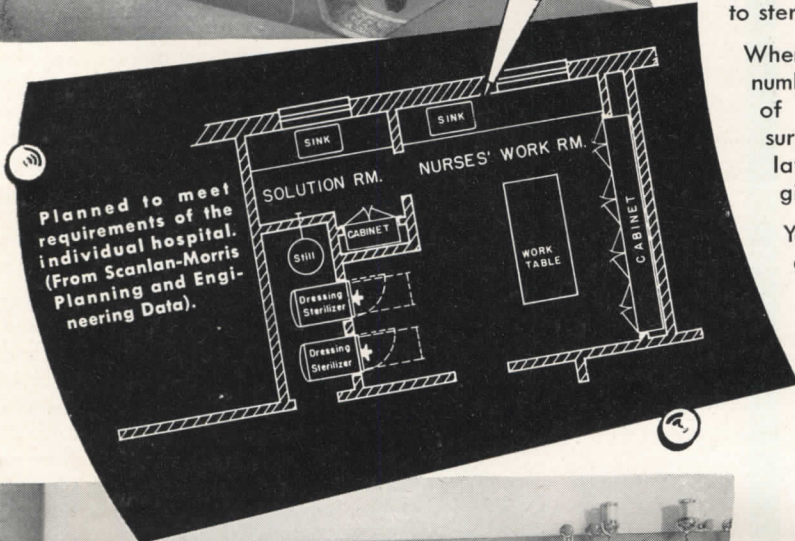
When planning new hospitals, any estimate of the number, sizes and types of sterilizers required should, of course, be based on bed capacity, amount of surgery and obstetrics to be done, and the general layout of the building. Consideration should also be given to possible future additions to the hospital.

You will find much helpful information in the Planning and Engineering Data section of the catalog of Scanlan-Morris Sterilizers.

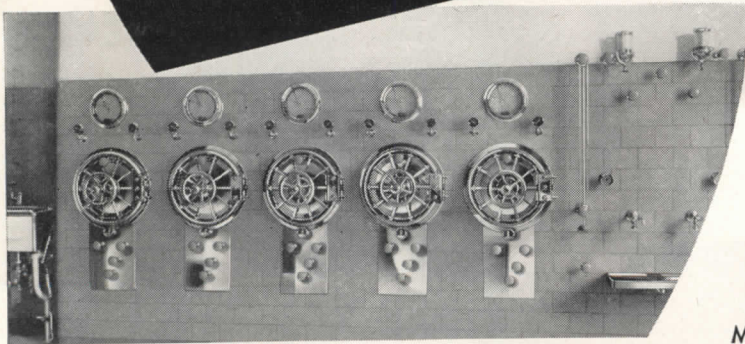
Scanlan-Morris sterilizing equipment is used exclusively not only in some of the largest American hospitals but also in many smaller institutions. More than 40 years' experience in manufacturing and installing sterilizers and other major hospital equipment, and in contacting superintendents, surgeons, hospital engineers and architects, qualify our Technical Sales Service Department to supply valuable data and assistance in proper planning for sterilizers. This department will gladly supply complete engineering data, suggestions and recommendations upon receipt of estimated requirements and a set of floor plans or a sketch of the proposed building. This service is available to architects without obligation.

Similar service is available also on Scanlan-Morris Surgical Lights and Scanlan-Morris Recessed Cabinets.

Mail the coupon for the latest catalogs.



Planned to meet requirements of the individual hospital. (From Scanlan-Morris Planning and Engineering Data).



Typical sterilizing room in a 3000-bed hospital completely equipped with Scanlan-Morris sterilizing apparatus.

THE Ohio Chemical & MFG. CO.

1400 East Washington Ave., Madison 3, Wisconsin

Represented in Canada by Oxygen Company of Canada Limited, Toronto and Montreal, and Internationally by Airco Export Corporation, 33 West 42nd Street, New York

BRANCH OFFICES IN PRINCIPAL CITIES

THE OHIO CHEMICAL & MFG. CO.,
1400 East Washington Ave., Madison 3, Wis.
Send: Catalog and Planning Data on Sterilizers;
 Catalog of Surgical Lights; Catalog of Recessed Cabinets.
(Please attach professional card or letterhead)

Name _____
Address _____
City _____ State _____ AR

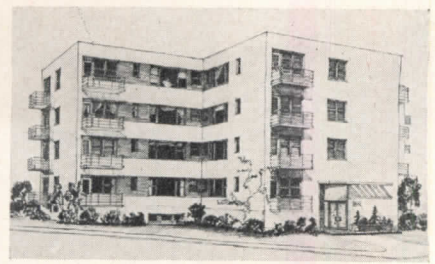
measure, initiated by the Dominion Government, served to assist non-priority residential builders until their requirements could be satisfied through regular channels.

Municipal Finances Studied

At a recent provincial-municipal conference held in Toronto, delegates demanded that the Ontario Government take over the hospital, child welfare and relief costs now borne by cities and

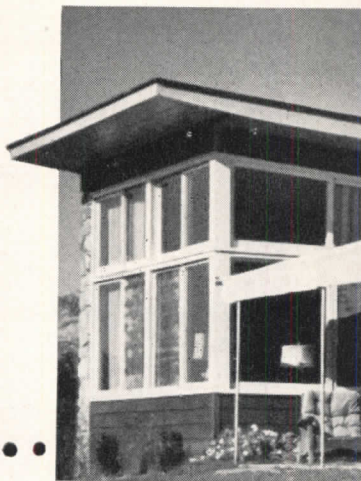
towns. Their brief states that "After full study of the effect of social services upon the municipal financial resources of this modern era, it is submitted these social services have been one of the major factors contributing to the burden on municipal taxpayers for services not properly municipal services."

It appears likely that a commission on provincial-municipal relations will be appointed to study how a more equitable distribution of taxes can be



One of two 4-story, radial-wing, 32-suite apartment buildings under construction in Montreal. Henry E. Greenspoon, Architect

Create Striking Effects..



BY USING THE NATURAL BEAUTY OF THE WOOD

There's real beauty in natural wood—a beauty that Cabot's Creosote Stains capture and enhance! Whether you want bold contrasts or soft blends, you'll find a Cabot Stain that will perfectly fit your color scheme... from brilliant hues to weathering browns and grays. And because only pure pigments are used, colors *stay* fresh and true.

With a content of 60% — 90% creosote oil, the most effective wood preservative known, Cabot's Creosote Stains fully

protect clapboards, shingles and wood siding against decay and termites. *They cost 1/3 as much as good paint and are much more economical to apply!*

Write today for color card and free booklet containing complete information about the advantages of Cabot's Creosote Stains.

ARCHITECT:
William Lescaze, New York City



SAMUEL CABOT, INC.

2191 Oliver Building, Boston 9, Mass.

evolved to pay for the cost of social services.

The need for "a more equitable distribution" may be seen in a study recently made by Professor C. A. Curtis of Queen's University, an international authority on the subject of taxation. Professor Curtis points out that real property provides no less than 85 per cent of municipal revenues in Ontario, the balance coming from provincial grants, fees and revenue-producing services. He estimates that in 1946 only 23 per cent of the total tax levies were expended on services to real property, whereas 31 per cent went to education, 11 per cent to public health, hospitalization and other social services. General administration and debt charges accounted for the rest.

Subsidized Housing Opposed

The main resolution passed at the recent annual convention of the Canadian Association of Real Estate Boards at Hamilton, Ontario, expressed realtors' opposition to "any subsidized housing project which requires a municipality to share in the subsidizing." A loophole would, however, permit municipalities to manage such projects if requested to do so by a senior government.

Steel Imports Curtailed

The vast re-armament program undertaken by United States is having Canadian consequences. In good neighborly fashion, the Dominion Government has announced that it is imposing a voluntary limitation on imports of iron and steel during the last quarter of this year. Imports are to be reduced to 200,000 tons, a cut of 18 per cent in the average quarterly level for last year.

The curtailment is particularly severe in the case of structural steel items. It amounts to about 35 per cent compared with 1947. Import permits are now required for all shipments from United States of angle-irons, beams, channels, columns, girders, joists, tees and zees. But however irksome it may be, the necessity for this control is well recognized by the construction industry.

PROVIDENCE WAREHOUSE WITH 22,000 SQ. FT. FLOOR AREA USES CHASE COPPER TUBE FOR RADIANT HEATING!



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.

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	

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. AR128.

Send for **FREE** book
"Suggestions for Designing
RADIANT PANEL HEATING
with Copper Tube."
MAIL THIS COUPON TODAY!

**Chase Brass & Copper Co., Dept. AR128
Waterbury 91, Conn.**

Please forward your book "Suggestions for Designing Radiant Panel Heating with Copper Tube."

Name _____
Address _____
City _____ State _____

Chase

WATERBURY 91, CONNECTICUT

the Nation's Headquarters for
BRASS & COPPER

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)



From the five old-law tenements at the left Louis E. Ordwein created the garden apartments at the right, winning an A.I.A. Apartment House Medal (see A.R., Aug., 1948, p. 168)

Louis, Kiel Auditorium, St. Louis, Mo.; sponsored by the Home Builders Assn. of Greater St. Louis.

Feb. 28-March 4: 1949 Spring Meeting and A.S.T.M. Committee Week, Hotel Edgewater Beach, Chicago, Ill.

COMPETITIONS ANNOUNCED
American Academy in Rome

The Association of the Alumni of the American Academy in Rome has announced its 22nd annual competition program "to encourage collaborative effort among students of painting, sculpture, architecture, and landscape architecture." It is open to teams composed of students of three or more of the above-named arts.

This year's problem is an island recreation center containing a theater, boating and club house building, bathing and casino building, restaurant, 10 shops, and several sandwich bars. Two prizes of \$200 and \$100 each are offered to the winning teams.

For further particulars address the American Academy in Rome, 101 Park Ave., New York 17, N. Y. The contest closes on April 1.

Princeton Fellowship

The Lowell M. Palmer Fellowship in Architecture, carrying a stipend of \$700, has again been offered by Princeton University. The Fellowship is for advanced study of architecture at Princeton, and is open to holders of a Bachelor's degree who are United States citizens who were less than 27 years old on October 1, 1949.

For complete information address the School of Architecture, Princeton University, Princeton, N. J. Applications must be made by March 25, 1949.

CHICAGO CLUB REOPENS

In response to the many requests that the Chicago Architectural Club resume its position in the field of architectural education and advancement, the directors of the Club have voted to return to active status and have leased quarters at 431 N. Clark St., Chicago. The Club was organized as a sketch club in 1885 and incorporated in 1887.

(Continued on page 166)

CLARK C. WRIGHT, A.I.A.

Clark Chittenden Wright, 68, member of the Chicago architectural firm of Carr and Wright, died on October 12 following a brief illness.

Born at Libertyville, Ill., Mr. Wright attended Beloit College Academy, Armour Institute, and the Art Institute of Chicago. In 1915 he entered the architectural office of George C. Nimmons. He was later admitted to partnership and the firm name was changed to Nimmons, Carr & Wright. Two years ago the firm became Carr and Wright, Inc.

SURE CURE FOR
Garage Door Grief



The tricks of wind and weather often result in annoying grief with old-fashioned swinging garage doors. Now, with R-W 999 Garage Door Hardware, it's easy and economical to use those same doors for the trouble-free convenience of overhead operation. They always open easily, stay "put" and close readily . . . weathertight. Garage door grief is eliminated entirely by this modern, new overhead door convenience—the R-W "nine-ninety-nine" hardware line. Conversion of ordinary

doors to the overhead way with R-W 999 Hardware is simple, swift, and inexpensive. Everything needed is delivered, *complete*, packed to specific order in one convenient carton, ready for installation and operation.

In your plans for building or modernization, specify R-W 999 Hardware and be sure of lasting and complete satisfaction. For detailed information about R-W 999 Garage Door Hardware, simply call or write the nearest Richards-Wilcox office for free folder.

RICHARDS
WILCOX
R-W
AURORA
1880 1948

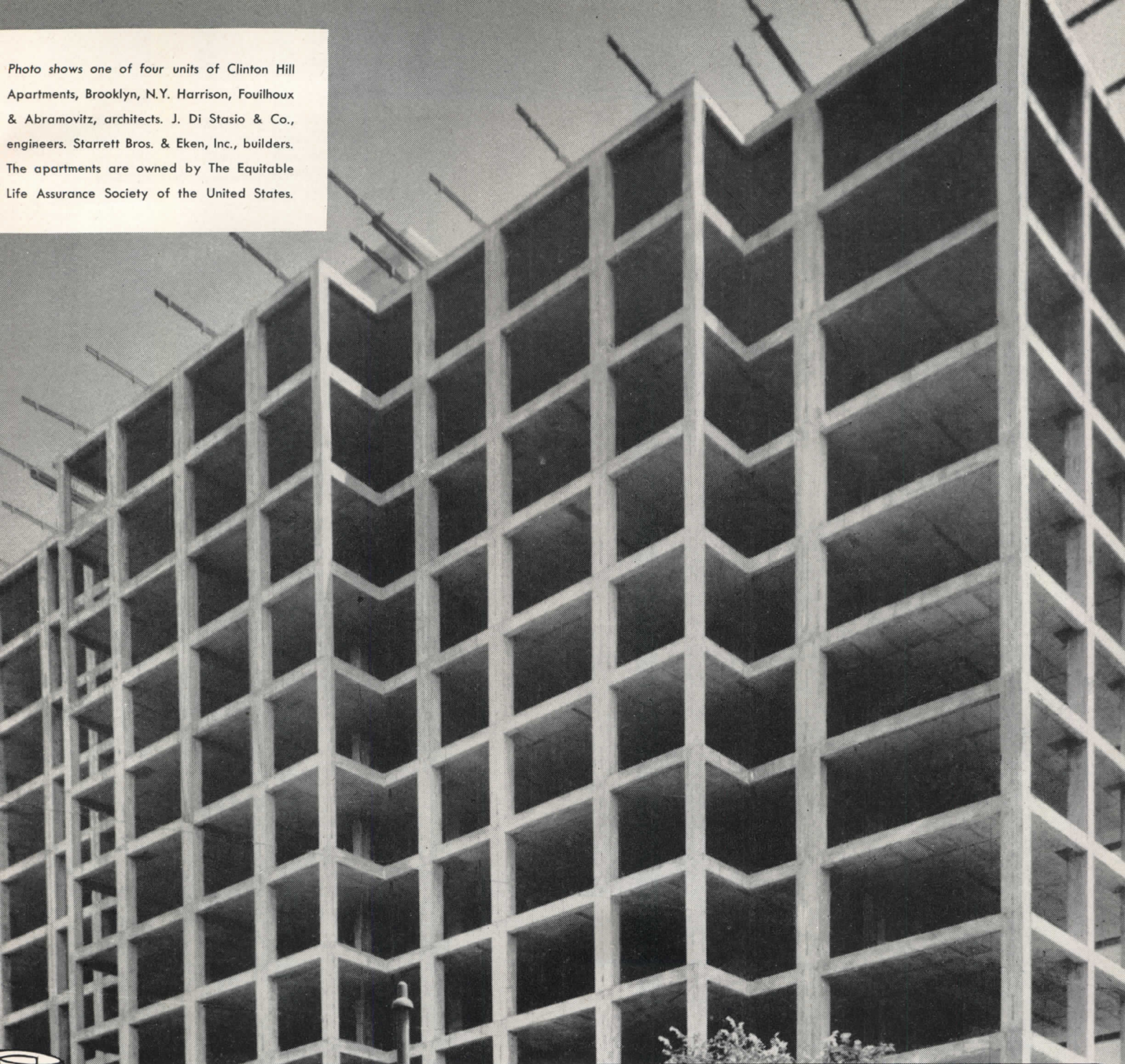
OVER 68 YEARS

Richards-Wilcox Mfg. Co.

"A HANGER FOR ANY DOOR THAT SLIDES"
AURORA, ILLINOIS, U.S.A.

Branches: New York Chicago Boston Philadelphia Cleveland Cincinnati Washington, D. C.
Indianapolis St. Louis New Orleans Des Moines Minneapolis Kansas City
Los Angeles San Francisco Denver Seattle Detroit Atlanta Pittsburgh

Photo shows one of four units of Clinton Hill Apartments, Brooklyn, N.Y. Harrison, Fouilhoux & Abramovitz, architects. J. Di Stasio & Co., engineers. Starrett Bros. & Eken, Inc., builders. The apartments are owned by The Equitable Life Assurance Society of the United States.



Actual bids demonstrate economy of **CONCRETE FRAME and FLOOR CONSTRUCTION**

Competitive bidding repeatedly has shown that the use of concrete frames and floors saves on construction cost. This was demonstrated again in the above 14-story unit of the Clinton Hill Apartments in Brooklyn.

Taking advantage of the economy of continuity in concrete construction, the designers used flat slab floors of uniform thickness (without drop panels) as continuous frames and prismatic concrete columns without caps. This design eliminated most interior beams and gave architects greater freedom

and flexibility in planning room layout by permitting them to place partitions of uniform height wherever needed.

Concrete frame and floor structures are firesafe, last a lifetime and cost little to maintain. That is *low-annual-cost* construction that protects investments. It is ideally adapted to apartments, schools, hospitals, hotels and office buildings for its economy applies equally to tall buildings or those of six stories or less.

Write for helpful free booklet, "Continuity in Concrete Building Frames." Distributed only in United States and Canada.

PORTLAND CEMENT ASSOCIATION • Dept. 12-8, 33 W. Grand Ave., Chicago 10, Ill.

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

BUILDING NOTES

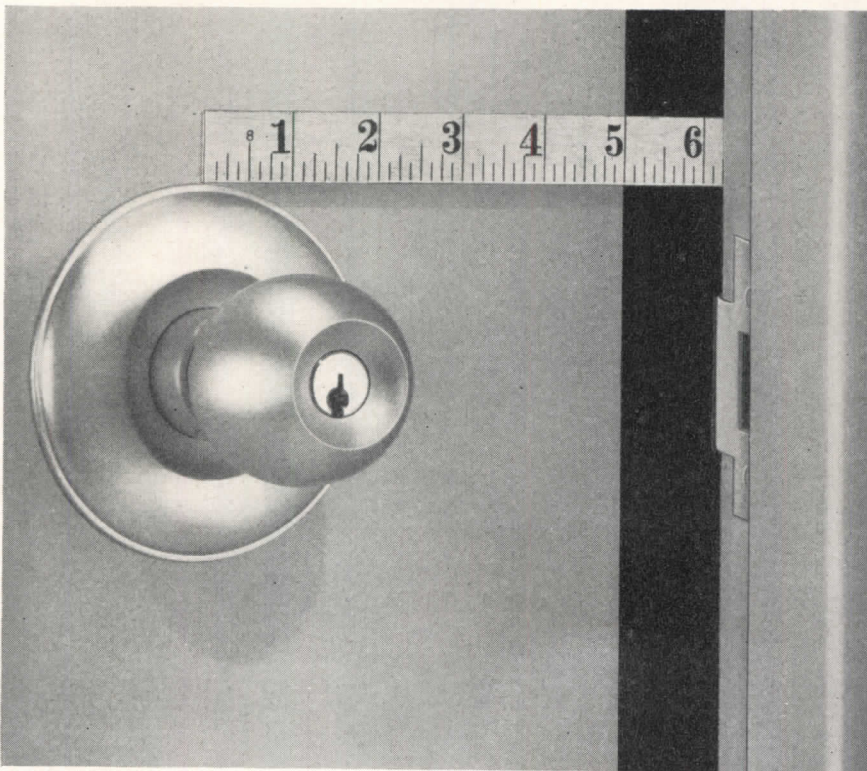
Telephone Laboratories Addition

The second large building unit of the Bell Telephone Laboratories at Murray Hill, N. J., is now partially occupied. Designed by Voorhees, Walker, Foley & Smith, Architects, with the cooperation of the Bell Laboratories' engineers, the new unit, like the earlier one, is designed around a 6-ft. module to achieve maximum flexibility. Each module contains a

window, radiator, artificial lighting and, in the laboratory areas, provision for supplying the multiplicity of services required for laboratory work such as electricity, gas, air, hydrogen, oxygen, hot and cold and distilled water, etc. There are no permanent partitions except around stair wells, elevator shafts and washrooms. Space subdivision is accomplished by movable, prefabricated panels of double steel sheets, 3 in. apart, filled with rock wool.

a new dimension in Door Locks

Schlage 5" Backset



Prevents barked knuckles

Schlage's 5" backset gives ample clearance between the knob and the door stop. It also provides a new freedom of design for architects.

To lengthen backset the Schlage way, just add this connecting link.



No special tools or skill required. Only two holes to bore.



See Schlage in Sweets Architectural File

SCHLAGE
LOCK COMPANY
SAN FRANCISCO NEW YORK

ORIGINATORS OF THE CYLINDRICAL LOCK

The new four- and five-story building is joined to the original one by a 120-ft. bridge, under which are driveways and a sheltered bus terminal. All the main buildings are of brick, with limestone and granite trim.



New home office for Mutual Life Insurance

Mutual Life Insurance Building

Ground was broken early in October for a \$9,500,000 home office building for the Mutual Life Insurance Co. Designed by Shreve, Lamb and Harmon Associates, Architects, the 25-story building is being erected on the block front from 55th to 56th Sts. on the east side of Broadway, New York.

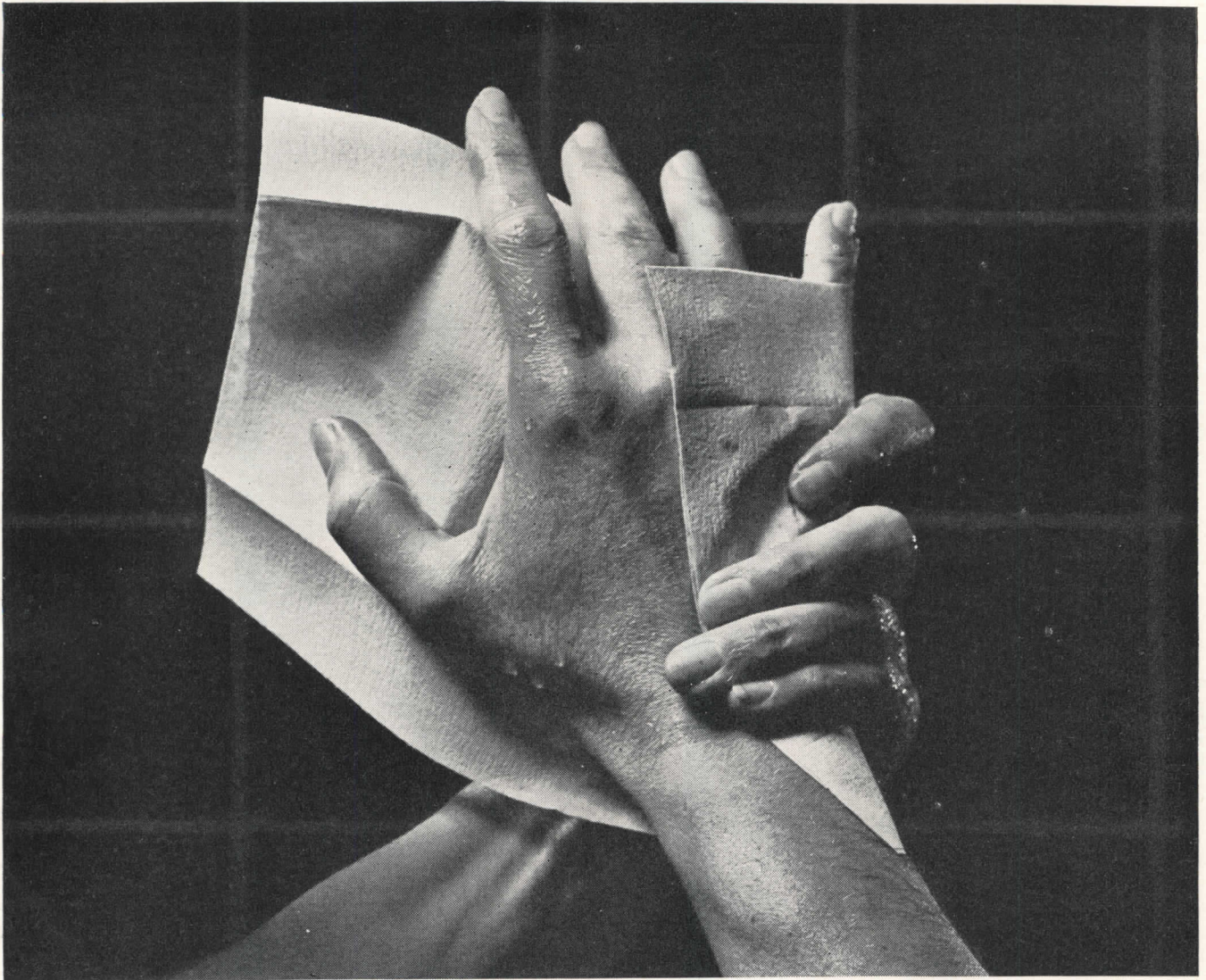
Pan American Union Building

A four story building to be used entirely for administrative purposes is now half completed in Washington, D. C. Designed by Harrison, Hough, Livingston and Larson, Architects, of Philadelphia, the \$2,400,000 complement to the present Pan American Union will be faced with the traditional black-veined Georgia marble of neighboring federal structures, and will have an identifying red-tiled, Spanish type roof. Located on a 16,330 sq. ft. site, with a 174 ft. frontage on Constitution Ave., the new building's 71,000 sq. ft. of floor space will be capable of integrating in one place the various departments that are scattered throughout the city at present.

ERRATUM

In the Universal Corporation, Dallas, page advertisement in the October issue of the ARCHITECTURAL RECORD, featuring the Herman Hospital and Herman Professional Building, Houston, the architects credited should have read Kenneth Franzheim and Hedrick & Lindsley, Associate Architects.

(News continued on page 168)



Washrooms rank as one of the four most important factors in good working conditions—according to a survey of workers from 400 plants.

In these hands...
better employee
relations

The kind of washrooms a company provides has a definite bearing on its employees' attitude towards the "front office." Don't you resent a washroom that isn't *right*?

Clean, modern, *carefully planned* washrooms create good impressions. You're doing your client a real service by making sure his washrooms *are* right.

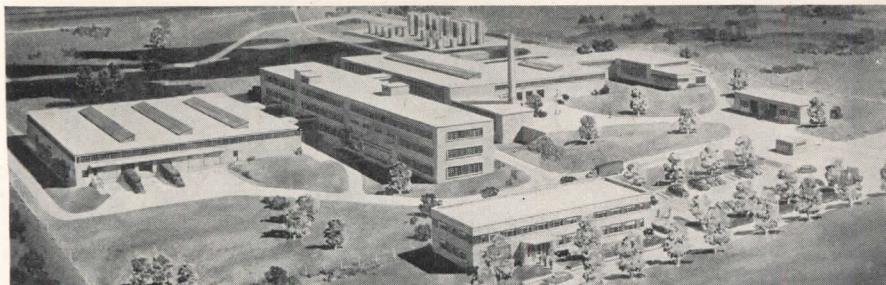
ScotTissue Towels are a symbol of the right kind of washroom. Include ScotTissue Towel cabinets in your washroom planning. Send for our free booklet that's filled with helpful suggestions, well-tested plans and diagrams (by an architect specializing in 'this field') for large and small washrooms, locker rooms, etc. Write to the Scott Washroom Advisory Service, Chester, Pa.

Trade Marks "ScotTissue," "Washroom Advisory Service," Reg. U. S. Pat. Off.



SCOTTISSUE TOWELS

Symbol of the right kind of washroom



New Socony Paint Products mill, Raritan, N. J. Walter Kidde Constructors, Inc., engineers

Planning a NEW SCIENCE BUILDING?

Layouts of equipment and plumbing details should be completed *before* building construction is started, to avoid excessive installation costs. Kewaunee engineers are experienced and can offer assistance without cost or obligation.

Some of the New Science Buildings that are being equipped in 1948 and 1949 with Kewaunee Equipment are:

- University of Michigan, Ann Arbor, Michigan
- University of Illinois, Urbana, Illinois
- University of Florida, Gainesville, Florida
- University of Washington, Seattle, Washington
- University of Arizona, Tucson, Arizona
- University of West Virginia, Morgantown, W. Va.
- Drake University, Des Moines, Iowa
- Wayne University, Detroit, Michigan
- Southern Methodist University, Dallas, Texas
- Michigan State College, East Lansing, Michigan
- Calvin College, Grand Rapids, Michigan
- Franklin & Marshall College, Lancaster, Pa.
- St. Michaels College, Winooski Park, Vermont

Here is more evidence that America's Finest Laboratories are Kewaunee Equipped. Write us about your Laboratory Problems.

Kewaunee Mfg. Co.

C. G. Campbell, President

5046 S. Center Street

Adrian, Michigan

Representatives in Principal Cities

OFFICE NOTES

Offices Opened, Reopened

Benjamin Hoffmann, A.I.A., announces the opening of his office for the practice of architecture in the Renshaw Bldg., 9th St., Pittsburgh 22, Penn.

Mr. Leon Hyzen, architect and industrial designer, has moved his offices to 1129 N. Dearbon St., Chicago, Ill. He is extending his practice to include store design.

The Lloyd-Thomas Co., Appraisal Engineers, has reopened its New York Office, 84 William St., New York 7.

Charles Macklin, Architect and Structural Engineer, has opened his office at 206 S. 4th St., Springfield, Ill.

Paul McCobb Design Associates have established new design offices at 150 E. 35th St., New York 16, N. Y. The firm will specialize in designing stores as well as merchandise in the home furnishings field.

James S. Payne has opened an office for the general practice of architecture at 182 S. Church St., Salem, Ore.

New Addresses

The following new addresses have been announced:

Bain, Overture, Turner & Associates, A.I.A., Architects, 908 7th Ave., Seattle 4, Wash.

Budd Contracting Corp., 350 Fifth Ave., New York 1, N. Y.

J. Herbert Burmeister, Architect, 89-30 161st St., Jamaica 2, N. Y.

Albin Gustafson Co., Electrical Contractors, 220 E. 51st St., New York 22, N. Y.

Salem Engineering (Canada) Ltd., 1525 Bloor St. W., Toronto, Canada.

Sigman & Farkas, Consulting Engineers, 150 Broadway, New York 7, N. Y.

George L. Walling, Architect, 304 W. 8th St., Austin, Texas.

New Firms, Firm Changes

J. Theodore Blomquist, Architect-Engineer-Consultant, is now associated with Frank A. Hecker and Eugene J. Maniscalco, Associated Architects, 332 River St., Hackensack, N. J.

Headed by Henry C. Day, chief industrial engineer, a new general engineering and process design division of the Wigton-Abbott Corp., has been formed to complement the company's present general engineering and construction services.

James C. Gardiner has announced the association of Robert B. Price in the practice of architecture, 200 Broadway Theater Bldg., Tacoma 3, Wash.

Theodore Hartman has announced his severance from the partnership of Howe and Hartman. He has established his own office for the general practice of architecture in the Goetz Bldg., 1702½ 11th St., Monroe, Wis.

(Continued on page 170)

Plywood Announcement!

- 1** A New, Simplified A-B-C System of Grade Identification for Douglas Fir Plywood Is Now in Effect.
- 2** Douglas Fir Plywood Is Now Produced in Accordance with New U. S. Commercial Standard CS45-48.

In order to simplify the identification of Douglas fir plywood grades, manufacturers have adopted a new A-B-C system of grade-marking.

Plywood is manufactured in two distinct types—Exterior and Interior. Within each of these two types are several appearance grades. These grades—of either Exterior or Interior type—are determined by the appearance quality of the *outer plys* (face and back veneers).

Now, there are just four such qualities of veneer—A, B, C and D, in order of appearance quality.

Highest in appearance quality — “A” veneer — is that formerly known as “Sound.” “B” veneer is a new quality, also known as “Solid,” which presents a firm, solid surface, free from open defects. “C” and “D” veneers may contain certain restricted defects which do not affect panel serviceability, and are used where appearance is not important.

*As the new A, B, C, D veneer designations are being introduced, industry grade-trademarking of panels provides for designation either by letters or by previous terminology. Thus, as listed above, grademarks on panels may read either “PlyShield A-C” or “PlyShield SolS” (Sound 1 Side).

GRADES OF EXTERIOR-TYPE

- EXT-DFPA•A-A (Sound 2 Sides)
- EXT-DFPA•A-B (Sound 1 Side, Solid Back)
- EXT-DFPA•PlyShield•A-C (Sound 1 Side)
- EXT-DFPA•Utility•B-C (Solid 1 Side)
- EXT-DFPA•Sheathing•C-C
- EXT-DFPA•Concrete Form•B-B (Solid 2 Sides)

GRADES OF INTERIOR-TYPE

- Interior•A-A•DFPA (Sound 2 Sides)
- Interior•A-B•DFPA (Sound 1 Side, Solid Back)
- PlyPanel•A-D•DFPA (PlyPanel Sound 1 Side)
- PlyBase•B-D•DFPA (Solid 1 Side)
- PlyScord•C-D•DFPA (Sheathing)
- PlyForm•B-B•DFPA (Solid 2 Sides)

The new U. S. Commercial Standard CS45-48 for Douglas fir plywood becomes effective November 1, 1948. The Commercial Standard booklet contains complete data on the new system of grade identification* and new grade-trademarks, and sets forth more stringent performance requirements for Exterior-type plywood. A free copy will be mailed to any point in the United States. Send the coupon below.

**Douglas Fir
PLYWOOD**

LARGE
LIGHT
STRONG *Real Wood* Panels



DOUGLAS FIR PLYWOOD ASSOCIATION
Tacoma 2, Washington

GENTLEMEN: Please send me my copy of the new U. S. Commercial Standard CS45-48, which contains new grade designations and new grade-trademarks for Douglas Fir Plywood.

NAME _____
 Firm _____
 Title _____
 Street _____
 City _____ Zone _____ State _____

Bryan W. Nolan and Robb W. Moore, Architects, have established the firm of Nolan and Moore, with offices at 301 Oklahoma Natural Bldg., Oklahoma City.

The election of Charles C. Whittelsey as vice president in charge of construction activities has been announced by Ford, Bacon & Davis, Inc., Engineers and Constructors with offices in New York, Philadelphia, Chicago, and Los Angeles. Mr. Whittelsey has also been

elected executive vice president of the firm's subsidiary, Ford, Bacon & Davis Construction Corp., with headquarters at Monroe, La.

ELECTIONS, APPOINTMENTS

Peter W. Eller has been elected chairman of the Board of Governors of the Building Trades Employers' Association of New York City. Mr. Eller, vice president of the Thompson Starrett Co., general contractors, will complete his

fourth term as president of the B.T.E.A., December 31. As the second permanent chairman of the board since the B.T.E.A. was founded, Mr. Eller becomes the top administrative official in the multi-million dollar building industry in Metropolitan New York. A recognized authority in labor-management relations, Mr. Eller will take office January 1, 1949, succeeding Christian G. Norman who retired last month after serving as chairman for 28 years.

W. J. Goodwin, jr., of Des Moines, Iowa, was elected president of the Structural Clay Products Institute at its convention at French Lick Springs, Indiana. Mr. Goodwin, the youngest man ever to hold office in the industry, and president of the Des Moines Clay Products Co., succeeds Roy A. Shipley of Pittsburgh. Rand Rodgers, president of the Alton Brick Co., in St. Louis, replaces Joseph A. Brown, Baltimore, as vice president of the Institute. W. Gardner Long, Boston, and Joseph Cermak, Washington, D. C., will continue in office as secretary and treasurer of the Institute.

Nolan B. Mitchell has been designated chief of the Fire Protection Section in the Building Technology Division of the National Bureau of Standards. In this capacity he will direct the NBS research on problems of fire protection and fire resistance of building materials, especially as they relate to design and construction of buildings.

N. R. Patterson, president of the Patterson Steel Co., Tulsa, Okla., was elected president of the American Institute of Steel Construction at the Institute's annual convention early in October. Elected to serve with him were: R. D. Wood, Chicago, first vice president; John E. Jackson, Pittsburgh, treasurer. L. Abbott Post, New York City, executive vice president, and M. Harvey Smedley, New York City, secretary, were re-elected. B. E. Bushnell of Jacksonville, Fla. was named to the board of directors.

George N. Sieger, President of the S-M-S Corp., of Detroit, has been elected president of the American Welding Society for the year 1948-1949. A national authority on resistance welding, Mr. Sieger has held many offices in the Society, serving as its first vice president in 1947-1948. He is a member of the American Society for Metals, and the Society of Automotive Engineers.

Herbert L. Tigges, second vice president of the American Society of Tool Engineers, has accepted an assignment as adviser and consultant to the National Securities Resources Board in connection with the work of the manufacturing division. His immediate work with the Board will pertain to the placement of "phantom" war orders in the machine tool field.

H₂SO₄
won't eat through
THIS PIPE
before
6571 A.D. !

If you install some 2" Duriron pipe, today, to handle 10% or higher concentrations of sulfuric acid, you won't get complaints because of corrosion before the 66th century. (And by that time you won't care.)

It will take 4,625 years for corrosive H₂SO₄ to eat through 5/16" of Duriron. That gives you a good idea of the resistance of this high silicon iron alloy to practically all corrosives.

EVIDENCE: Here are the results of tests made on Duriron over a period of 120 days with unagitated solutions of most of the corrosives in commercial and laboratory use.

Solution	Per cent of Loss	Depth of Corrosion in Inches, per Year
95% Sulphuric acid.....	.007	.0000206
25% Sulphuric acid.....	.016	.0000463
10% Sulphuric acid.....	.025	.0000685
70% Nitric acid.....	.006	.0000188
10% Nitric acid.....	.000	.0000000
5% Hydrochloric acid.....	1.162	.00324
90% Acetic acid.....	.006	.0000188
87% Phosphoric acid.....	.006	.0000188
25% Phosphoric acid.....	.010	.0000292
7.9% Oxalic acid.....	.014	.0000412
9.1% Picric acid.....	.005	.0000137
25% Copper sulphate.....	.008	.000024
27% Ammonium chloride.....	.026	.0000977

For information on the application of Duriron pipe for waste acid disposal systems write for bulletin 703.

DC-11

THE DURIRON COMPANY, INC.
DAYTON 1, OHIO

DURIRON
ACID PROOF
DRAIN PIPE

DC-11

ANEMOSTAT

DRAFTLESS AIR DIFFUSERS

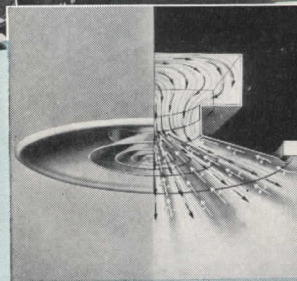
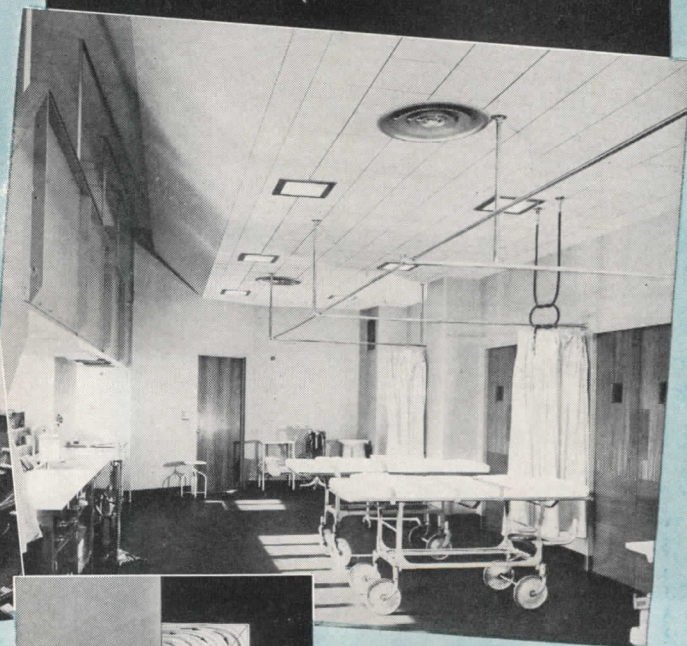
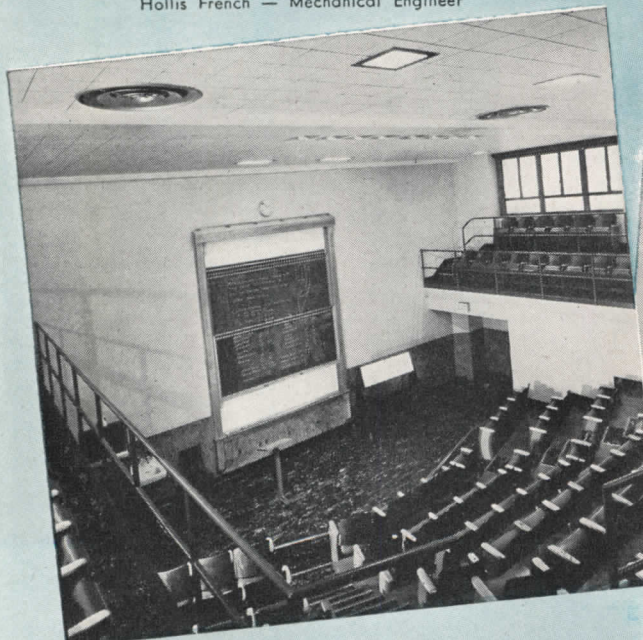
in the Hartford Hospital

For comfort, for health, for safety, conditioned air in the new Hartford Hospital is distributed through Anemostat air diffusers. These devices permit a high number of air changes per hour with complete freedom from drafts. They assure uniform temperature and humidity throughout the enclosure and prevent stratification or stale air pockets.

The problems encountered in air conditioning hospitals are unusually complex. Unless forced-air movement is draftlessly diffused and directed, discomfort, bacterial pollution by infected dust and explosion hazards exist. The use of Anemostat air diffusers has solved these problems in over 200 leading hospitals.

Write for full information on the use of Anemostats for heating, ventilating or cooling or ask for a consultation with an Anemostat engineer.

Coolidge, Shepley, Bulfinch and Abbott—Architects
 Hollis French — Mechanical Engineer



The Anemostat Air Diffuser is distinguished by the exclusive feature of aspiration . . . the drawing of room air into the device where it is mixed, within the unit, with the supply air before it is discharged in a multiplicity of planes.

ANEMOSTAT

REG. U. S. PAT. OFF.

DRAFTLESS AIR-DIFFUSERS

ANEMOSTAT CORPORATION OF AMERICA

10 EAST 39th STREET, NEW YORK 16, N. Y.

REPRESENTATIVES IN PRINCIPAL CITIES

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

AC-1192

MANUFACTURERS' LITERATURE

Lighting

Smithcraft School Lighting. Booklet discusses how the *Eye-Q* line of fluorescent lighting fixtures are designed to meet the basic factors of school lighting. Various models are pictured and described; special installation features are shown. 12 pp., illus. Smithcraft Lighting Division, Chelsea 50, Mass.*

Neo-Ray ML-2448 Lowered Ceiling. Shows by detailed drawings basic parts of the *Neo-Ray* lowered ceiling, basic steps in design of a lowered ceiling, typical layouts and shop window treatments. Computed illumination values are given for various lamp heights, lamp spacing. 6 pp., illus. Neo-Ray Products, Inc., New York 10, N. Y.

Ceilings Unlimited. This comprehensive bulletin on the *Miller Troffer System of Fluorescent Lighting* is divided into three main sections — How They Look, How They Work and How to Specify Them. "How They Look" presents actual installation photographs and architectural renderings of interiors showing what has been done and what can be done to achieve decorative ceiling effects. "How They Work" illustrates the four basic methods of ceiling construction employed with detailed drawings and photographs. "How to Specify Them" shows all items making up the Miller Troffer systems with installation and dimensional data included. 105 pp., illus. The Miller Co., Meriden, Conn.

Architectural Lighting Equipment. Catalog describes complete Gotham line of *streamlights, downlites, litetroughs, fluorotroughs*, fitting mirror brackets and the new pendant indirect *dome-lite*. Photographs, descriptions, scale drawings, specifications and engineering data are included. 36 pp., illus. Gotham Lighting Corp., 548 W. 22nd St., New York 11.

Plastics

Texolite Plastics Surfacing, Tops for Table Tops. Presents features of *Texolite* plastics, suitable for use on dinette table tops, sink tops, kitchen work surfaces, bar and counter tops. Method of application is explained. Several pages are devoted to showing new colors and patterns. Typical applications are pictured. 12 pp., illus. General Electric Co., Chemical Dept., Pittsfield, Mass.*

Mixing Valves

Doran Thermostatic Water Mixing Valve Catalog No. 2-41. Lists characteristics of Doran mixing valves such as available water temperatures and capacities. Doran Shower Sets are pictured. Installation features are shown in dimensioned drawings and photographs, and a price list is included. 8 pp., illus. Cunningham Mfg. Co., 4200 W. Marginal Way, Seattle 6, Wash.

Sliding Door Hardware

The Modern Sliding Door Rolls on Harvey Hardware. Brochure contains floor plans showing various adaptations of sliding doors. Operation of sliding door hardware is explained and installation details are included. 10 pp., illus. Metal Products Corp., 809 Northwest 20th St., Miami, Fla.*

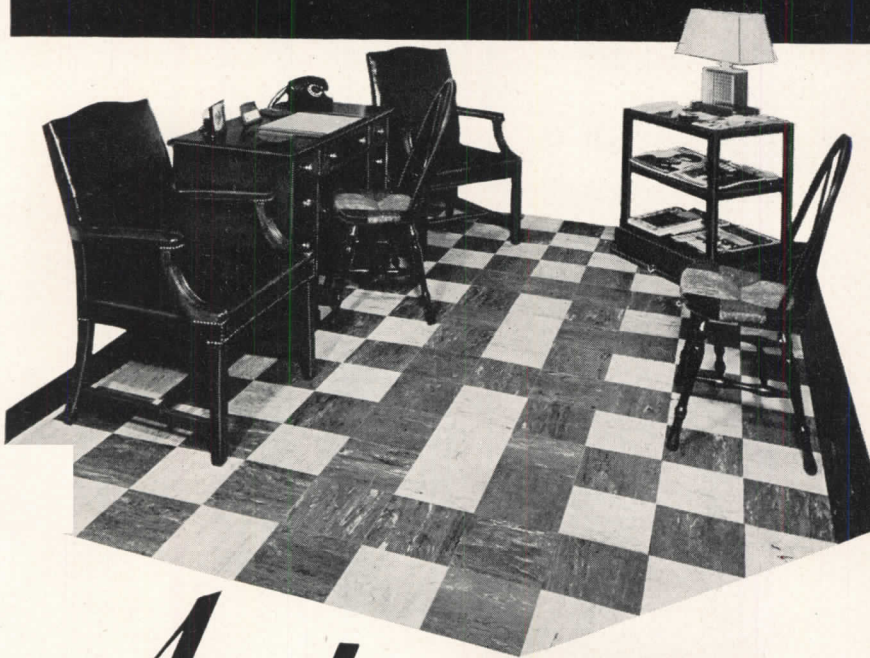
Concrete Forms

Steel Forms for Concrete. Manual intended primarily as an instruction book for those who will actually use or super-

*Other product information in Sweet's File, 1948.

(Continued on page 174)

Where appearance counts....



Amtico RUBBER FLOORS

Give the mark of distinction to lobbies and waiting rooms you design. Specify Amtico Rubber Flooring for these important "first impression" points, for with Amtico you're recommending a quality product backed by thirty years' experience.

From Bullock's new Pasadena store on the West Coast to Princeton University in the East, year after year Amtico is proving its superiority throughout the country. Whether you concentrate on large public buildings or

do most of your designing for private homes, you'll find Amtico Rubber Floors adaptable to any room or decorative scheme.

When you want distinguished, beautiful floors that defy wear; that keep their gleaming freshness with a minimum of care; that absorb sound and lessen fatigue, specify Amtico.

It's easy to get more information about this premium flooring—just send in the coupon.

AMERICAN TILE & RUBBER CO.
TRENTON,
NEW JERSEY

AMERICAN TILE and RUBBER COMPANY
Perrine Avenue, Trenton 2, New Jersey

Please send me samples and literature showing Amtico Rubber Flooring in full color.

NAME.....

ADDRESS.....



Architects:
Skidmore, Owings & Merrill,
New York City.

Contractor:
Frank Messer & Sons Inc.,
Cincinnati.

Why architects Skidmore, Owings & Merrill → CHOSE FENCRAFT WINDOWS for the new Terrace Plaza Hotel

Here is a building of distinctive beauty. Every room is a charming "package" of comfort and light. Architects Skidmore, Owings & Merrill capitalized on the grace and efficiency of Fenestra in planning this magnificent hotel.

The finer fenestration offered by Fenestra Intermediate Steel Windows is in their design. But their *low cost* is the result of modern manufacturing methods. Use of high-quality standard casement sections of advanced design streamlines production . . . without sacrificing variety in window types and sizes. Installation costs are minimized because the dimensions of Fenestra Windows are co-ordinated with those of collateral wall materials.

The better your materials, the better the finished job. For full information on the many types and sizes available, see Sweet's Architectural File for 1948 (section 16a-14), or mail the coupon.

The beautiful Terrace Plaza Hotel, Cincinnati, equipped with Fenestra* Steel Fenestra Intermediate Windows for abundant daylight and controlled fresh-air ventilation.

Remember these Fenestra benefits whenever YOU have a job to do:

BEAUTY—in graceful lines and fine hardware.

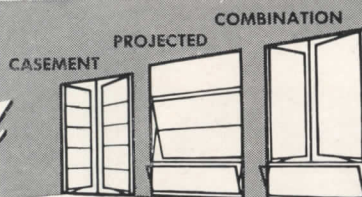
DURABILITY — in solid, rolled-steel casement sections.

UTILITY—in easy screening and safe

washing (both from inside the room), firesafety, efficient daylighting and controlled fresh-air ventilation.

ECONOMY—in low cost that helps stretch today's building dollar. *®

Fenestra



FENCRAFT INTERMEDIATE STEEL WINDOWS

Detroit Steel Products Company,
Dept. AR-12,
2252 East Grand Blvd.,
Detroit 11, Michigan
Please send me data on types and sizes of the
new Fenestra family of Fenestra Windows.

Name _____

Company _____

Address _____

(Continued from page 172)

use the use of steel forms. Contains discussion of advantages claimed for Atlas Speed Forms such as economy, convenience of use and time saving. Irvington Form & Tank Corp., Irvington, N. Y.*

Electrical Wire, Cable

Latex Insulated Building Wires and Cables. Booklet gives performance characteristics, construction details and specifications for a complete line of

armored cables, service entrance cables, non-metallic sheathed cables and new building wire designed specifically for wet locations. 20 pp. United States Rubber Co., Rockefeller Center, New York 20, N. Y.

Roof Drainage

Stainless Steel Roof Drainage for Lasting Architectural Distinction. Discusses features of stainless steel roof drainage equipment such as: durability, freedom

from replacement, strength, abrasion resistance and riddance of "bleeding." The booklet shows details of a canopy over a garage entrance, ventilation dormer, and flashing. Also included are illustrations of standard parts and fittings and a listing of standard specifications. Another section describes tested procedures for fabrication and installation. 8 pp., illus. Armeo Steel Corp., 199 Curtis St., Middletown, Ohio.*

Heat Transfer

Bush Heat Transfer Products (Catalog No. 140). Provides calculation methods and engineering data for selecting the following types of air conditioning coils: steam coils (standard), steam coils (non-freeze), direct expansion cooling coils, and water cooling coils. Ratings and performance data are given for many applications. 36 pp., illus. The Bush Mfg. Co., 179 South St., West Hartford 10, Conn.

Thermal Insulation

Simplified Physics of Thermal Insulation. Revised edition of a manual containing a discussion of heat transfer, condensation, vermin, mold, radiant heating and other topics involved in the study of insulation. A chart of thermal insulation values has been revised and broadened in scope. Advantages of aluminum reflective insulation are given. 32 pp., illus. Infra Insulation, Inc., 10 Murray St., New York, N. Y.*

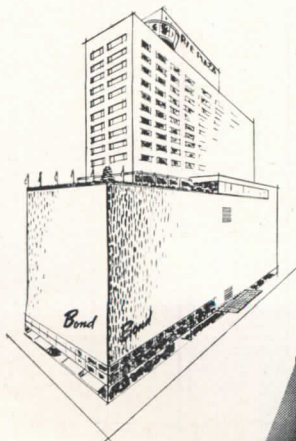
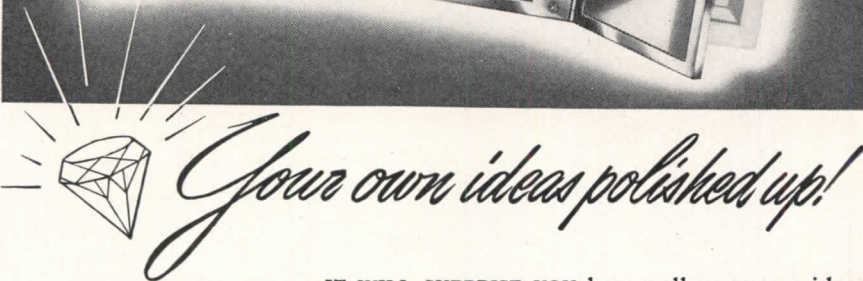
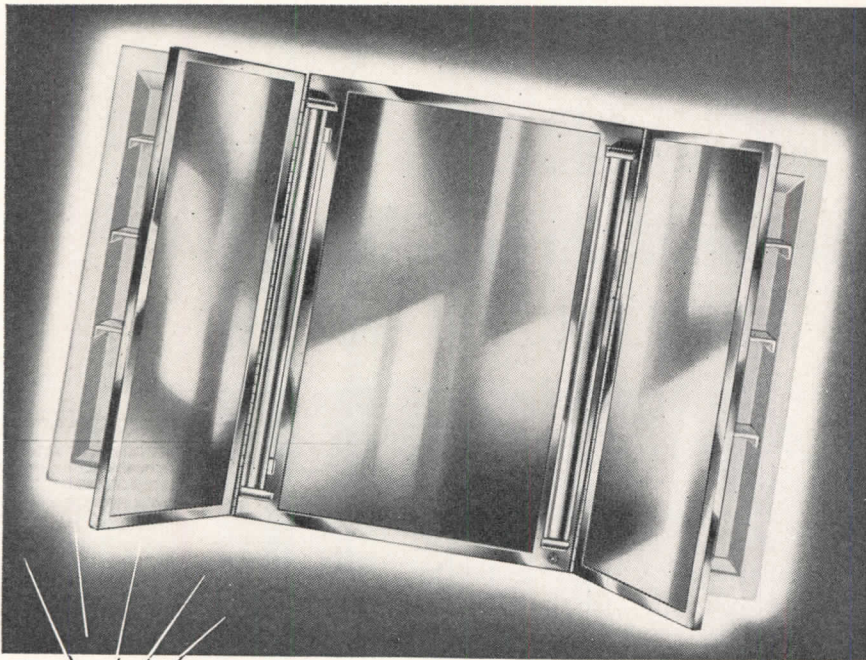
Plastics Standards

NEMA Standards for Laminated Thermo-Setting Decorative Sheets. Describes standard grades, thicknesses, tolerances and various tests for resistance to wear, boiling water, high temperatures, stains, color fastness, moisture and dimensional change. The last section of the data is devoted to recommended techniques for applying decorative laminates. These new standards are the work of the Advisory Technical Committee of NEMA's Decorative Laminate Group. National Electrical Manufacturers Ass'n, 155 E. 44th St., New York 17, N. Y.

Standards for Treated Wood

Manual of Standards for Treated Wood. An engineering guide in the form of a revised manual of standards for treated wood is now available from the American Wood-Preservers' Ass'n. According to the publisher, the standards have been condensed to essential details with repetitions eliminated. Principal subjects are grouped under the titles: Preservatives, Treatments, Methods of Analysis and Recommended Practices. 150 pp. American Wood Preservers' Ass'n, 1427 Eye St., N. W., Washington 5, D. C.

(Continued on page 190)



Parker Bathroom Cabinets and Accessories were used throughout Cincinnati's new Terrace Plaza Hotel.

IT WILL SURPRISE YOU how well your own ideas have been polished up—and how completely they have been incorporated in the designs of the whole Parker Line of bathroom cabinets and accessories. Years of experience have developed Parker's ability to see eye-to-eye with architects in style and utility... just as working with builders has influenced Parker's strict standards of materials and workmanship to meet extreme usage requirements. See the complete line in Sweet's, or send for the new Parker Catalog. The Charles Parker Company, Meriden, Connecticut.

PARKER

BATHROOM CABINETS AND ACCESSORIES

Store Fronts with

SELLEVISION



Architectural Engineers, Herman & Salzman, Chicago

ACTION WHERE IT COUNTS . . .

Sellevison induces action at the store entrance itself. The doors swing in for ready made customers, made ready by the compelling array of attractions inside and clearly visible from the sidewalk. To obtain the full benefits of *Sellevison* design, complete Safety-Set Store Front Construction should be utilized.

Safety-Set is heavy gauge, steel reinforced construction in handsome stainless steel and anodized aluminum. The sash is extremely low to permit maximum visibility and it incorporates Brasco's deeper grip to hold glass firmly and securely. Heavy-duty bars provide ample strength and support for heightened areas and larger glass loads.

In addition to classic styling and structural soundness, Safety-Set Fronts are economical to install. Our complete line includes a wide selection of standard assemblies requiring stock size millwork only. Here is beauty, utility and economy combined. For store fronts of individuality and distinction your best bet is Safety-Set.

★ ★ 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

Copr. 1948 by Brasco Manufacturing Co.

(Continued from page 146)

ported to show that light and sound transmission properties of plastic blocks are nearly the same as for those made of glass. Columbia Protektosite Co., Carlstadt, New Jersey.

SLIDING DOOR UNIT

A sliding door kit, designed primarily for general home building, is said to contain all essential operating hardware and accurately machined wood frame parts. The *Huttig* frame, when assembled, is

installed in the prime 2 by 4 in. studding, with pocket portion covered with the same material used on other wall surfaces.

The frame is manufactured for single doors only, in standard widths from 1 ft. 6 in. to 3 ft., in standard heights 6 ft. 6 in. to 7 ft., and either 1 $\frac{3}{8}$ or 1 $\frac{3}{4}$ in. widths.

The manufacturer lists three unique features: (1) the door is suspended from two solid brass hangers with ball-bearing

rollers operating on an aluminum track. The patented hanger design permits floor clearance adjustments without removing the door from the track; (2) a stabilizing fixture guides the door, equidistant from each side of the pocket jambs, preventing noisy play and eliminating marring of the door; (3) a slotted escutcheon plate at the lower closing edge of the door fits firmly over a rubber door guide at the bottom of the closing jamb to insure a rigid closed door. Huttig Sash & Door Co., St. Louis, Mo.



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.

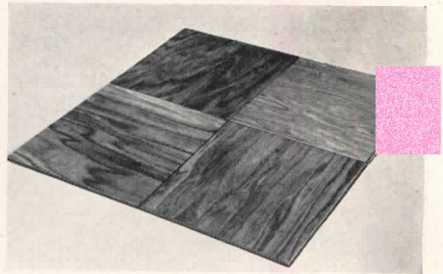
4 TYPES:

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.



Multiple veneer plies make up flooring

HARDWOOD BLOCK FLOORING

Hasko Block Flooring is said to be exceptionally strong and highly inert by being constructed of multiple plies of veneers laid cross-grained. The hardwood blocks are reported to withstand extreme temperature changes and moisture conditions; the manufacturer guarantees each block against delamination.

The flooring comes in blocks 12 in. square by $\frac{3}{8}$ in. thick made of Northern Oak, and the blocks have a tongue and groove feature.

The blocks are laid with the grain of each running opposite to that of surrounding blocks. Hasko flooring can be applied directly on concrete by using a mastic; no screeds, lag screws or expansion bolts are necessary. On wood sub-floors or old wood floors, the technique of blind nailing is employed.

Each block is prefinished at the factory. Haskelite Mfg. Corp., Grand Rapids, Mich.

MINIATURE KITCHEN EQUIPMENT

A complete set of miniature plastic appliances is being made available to assist architects, builders, financial institutions and schools in planning kitchens and laundries.

Called the *Applianset*, the kit consists of 77 appliances, cabinets and kitchen furnishings scaled one inch to the foot and made of light, durable polystyrene. Also included are four metal walls, four windows, two doors (all in miniature), and a 16-page instruction book together with a specially scaled measuring ruler.

In use as displays and demonstration aids, an unusual feature of the *Applianset*

(Continued on page 178)

AMERICAN ABRASIVE METALS CO. (AR 12-48)
460 Coit Street Irvington, N. J.

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.....

**Send for your
FREE COPY**

School Department, Luminall Paints
Chicago 9, Illinois

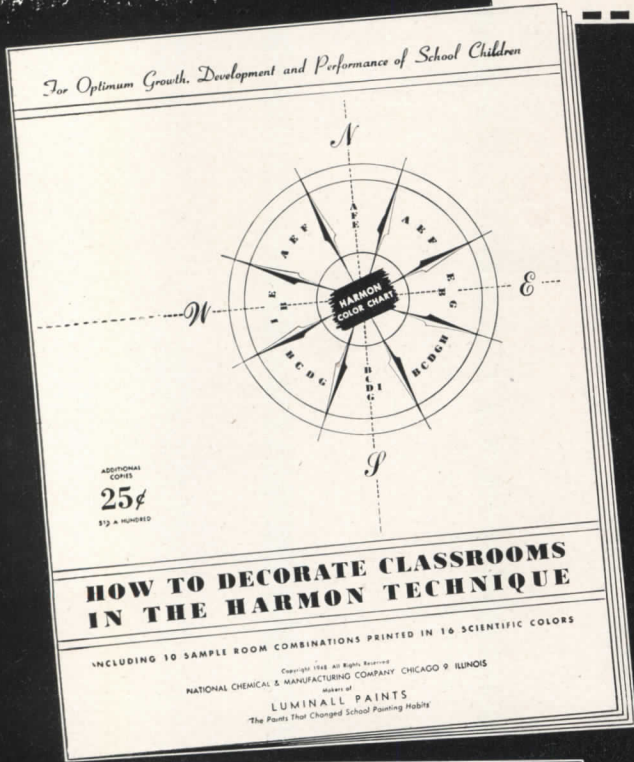
Please send me a FREE copy of "How to Decorate Classrooms in The Harmon Technique" including 10 sample room combinations printed in 16 scientific colors.

NAME.....

TITLE AND SCHOOL.....

STREET.....

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



**Every Architect Needs a Copy of
"HOW TO DECORATE CLASSROOMS
IN THE HARMON TECHNIQUE"**

With this booklet, just off the press, you can duplicate the painting of schoolroom walls and ceilings as recommended by Dr. D. B. Harmon. The Harmon Technique has produced remarkable educational and physical betterments in school children as shown at Rosedale (Austin, Tex.) and elsewhere.

This booklet greatly simplifies the decorating procedure of the Harmon Technique. You follow the directions in each of five steps. A chart indicates approved color combinations from which you make your selections; 16-color printing shows you the colors and how they will look on the wall; complete formulas are given for mixing the paint colors and applying Luminall Paint.

The Harmon Technique is scheduled to be discussed editorially in several leading national magazines. Luminall paints' own advertising to the general public on the Harmon Technique will appear shortly.

Send today for your Free copy of "How to Decorate Classrooms in the Harmon Technique." Additional copies may be purchased at 25c each . . . or \$15 per hundred copies.

SCHOOL DEPARTMENT, LUMINALL PAINTS
CHICAGO 9

DARELL BOYD HARMON
2212 WILLOW GROVE PARKWAY
AUSTIN TEXAS

June 15, 1948

Mr. John Marshall Ziv
Color Consultant
Luminall Paints Division
National Chemical & Mfg. Co.
3617 S. May Street
Chicago 9, Illinois

Dear Mr. Ziv:

I have carefully examined the printer's proofs for your proposed brochure, "How to Decorate Classrooms in The Harmon Technique". The material covered is in full accordance with the reflectance, color mixing and orientation specifications developed in the Rosedale School coordinated classroom lighting experiments.

Schools meeting the minimum fenestration, artificial lighting, equipment and other specifications of our experimental classrooms should be able to reproduce the light distribution patterns and results we attained at Rosedale, if they use the decoration treatments in the new brochure.

Sincerely yours,
Darell Boyd Harmon
Darell Boyd Harmon

DBH/amd



LUMINALL

the light-reflective
paint for interiors

(Continued from page 176)

set is the method of hanging wall cabinets. Each of these units is fitted with a small *Alnico* magnet which holds it tight against the metal walls, yet permits fast setting up and changing of any plan. General Electric Co., Bridgeport 2, Conn.

RESIDENTIAL LIFT

An exclusive feature of the new *Wecolator* residential inclined elevator or lift is its ability to turn corners and

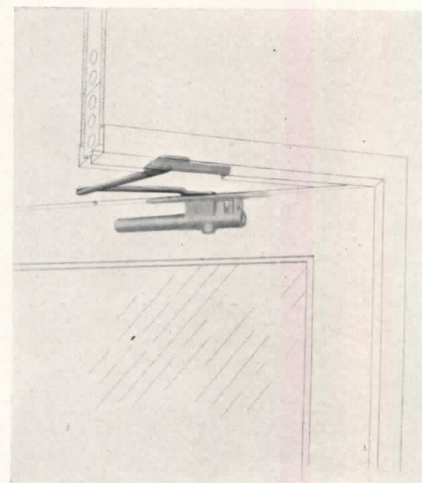
proceed around landings as it travels up and down stairways. The *Wecolator* is installed without the stairway or wall being cut or marred.

Pushbuttons at the top and bottom of the stairway are used to summon the lift, and a pushbutton located on the chair is used by a passenger to control movement of the lift. The chair may be folded against the wall when the lift is not being used. GMK Sales Associates, 514 N. LaSalle St., Chicago 10, Ill.

CONCEALED DOOR CLOSER

A new door closer is described as providing concealed control for any metal interior door up to 3 ft. 6 in. by 7 ft. by 1 3/4 in. in size at a cost not much higher than that of an ordinary exposed closer of similar capacity.

The closing mechanism is entirely concealed within the top rail of the door. Only a slender arm is visible, attached to the frame by a recessed soffit plate. A shock-absorber is standard, and a hold-open arm may be specified. Installation is said to take only a few minutes as both door and frame are previously prepared by the door fabricator. LCN Closers, Inc., 466 W. Superior St., Chicago 10, Ill.



Door closer mechanism is concealed in top rail of door; only small arm is visible

specify with assurance



use

Feather-light
alumitile

When you specify Alumitile you give your client assurance of enduring beauty, and the convenience of gleaming, easy-to-clean walls at prices within the most modest budget. You, the architect, are assured of quality, permanence, and dependability with

this modern wall covering. Alumitile is made of sturdy aircraft aluminum, so light in weight that it presents no structural problem. Finished in a choice of 14 decorator selected colors, baked on for permanence, Alumitile offers a wide range of distinctive designs. When applied with a waterproof mastic to any smooth surface it becomes as rigid as the wall itself. Alumitile is thoroughly proof against fire, water, rust, heat and cold. It will not crack, peel or craze. Alumitile is the ideal wall covering for kitchens, breakfast nooks, laundries and bathrooms for home use; and in addition, it has a wide range of commercial uses . . . both indoors and out. Investigate this amazing new wall tile—*alumitile*. Send coupon for descriptive material, color chart and FREE sample.



HASTINGS alumitile

METAL TILE PRODUCTS, INC., Hastings, Mich.
Please send me architect's kit FREE.

name _____
business _____
address _____
city _____ state _____

VENTILATING STORM WINDOW

An inside storm window with open sill ventilator is now being manufactured. This storm sash has a frame of formed steel, and is for use with *Fenestra* steel casement windows as a complete window unit.

The storm windows are available either one- or two-lights wide. A rubber gasket, attached to storm window frame, is used to prevent metal-to-metal contact and to seal the whole window. Detroit Steel Products Co., c/o W. T. Huddle, 300 Francis Palms Bldg., Detroit 1, Mich.

AUTOMATIC STEAM COOKER

A new steam cooker is not only controlled automatically by operation of the door locking mechanism, but the cooking operation in each compartment is also controlled by the use of electric time clocks. The pressure is automatically released at the end of a predetermined period so that food need not be removed immediately to prevent overcooking.

(Continued on page 180)

For jobs in
every price range —
**LOW COST
HOUSING**

or

**DELUXE
APARTMENTS**

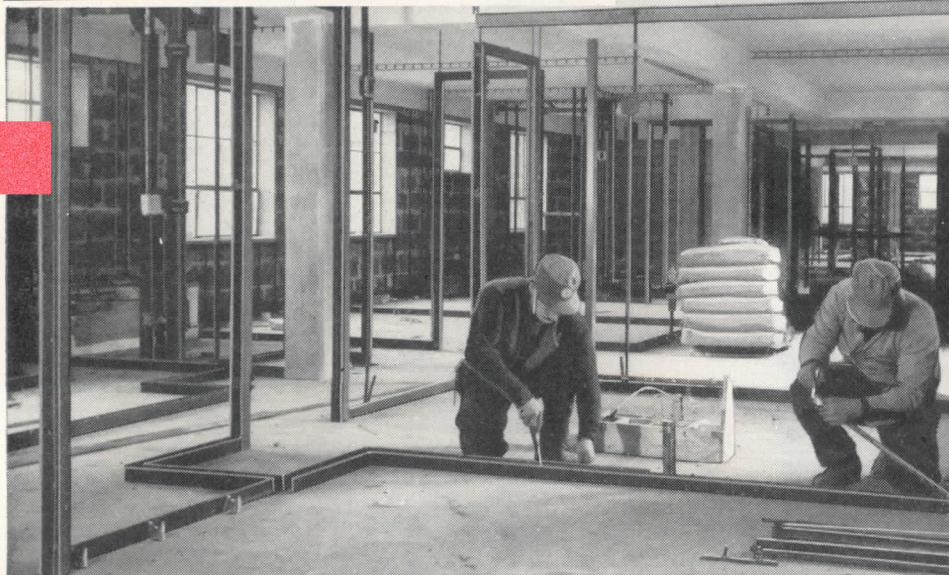
Fireproof **GOLD BOND**
Partition Systems
offer
best value!



WHERE COST IS A VITAL FACTOR — AMSTERDAM HOUSES had to keep down the cost of 1084 apartments. Gold Bond Solid Partitions met *all* requirements, provided far more living space.



WHERE QUALITY ALONE COUNTS — TUDOR PLAZA APARTMENTS. For this ultra-modern cooperative apartment building in Buffalo, Gold Bond Partition Systems met *all* requirements.



You'll build or
remodel better with
Gold Bond

GOLD BOND PARTITION SYSTEMS provide greater living space at no extra cost for *any* job, regardless of size. These partitions, of fireproof gypsum plaster and metal lath save time, labor and space. They're fully described in Sweet's. Or if you'd like a 15 minute demonstration without obligation, just drop us a card.

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 *Van Automatic Pressure Type Steam Cooker* can be furnished either in two-, three- or four-compartment sizes with standard heights, or in two- or three-compartment sizes with extra height compartments.

A red light indicates that there is steam in the pressure compartment. When the steam is exhausted, a green light indicates that the compartment door may be opened.

The automatic door lock turns off the

steam before the door can be opened, if electric equipment should fail.

This automatic cooker is available in boiler plate, hot galvanized; in clad metal stainless-steel-lined; and in solid stainless steel. The John Van Range Co., 401-413 Culvert St., Cincinnati 2, Ohio.

ALUMINUM LAMP POST, FLAGPOLE

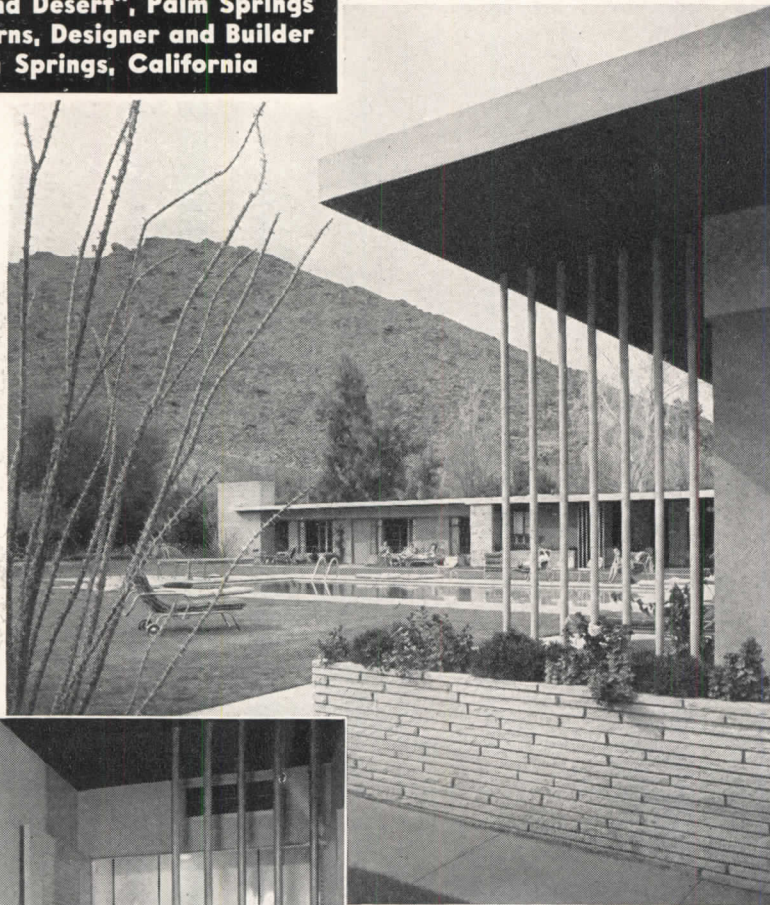
The sectional, aluminum lamp post, *Liteway*, is approximately 8 ft. high and has provision for fitting various sized

lantern collars by means of wooden adapters, 3 to 4 in. in diameter.

This lamp post comes in two sizes — 8¼ and 8½ ft. in length with base diameters 4 and 5 in. respectively; the sections fit into a 5 ft. carton for shipment.

An aluminum flag pole, having an overall length of 21 ft. and base diameter of 1⅞ in., is constructed of four telescopic sections, with pin stops designed for rigid, long lasting service. The pole comes complete with rope, fittings, and is topped by a brass finished eagle. Swain & Bridge, New Britain, Conn.

"Town and Desert", Palm Springs H. W. Burns, Designer and Builder Palm Springs, California

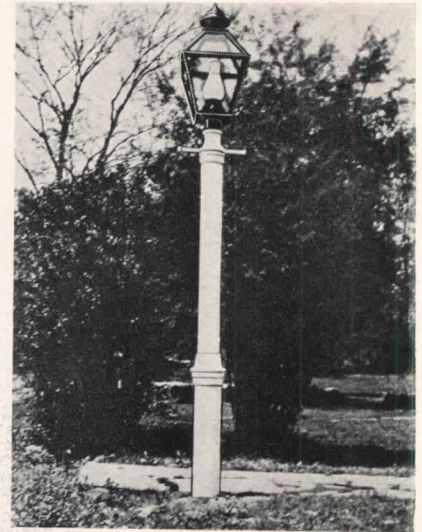


MURPHY-CABRANETTE KITCHENS . . . Luxury at famed Palm Springs

Chosen for guest convenience, for beauty and with confidence of trouble-free maintenance. Modern range (gas or electric) with oven, electric refrigeration, sink and storage space in a single, streamlined, compact unit with exposed surfaces of imperishable porcelain. Write for bulletin.



DWYER PRODUCTS CORPORATION
Dept. R12 - MICHIGAN CITY, INDIANA



Sectional lamp post made from aluminum

WOOD-PLASTIC PANELS

Finely divided wood is being formed into panels through the addition of a plastic resin and other binding ingredients followed by the application of heat and pressure. The material was said to have shown very little change after extensive heat and humidity tests. The plastic content of *Prespine* is said to improve the water resistance of the wood fibers as well as acting as a binder.

The color of *Prespine* is close to that of the species of wood from which it is made. It is cut and machined like wood and made into door panels for interior and exterior use, for parts of kitchen units and for other woodwork. Curtis Companies, Inc., Clinton, Iowa.

WALL COVERING

Timbertone is a recently introduced wall covering designed to have the visual qualities of wood paneling but to be hung like wallpaper.

These *Timbertone* coverings (called structural paper veneers) are designed to afford a three dimensional appearance, depth and richness of natural color, sturdiness and durability, and ease of installation. The coverings have raised

(Continued on page 182)



Architect:
Stevens & Sipple,
Orlando, Florida

Simple, forceful display — A SIDEWALK SHOWCASE

Reduce barriers to vision and you reduce barriers to sales . . . that's the principle of a Visual Front—such as this auto showroom. No hiding behind fancy decoration. Just plain, simple, forceful display of the entire interior.

The Visual Front idea has taken hold in a big way. Store owners have found that there's real merchandising power in displaying the whole store and its activity to passersby. That calls for glass—in large areas.

Visual Fronts are practical, too.

Glass keeps its look of newness through the years, resists weather far beyond the limits of most materials. That means less refinishing, less cleaning. Large glass areas flood interiors with daylight . . . serve double duty by making the entire lighted store a showcase at night.

For Visual Front ideas and information on types of glass, write for your copy of our colorful book. Libbey-Owens-Ford Glass Company, 45128 Nicholas Building, Toledo 3, Ohio.

GLASS FOR VISUAL FRONTS

See Your L·O·F Distributor

FOR TRANSPARENT AREAS—L·O·F Plate Glass, ground and polished for maximum freedom from distortion. To insulate glass areas, specify *Thermopane**. Its panes are separated by sealed-in, dehydrated air. *Thermopane* is readily available. For doors and other areas that might be subject to impact, specify *Tuf-flex** tempered plate glass.

FOR TRANSLUCENT AREAS—to bring in light and assure privacy, use Blue Ridge Patterned Glass for walls and partitions.

FOR SOLID AREAS—Colorful *Vitrolite** glass facing keeps its luster, doesn't need refinishing and is unaffected by weather. Does not warp, swell or craze.

*®

IN CANADA, THERMOPANE IS SOLD BY PILKINGTON GLASS, LTD.



LIBBEY · OWENS · FORD

a Great Name in **GLASS**

ridges to simulate actual wood grains.

Timbertone is prepared as an emulsion of fibre, cement and linseed oil. This material is then aged, cured, and finally finished with oil stains to make the covering sunfast and washable. A coat of wax applied every few years is said to maintain a depth and richness of color and to insure perfect washability.

Wood finishes include Gold Oak, Oak, and Pecky Cypress; other surface finishes are Fabriktones, Metaltones and

a reproduction of hand-laid bricks. Timbertone Decorative Co., Inc., 324 Lafayette St., New York 12, N. Y.

TRANSPARENT MIRROR

A new large size of transparent mirror (30 by 60 in.) made of polished glass $1\frac{3}{64}$ in. thick is now available from Libbey-Owens-Ford Glass Co.

When installed in a wall between a well-lighted room and one that is darkened, the transparent mirror appears re-

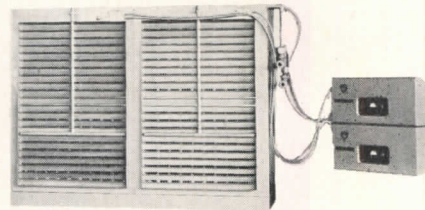
flective to occupants in the well-lighted room; however, it is transparent to those in the dark room.

Other sizes available are: 12 by 40 in., 20 by 40 in., and 30 by 40 in. The manufacturer is also making special transparent mirror of *Tuf-flex* heat-tempered glass. Libbey-Owens-Ford Glass Co., Nicholas Bldg., Toledo 3, Ohio.

ELECTROSTATIC PRECIPITATORS

Commercial electrostatic precipitators are now being built to customer specifications by Trion, Inc. for cleaning and purifying air and other gases. Specially constructed floor models, suspended cabinets and large size filters for unusual applications can be furnished on request.

Two new models have been added by the company to their "packaged" line.



Custom-built electrical precipitators are available for cleaning air, other gases

These Trion air filters (ready to install) are designed to handle air volumes up to 4000 cfm.

All units are guaranteed by the manufacturer to remove more than 90% of the dust, smoke, soot, lint, pollen and other air-borne irritants from air streams passing through the filter — if installed according to specifications and not in excess of nominal rating. Trion, Inc., 1000 Island Ave., McKees Rocks, Pa.

EXTRUDED METAL PRODUCTS

Eugene Extruded Metals Corp., subsidiary of Southern California Glass Co. and manufacturers of *Holobilt* aluminum doors, tub and shower enclosures and sliding glass patio walls are now operating under the name of The Holobilt Co. Holobilt Co., 2445 S. Santa Fe Ave., Los Angeles 11, Calif.

SLIDE VIEWER

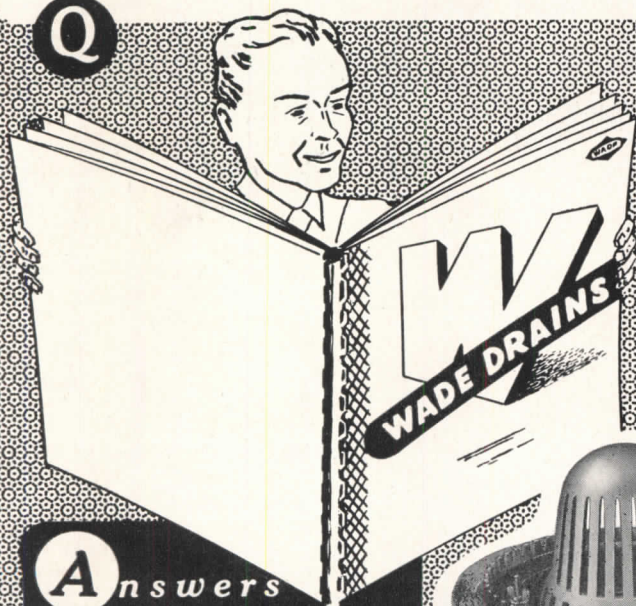
Offered as a selling aid for architects and building contractors is the *Kodaslide Table Viewer* which projects 2 by 2 in. photographic transparencies on a new type screen built into the viewer. It is said to be the first complete projection system for miniature color transparencies which can be used in a fully lighted room.

The new viewer is completely portable and occupies less than 10 by 12 in. of table space. It holds 75 cardboard slides or 30 double-glass slides which may be

(Continued on page 184)

What can you find in the New Wade Catalog that you can't find anywhere else?

Q



Answers
to Your Problems
...for example...

HOW TO SIZE
ROOF LEADERS



W-3260
Roof Drain
with integral
expansion joint

Here's just about the most complete section on roof drains anywhere—pictures, drawings, dimensions, weights and prices—plus—*how many, what size and where to put* roof leaders! Tables based on a scientific U.S. rainfall map tell just what area can be drained by each size leader.

In fact, the whole Wade Catalog W-55 is designed to solve as many problems as possible, about floor or roof or pool drains, backwater valves, grease interceptors, water hammer or sump pumps! If you haven't a copy, drop us a line today.



of ELGIN, Illinois

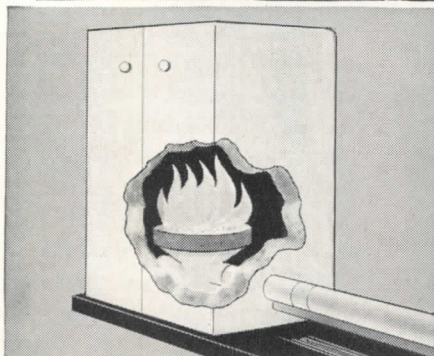
Makers of Fine Drains and Plumbing Specialties Since 1865

Must Owners of your new houses **POLICE** **THE THERMOSTAT?**

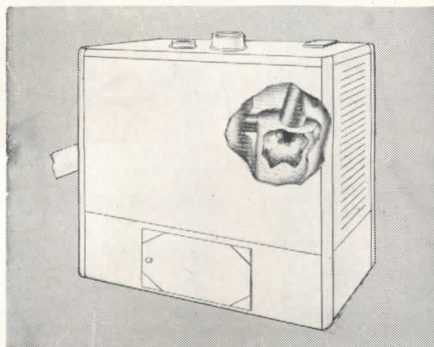


Experts predict shortages of some fuels for 3 to 5 more years!

There are no Ifs, Ands or Buts when you specify Automatic Anthracite Heating



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 50% 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.

OWNERS of your new houses *can* have *plenty* of worry-free heat because there's plenty of hard coal and there is anthracite equipment to fit any heating requirement.

A whole winter's supply of anthracite can be stored easily in advance. Everyone wants this kind of security and convenience. They have *just that* when you specify automatic anthracite equipment.

Look over the two types of domestic anthracite equipment shown here. They burn the cheaper sizes of economical hard coal . . . completely automatic from bin feed to ash removal.

Write to us for more detailed information on all types of anthracite heating equipment—domestic and commercial.



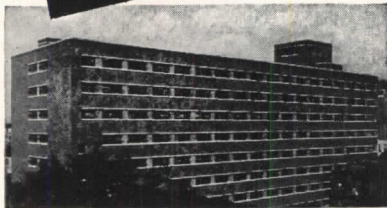
ANTHRACITE INSTITUTE

101 Park Avenue

New York 17, New York

mullions and spandrels by

ALBERENE



U. S. Veterans Administration Bldg., Wilkes-Barre, Pa. Architects: Lacy, Atherton, Wilson & Davis.

Regular grade Alberene's soapstone window mullions and spandrels are financially and esthetically *right* for your job. They're greenish-blue . . . harmonize with any decorative pattern. *And* their price will put a grin on the face of even your most budget-minded client.

For samples and further information, write or phone —

ALBERENE STONE CORPORATION
of VIRGINIA
419-4th Ave., New York 16, N. Y.

ARCHITECTURAL ENGINEERING

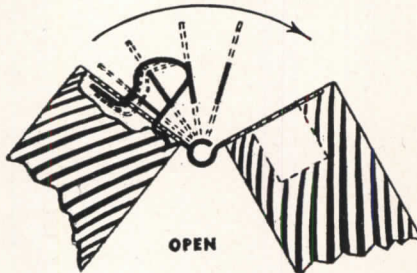
TECHNICAL NEWS AND RESEARCH

(Continued from page 182)

intermixed in use, and projects on the screen (7½ by 7½ in.) an enlarged image approximately five times that of slides made from 35 mm. transparencies. Eastman Kodak Co., Rochester 4, N. Y.



CLOSED



OPEN

Tempered spring transforms butt-hinge into one that is reported self-latching

LATCHING HINGE

An ingenious device that adds to any conventional butt-hinge the function of a latch spring has been introduced. It is described as not only self-latching, but also self-aligning.

Both leaves of the hinge are slotted to permit the insertion of a simple "cam"-like, U shaped, tempered spring made from flat spring steel stock. One end of the spring is anchored in the door jamb. The other end, the curved or "cam" side, compresses into the hinge slot. The spring then releases and latches by the manual closing of the door — 1, 2, or 3 springs are inserted in the hinge, depending upon the size of the hinge.

Latching is installed like any other butt-hinge, except that a mortise, the depth of the spring insert, must be provided. No other separate latch, catch, or hook need be put on. With the addition of a pull, knob or handle, the entire door is ready for hanging. Sagging or warped doors, thus present no "out-of-alignment" latching problems, according to the manufacturer. Latching Corp., 9100 Roselawn, Detroit 4, Mich.

OVERLOAD PROTECTION

A new line of *Quicklag Load Centers* in basic circuit enclosures of 2, 4 or 8 is available for completely automatic protection of home wiring circuits.

(Continued on page 186)

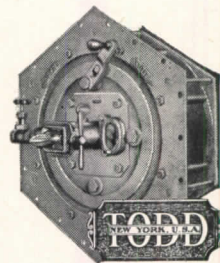
**EVEN NOW...
IN MID-SEASON
—IT'S SMART
TO MODERNIZE
YOUR BOILER PLANT**

WITH

TODD BURNERS

Replace obsolete equipment—now—with Todd Burners and profit in terms of fuel saved. Trained Todd specialists . . . long Todd experience...modern Todd facilities . . . assure you a fast change-over to efficiency in the burning of liquid or gaseous fuels. Take advantage of the knowledge and guidance of your local Todd Dealer.

Oil Burners
Gas Burners
Combination
Oil and Gas
Burners



**COMBUSTION EQUIPMENT DIVISION
TODD SHIPYARDS CORPORATION**

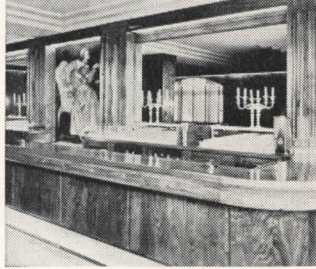
81-16 45th Ave., Elmhurst, Queens, N. Y.

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 • BIENOS AIRES • LONDON

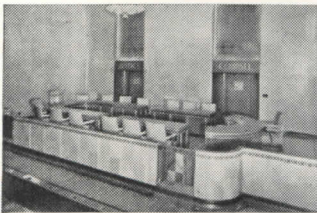
How to Please All Your Clients... specify **WELDWOOD PLYWOOD** for commercial installations



OFFICES. Birch Weldwood combined with wallpaper. Valance is decorative and practical — it conceals drape and blind attachments, and provides space for indirect lighting fixtures at the same time.



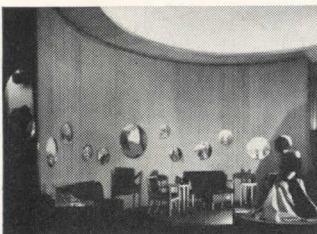
BARS & RESTAURANTS. This beautiful Claro Walnut Weldwood bar front was made for the Cardinal Richelieu Hotel, San Francisco. Walls and columns were covered with the same paneling.



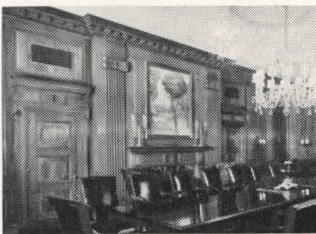
INSTITUTIONS. Mengel Flush Doors and trim of Ribbon Grain Walnut Weldwood set off the diamond-matched bleached Walnut walls and railing. Recessed panels over doors are of Stamp Claro Walnut.



HOTELS. Your first impression of the Ottaray Hotel lobby, Greenville, S. C., is one of richness and good taste. Guinea Wood Weldwood in a handsome treatment of walls, columns and stair-rail.



STORES. Window-dress the whole store! Graceful curves and smooth-flowing lines provide an eye catching background for display in this I. Miller shoe salon, New York. The wood is oak Weldwood.



BANKS. Dignity and stability are the keynotes of this luxurious installation of Figured Mahogany paneling in the Conference Room of the Long Island City Savings Bank, L. I. City, N. Y.

Most commercial installations present essentially the same requirements for an interior wall surface. Appearance, durability, ease of maintenance and finished cost . . . these are the major questions.

And here are Weldwood's answers:

APPEARANCE. Man's old-time, all-time structural-decorative favorite . . . wood. Choose from the very finest domestic and imported hardwoods . . . because only selected fitches go into Weldwood panels. Create traditional or modern interiors. You have a wide latitude for numerous effects . . . because Weldwood's lustrous beauty is a perfect complement to any style.

DURABILITY. Weldwood *resin-bonded* panels are laminated under heat and pressure, to produce a modern form of decorative panel that will *never* warp, crack or delaminate, when properly installed.

EASE OF MAINTENANCE. First cost is practically last cost, when Weldwood walls are installed. These beautiful decorative panels maintain their original beauty with minimum care. Maintenance is negligible.

FINISHED COST. Because Weldwood panels combine high structural strength with great decorative beauty, you can specify many short cuts that save both material and labor. Your finished costs will look good, compared to the striking appearance of the finished job.

So look into Weldwood for *all* your commercial clients. Take your choice from fine woods like oak, birch, korina, maple, walnut, gum, mahogany, zebra-wood, avodire, rosewood and teak. Make *everybody* happy . . . store-owners, restaurants, bankers, businessmen, hotel-owners and operators of institutions. Specify Weldwood for their interior walls.

**SEND FOR NEW BOOKLET ON WELDWOOD
FOR COMMERCIAL INSTALLATIONS...
YOURS FOR THE ASKING**

UNITED STATES PLYWOOD CORPORATION

AR-128

55 West 44th Street, New York 18, N. Y.

Gentlemen:

Please send me your free booklet on commercial installations of Weldwood Plywood.

Name _____

Address _____

City _____ Zone _____ State _____

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, Chicago, Cincinnati, Cleveland, Detroit, Fresno, High Point, Los Angeles, Milwaukee, Newark, New York, Oakland, Philadelphia, Pittsburgh, Rochester, San Francisco, Seattle. Also U.S.-Mengel Plywoods, Inc., distributing units in Atlanta, Dallas, Jacksonville, Louisville, New Orleans, Houston, St. Louis, Tampa. In Canada: United States Plywood of Canada, Limited, Toronto. Send inquiries to nearest point.

Weldwood* Hardwood Plywood
Douglas Fir Weldwood
Mengel Flush Doors
Douglas Fir Doors
Overhead Garage Doors
Molded Plywood
Armorply* (metal-faced plywood)
Tekwood* (paper-faced plywood)

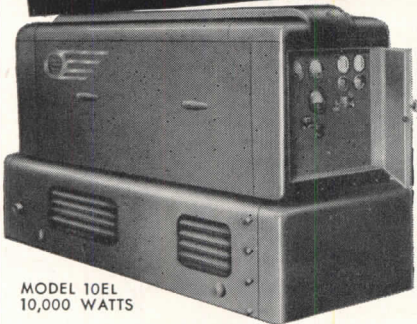
Flexmetl
Weldwood Glue* and other adhesives
Weldtex* (striated plywood)
Decorative Micarta*
Flexwood*
Flexglass*
Firzite*
*Reg. U. S. Pat. Off.



**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.

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.
5133 Royalston Ave., Minneapolis 5, Minn.



Please send me your Standby Folder

Name

Address

City State

ONAN STANDBY POWER

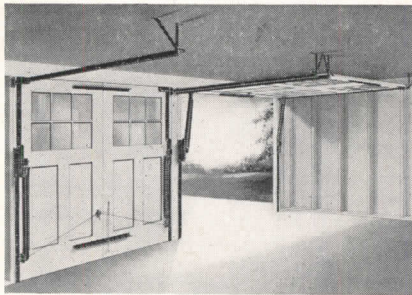
ARCHITECTURAL ENGINEERING

TECHNICAL NEWS AND RESEARCH

(Continued from page 184)

An outstanding feature of the load center is the Quicklag Circuit Breaker, with advantages listed by the manufacturer as: (1) there are no fuses to replace; (2) circuit protection cannot be changed; (3) breaker cannot be held closed against shorted or overloaded circuits; arcs are snuffed out by the De-Ion principle; its thermal magnetic action protects against unnecessary tripping and momentary overloads—time delay (thermal) protection operates on sustained overloads and instantaneous (magnetic) protection on short circuit faults.

The load center is designed to accommodate 10-, 15-, 20-, 30-, 40- and 50-ampere breaker ratings. They can be installed with fewer active circuits than the total provided for, leaving spare circuit positions. They are designed for 2-wire SN 125 V a-c or 3-wire SN 125/250 V a-c. Westinghouse Electric Corp., P. O. Box 868, Pittsburgh 30, Pa.



Kit furnishes hardware for overhead doors

OVERHEAD DOOR HARDWARE

The 999 Overhead Garage Door Hardware Kit is designed to simplify the installation of overhead garage doors and to provide the convenience of balanced, quiet, smooth overhead doors at a minimum of cost. Hardware in the kit can be used on any door not more than 8 ft. wide, 8 ft. high, 1 3/4 in. thick, and weighing up to 200 lb. Only 1/2 in. headroom is needed. All parts are constructed to attach in sequence by fitting one part to the other. Steel weatherstrips are included, and latches are part of the bottom arm bracket which fastens to the door. Richards-Wilcox Mfg. Co., Aurora, Ill.

THIN STEEL WALL COVERING

Ribbon steel coated with porcelain is one of the newest things in wall coverings. Marketed in lengths of 100 ft., rolled, the material is said to be applied more easily than wallpaper.

A number of advantages are listed for the new-type "wallpaper"—ease of

(Continued on page 188)



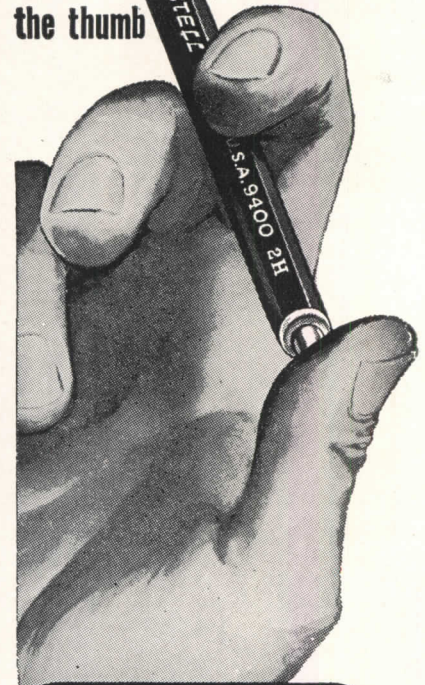
LOOK-One Hand!

A. W. Faber's quick-action
(black or colored)

LOCKTITE

refill
works
the thumb

drawing pencil
with a flip of
the thumb



1). Patented collet to hold lead in bulldog grip.

2). One-hand clutch operation to avoid touching lead and smearing fingers.

These are but two exclusive features which make LOCKTITE the favorite of professional men. Collet prevents lead breaking or slipping. Try this clean, balanced, sturdy mechanical beauty and you will surely want to own it.

Holds all standard graded drawing or retouching leads. Winner Techno-TONE No. 1930 assures best results.

ALSO AVAILABLE IN RED, BLUE, GREEN, YELLOW, CARMINE, ORANGE and WHITE—holding hardy WINNER Techno-TONE crayon leads for coloring, sketching and checking.

BLACK in degrees 4B to 9H. Sold at Stationers', art and drawing supply stores, photo supply shops and Blueprinters.

GUARANTEED OF COURSE!

AW. FABER-CASTELL
PENCIL COMPANY INC., NEWARK, N. J.

"Owners are Satisfied"

... with Petro oil-heat economies



Of the architectural firm of Nemeny & Geller, Mr. George Nemeny has been identified with many types of buildings, including homes, row houses, stores, apartments, institutions and industrial construction. His more recent projects include Garden Apartments, Syracuse, N. Y.; Cooperative Clinic, Newark, N. J.; and Al & Dick's Steak House, New York, N. Y. Based on his wide experience, Mr. Nemeny comments on Petro Oil Heating Systems as follows:

"I have found that Petro equipment is designed primarily to deliver the fuel economy which causes architects, engineers and owners to install oil firing. Petro Systems possess a mechanical simplicity and basic strength which result in easy, inexpensive upkeep."

"I am satisfied, and I know owners are too, with the Petro characteristics of long operation and economy in fuel, labor and maintenance."

OF THE MANY REQUIREMENTS to be met in planning a building's oil-heating system, two in particular deserve first consideration. Will the proposed equipment handle the heating load adequately? Will it do so economically — so the owner will be satisfied?

According to Mr. Nemeny, both questions are answered affirmatively when a Petro oil burner system is installed. Like so many other architects, Mr. Nemeny identifies Petro with fuel savings, reliable operation, inexpensive upkeep. He and the owners he serves enthusiastically endorse Petro fine performance — made possible by such exclusive features as Thermal Viscosity Control and the mechanical simplicity and sturdiness reflecting Petro's 45 years' oil-heat "know-how".

Petro equipment will meet *your* most exacting specifications — for *any* building!

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 obtainable 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

(Continued from page 186)



- 1 **Deep-Driven Anchors** hold the fence permanently erect and in line, yet can easily be relocated.
- 2 **Square Frame Gates** remain free from sagging and warping.
- 3 **H-Beam Line Posts** are rust-free, rigid and self-draining.
- 4 **Square Terminal Posts** improve strength, durability and appearance.

ANCHOR CHAIN LINK FENCE rates a top spot on your "spec" list for features like these! To your clients, they mean extra years of all-out protection. And they are *your* assurance of specifying the best in fencing for factory, institution and home alike.

WRITE TODAY for your copy of "Anchor Protective Fences." It's both a catalog and specification manual for your A.I.A. File 14-K. Contains structural diagrams and specification tables, installation photos, many types and uses of Anchor Chain Link Fence. Just ask for Book No. 110. Address: ANCHOR POST FENCE DIV., Anchor Post Products, Inc., 6600 Eastern Ave., Baltimore 24, Maryland.

Anchor Fence
Nation-wide Sales and Erecting Service

handling, for one. The thin steel sheet is only 0.010 in. thick with a 0.006 in. layer of porcelain on each side and can be cut readily with ordinary scissors. It is claimed not to buckle or wrinkle in any of the handling processes. Its backers say it is practically impossible to chip or crack the porcelain layers.

The new material is applied to any conventional flat surface, as plaster or plywood, with glue such as that used in laying linoleum. The seams can be covered with tack-on or snap-on mouldings. These can be arranged to give depth and size to the room.

When installed, the steel "wallpaper" is reported impervious to heat, acids, rust, moisture, discoloration, and destruction by rodents. Cleaning requires only washing with a wet cloth, the manufacturers say. Baltimore Porcelain Steel Corp., Baltimore 3, Md.

ALUMINUM WALL TILE

One of the prominent features of *Hastings Alumitile* is said to be the application of precise color control—the finish of the tile is reported so carefully regulated that a perfect match in color can be made.

The bond between the baked-on finish and aluminum is said to be so permanent that the finish will not crack until the metal itself is torn.

Alumitile is claimed not to rust and to have a finish highly resistant to normal household acids. The tile is available in a variety of shapes and in 14 colors. Metal Tile Products, Inc., Hastings, Mich.

AUTO CLOSE DOORS

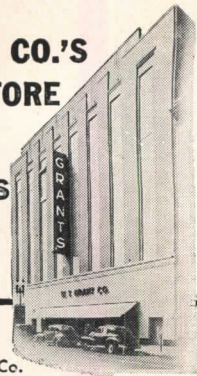
An automatically closing, insulated, swinging door is now being manufactured for protection of different plant areas from heat or drafts.

The metal-clad doors are designed to be pushed aside by running an electric truck or other heavy duty transportation conveyance truck through them and to close automatically. The doors, operating without springs or air pressure control, lift slightly and move a two-way gravity cam which operates in a fully enclosed housing bolted to the upper portion of the side and head jambs. Return of the cam by gravity closes the doors.

Because they are designed to provide fire-resistance, and to withstand hard usage, it is believed that these doors will be particularly suitable in warehouses, railroad freight stations and manufacturing industries as well as hospitals, hotels and restaurants. Jamison Cold Storage Door Co., Hagerstown, Md.

**W. T. GRANT CO.'S
LARGEST STORE**

**heated by
Smith-Mills
Boilers**



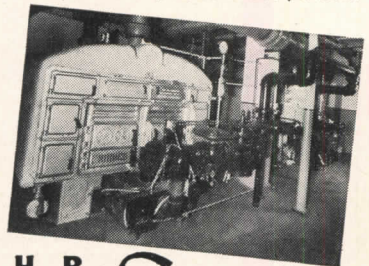
New W. T. Grant Co. Store in Syracuse, New York. Completely modern in every detail, to help customers buy, salespeople sell. Architect—P. A. Cunniss; Mech. Eng'rs.—Jaros, Baum & Bolles; Heat. Cont.—Edward Joy Co.

The W. T. Grant Co. chain sells millions of dollars worth of goods in an average postwar year! It isn't all gravy, however—overhead costs really eat into profits in these days of high break-even points!

But Grant management knows that *some* operating costs—like heating—can be cut to the bone... by selecting equipment that costs less to operate and maintain. That's why over 200 Grant stores have installed Smith-Mills cast-iron boilers. As a result, they're enjoying lower fuel bills, negligible maintenance costs—and better heating, to boot!

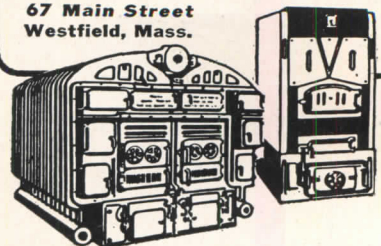
It *always* makes sense to specify Smith-Mills for commercial, institutional, and industrial installations. And when profits hinge on lowered operating and maintenance costs, it makes *double sense*.

Boiler room of the new Grant Syracuse Store, heated by two 24 section No. 60 Smith-Mills boilers, which fired by gas, deliver a total of 12,000,000 b.t.u.'s per hour.



**H. B. Smith
CAST-IRON BOILERS**

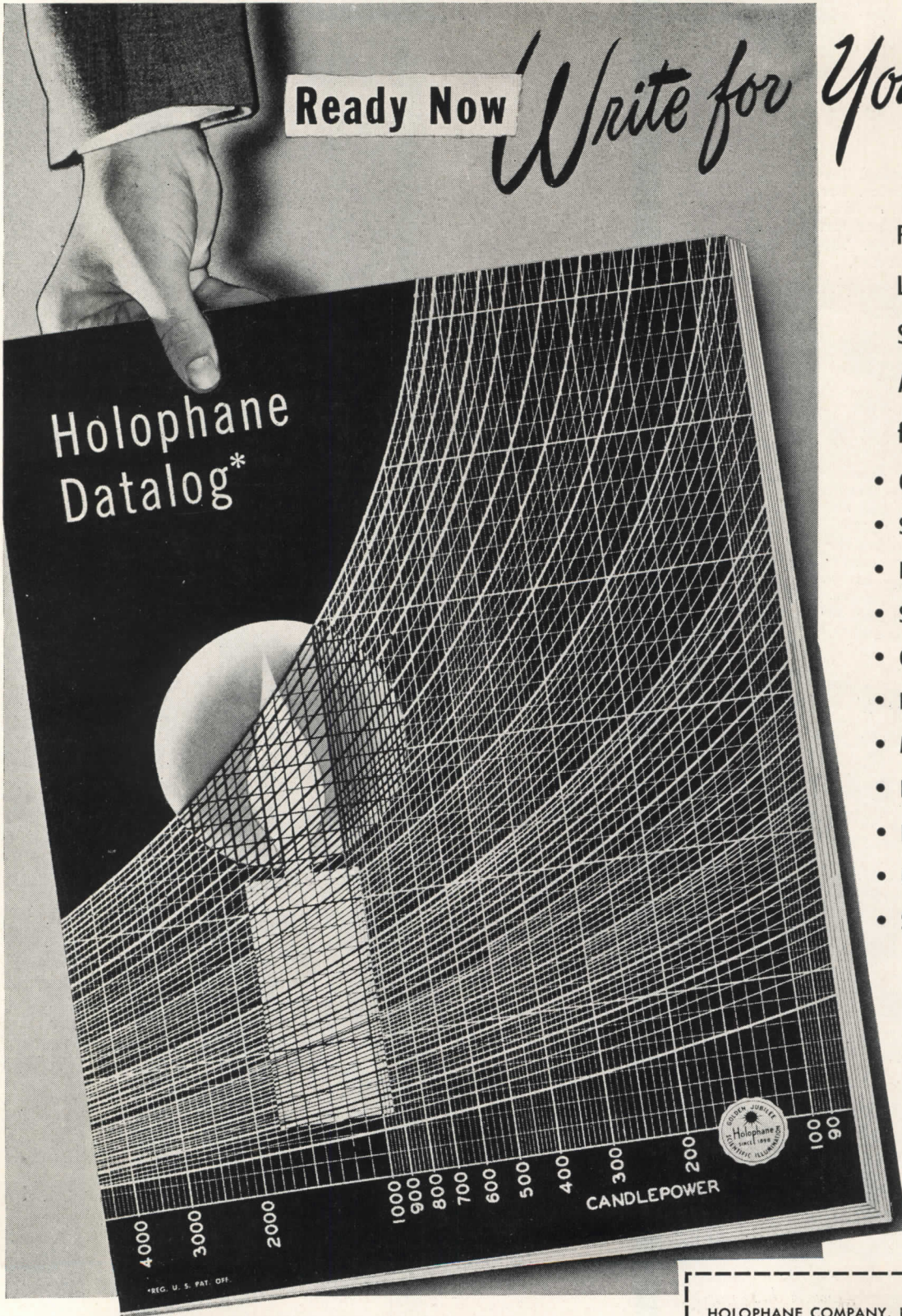
H. B. SMITH CO., INC.
67 Main Street
Westfield, Mass.



Offices and Representatives in Principal Cities

Ready Now

Write for Your Copy!



Featuring
LIGHT CONTROL
SYSTEMS and
APPLICATION DATA

for

- Offices
- Schools
- Public Buildings
- Service Areas
- Churches
- Radio Studios
- Museums
- Hospitals
- Factories
- Outdoors
- Special Applications

Cranes
Test Cells
Sub-Stations
Spray Booths
and others



56 pages of authoritative, practical information for architects and engineers available without charge.

HOLOPHANE COMPANY, Inc.

Lighting Authorities Since 1898 • 342 MADISON AVENUE, NEW YORK 17, N.Y.
THE HOLOPHANE COMPANY, LTD., THE QUEENSWAY, TORONTO 14, ONTARIO

HOLOPHANE COMPANY, Inc.
342 Madison Avenue, New York 17

Please send us your New Datalog No. D-48 without charge.

FIRM NAME _____

ADDRESS _____

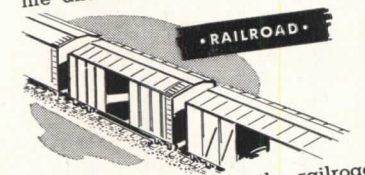
INDIVIDUAL _____

ZINC SERVES YOU

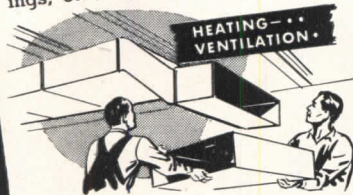
Galvanizing (Zinc coating) insures long-time, low-cost service. For as long as iron or steel is coated with Zinc, it cannot rust. For satisfaction, use galvanized materials. They're "Sealed-in-Zinc" against rust.



TIME proves galvanized sheets stay stronger longer. Used as roofing and siding, they give buildings the "strength of steel" . . . the rust protection of Zinc. The "Seal of Quality" (above) is your guide to economy in buying galvanized sheets. It means they carry at least 2 oz. of Zinc per sq. ft. Galvanizing also lengthens fence life and service.



Galvanized products in the railroad industry guard bridges, cars, buildings, etc., against rust.



Strength, workability and resistance to heat as well as rust make galvanized sheets ideal for heating and air-conditioning.

FREE BOOKLETS

Fully illustrated and packed with practical information on galvanized sheets and Metallic Zinc Paint. Send for them, today!



AMERICAN ZINC INSTITUTE
 35 East Wacker Dr., Chicago 1, Ill. Rm. 2604
 Send me without cost or obligation the illustrated booklets I have checked.

Repair Manual on Galvanized Roofing and Siding.
 Facts about Galvanized Sheets.
 Use of Metallic Zinc Paint to Protect Metal Surfaces.

Name _____
 Address _____
 Town _____ State _____

ARCHITECTURAL ENGINEERING

TECHNICAL NEWS AND RESEARCH

(Continued from page 174)

Steel-Frame Structures

Standard Buildings by Luria. Contains data and specifications on complete line of steel-frame buildings available with clear spans of 40 to 100 ft., eave heights of 12 to 20 ft., and lengths in increments of 20 ft. These standard buildings are flexible so as to be used singly or in any desired combination. 20 pp., illus. Luria Engr. Corp., 500 Fifth Ave., New York 18, N. Y.

Aluminum Windows

Kesko Architectural Aluminum Windows. Installation details and standard types available are shown for a line of aluminum windows designed for application in one-story industrial buildings, dairies, bottling plants, etc. 6 pp., illus. Kesko Products, Inc., Bristol, Ind.

White Fir Wood

White Fir of the Western Pine Region. Lists in detail the properties and grades of the species and its uses in the general construction and industrial fields. Full page pictures of typical pieces of each grade are accompanied by text material describing the illustrated examples.

Properties and uses sections are illustrated with photographs of white fir in actual use in residences, commercial buildings, cabinets, etc.

The book is indexed and carries a list of standard manufactured sizes and an alphabetical list of uses and recommended grades. 56 pp., illus. Western Pine Assn., Yeon Bldg., Portland 4, Ore.*

LITERATURE REQUESTED

The following individuals and firms request manufacturers' literature:

B.B.B. Impianti Speciali, Contractors, Viale dei Mille 19, Milano, Italy.

Darden Drafting Office, 735 S. Maine Street, Santa Ana, Calif.

David G. Haumerson, Architect, 702 Court Street, Janesville, Wis.

Hidell & Decker, Architects, 2715 Oak Lawn, Dallas 4, Texas.

Benjamin A. Hoffman, Architect, 308 Renshaw Building, Pittsburgh 22, Pa.

W. C. Magill, Designer, The Gardens, Berlin, New Jersey.

D. N. McIntosh, Architect & Engineer, 513 Pigott Bldg., Hamilton, Ontario.

Rudolph A. Polley, Architect, 528 B Street, Oxnard, Calif.

Dale C. Robinson, B.M.E., Granby, Conn.



First with patented REVERSING ACTION!

The superiority of IN-SINK-ERATOR'S patented two directional shredding action has been proved by over ten years of consumer use. This and other features listed assure long and trouble-free operation.



- **TWO DIRECTIONAL SHREDDING . . .**
 doubles the life of the shredding elements . . . adds self-sharpening feature.
- **SELF CLEANSING . . .**
 because of its unique reversing feature the In-Sink-Erator has a double cleansing action which is positive and complete.
- **CONTINUOUS FEEDING . . .**
 food waste can be fed continuously while unit is in operation giving unlimited capacity for domestic use.
- **COMPACT, PRACTICAL DESIGN . . .**
 In-Sink-Erator was first to have the shredder mounted directly to motor shaft . . . providing first practical disposer design.
- **GLEAMING WHITE FINISH**
 plus streamlined design make In-Sink-Erator a point of pride in any kitchen.

NATIONALLY ADVERTISED

This year the IN-SINK-ERATOR story will be repeated 23,000,000 times in leading national magazines such as BETTER HOMES & GARDENS, AMERICAN HOME, HOUSE BEAUTIFUL, HOUSE AND GARDEN and SMALL HOMES GUIDE.

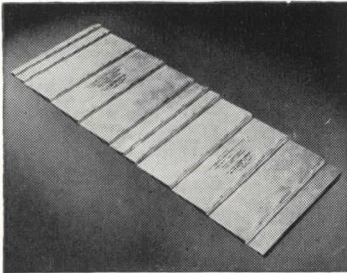
SOLD BY PLUMBER DEALERS ONLY . . .
 DISTRIBUTED THROUGH RECOGNIZED PLUMBING JOBBERS.



Specializing Exclusively in the Manufacture of Food Waste Disposers Since 1938

Practical **METAL ROOFING** Specification...

...calls for an economical, corrosion-resistant metal that is good for the life of your building



INTERLOCKING THROUGH-WALL FLASHING—mechanically keyed—readily available in .018" Monel. It provides a 3-way bond on mortar bed, and protection against water seepage. Manufactured by Keystone Flashing Co., Philadelphia, Pa. Write for specifications.

Long-lasting metal roofs are now within pocketbook reach of every client! And credit goes to the newly-developed, softer-temper Monel* Roofing Sheet, now available in a lighter gauge, U.S.S. #26 (.018" thick).

You can specify this soft temper sheet for nearly every type of roof work. Its properties make it a natural choice for skylight framework, penthouse siding, through-wall flashing, cap and base flashing, gutters, cornices and downspouts, as well as for complete roofs. (Note the illustration showing an original design for base flashing expansion joints and the photo of a patented interlocking through-wall flashing.)

Keep in mind, too, that Monel Roofing Sheet is just as adaptable to private urban and rural homes as it is to public and commercial buildings exposed to corrosive atmospheres and salt air.

Monel Roofing Sheet is strong and tough. It withstands corrosion, erosion and abrasion. Yet—thanks to its soft temper—it can be readily cut, bent, formed, seamed and soldered. Naturally, this means lower fabrication cost, lower installation cost.

A further saving for your client comes from

the use of a relatively thin gauge—.018". This does the same job that a heavier gauge would, but does it more economically. And in any gauge, corrosion-resistant Monel has all the properties needed for a good roof. It has a low coefficient expansion. It's rigid. Isn't subject to fatigue cracking. Is unaffected by sudden temperature changes.

Getting this across to clients may have presented problems in the past. But it shouldn't now. We've written a booklet that tells the whole story in plain language. It's called *ONE METAL ROOF... for the life of your building* and all you need do is give it to your clients. The text, although short, contains full, non-technical data. There are sketches and diagrams... and plenty of convincing photographs. There's even a sample of Monel Roofing Sheet in every booklet!

We'll send you as many copies of *ONE METAL ROOF...* as you can use. They're free, of course—but the edition is limited. Write for your copies now, using the handy coupon below.

*Reg. U. S. Pat. Off.

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street, New York 5, N. Y.

ORIGINAL DESIGN for base flashing expansion joints developed by Perry S. Dewey, of Chrystie Cornice & Skylight Works, New York. This type of joint is being used for roofing work now in progress at New York's Metropolitan Museum of Art. When installed approximately every 24 feet, the crimped section will eliminate failures in base flashings caused by expansion and contraction.



Monel*... for the life of your building

SCALE: 2" = 1' - 0"

CROSS SECTION OF .018 MONEL BASE FLASHING SHOWING CRIMPED SECTION INSTALLATION ALL JOINTS PRE-TINNED, THEN SOLDERED

Clip and mail to INCO

The
INTERNATIONAL NICKEL
Company, Inc.
67 Wall Street,
New York 5, N. Y.

Please send me _____ copies of *ONE METAL ROOF... for the life of your building*, written especially for distribution to clients. I understand that this does not obligate me in any way.

Name _____

Firm _____

Address _____ A. R. 12-48

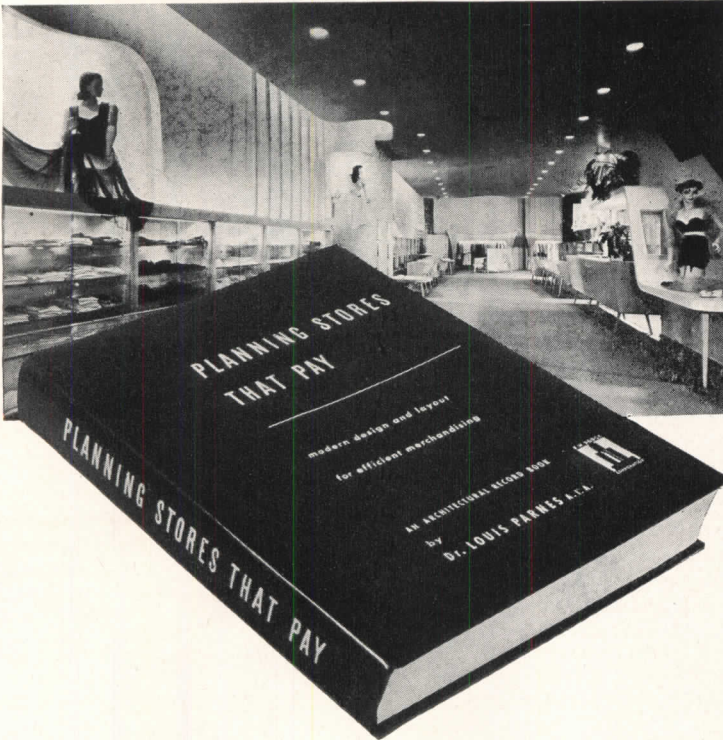
City _____ Zone _____ State _____

SCALE: 1" = 1' - 0"

CROSS SECTION SHOWING MONEL BASE & CAP FLASHING INSTALLATION



BOOKS ARE



“Planning Stores That Pay”

by Dr. Louis Parnes, A.I.A.

In answer to the onrushing demand for the new know-how on functional store design, “Planning Stores That Pay” reveals the simple but scientific new techniques for deriving optimum store design organically from available financial data. Object: maximum per-dollar sales per square foot.

With this book architects can demonstrate to a store administrator, in his own language and figures, the *economic* soundness of their “engineered” design, and thereby relieve his basic worry, and clear the way for greater freedom in the conception of decor.

For Every Store That Needs Replanning

“Planning Stores That Pay” is a huge compendium of live new case histories, rounded up from America’s most dollar-minded stores and from the works of the most celebrated architects. Illustrated with 500 photographs, diagrams, tables and charts.

Here you explore every detail of a modern store and its arrangements — entrances, arcades, show windows, circulation and transportation systems, furniture and fixtures, receiving

- for clients
- for professional friends
- for business associates

For a man inured to Christmas neckties, an appropriate book is a memorable gift. It is flattering proof that someone has given thought to his interests. It is lasting testimony to the intelligence of the giver. Start your Christmas shopping now by using the coupon on the opposite page.



“Hospital Planning”

by Charles Butler, F.A.I.A.
and Addison Erdman, A.I.A.

A complete, authoritative, up-to-date manual, featuring the new and unprecedented facilities demanded by advanced techniques in hospitalization.

Hundreds of case histories covering the most striking features of 51 modern hospitals and the work of 30 celebrated architects — posing actual problems and showing how they were solved.

266 illustrations: 32 photographs, 11 site plans, 187 floor plans, and 38 special unit plans of rooms, wards, departments and construction details. 232 pages, 8½ x 11. Stiff cloth binding. Comprehensive Index. \$15.00

and shipping facilities, floor and department layouts, display arrangements and lighting, and all the hundreds of items that go to make up a modern merchandising machine. . . . Then in an invaluable presentation of Scientific Surveys and Data you find the ultimate key to the over-all scheme of moulding store design for maximum net profit.

A Basic and Comprehensive Textbook

This basic and comprehensive new textbook is applicable to the replanning of the backlog of myriads of stores now known to be architecturally obsolete. 300 pages, 8¾ x 11¼. 80-lb. coated stock. Heavy cloth binding. Detailed Table of Contents. Comprehensive Index. \$15.00



IDEAL GIFTS ★

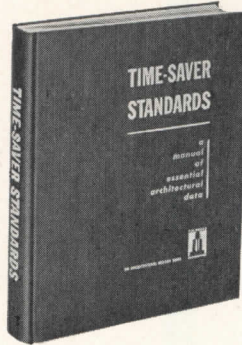
"The Last Lath"

by Alan Dunn

An album of 152 cartoons. For many years the readers of ARCHITECTURAL RECORD have laughed at the sly and intimate cartoons of Alan Dunn. "The Last Lath" is a selection of 152 of his cartoons on architecture, building and real estate. 96 pages, 8 x 10, with a black and yellow picture jacket. \$2.50

"If these cartoons don't strike you as funny, then you've never built a house, or even lived in one." — San Francisco Chronicle.

"If a housewarming present is puzzling you, this is the answer." — New York Herald Tribune.



ARCHITECTURAL RECORD'S monumental 10-year collection of basic data on architectural design, engineering data, materials technology and building practice. 277 complete "Time-Saver Standards" as selected month by month for publication from the masterworks of the nation's leading authorities.

"The Restoration of Colonial Williamsburg"

The Greatest Adventure Story in the Annals of Architecture

How architects trained in Egyptian archeology forced the secrets of the sumptuous lost capital of Colonial Virginia . . . discovered "this incomparable monument to early American history and art" . . . and reconverted it into a going community!

The modern Mecca for Americans is pictured with 125 illustrations, including a portfolio of radiant photographs by F. S. Lincoln. This celebrated 104-page reprint, 9 x 12, bound in heavy cloth, is now available at the mass production price of \$2.50.



"Time-Saver Standards"

Experience shows that a single item in "Time-Saver Standards" can save hundreds of dollars in economy construction and many hours of your own valuable time. Advantages are two-edged: (1) "Time-Savers" to streamline the drudgery of the planning board and (2) "Standards" against which to check the work of designers, draftsmen, and specifications writers.

This famous reference work may pay for itself the first time you open it. Eventually it may prove to be worth a year's income or salary. That is why many architects buy extra copies and send in multiple orders. Many firms have more than 25 copies. Almost as many copies have been sold as there are architects. Yet orders still pour in at the rate of 500 a month. That is why you cannot afford to be without a copy.

The wealth of basic data on 656 pages, with 1000-plus illustrations, is quickly and easily available via the 4-page Table of Contents . . . and the 12-page Index with its 1700 subject entries! \$12.00

Personalize each book you give with your autographed greetings on the flyleaf

Additional Titles:

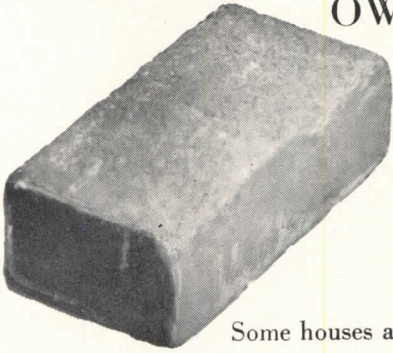
ARCHITECTURAL GRAPHIC STANDARDS by Ramsey and Sleeper	\$6.50
SIMPLIFIED ENGINEERING FOR ARCHITECTS AND BUILDERS by Harry Parker	3.25
ENGINEERING CONTRACTS AND SPECIFICATIONS by Robert W. Abbett	3.75
HANDBOOK OF BRICK MASONRY CONSTRUCTION by John A. Mulligan	5.50
ARCHITECTURAL SPECIFICATIONS by Harold Sleeper	12.00
ARCHITECTS AND BUILDERS HANDBOOK by Frank Kidder and Harry Parker	8.50
BUILDING CONSTRUCTION ESTIMATING by George H. Cooper	3.00
RADIANT HEATING by T. Napier Adlam	6.00
THE HOUSE FOR YOU by Catherine and Harold Sleeper	5.00

Book Department, Architectural Record 119 West 40th Street, New York 18, N. Y.			
You may send me the following books:			
Title	Price	Copies	Total
Planning Stores That Pay	\$15.00	_____	_____
Time-Saver Standards	12.00	_____	_____
Hospital Planning	15.00	_____	_____
The Last Lath	2.50	_____	_____
Restoration of Colonial Williamsburg	2.50	_____	_____
Other titles:			

Plus 2% sales tax for delivery in New York City			
I inclose \$ _____		TOTAL	_____
Name	_____		
Address	_____		
City	Zone	State	



THE
OWNER-BUILT
HOUSE TAKES AFTER
ITS OWNER

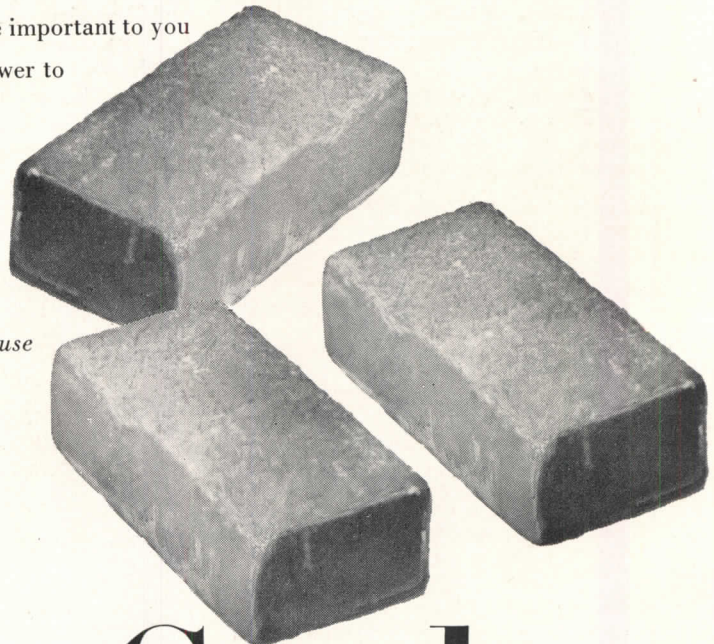


Some houses are merely living quarters. But the owner-built, owner-occupied house is an expression of individual taste . . . outstanding for its expert design and exacting construction.

House & Garden readers to a large extent are owner-builders. Their choice is the final choice in blueprints, materials . . . installation, equipment. Brick or stone, steam or radiant heat . . . their okay decides the purchase. Leading families with leading incomes, they influence the selections of others . . . set the building trends of the future. These people are important to you because theirs is the power of decision . . . the power to specify your product.

79%
*of House & Garden
readers live in a house*

78%
own their home

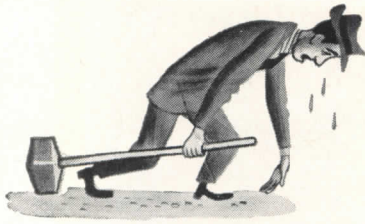


House & Garden

...for the OWNER-BUILDER market



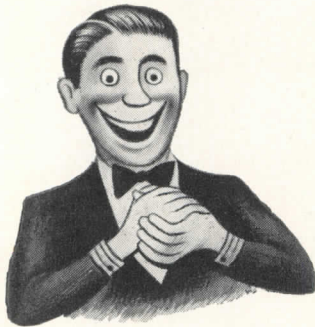
© 1948 THE CONDÉ NAST PUBLICATIONS INC.



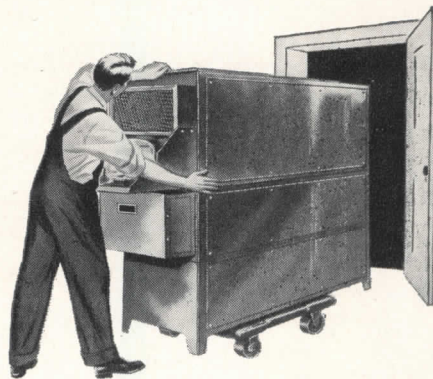
HE knocked down walls



HE practically rebuilt the equipment on the spot



HE saved time . . . cut costs with a
**G-E CENTRAL PLANT
AIR CONDITIONER**



Move a General Electric Central Plant Air Conditioner right through a 30" door. Smaller sizes can go through completely assembled . . . larger sizes in sections. Install it exactly where you want it. It's quick and easy because this G-E equipment is compact . . . and because its pre-matched sections can be arranged *28 different ways!*

This "building block" design applies to both the new vertical and horizontal models which cover a cooling range from .8 to 58 tons . . . and

a heating range from 28,100 to 1,310,000 Btu's per hour. A complete line of heating coils is available.

The G-E Central Plant Air Conditioner is light in weight but rigid and sturdy due to its welded sheet-steel construction. That means it's easy to handle, inexpensive to ship.

The free booklet offered in the coupon below will give you further details . . . or contact your G-E air conditioning representative for full information.

GENERAL  **ELECTRIC**
Better Air Conditioning

General Electric Co.,
Air Conditioning Dept., Sect. A84412
Bloomfield, N. J.

Gentlemen: Please send me your free booklet on the new General Electric Central Plant Air Conditioners.

Name

Address

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

Get Guaranteed Dimensional Stability

with The New Weldwood Flush Veneer Door

New Mineral Core and Precision Manufacture give Weldwood Flush Veneer Doors Extraordinary Dimensional Stability

These beautiful new wood-faced doors always measure up. They won't swell in summer . . . won't shrink in winter.

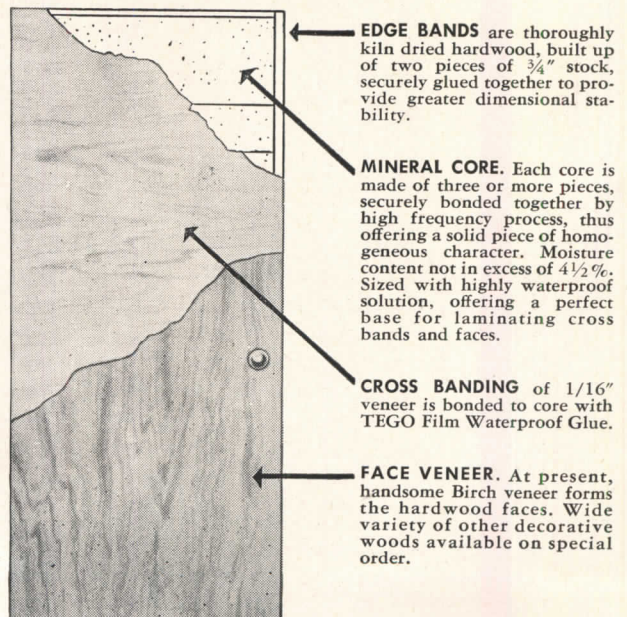
The new mineral core of the Weldwood Flush Veneer Door gives it such a degree of dimensional stability that we back it with the most sweeping guarantee ever given by any manufacturer.

Weldwood Doors are guaranteed against warpage or binding in opening due to any dimensional changes in the door.

Here indeed is a superior door. Just go over this checklist of advantages:

- 1 PERMANENT BONDING** of veneers to core and banding with TEGO Film Waterproof Glue by hot plate process.
- 2 VERMIN AND DECAY PROOF** mineral core resists fungus, decay and termites for the life of the structure.
- 3 INSULATING PROPERTIES** are superior to double glazing, such as opening protected by storm door . . . when door is installed in an exterior opening with weather stripping.
- 4 EXCELLENT VAPOR BARRIER.** TEGO Film Phenolic Glue bond provides a completely effective moisture barrier.
- 5 INCOMBUSTIBLE MINERAL CORE.** Core has a fibrous binder with a nominal density of 20 lbs. per cubic foot. This material has a sturdiness which assures proper performance of door under the most severe conditions.

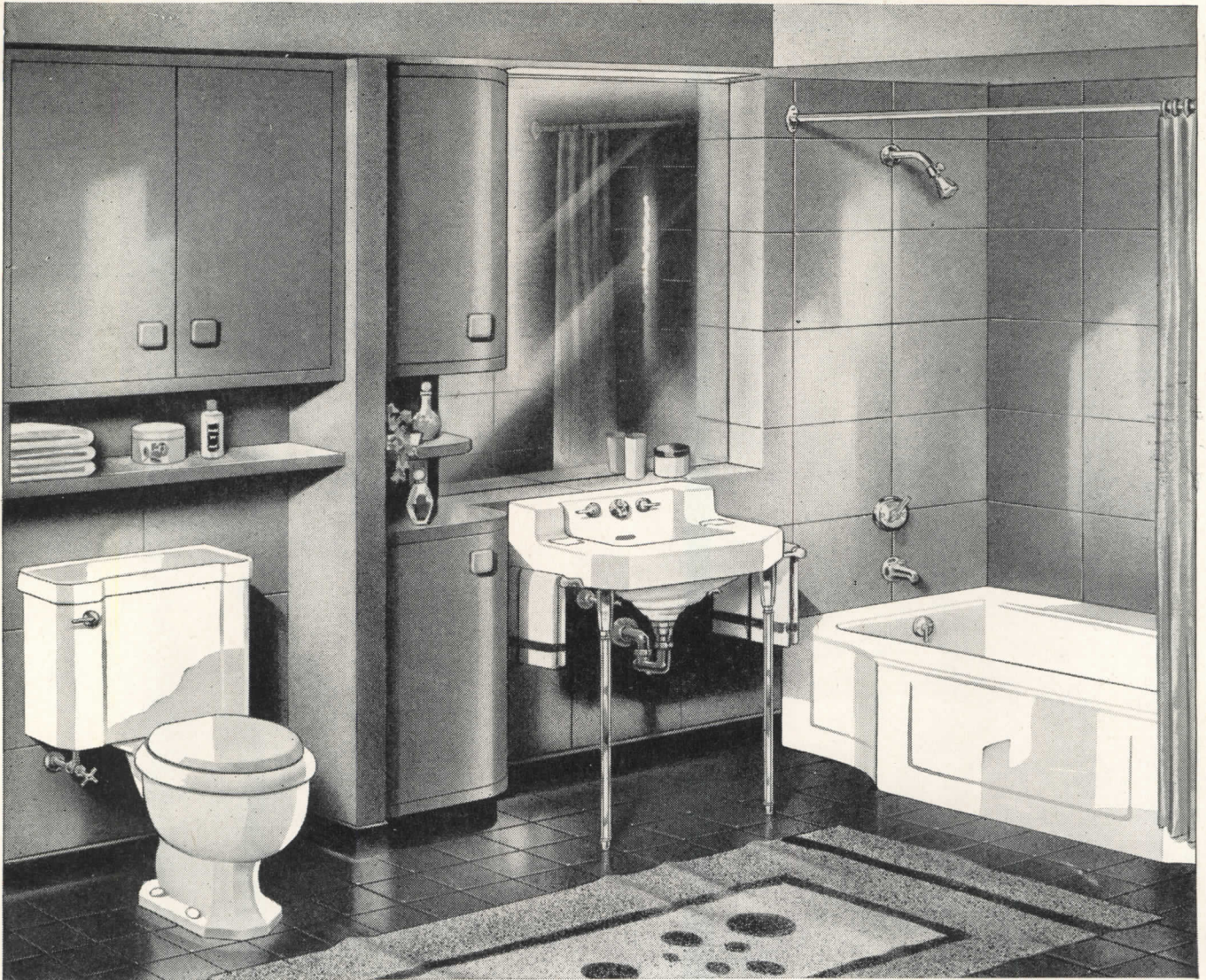
We'll be glad to rush you full specifications on this new door. Write or contact our nearest branch.



UNITED STATES PLYWOOD CORPORATION

55 West 44th Street, New York 18, N. Y.

Distributing units in Baltimore, Boston, Brooklyn, Chicago, Cincinnati, Cleveland, Detroit, Fresno, High Point, Los Angeles, Milwaukee, Newark, New York, Oakland, Philadelphia, Pittsburgh, Portland, Ore.; Rochester, San Francisco, Seattle. Also U. S.-Mengel Plywoods, Inc., distributing units in Atlanta, Dallas, Houston, Jacksonville, Louisville, New Orleans, St. Louis, Tampa.
In Canada: United States Plywood of Canada, Limited, Toronto.



KOHLER PLUMBING FIXTURES

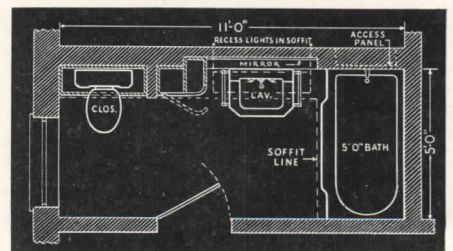
in bathrooms like this, create *lasting satisfaction*

WHEN home-owners see the name "Kohler" on plumbing fixtures, they know the answers to many important questions. The Kohler reputation for first quality assures them that besides the beauty and harmony they admire, there is the highest degree of *practicality, serviceability and durability.*

In the illustration Kohler fixtures are placed in relation to other facilities so that comfort and convenience combine with a well-balanced effect. The fixtures come in pure white or delicate pastel shades.

The Cosmopolitan Bench Bath has

a base of non-flexing iron, cast for rugged strength and permanent rigidity, and coated with lustrous, glass-hard, easy-to-clean Kohler enamel. The efficient Triton shower fitting is shown with the Niedecken Mixer. The Gramercy lavatory, with roomy shelf, is made of highest quality vitreous china. All the fittings are of chromium-plated brass, precision-made and convenient to use. Kohler quality is a 75-year-old tradition. Kohler Co., Dept. 7-C, Kohler, Wisconsin. Established 1873.



Convenience, practicality and economy are here planned in good measure. All outlets on the same wall simplify piping. Here there is easy access to all fixtures. Storage facilities are roomy and modern in design.

KOHLER OF KOHLER

PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS

Steel pipe is first choice



—for giant housing developments

The colossal Parkchester development in New York is one of the great experiments in modern housing. As it commands national attention for its daring conception and modern construction, likewise the materials, products, and equipment which compose it assume national interest.

Adequate and strictly modern plumbing and heating facilities play a vital role at Parkchester. *Steel pipe*, of course, is the predominant medium for the transmission and distribution of these services. So it is in all forms of modern housing, right down to the cozy cottage in the suburbs!

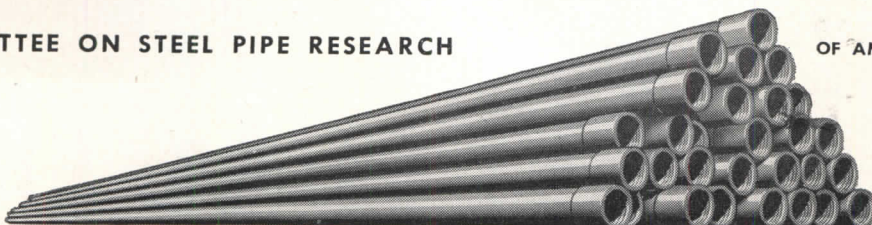
Architects, builders, plumbers, and heating contractors know that *steel pipe* is durable, adaptable, serviceable and economical. That's why, for conventional steam or hot water heating, or for the new and growing radiant panel heating . . . as well as plumbing supply lines, too . . . the overwhelming percentage of all pipe used is *steel pipe*.

That's proof. *Steel pipe is first choice!*

The interesting story of "Pipe in American Life" sent upon request.

COMMITTEE ON STEEL PIPE RESEARCH

OF AMERICAN IRON AND STEEL INSTITUTE
350 Fifth Ave., New York, N. Y.





ANTI-SMUDGE CONE

DIFFUSER AND CONE SEPARATED

DIFFUSER AND CONE ASSEMBLED

The New Kno-Draft Ceiling Smudge Control

Now you can control tough smudging problems. When exceptionally sooty, smoky or dusty air conditions are expected, or where rough textured, dirt-catching ceilings are employed, Kno-Draft Anti-Smudge Cones give the utmost in protection—and increase the attractiveness of the diffuser besides.

How it works

Under normal conditions, all Kno-Draft diffusers can be adjusted so that their specially designed deep shoulder rims will deflect the discharge air away from the ceilings and prevent smudging. However, under the abnormal conditions mentioned above, the use of Kno-Draft anti-smudge cones is recommended. They furnish the additional control which will enable you to provide the precise minimum separation of the discharge air from the ceiling that you need to inhibit smudging and, at the same time, maintain the radial air diffusion pattern you need to eliminate drafts.

What we can do to help

W. B. Connor Engineering Corp. maintains a research laboratory with a staff of trained specialists and district representatives in leading cities. Their services are at the disposal of con-

sulting engineers, architects, air conditioning dealers, and plant engineers. They can assist you in getting the best possible performance out of your air conditioning system by creating custom-made air patterns which thoroughly mix room and supply air, eliminate drafts, and maintain uniform temperature throughout an area.

VISIT BOOTHS 427-429 AT THE 9TH INTERNATIONAL HEATING, VENTILATING & AIR CONDITIONING EXPOSITION, INTERNATIONAL AMPHITHEATER, CHICAGO, JAN. 24 TO 28.

FREE HELPFUL LITERATURE

- BULLETIN K-22—Contains complete details on the new and exclusive Kno-Draft Anti-Smudge Cone.
- NEW HANDBOOK ON AIR DIFFUSION — Contains all the engineering data necessary on air diffusion in general and Kno-Draft Adjustable Diffusers in particular to enable you to create "custom-made" air patterns and eliminate drafts.

W. B. Connor Engineering Corp.
 Dept. S-108, 112 East 32nd Street
 New York 16, New York

Please send me the free literature I have checked above.

Name.....

Company.....

Street.....

City..... Zone..... State.....

W. B. CONNOR ENGINEERING CORP.

Air Diffusion • Air Purification • Air Recovery

112 East 32nd Street  New York 16, N. Y.

IN CANADA: Douglas Engineering Co., Ltd., 190 Murray Street, Montreal 3, P. Q.



PORTRAIT OF AN ARCHITECT

(who knows a good thing when he sees it!)

Here's an architect who knows how to please his clients and simplify his job of writing specifications at the same time! He's the fellow who checks over his plans, notes the rooms in which colorful, practical interiors are needed, then simply specifies Marlite plastic-finished wall and ceiling panels. To make the job complete, he specifies Marsh Mouldings and Marsh Adhesives and, in bathrooms and washrooms, Marsh Bathroom Accessories.

Genuine Marsh products offer every architect an opportunity to simplify specifications on new construction or modernization, in every type of building where beautiful, durable interiors are required. Complete information is available in SWEET'S FILE, ARCHITECTURAL, or direct from the factory.

MARSH WALL PRODUCTS, INC.
1205 Main Street ★ Dover, Ohio



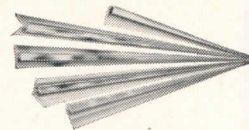
for Creating Beautiful Interiors



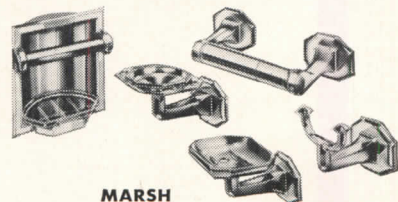
MARLITE PLASTIC-FINISHED WALL AND CEILING PANELS



MARSH MOULDINGS



MARSH BATHROOM ACCESSORIES



MARSH ADHESIVES



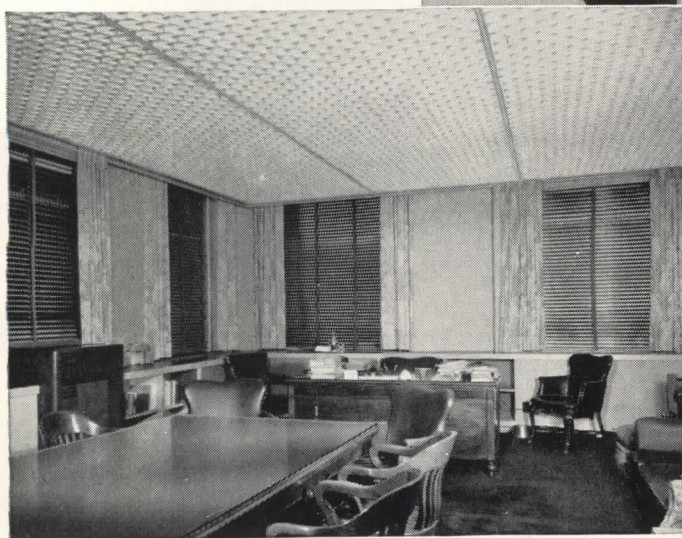
MARLITE POLISH



MARSH CAULKING

New **BEAUTY** *with*
FEDERAL Cell-Ceil*

Lighting Treatments



Foyers, display rooms and offices take on new life and glowing beauty with the installation of Federal Cell-Ceil, the most modern lighting treatment.

This beautiful overall ceiling louvering is easy to install. The light-weight sturdy hanging mechanism developed for Cell-Ceil not only speeds up application but provides such easy access for relamping and cleaning that continued satisfaction to the client is assured.

Wherever you specify Federal Cell-Ceil you assure those who work and live under this louvered ceiling a soft diffused light. With all direct glare reduced and bad effect of sharp shadows eliminated, uniform lighting is provided that allows better easier-on-the-eye seeing.

The Federal engineering staff will gladly advise on any installation problem. Our technical bulletin on installation techniques is also available, address Dept. CC-9.



*Trade Mark "Cell-Ceil" applied for.

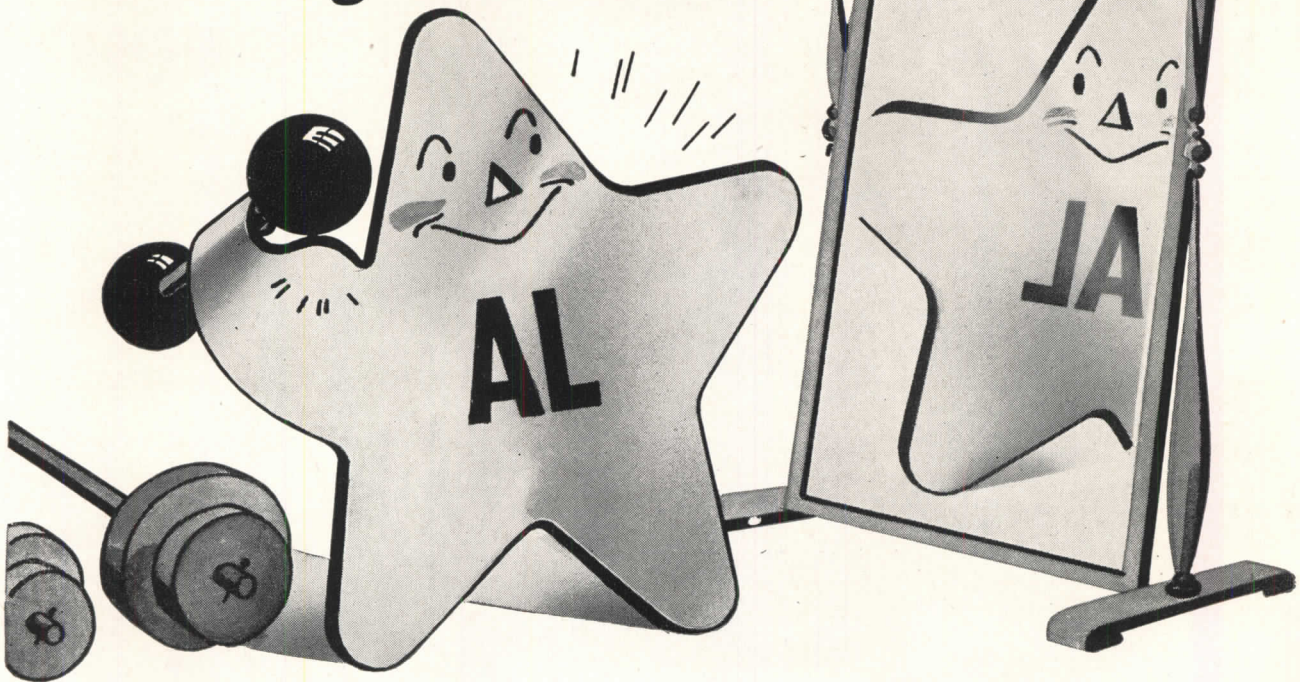
FEDERAL ENTERPRISES, INC.

Formerly: FEDERAL ELECTRIC COMPANY, INC.

8700 S. STATE STREET

• CHICAGO 19, ILLINOIS

Lasting strength
and a lifetime of
good looks...



That's why to specify **ALLEGHENY METAL**

**ALL THE LEADING
FABRICATORS USE
ALLEGHENY METAL**

... every type of equipment you may need is available in this lustrous, lifetime-lasting stainless steel. Full information, prices, etc. are yours for the asking—either from the fabricator, or write us direct.

ADDRESS DEPT. AR-70

Everything that you want *most*, you get in equipment made of the time-tested stainless steel, Allegheny Metal. Stainless steel combines corrosion-resistance, great strength and hard-surfaced, long-wearing qualities to a degree actually unequalled by *any* other metal. That means it not only looks better and retains its bright beauty longer, but also cleans easier and reduces your maintenance and depreciation costs to a whisper.

Yes, Allegheny Metal equipment gives you maximum service life and stamina—it protects the purity and quality of products—and best of all, it saves you money in the long run. ● Next time you buy equipment, be sure it's built of Allegheny Metal, the pioneer stainless steel—it *pays!*

**ALLEGHENY
METAL**
STEEL CORPORATION
Pittsburgh, Pa.

*Nation's Leading Producer
of Stainless Steels
in All Forms*



W&D 1613V

ALLEGHENY METAL is stocked by all
Joseph T. Ryerson & Son, Inc. warehouses



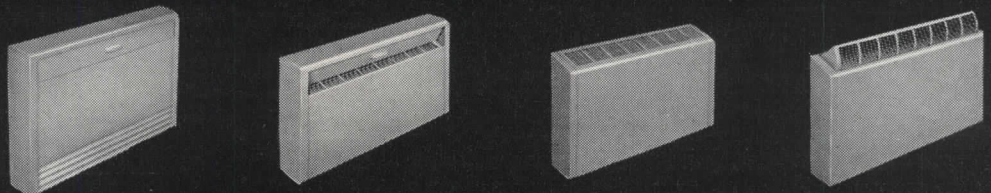
It's New! It's beautiful! It's the last word in heating comfort . . . the New Modine Convactor

It's the *new* way . . . the *better* way to heat the modern apartment, new home, school, office or hospital. Yes, Modine Convectors are functionally styled to complement modern taste in interior design. Modine gives you entirely new installation, control and maintenance features that make

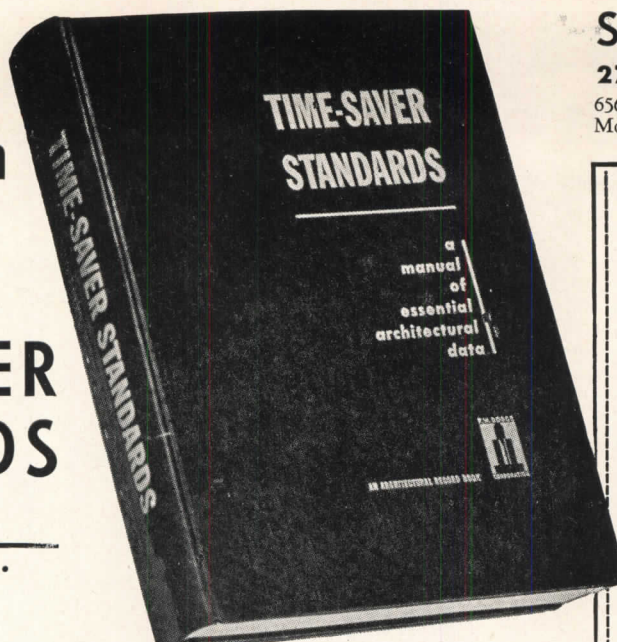
it one of the greatest forward steps in radiation. Call your Modine representative. He's listed in the "Where-to-Buy-It" section of your phone book. Or write direct for complete details. Modine Manufacturing Company, 1510 Dekoven Avenue, Racine, Wis.

***Modine* CONVECTOR RADIATION**

Modern Modine Convectors are available in four distinctive cabinet styles plus a wide range of modular sizes. For recessed, free-standing or wall-hung installations.



Available Again



TIME-SAVER STANDARDS

Architectural Record's
ten-year collection . . .
all in one volume

IN RESPONSE to insistent demand for more copies, here, reprinted again in one volume of encyclopedic size, are virtually all the Time-Saver Standards ever published — 277 of them — exactly as they appeared originally in *Architectural Record* and *American Architect* during the past ten years — with one 12-page master index!

Just off the press, for immediate delivery to you, is this work of 656 pages, with a mailing weight of 4½ lbs., containing a complete collection of these now famous authoritative monographs on technical aspects of construction dealing with

- Architectural Design • Materials Technology
- Engineering Data • Building Practice

Designed for the practical guidance and every-day use of architects, engineers, specification writers and building technicians, TIME-SAVER STANDARDS will bring you a wealth of detailed information on design and building practice . . . carefully selected from the works of the nation's leading building designers and engineers.

Well-Organized 12-page Index

This wealth of data is carefully organized and painstakingly presented. It is so thoroughly indexed that there are 1,856 references and cross-references . . . occupying *twelve pages* of closely set print.

Experience shows that a single item in TIME-SAVER STANDARDS can well save hundreds of dollars in economy construction . . . save many hours of *your* valuable time. Yet you can now place this concise and well-organized planning data at your command for the nominal sum of \$12.00 — provided you act now.

Order Your Copy Now

The first printing of TIME-SAVER STANDARDS last November was sold out almost before publication. Now an unanticipated flood of reorders — for extra copies and multiple copies — on top of new orders indicates the second printing will soon be snapped up.

So get your copy now. Don't get caught on a long waiting list. Simply fill out the coupon at right, attach your check or money order for \$12.00, and mail today. Your copy will be rushed to you without delay.

Second Printing

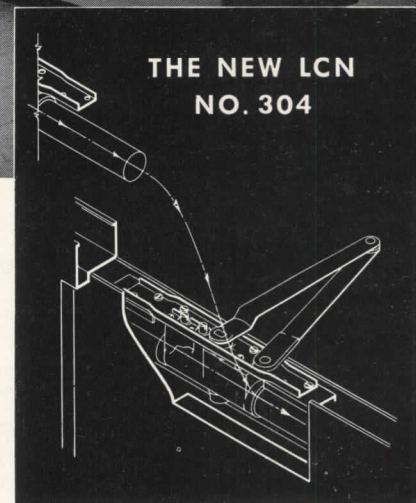
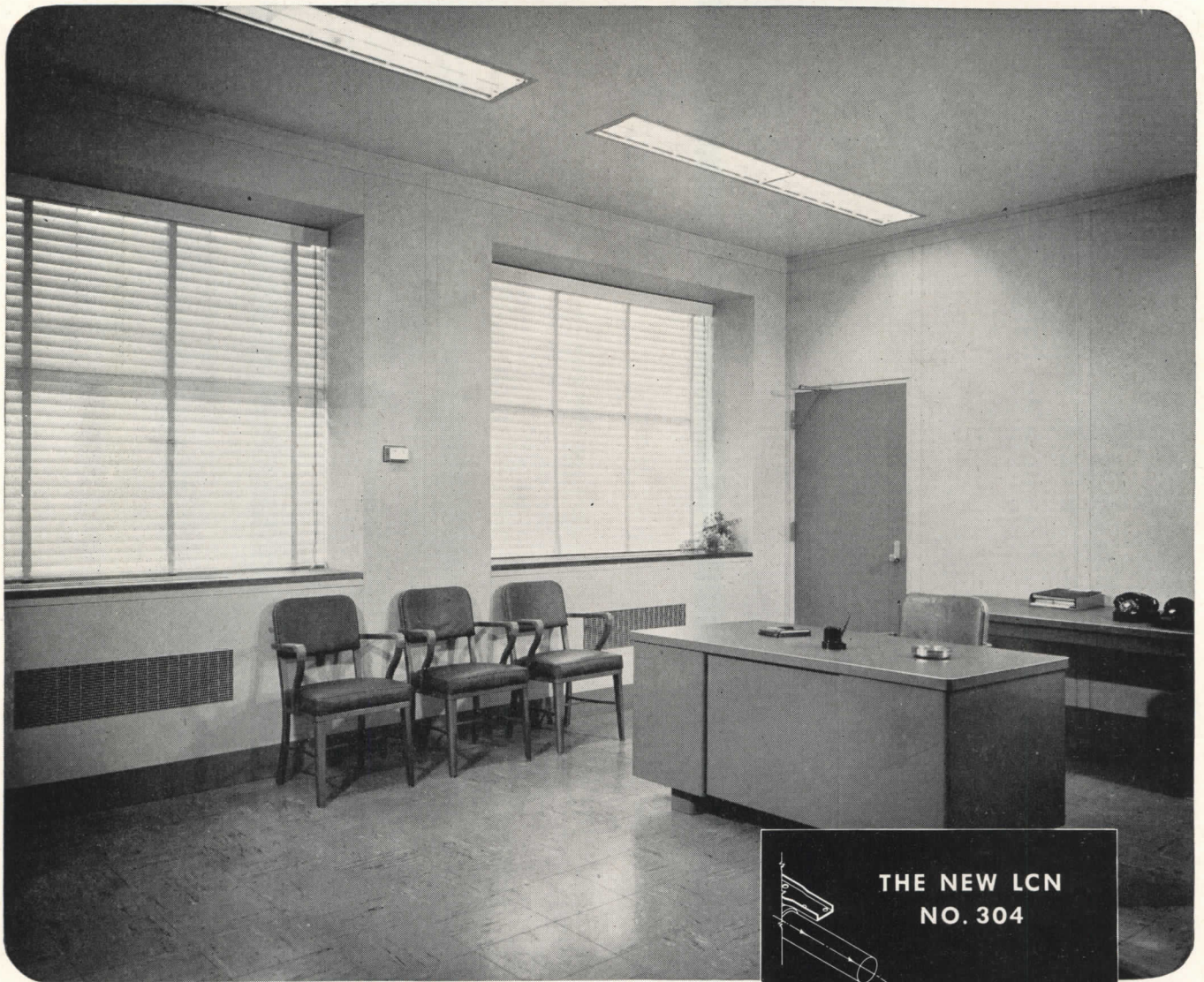
277 Time-Saver Standards —
656 Pages; 12-Page Master Index; Size 8½ x 11.
More than 1,000 illustrations, charts, diagrams

CONSTRUCTION OF SMALLER BUILDINGS — OPENINGS SPANNED BY REINFORCED LINTELS

The following outlines contain all information for planning, specifying, estimating, and bidding the construction of reinforced concrete and brick lintels for openings in exterior walls of smaller buildings. For information on larger buildings and for complete specifications, see *Architectural Record* and *American Architect*.

REINFORCED CONCRETE LINTELS

CLEAR OPENING	MINIMUM THICKNESS	MINIMUM WEIGHT	MINIMUM WEIGHT PER CU YD	MINIMUM WEIGHT PER CU YD	MINIMUM WEIGHT PER CU YD
IN FEET	IN INCHES	IN POUNDS	IN POUNDS	IN POUNDS	IN POUNDS
6	10"	1100	120	120	120
6	12"	1320	140	140	140
6	14"	1540	160	160	160
6	16"	1760	180	180	180
6	18"	1980	200	200	200
6	20"	2200	220	220	220
6	22"	2420	240	240	240
6	24"	2640	260	260	260
6	26"	2860	280	280	280
6	28"	3080	300	300	300
6	30"	3300	320	320	320
6	32"	3520	340	340	340
6	34"	3740	360	360	360
6	36"	3960	380	380	380
6	38"	4180	400	400	400
6	40"	4400	420	420	420
6	42"	4620	440	440	440
6	44"	4840	460	460	460
6	46"	5060	480	480	480
6	48"	5280	500	500	500
6	50"	5500	520	520	520
6	52"	5720	540	540	540
6	54"	5940	560	560	560
6	56"	6160	580	580	580
6	58"	6380	600	600	600
6	60"	6600	620	620	620
6	62"	6820	640	640	640
6	64"	7040	660	660	660
6	66"	7260	680	680	680
6	68"	7480	700	700	700
6	70"	7700	720	720	720
6	72"	7920	740	740	740
6	74"	8140	760	760	760
6	76"	8360	780	780	780
6	78"	8580	800	800	800
6	80"	8800	820	820	820
6	82"	9020	840	840	840
6	84"	9240	860	860	860
6	86"	9460	880	880	880
6	88"	9680	900	900	900
6	90"	9900	920	920	920
6	92"	10120	940	940	940
6	94"	10340	960	960	960
6	96"	10560	980	980	980
6	98"	10780	1000	1000	1000
6	100"	11000	1020	1020	1020
6	102"	11220	1040	1040	1040
6	104"	11440	1060	1060	1060
6	106"	11660	1080	1080	1080
6	108"	11880	1100	1100	1100
6	110"	12100	1120	1120	1120
6	112"	12320	1140	1140	1140
6	114"	12540	1160	1160	1160
6	116"	12760	1180	1180	1180
6	118"	12980	1200	1200	1200
6	120"	13200	1220	1220	1220
6	122"	13420	1240	1240	1240
6	124"	13640	1260	1260	1260
6	126"	13860	1280	1280	1280
6	128"	14080	1300	1300	1300
6	130"	14300	1320	1320	1320
6	132"	14520	1340	1340	1340
6	134"	14740	1360	1360	1360
6	136"	14960	1380	1380	1380
6	138"	15180	1400	1400	1400
6	140"	15400	1420	1420	1420
6	142"	15620	1440	1440	1440
6	144"	15840	1460	1460	1460
6	146"	16060	1480	1480	1480
6	148"	16280	1500	1500	1500
6	150"	16500	1520	1520	1520
6	152"	16720	1540	1540	1540
6	154"	16940	1560	1560	1560
6	156"	17160	1580	1580	1580
6	158"	17380	1600	1600	1600
6	160"	17600	1620	1620	1620
6	162"	17820	1640	1640	1640
6	164"	18040	1660	1660	1660
6	166"	18260	1680	1680	1680
6	168"	18480	1700	1700	1700
6	170"	18700	1720	1720	1720
6	172"	18920	1740	1740	1740
6	174"	19140	1760	1760	1760
6	176"	19360	1780	1780	1780
6	178"	19580	1800	1800	1800
6	180"	19800	1820	1820	1820
6	182"	20020	1840	1840	1840
6	184"	20240	1860	1860	1860
6	186"	20460	1880	1880	1880
6	188"	20680	1900	1900	1900
6	190"	20900	1920	1920	1920
6	192"	21120	1940	1940	1940
6	194"	21340	1960	1960	1960
6	196"	21560	1980	1980	1980
6	198"	21780	2000	2000	2000
6	200"	22000	2020	2020	2020
6	202"	22220	2040	2040	2040
6	204"	22440	2060	2060	2060
6	206"	22660	2080	2080	2080
6	208"	22880	2100	2100	2100
6	210"	23100	2120	2120	2120
6	212"	23320	2140	2140	2140
6	214"	23540	2160	2160	2160
6	216"	23760	2180	2180	2180
6	218"	23980	2200	2200	2200
6	220"	24200	2220	2220	2220
6	222"	24420	2240	2240	2240
6	224"	24640	2260	2260	2260
6	226"	24860	2280	2280	2280
6	228"	25080	2300	2300	2300
6	230"	25300	2320	2320	2320
6	232"	25520	2340	2340	2340
6	234"	25740	2360	2360	2360
6	236"	25960	2380	2380	2380
6	238"	26180	2400	2400	2400
6	240"	26400	2420	2420	2420
6	242"	26620	2440	2440	2440
6	244"	26840	2460	2460	2460
6	246"	27060	2480	2480	2480
6	248"	27280	2500	2500	2500
6	250"	27500	2520	2520	2520
6	252"	27720	2540	2540	2540
6	254"	27940	2560	2560	2560
6	256"	28160	2580	2580	2580
6	258"	28380	2600	2600	2600
6	260"	28600	2620	2620	2620
6	262"	28820	2640	2640	2640
6	264"	29040	2660	2660	2660
6	266"	29260	2680	2680	2680
6	268"	29480	2700	2700	2700
6	270"	29700	2720	2720	2720
6	272"	29920	2740	2740	2740
6	274"	30140	2760	2760	2760
6	276"	30360	2780	2780	2780
6	278"	30580	2800	2800	2800
6	280"	30800	2820	2820	2820
6	282"	31020	2840	2840	2840
6	284"	31240	2860	2860	2860
6	286"	31460	2880	2880	2880
6	288"	31680	2900	2900	2900
6	290"	31900	2920	2920	2920
6	292"	32120	2940	2940	2940
6	294"	32340	2960	2960	2960
6	296"	32560	2980	2980	2980
6	298"	32780	3000	3000	3000
6	300"	33000	3020	3020	3020
6	302"	33220	3040	3040	3040
6	304"	33440	3060	3060	3060
6	306"	33660	3080	3080	3080
6	308"	33880	3100	3100	3100
6	310"	34100	3120	3120	3120
6	312"	34320	3140	3140	3140
6	314"	34540	3160	3160	3160
6	316"	34760	3180	3180	3180
6	318"	34980	3200	3200	3200
6	320"	35200	3220	3220	3220
6	322"	35420	3240	3240	3240
6	324"	35640	3260	3260	3260
6	326"	35860	3280	3280	3280
6	328"	36080	3300	3300	3300
6	330"	36300	3320	3320	3320
6	332"	36520	3340	3340	3340
6	334"	36740	3360	3360	3360
6	336"	36960	3380	3380	3380
6	338"	37180	3400	3400	3400
6	340"	37400	3420	3420	3420
6	342"	37620	3440	3440	3440
6	344"	37840	3460	3460	3460
6	346"	38060	3480	3480	3480
6	348"	38280	3500	3500	3500
6	350"	38500	3520	3520	3520
6	352"	38720	3540	3540	3540
6	354"	38940	3560	3560	3560
6	356"	39160	3580	3580	3580
6	358"	39380	3600	3600	36



NOW YOU CAN EQUIP THOSE INTERIOR METAL DOORS WITH EFFICIENT, LOW-COST LCN CLOSERS CONCEALED-IN-DOOR

This closer has actually been used and tested in the field for over two years with results more than fulfilling all expectations of the designers.

Its powerful mechanism is entirely concealed within the top rail of the door. It handles any interior metal swing door up to 3' 6" x 7' x 1 3/4", and will operate efficiently under common conditions of internal draft and heavy traffic. It incorporates back-check and hold-open devices; yet it costs little more than an LCN exposed closer of similar capacity. Descriptive folder 304-a promptly sent on request. Address LCN Closers, Inc., 466 West Superior Street, Chicago 10, Illinois.

● As both door and frame are previously blanked out by the door fabricator to template details, the LCN 304 closer is easily slipped into place and secured with machine screws. On-the-job work is reduced to a minimum; the total cost cut accordingly.



OVERHEAD CONCEALED, FLOOR CONCEALED AND EXPOSED TYPE DOOR CLOSERS

Provide Greater **LIVABILITY**...



with Self-storing
THERMOSEAL
ALUMINUM

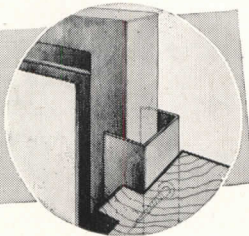
Combination Screen and Storm Sash

Your clients will enjoy these benefits the year 'round:

- 1—Storm sash, screens and weatherproofing in one permanently installed unit
- 2—Nothing to change, nothing to store
- 3—No seasonal refitting or repairing
- 4—Rainproof, draft-free, filtered-screen ventilation
- 5—A cleaner, more healthful and safer home
- 6—Up to 1/3 less fuel requirements

**Patented THERMOLOK*
 CLOSURE FRAME**

Assures permanent, weather-tight fit and perfect alignment because it automatically adjusts to expansion, contraction and settlement.



Your specification of Thermoseal Windows assures your client of all these benefits . . . plus the advantage of reducing heating requirements.

Consult Sweet's Catalog File for Architects or write direct for literature.

Thermoseal Division

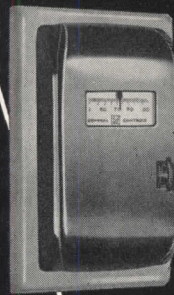
THE F. C. RUSSELL COMPANY
 DEPARTMENT 2ARA128
 CLEVELAND 1, OHIO



©TFCRC

*T. M. REG. APP. FOR

TOMORROW'S



**AUTOMATIC
 CONTROLS
 TODAY**

General Controls
 New Compact Snap-
 Action T-70 Thermostat

Sets a new standard of Functional Beauty and Accuracy in room temperature control. Extending only 7/8" from the wall, the ivory plastic base and lustrous stainless cover of streamlined design harmonize perfectly with the finest taste in room decoration. Use either with famed B-60 Control Systems or any standard low voltage control circuit.

For complete specifications on the T-70 or other GENERAL CONTROLS Automatic Pressure, Temperature and Flow Controls, request additional literature.

44-4

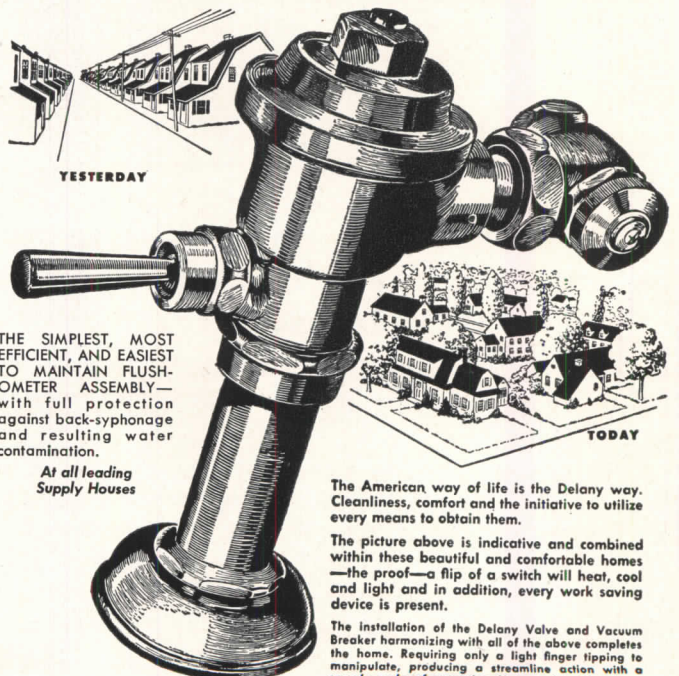
GENERAL CONTROLS

801 ALLEN AVENUE GLENDALE 1, CALIF.

Manufacturers of Automatic Pressure, Temperature & Flow Controls

FACTORY BRANCHES: BIRMINGHAM (3) • BOSTON (16) • CHICAGO (5) • DALLAS (2) • DENVER (10) • DETROIT (8) • CLEVELAND (15) • HOUSTON (2) • KANSAS CITY (2) • NEW YORK (17) • PHILADELPHIA (40) • PITTSBURGH (27) • SAN FRANCISCO (7) • SEATTLE (1)

DISTRIBUTORS IN PRINCIPAL CITIES



THE SIMPLEST, MOST EFFICIENT, AND EASIEST TO MAINTAIN FLUSH-O-METER ASSEMBLY—with full protection against back-siphonage and resulting water contamination.

At all leading Supply Houses

The American way of life is the Delany way. Cleanliness, comfort and the initiative to utilize every means to obtain them.

The picture above is indicative and combined within these beautiful and comfortable homes—the proof—a flip of a switch will heat, cool and light and in addition, every work saving device is present.

The installation of the Delany Valve and Vacuum Breaker harmonizing with all of the above completes the home. Requiring only a light finger tipping to manipulate, producing a streamline action with a speedy cycle of operation (6 seconds) obtaining a positive clean elimination of all waste, definitely doing away with all personal annoyances. The water economy, long lasting efficiency and freedom from break-downs of the Delany Valves and Vacuum Breakers over past accepted units of domestic sanitation, earns for them a place in your plans for the fulfillment of the American way of life.

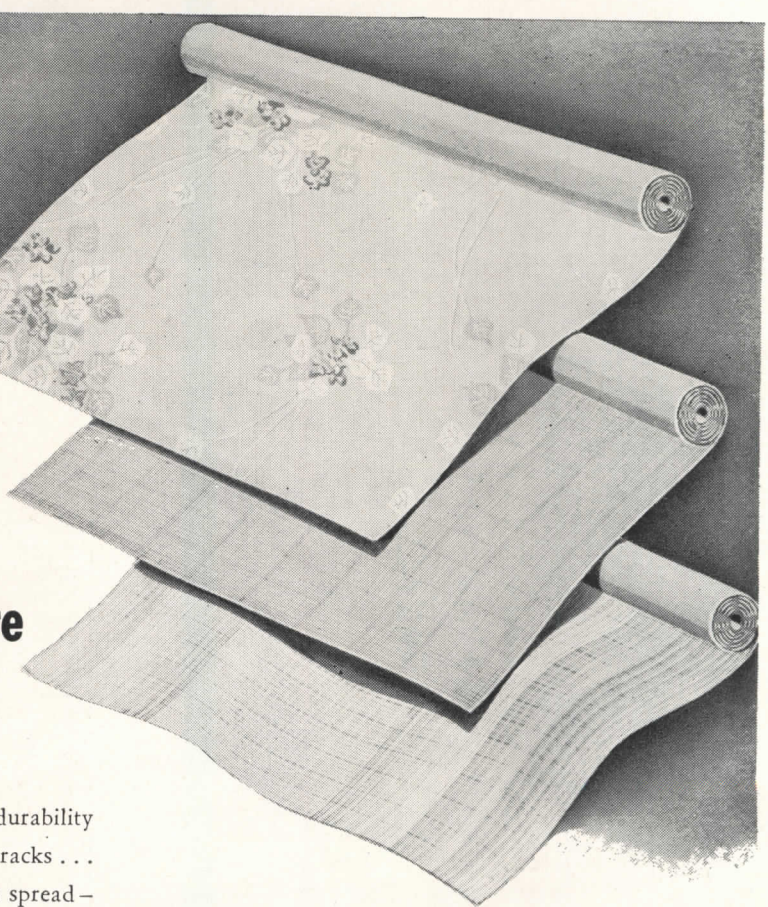
**PROGRESS
 Says "DELANY
 FLUSH VALVES"**

SINCE 1879
Coyne & Delany Co.

BROOKLYN N.Y.
 FLUSH VALVES • VACUUM BREAKERS • PLUMBING SPECIALTIES

IN CANADA: THE JAMES ROBERTSON COMPANY, LIMITED • MONTREAL • TORONTO • ST. J.

Why specify ordinary interior finishes — when FABRON offers so much more ... at comparable cost?



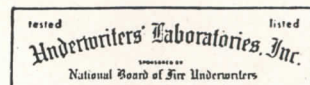
WHAT OTHER interior finish can give you the long-term durability of FABRON . . . its positive protection against plaster cracks . . . its easy washability . . . its positive protection against fire spread — and still remain within the limited budgets that confront most institutional projects today?

As far as initial cost is concerned, FABRON is available for institutional construction at a cost that need be little — if at all — higher than that of a good quality 3-coat oil paint treatment. Even more important to the client, however, is the proven fact that FABRON outlasts several ordinary redecorations. By eliminating the inconvenience and expense of frequent redecorations, FABRON assures substantial operating economies . . . begins paying for itself the very first time an ordinary finish would require re-doing.

FABRON's superiority has been demonstrated by years of service in more than 1000 hospitals . . . a similar number of hotels . . . countless schools, colleges, apartment houses, etc. Before specifying the interior finish for your next institutional project, be sure you have all the facts about FABRON. Mail the coupon today.

FABRON is supplied in roll form and consists of a canvas backing to which have been bonded layers of plastic, topped off by lacquer colors. It is applied as easily as wallpaper. More than 180 patterns and colors permit a decorative latitude unmatched by ordinary interior finishes.

Our Advisory Department will gladly cooperate in estimating costs, establishing color schemes, etc., from blueprints. Cost free, of course.



FABRON prevents fire-spread. Each roll bears the label of the Underwriters' Laboratories, Inc., sponsored by the National Association of Fire Underwriters, Inc.

Fabron
REG. U. S. PAT. OFF.
the canvas-plastic-lacquer wall covering

FREDERIC BLANK & CO., INC.
Established 1913
230 Park Avenue, New York 17, N. Y.



FREDERIC BLANK & CO., INC., 230 Park Avenue, New York
Please send us samples of Fabron and information concerning its use in:

- Hospitals
- Hotels
- Schools
- Theatres
- Restaurants
- Offices
- Apartments
- Residences

Name

Address

City & Zone State

AR-12-48

**Insist
on this
Seal...**



**when you specify
ALUMINUM
WINDOWS**

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.



DOUBLE-HUNG



CASEMENT



PROJECTED

ALUMINUM WINDOW MANUFACTURERS ASSOCIATION
209 Cedar Avenue, Takoma Park, Washington 12, D. C.

**HERE ARE
hard-to-get
lighting facts!**

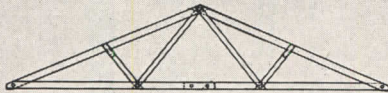
Every Solarlite engineer walks into your office well-armed with *lighting facts*. He's not a fixture hound but a full-fledged lighting man, and he can talk actual cases in terms of lighting performance. He can show you how Solarlite lifts the load from your shoulders, lives with the job from start to finish, delivers precisely what you expect. Call the Solarlite man in today.

FREE . . . Here's a sample of the kind of lighting data he carries with him—a fact-filled portfolio showing a variety of successful installations—schools, stores, banks, etc. Write for your copy of "SHOWCASE" today.



Solar Light Manufacturing Co.
1357 South Jefferson Street, Chicago 7, Ill.

LEADING ARCHITECTS SPECIFY TECO RAFTERS



FREE copy of "Clear Span Teco Trussed Rafters in Modern Home Planning" has been prepared for architects, designers, contractors, builders and financial institutions.

TIMBER ENGINEERING COMPANY
1319 - 18th St., N. W., Washington 6, D. C.

Gentlemen:

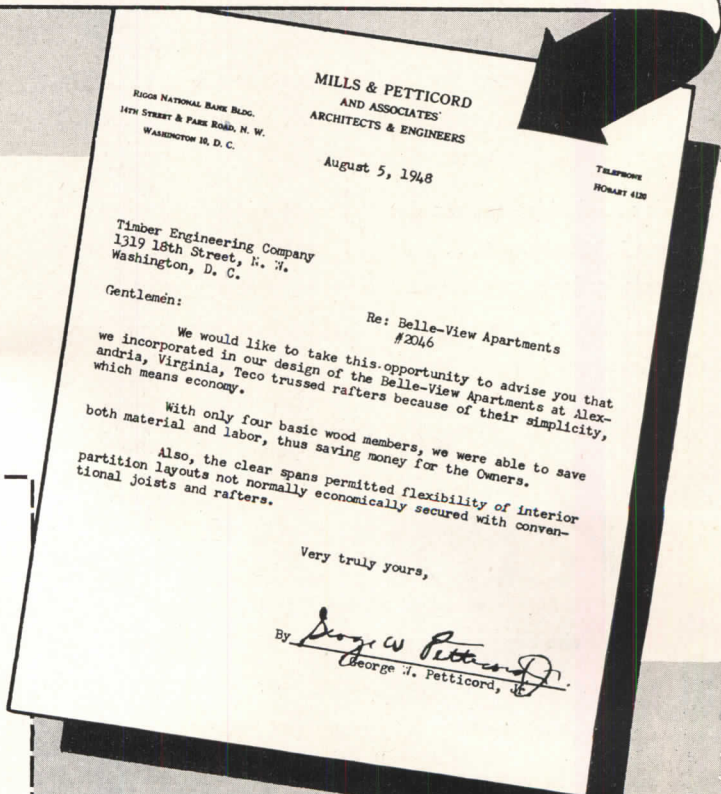
Please send FREE copy of AIA File 19-B, "Modern Home Planning".

Company Name.....

Address.....

Your Name.....

A.R. 11-12-48



"Pittsburgh's" new
HERCULITE

DOOR-FRAME ASSEMBLY

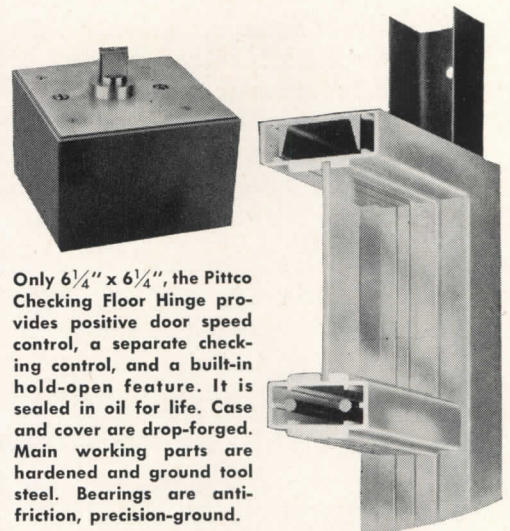
*is simple, adaptable,
 easy to install*



FROM specification to installation, utter simplicity marks this new Herculite Door-Frame Assembly. In ordering, all you do is specify "Herculite Door-Frame Assembly" and give the style number and size needed. There are twelve standard designs from which to choose, affording unusual versatility and adaptability to many varied requirements. And the ease with which these frames are handled appeals to all — architects, contractors, chain store executives, and retail merchants.

Using special checking gauges to assure the accuracy of all dimensions, these factory-built (no assembly is necessary on the job) units meet the highest standards of fabrication. Architectural styling has been combined with structural and mechanical engineering to produce frames that are handsome, well constructed. They are built of special shapes and of heavy extruded aluminum, heavily reinforced with structural steel. They are supplied complete with Pittco Checking Floor Hinge, moldings for transom glass, supports for sidelights, strikes for locks, sockets for bolts, and thresholds when specified.

Why not get the full story on this revolutionary door-frame? Simply fill in and return the coupon below for your free copy of our booklet. Do it now.



Only $6\frac{1}{4}'' \times 6\frac{1}{4}''$, the Pittco Checking Floor Hinge provides positive door speed control, a separate checking control, and a built-in hold-open feature. It is sealed in oil for life. Case and cover are drop-forged. Main working parts are hardened and ground tool steel. Bearings are anti-friction, precision-ground.

This sectional view illustrates the handsome, rugged design of the frame. Made of extra-heavy extruded aluminum, highly polished and anodized, it is heavily reinforced with steel channels and tie rods as partially shown here.

Pittsburgh Plate Glass Company
 2363-8 Grant Building, Pittsburgh 19, Pa.
 Without obligation on my part, please send me a copy of your free booklet on "Pittsburgh's" new factory-built Herculite Door-Frame Assembly.

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



PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS

PITTSBURGH PLATE GLASS COMPANY

Infra Insulation Is Never A Wet Blanket

**Excludes Unwanted Heat, Cold
or Vapor—Never Retains Them**

Infra Accordion Aluminum Insulation neither absorbs, retains, nor is harmed by moisture. Fireproof, it will not swell or warp, is effective at any temperature. One carton, 2½ cubic feet of Infra, provides 1000 square feet of insulation. Infra is easy to unpack and install.

Read the following quotation from a paper by a renowned authority on Insulation, Prof. G. B. Wilkes of the Massachusetts Institute of Technology:

“Due to its light weight, the heat storage capacity is very low and consequently, a wall or roof, insulated with aluminum foil will tend to reach thermal equilibrium with the surroundings quicker than one insulated with the heavier types of insulation. Under summer conditions, with a falling temperature at night after a hot day the roofs and ceilings of a home insulated with foil will tend to cool more rapidly than if they were insulated with heavy materials.

“The reverse is also true, a foil insulated structure will tend to heat quicker than one insulated with ordinary insulation.”

Thermal Factors Stamped on Every Infra Carton

Infra C Factors and Rockwool Equivalents

C.052 Heat Flow Down, equals 6" Rockwool.
C.083 Heat Flow Up, equals 3.97" Rockwool.
C.10 Lateral Heat, equals 3-1/3" Rockwool.

WRITE FOR FREE 32-Page BOOKLET: “Simplified Physics of Thermal Insulation”

Architects and engineers use it as a handbook, and colleges as a text, on heat transfer, condensation, vapor, mold, radiant heating, etc. Contains chart of k, C, R and U factors of all insulations, of all thicknesses, weights, densities.

Address Dept. AR

Infra INSULATION, INC.
10 Murray St., N. Y., N. Y.

MULTIPLE ACCORDION ALUMINUM &
TRIANGULAR REFLECTIVE AIR CELLS

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 reprints have been sold but the demand continues unabated.

⊗

**104 pages, bound in cloth
\$2.50 per copy**

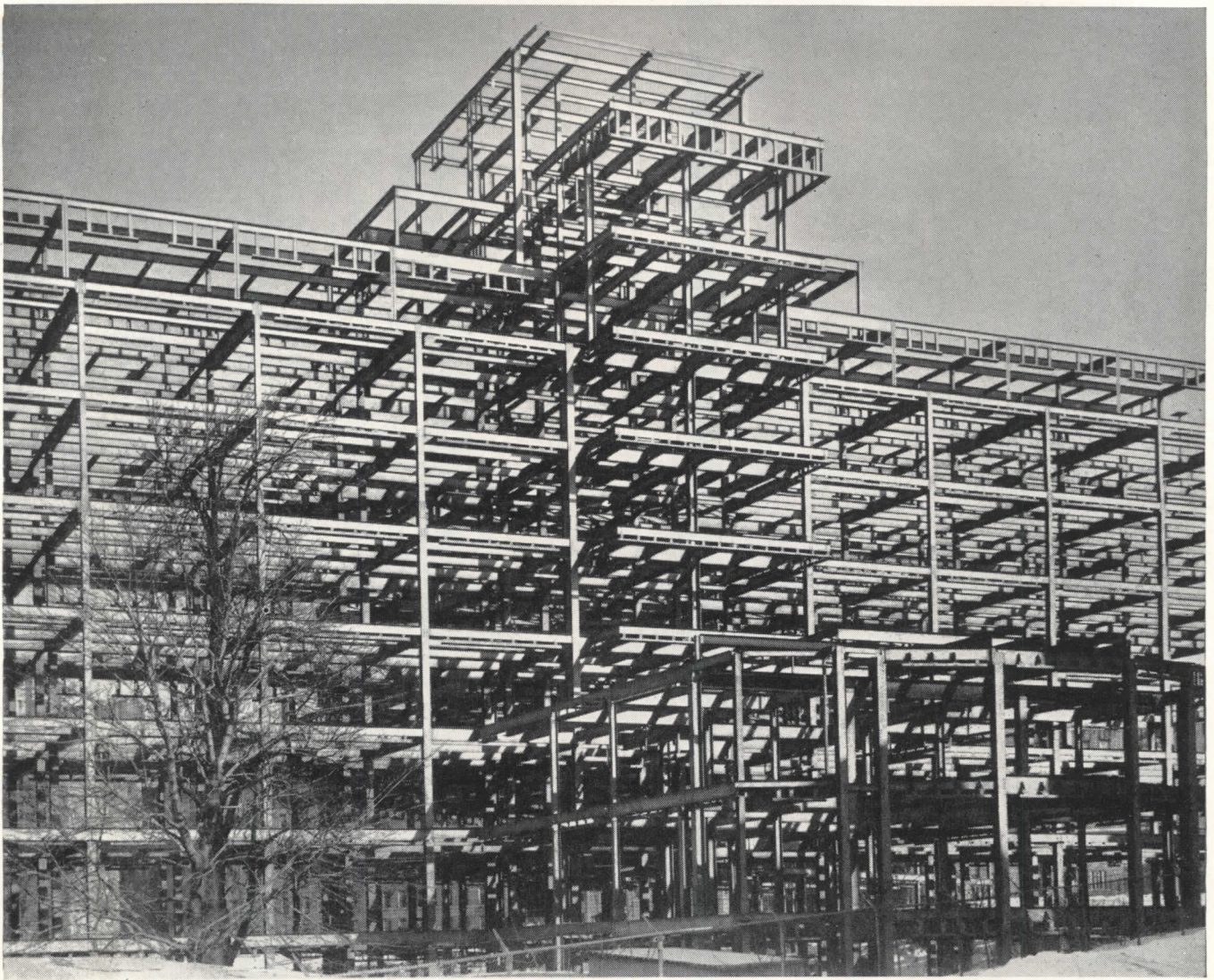
ARCHITECTURAL RECORD
119 W. 40th Street, New York, N. Y.

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. 12-48



Architects and Engineers: Department of Public Works, City of New York, in consultation with James Gamble Rogers, architect, New York, and Sears & Kopf, consulting engineers, New York. *General Contractor:* Gerace & Castagna, Inc., Brooklyn. *Steel Fabricator:* Harris Structural Steel Co., New York.

Pattern in Steel

This huge concentration of steel is the framework for Florence Nightingale Hospital, in upper Manhattan. Owned by the Department of Hospitals of the City of New York, the ten-story, 331-room structure will have facilities for 307 patients, and will include research laboratories for the study and control of cancer. Its two lower stories are to be finished with granite ashlar, while facing brick with limestone trim has been chosen for the remainder of the building.

As in scores of hospitals and other impressive structures now being erected in widely scattered areas, the framework for Florence Nightingale Hospital is comprised of Bethlehem Structural Shapes.

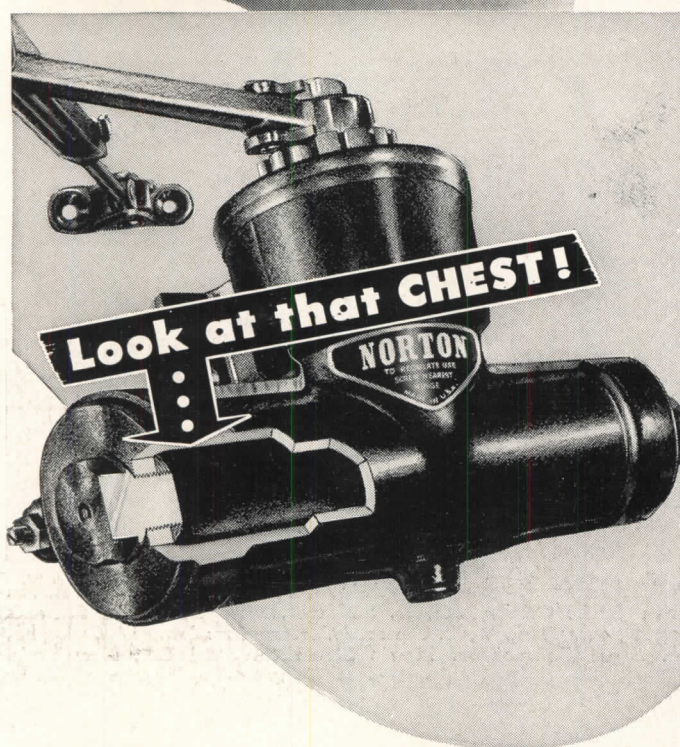
BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

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

Export Distributor: Bethlehem Steel Export Corporation

Bethlehem
**STRUCTURAL
SHAPES**





There's strength and to spare in a NORTON Door Closer for controlling stout doors in whipping winds and sudden drafts. Yet NORTON closes a door gently as a dove, firmly but with finesse. That's because NORTON is built to do a heavy job *easily*. And that's why, for entrance or inside installations, with a NORTON it's easy up and trouble free for a long life of service.

Meets Federal Specifications F.F.-H-721a



NORTON
DOOR CLOSER CO.

Division of The Yale & Towne Mfg. Co.

2900 N. WESTERN AVE. CHICAGO 18, ILL.

Available Now!

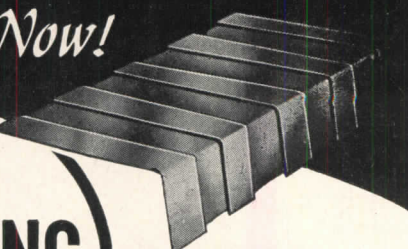
CHENEY FLASHING

3-Way Bond

16 OZ. COPPER

CHENEY FLASHING REGLET

16 OZ. COPPER



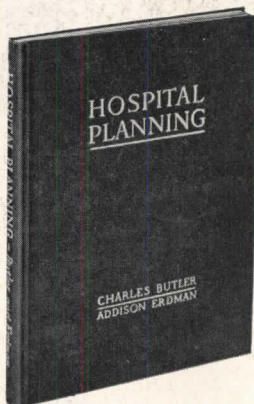
CHENEY FLASHING is again being made by the original inventor who pioneered the art of thru-wall flashing eighteen years ago.

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.



"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 \$

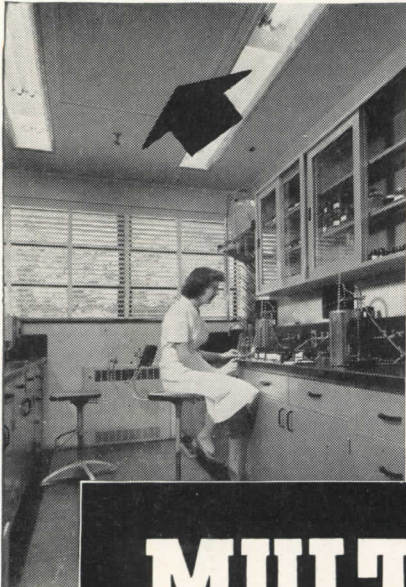
(for New York City delivery add 30c for sales tax—\$15.30 in all.)

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!



MULTI-VENT

AIR DISTRIBUTION SYSTEM

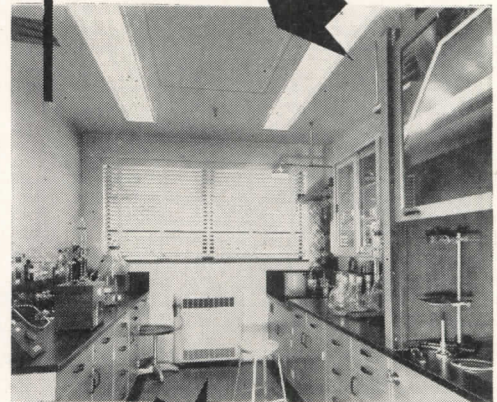
Meets the Exacting Requirements of Scientific Research...

In determining the best method of air diffusion for the new Searle Laboratory buildings, the architect, air conditioning engineer and company officials made the same decision that have many other builders of scientific research laboratories throughout the country. They specified low velocity, pressure displacement air diffusion through perforated ceiling distribution plates of large area.

This method of air diffusion, which is patented and exclusively manufactured by the Multi-Vent Division of the Pyle-National Company, has many important advantages over all others on the market today. Although much larger volumes of air can be delivered without excessive air motion (i. e. drafts) or friction noise, the air volume usually required to handle a given load is greatly reduced by the use of much larger diffusion temperature differences without disturbing temperature uniformity between floor and head level. Thus Multi-Vent can achieve an uncomparable uniformity of temperature and humidity, with substantial savings in the tonnage of basic air conditioning equipment, because of its low velocity, wide-spread and rapid diffusion characteristics.

Multi-Vent installations are simple, quick to balance and easy to clean. They have been applied with unexcelled results to almost any type of building, new or old, and are particularly well adapted to the lower ceilings of modern architecture.

THE G. D. SEARLE COMPANY'S Biological Laboratory Building, Skokie, Illinois, illustrated above, is the first of a series of air conditioned buildings to be constructed by this renowned pharmaceutical house in their extensive postwar expansion program. Multi-Vent panels have been specified throughout for air diffusion. Architect—Herbert Banse. Consulting Engineer—E. P. Heckel and Associates.



THE PYLE-NATIONAL COMPANY

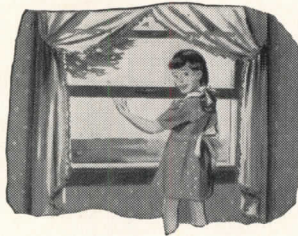


MULTI-VENT DIVISION • 1375 WEST 37th STREET, CHICAGO 9, ILLINOIS
 DISTRICT OFFICES: Boston • New York • Philadelphia • Baltimore • Atlanta
 Pittsburgh • Cleveland • St. Louis • St. Paul • Houston • San Francisco
 CANADIAN AGENT: F. W. Chambers and Co., Ltd., Toronto 12

CONDUIT FITTINGS • PLUGS and RECEPTACLES • FLOODLIGHTS • TURBO GENERATORS • LOCOMOTIVE HEADLIGHTS

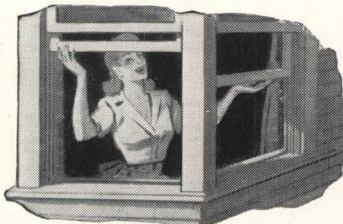
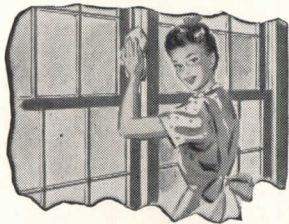
Invizie says:

"GRAND RAPIDS INVIZIBLES are easy to sell because—"



1 Most people want windows that can be opened or closed at will, according to the seasonal or individual room requirements. Invisible Sash Balances completely satisfy this desire.

2 Most people want windows that open smoothly, quietly and with minimum effort. The enclosed mechanism of Invisible Sash Balances provide this kind of window operation at its very best.



3 Most housewives prefer windows that are easy to keep clean and neat. With Invisible Sash Balances, there are no cables, tapes or exposed tubes to catch dust or paint.

4 Most people want full view windows including multiple and corner installations with modern narrow trim. 'Invizibles' are the most practical balances for double-hung windows of every type."

**ADVERTISED TO
134,445,040
READERSHIP IN
NATIONAL
MAGAZINES**



BALANCE 100%
concealed in the sash . . . no tapes . . . no cables.

EASY TO INSTALL
... just drive in two fasteners . . . screw in one screw.

10 SIZES FIT 95%
of all new and old windows . . . completely interchangeable.



**GRAND RAPIDS
SASH PULLEYS**

No. 103 face plate, cone bearing type, and Nos. 175, 109, 110 saw-tooth drive type sash pulleys cover 95% of all sash pulley requirements.



**SEE OUR CATALOG IN
SWEET'S**

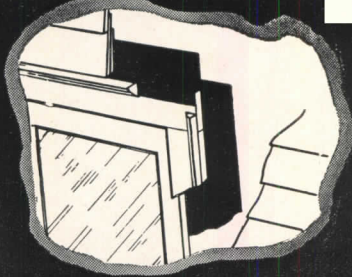
WRITE
for illustrated specifications and instructions.

GRAND RAPIDS HARDWARE COMPANY
GRAND RAPIDS 2, MICHIGAN
Quality leaders in Sash Hardware for over 50 Years

Now Available!

COPPER ARMORED SISALKRAFT

Strong, flexible, easy to apply! For door and window flashing, as shown, 6-10- or 12 in. Copper Armored Sisalkraft in 1 oz. weight is recommended.



**PURE COPPER PROTECTION
at 1/5 the NORMAL COST!**

Copper Armored Sisalkraft is pure electro deposit copper reinforced with thousands of crossed sisal fibres and bonded with two layers of special asphalt to heavy kraft paper. Uniform, lightweight, will not kink, break or tear, 100% impervious to moisture. For all concealed flashing and foundation damp-coursing. Available in 6" to 60" widths, copper weights of 1, 2 or 3 oz. per square foot.

Write for complete information.



The SISALKRAFT Co.

205 W. WACKER DRIVE DEPT. AR CHICAGO 6, ILLINOIS

STOP that WATER with FORMULA #640

A Clear Liquid Waterproofing for Old or New Construction

PENETRATES deeply—one inch or more—is not a surface treatment. Brush, spray, or float on stone, cast stone, concrete, mortar, stucco, tile, brick, plaster, wood, wall board—any absorbent material.

WATERPROOFS, preserves, prevents dusting of floors, surface dirt washes away in rain.

FORMULA No. 640 is a balanced formula of seven different waxes and resins in a hydrocarbon solvent.

ACID-ALKALI proof—does not oxidize, unchanged by temperature.

PERFORMANCE—It is our opinion it will last as long as the concrete, mortar, stucco, etc., lasts.

OIL PAINT saponifies on cement unless sealed first with Formula No. 640.

APPLY to either side: **The pressure side, or opposite side**—it is equally effective.

HYDROSTATIC PRESSURE—A 20 foot head has been held by Formula No. 640.

CUTS WATERPROOFING COSTS because it applies three times as fast as paint, requires no special technique. No preparation—comes ready to apply. Eliminates necessity of furring. Concrete floors and walls need no membraning.

KEEPS IN ALL CLIMATES • **HARMLESS TO USE**
GOOD COVERAGE • **MODERATE PRICE**

WRITE OUR ENGINEERING DEPARTMENT for office test kit, technical data, or regarding any special problem.
J. Wilbur Haynes, Engineer

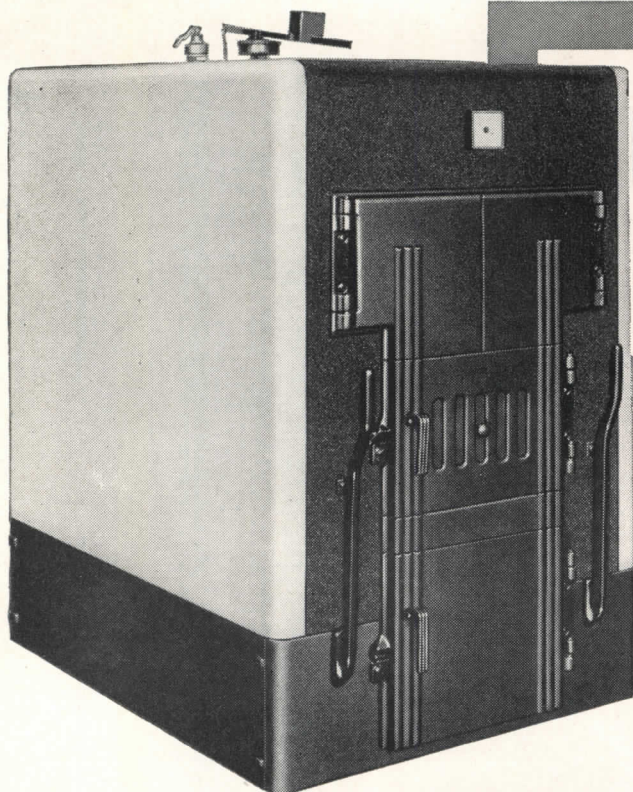
OTHER PRODUCTS: Formula No. 640 Toxic, combines waterproofing with termite and fungus protection; cement hardener; cement paint; floor mastic; roof coatings, etc.

HAYNES PRODUCTS CO.

4007 FARNAM STREET • OMAHA 3, NEBRASKA

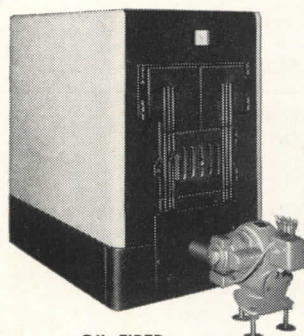


Section 9a/8

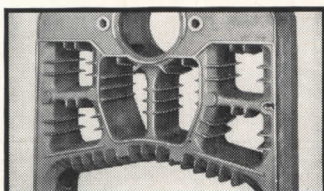


CONVERTIBLE TO ANY TYPE OF FUEL

Adaptable to any firing method, the "300" Series National Heat Extractor Boiler, for steam or hot water, assures continuous heating comfort. It can be installed as a hand-fired unit and later converted to automatic firing to take advantage of changing fuel supplies. The "300" Series is particularly suited to larger homes, small apartments and commercial buildings. Radiators, convectors, unit heaters, baseboard heating units or radiant panels can be used with the "300" Series to form a complete and modern heating system.



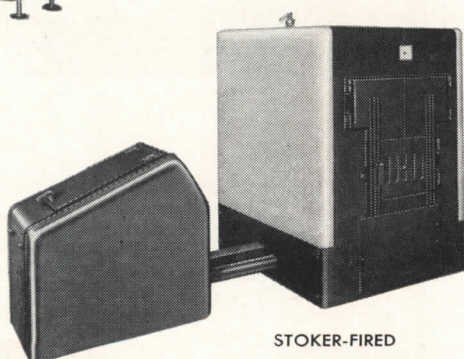
OIL-FIRED



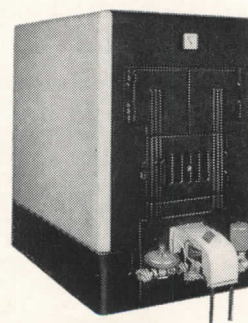
Finger-like projections form extra heating surfaces to capture and hold extra heat, reduce stack losses and fuel bills.

Durable cast iron construction, multiple-flue sections, extended heating surface, extra thick insulation, special baffles (for oil and gas firing) and an attractive jacket are some of its unique features that add up to heating satisfaction.

Domestic hot water, year 'round, is another convenience of the "300" Series, offered by the easy addition of an integral tankless type or storage type National Water Heater.



STOKER-FIRED



GAS-FIRED

For complete information on the "300" Series Heat Extractor—or the similarly designed "100" and "200" Series for smaller installations or the "400" and "500" Series for larger installations—phone our nearest office or write to us at Johnstown.



THE NATIONAL RADIATOR COMPANY

JOHNSTOWN, PENNSYLVANIA

CORK is QUIET, CORK is



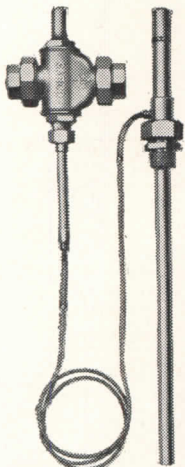
Beautiful

For homes, offices, churches, schools, and public buildings of all kinds, there's nothing like Corinco Cork Flooring. It's quiet. It's beautiful. It keeps its resilience for years. It's easy to install on either old or new construction, on metal, concrete or wood. It's easy to maintain—with an occasional dusting. No wonder so many far-sighted architects and contractors are giving their clients the benefits of this versatile flooring. Write our engineering office for specifications, details and layouts.



CORK INSULATION CO., INC.

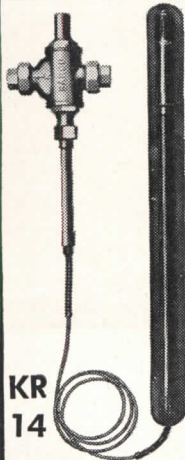
155 EAST 44th STREET, NEW YORK 17, N.Y.



TR-21

SARCO TR-21 operates steam, water, brine and gas valves. Entirely self-contained and self-operated. No electricity, compressed air, etc., needed. Easy to install. For any temperature between 0 and 300° F. Electric controls also available. Catalog 600.

**SARCO
Temp-
erature
Control**

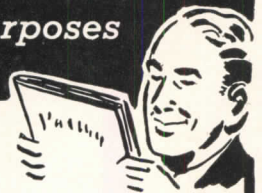


KR
14

SARCO KR-14 temperature regulator is a self-operated liquid expansion type control, packless and easy to install. Used for air conditioning, refrigeration, dryers, ovens, ducts and all types of industrial process work. Temperatures 0° to 300°F. ½ to 8". Catalog 600.

SARCO SAVES STEAM **SARCO COMPANY, INC.**
Empire State Bldg., New York 1, N.Y.
SARCO CANADA, LTD., TORONTO 5, ONTARIO

Keep up-to-date on
SPECIAL CEMENTS
for special purposes



Medusa Special Cements are designed to produce better work on certain construction. As an architect, you will want to know about these Special Cements and the work they perform. Check the literature in which you are interested, attach this advertisement to your letterhead and send it in.

- A Guide To Finer Stucco
- How to Waterproof Concrete, Stucco and Masonry
- "Medco" High-Early Strength Cement
- A Discussion on Integral Waterproofing
- The Beauty of Terrazzo
- Medusa StoneseT for Permanent Wall Beauty
- How to Choose a Better Masonry Cement
- Medusa Air-Entraining Cement

MEDUSA

PORTLAND CEMENT CO.

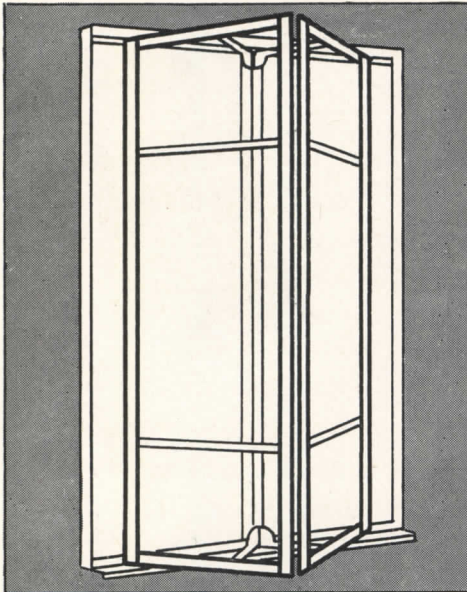
1015 Midland Bldg. Cleveland 15, Ohio

FIFTY-SIX YEARS OF CONCRETE PROGRESS

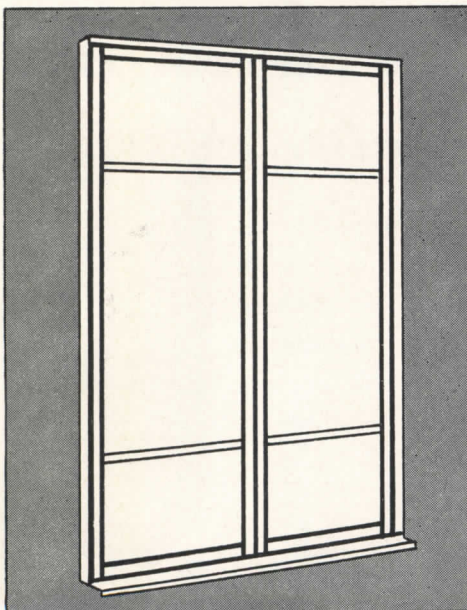
Also made by Medusa Products Company of Canada, Ltd., Paris, Ont.

BROWNE WINDOWS

fold open!



Sash are manually operated or equipped with concealed mechanical operators. Can be geared together for remote operation.



Browne Folding Type Windows have symmetry and crisp modern lines which add dignity and beauty to any building; provide maximum light and vision.

Performance values, not possible with other type windows, result from this "folding" feature of Sealuxe Browne Folding-Type Windows.

Sash members of a Browne Window fold open. Do not slide open. No need to provide tolerance for easy operation. Sash members fit accurately and permanently.

Permanent resilient wool felt weatherstripping makes an airtight and dust-proof window when closed.

Sash can be bowed open outwardly, with no opening at sides, forming flue that creates draft-free ventilation even in foul weather.

Sash can be easily set at any width opening desired; will not move under wind pressure.

Both sides of glass can be quickly cleaned from room-side; eliminates cost and hazards of outside window washing.

Sealuxe Browne Folding Type Windows are available in standard and custom-built sizes. Aluminum or bronze; Underwriters' Model in steel.

Come in several models including the escape-proof and prowler-proof Psychiatric Model.

There is only one Browne Folding-Type Window. It is manufactured exclusively by Universal Corporation.

Write for Catalog

Use Our Service on Window Problems

See our catalog in Sweet's Architectural File or write us direct. Our Department of Design and Engineering is qualified and eager to work with you.

Universal
CORPORATION 

6710 DENTON DRIVE, DALLAS 9, TEXAS
District Offices: LOS ANGELES • DAYTON • DES MOINES • HOUSTON

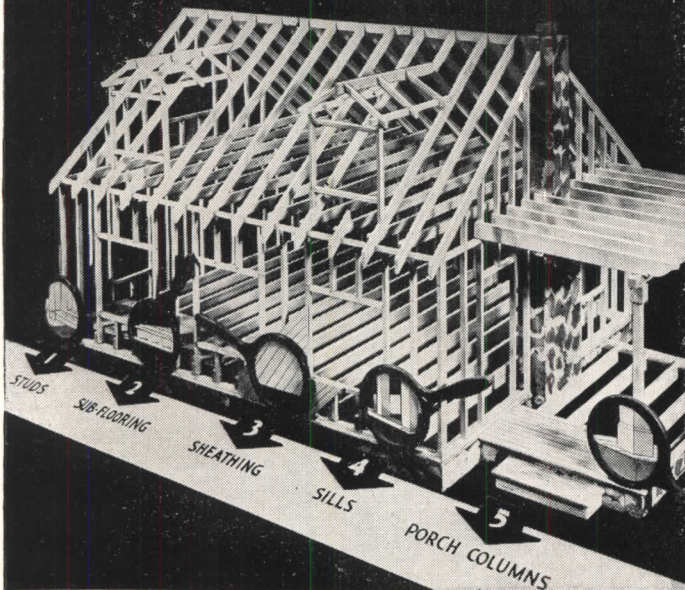
Qualified Sales Representatives in all Architectural Centers

BROWNE

FOLDING-TYPE WINDOW
in Aluminum or Bronze

A *Sealuxe* PRODUCT

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

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.

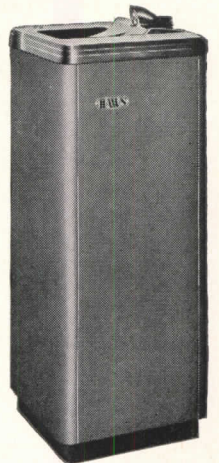
MONROE, LEDERER AND TAUSSIG, INC.
606 N. American St., Phila. 23, Pa.

Moletq FLAT OIL PAINT
ARCHITECTURAL The Truly Washable Paint

LET ELECTRIC WATER COOLERS DO

Double Duty...

HAWS Electric Water Coolers give double duty when installed with one or more **HAWS** Sanitary Drinking Fountains connected to serve adjacent rooms. Large capacity cooling units provide an ample supply of cooled water.



Model HT-10 Electric Water Cooler

Model 7A Vitreous China Wall Fountain



HAWS ELECTRIC
WATER COOLERS
SANITARY DRINKING
FOUNTAINS

WRITE FOR LITERATURE

HAWS DRINKING FAUCET CO.

1441 FOURTH STREET (Since 1909) BERKELEY 2, CALIFORNIA
Agents and Sales Representatives in All Principal Cities

WORTHINGTON

Air Conditioning and Refrigeration Report

Worthington Pump & Machinery Corporation, Harrison, New Jersey

NEW EVAPORATIVE CONDENSER SAVES MANY COSTS

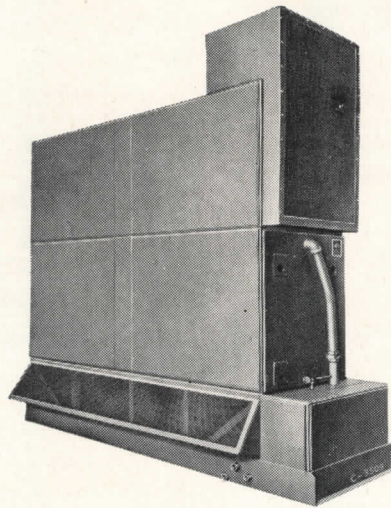
Where water for use in refrigerating condensers is expensive, high in temperature or difficult to secure and dispose of, the Worthington ECZ Evaporative Condenser saves water, equipment, space and money.

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



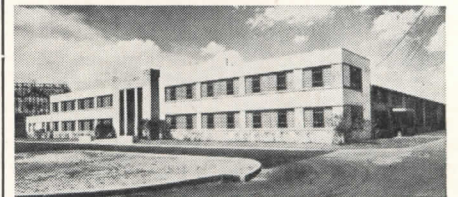
Higbee Is Ahead On Air Conditioning, Too

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*

SAFETYMIX

gives you real
shower safety



When you say "SAFETYMIX" — you get the world's leading, pressure-actuated, non-scald shower valve. Guaranteed to hold constant shower temperature against pressure fluctuations, it maintains 2°F accuracy.

SAFETYMIX STAYS SAFE

- Gives foolproof protection against sudden scalds — even with pressure fluctuations up to 85%.
- Only *Safetymix* has the patented Flow Control Spindle with one moving part to regulate all valve functions.

SAFETYMIX STAYS CLEAN

- Designed for self-cleaning action to prevent clogging . . . saves hot water.

SAFETYMIX STAYS PUT

- The simplest, most rugged non-scald shower valve on the market. Flow Control Spindle has but one moving part. Designed to last a lifetime. As easy to fix as a faucet. Costs no more than ordinary shower valves.

HERE ARE A FEW FAMOUS SAFETYMIX USERS

Pratt & Whitney	Netherland Plaza
General Electric Co.	Ritz-Carlton
du Pont de Nemours	Harvard University
Ford Motor Co.	William & Mary College
Mass. General Hospital	University of Chicago
Statler Hotel	U. S. Army & Navy
Royal Canadian Air Force	Bell Telephone Co.

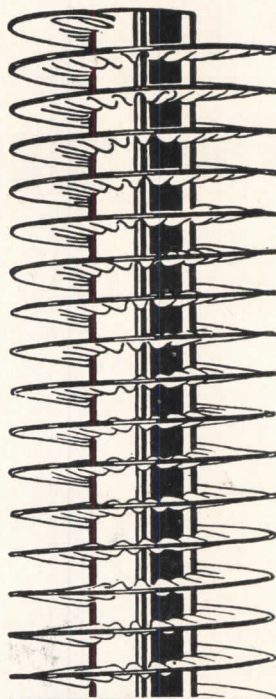
100,000 SAFETYMIX INSTALLATIONS CAN'T BE WRONG!

Send for bulletin and details now.

SAFETYMIX IS MADE BY THE MAKERS OF THE
NEW SYMMONS "TEMPERING-CONTROLLER"

Symmons ENGINEERING COMPANY
791 TREMONT ST., BOSTON 18, MASS.

AEROFIN



FIN-TYPE COILS
For
Fast, Efficient
HEATING
and
COOLING

*Write for
Information*

AEROFIN
CORPORATION
S. Geddes St. Syracuse 4, N.Y.

Century Notes:

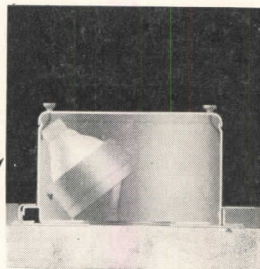
Published in the interests of better lighting

Incomparable!

the focusing range achieved by Century's

*Flush Accent Light**

Cat. #396 List Price 33.00



These are the advantages this extraordinary unit offers:

1. Rotates 360°—45° off the vertical
2. 8" depth
3. Flush ceiling plate
4. Louver included effects a cut-off of all stray light
Flexible tabs clamp glass filters
5. Aperture 5 1/4"
6. Uses 150 watt reflector bulbs
7. Simple lamp replacement
8. Union wired with 4 ft. greenfield
9. Underwriters' approval

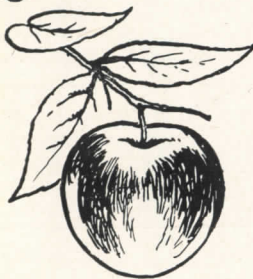
Order Yours Now

Century Lighting Inc.

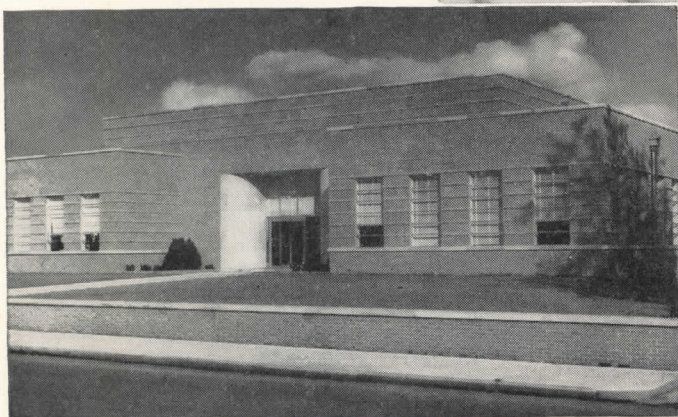
419 W. 55th St., New York 19 • 626 N. Robertson Blvd., Los Angeles 46

*Pat. pending

Serving



FRUITFULLY



In the heart of the apple country, the fertile Shenandoah Valley, is the new office building and the plant of the NATIONAL FRUIT PRODUCT COMPANY, Winchester, Va.

The WALKER UNDERFLOOR SYSTEM is an active servant in this new building of the National Fruit Product Company. (Note especially, in the upper illustration, that the Walker System is readily adapted to radiant heat installations.)

Architect:
ELMER E. BURRUSS,
Charlottesville, Va.

General Contractor:
A. R. WARNER & SON,
Waynesboro, Pa.

Electrical Contractor:
BAKER & ANDERSON ELECTRICAL CO.,
Winchester, Va.

Electrical Distributor:
Tri-State Electrical Supply Co., Inc.,
Hagerstown, Md.

And here is another great industry now being served by the WALKER Underfloor System which provides a multitude of outlets for power, light, telephone and intercommunication.

Nearly a *thousand electrical outlets* are furnished by the Walker System . . . outlets which are available at practically any point of the entire floor area. Ready for the immediate needs of today . . . and ready for changes and new needs of tomorrow.

WALKER BROTHERS
Conshohocken 35, Pa.

Write to us for our Catalogue No. 146 or consult Sweet's Architectural File for further details.



UNDERFLOOR SYSTEMS

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: One experienced architectural draftsman. Small office doing contemporary work. Please address education, experience, references and salary expected to P. O. Box 4122, Centenary Station, Shreveport, La.

WANTED: Need expert and enthusiastic assistance in a practice devoted to developing architecture which is a basic and natural expression of its purpose, place and time. Moderne mannerisms are as abhorrent as eclecticism. Work requires natural aptitude, trained skill, and a yearning to assist in architectural experimentation and growth. Absorbs much time and thought, but pays less cash than ditch-digging. Architect Paul Beidler & Colleagues, Northeon, R. D. 4, Easton, Pa.

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: 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.

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.

Positions Sought

ARCHITECT: Graduate, NCARB, registered. First-rate contemporary designer. Publications in national magazines. Ten years experience large and small offices, own practice, teaching. Preliminaries through working drawings schools, commercial, public buildings, industrial, residential. Seeking partnership connection in medium size city. Invite inquiry and investigation. Box 381, *Architectural Record*, 119 W. 40th St., New York 18.

CONSULTING ENGINEERS OFFICE: Design of air conditioning, heating & ventilating, electric, plumbing. This office is in position to take on at this time, domestic or foreign work of the above nature which requires immediate attention. Box 382, *Architectural Record*, 119 W. 40th St., New York 18.

ELECTRICAL DESIGNERS AND DRAFTSMEN: Six experienced men in electrical design and drafting for residential, office, and industrial projects. Accurate and prompt prints furnished for power distribution, lighting, and control. Desire work to do in own office. Box 383, *Architectural Record*, 119 W. 40th St., New York 18.

An unusual "strip" window pattern, making use of stainless steel mullions, creates the impression of continuous fenestration on the exterior of this newly constructed office building.

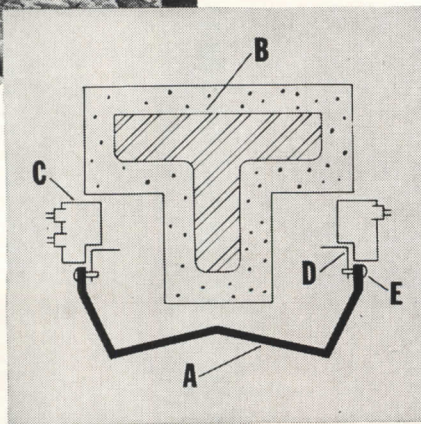
OWNER-BUILDER: *Tishman Realty and Construction Co., Inc., New York*

LOCATION: *445 Park Ave., New York*

ARCHITECTS: *Kahn & Jacobs*



Mullion is screwed to an angle, which is an integral part of the window frame, by stainless steel self-tapping screws.




A—Stainless Steel Mullion. B—Main Strut.
C—Fixed Sash. D—Angle. E—Screw.

1300 stainless steel mullions

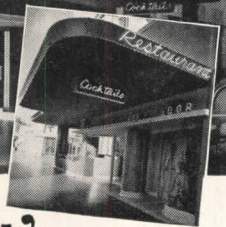
■ *The facade of this 22-story office building has attracted wide interest because it lacks the heavy masses of masonry conventional for a building of this size. To create the impression of lightness, structural columns between windows were faced with stainless steel mullions. Over 20 tons of the metal was used. Since the surface of the stainless steel stays permanently bright—unaffected by all kinds of weather—building maintenance costs are materially reduced. The metal is also exceptionally strong and durable. If you'd like to keep up to date on uses for stainless steel, ask to receive our monthly publication ELECTROMET REVIEW.*

ELECTRO METALLURGICAL COMPANY

Unit of Union Carbide and Carbon Corporation 
30 East 42nd Street, New York 17, N. Y.



Hollywood and Vine



Seaporcel...it's practically ageless!

The Belasco Restaurant (Hollywood, California) is a new Seaporcel Porcelain Enamel job completed just recently. It's new . . . it's brilliant . . .

BUT . . . look at the "old timers" here depicted . . . these installations range from 7 years to 13 years in age. They are all sheathed in Seaporcel and . . .

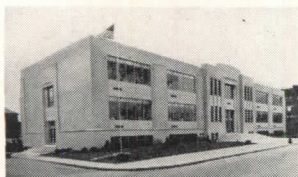
STILL HAVE THAT "NEW LOOK."



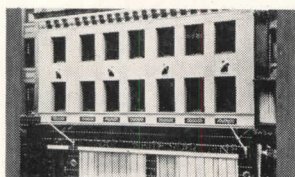
←
10 years young . . . Perry Theatre, Pottsville, Pa. John Eberson, N. Y., Architect. Entire Tower Facade in Seaporcel.



→
. . . 9 years young: Cambridge High & Latin School, Cambridge, Mass. C. R. Greco, Boston, Arch. Decorative Towers in Seaporcel Limestone.



7 years young . . . Conaty High School Pittsfield, Mass. J. R. Hampson, Pittsfield, Mass., architect. All Spandrels in Seaporcel Porcelain Metal.



13 years young . . . Cunard White Star Line Bldg., Boston, Arch. Kilham, Hopkins & Greeley, Boston. Curtain of Seaporcel dropped over old building.

Seaporcel* Architectural Porcelain Enamel is porcelain enamel deluxe . . . proved color fast and durable regardless of time or weather.

Write today for catalog showing applications and current jobs.

SEAPORCEL METALS, INC.

Formerly Porcelain Metals, Inc.

28-02 Borden Avenue, Long Island City 1, N. Y.

Complete American Federation of Labor Metal Fabricating and Enameling Shop

Also manufactured on the West Coast by

SEAPORCEL CORPORATION OF CALIFORNIA

represented by: DOUGLAS McFARLAND & CO.

1491 Canal Street, Long Beach, California

*Reg. U. S. Pat. Off.



Seaporcel

Member: Porcelain Enamel Institute, Inc.

CONNOR

Forest Products Since 1872

"LAYTITE" MAPLE FLOORING

MFMA Specifications

The World's Finest — Bar None

Write For Illustrated 75th Anniversary Booklet

CONNOR LUMBER AND LAND COMPANY

PHONE No. 3

Marshfield, Wisconsin P. O. Box 112-R

Behind the Mills — The Connor Timber Stands

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.

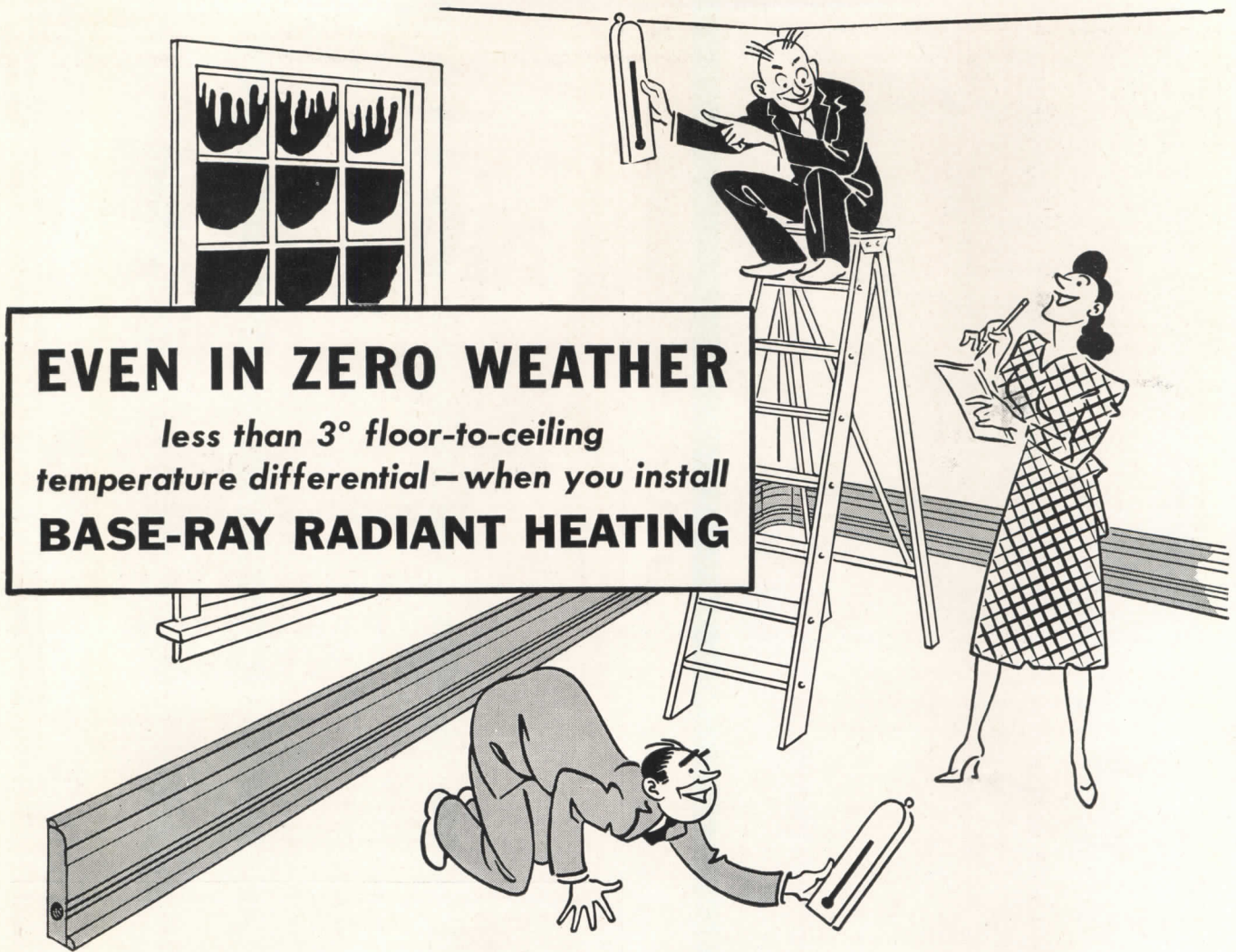
WRITE NOW for catalog for full details on model LP-20 (illus.), model LP-40 with self-sustaining hinge, and a complete line of conventional models.

DEPT. AR.

THE SPERZEL COMPANY

All Sperzel Seats fit Standard Bowls

123 14th AVENUE S. • MINNEAPOLIS, MINN.



The amazingly even heat distribution provided by Burnham BASE-RAY® Radiant Baseboards marks a new high in heating efficiency and comfort. It's a point that never fails to get the interested ear of Mr. & Mrs. Home Owner, for it cuts down chill-provoking air currents to the vanishing point. No wonder owners of BASE-RAY installations are so enthusiastic in their praise of this practical approach to Radiant Panel Heating.

Yes, Burnham BASE-RAY Radiant Heating has been tested in thousands of homes for nearly three years. And

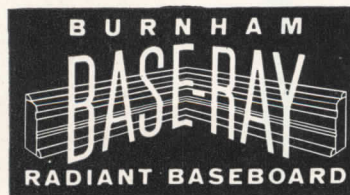
Burnham engineers, who pioneered the development of Radiant Baseboards, have worked out installation methods for you that are simple, practical and inexpensive.

Recommend nationally advertised Burnham BASE-RAY Radiant Baseboard heating systems. They're the original — a *proven* product! You can be sure of results . . . sure of delivering complete satisfaction.

If you are not familiar with BASE-RAY, get all the facts.

®Reg. U.S. Pat. Off.

Mail coupon below for Booklet which gives ratings and installation data on BASE-RAY Radiant Baseboards.



NOW! Increased Base-Ray production reduces delivery time.

Burnham Corporation

"PIONEERS OF RADIANT BASEBOARD HEATING"

IRVINGTON, N. Y., Dept. AR-128



Burnham Corporation Dept. AR128
 Irvington, New York

Please send me copy of "Ratings and Installation Guide" on BASE-RAY Radiant Baseboards.

Name.....

Address.....

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

TERRAZZO in action



WHEN THE CHIPS ARE DOWN

Terrazzo STANDS OUT

STEADFAST AND MARBLE-HARD

Traffic's wear and tear hold no terrors for Terrazzo. No matter how demanding the requirements, Terrazzo floors last as long as the building. Under the most punishing of day-in, day-out traffic, Terrazzo stands unyielding.

Available for floors, stairs, wainscots and walls, Terrazzo is as versatile as an architect's imagination. Its marble-hardness offers an easy-to-clean surface that requires no costly repairs, no costly paint jobs—and virtually no maintenance expenditures. Specify Terrazzo—and enjoy permanent service.



For Free AIA Kit—a complete reference work about TERRAZZO, the once-in-a-lifetime floor — write

THE NATIONAL TERRAZZO AND MOSAIC ASSOCIATION, INC.

1420 New York Avenue, N. W., Dept. R, Washington 5, D. C.

Specify
MONARCH
INSTANT EXIT
PANIC DEVICES



★ **FULL DETAILS
IN SWEET'S
CATALOG**



Write for Literature

CLAYTON & LAMBERT MFG. CO.
1705 DIXIE HIGHWAY • LOUISVILLE 10, KENTUCKY



Design 4174

**CUTLER
U. S.
MAIL BOXES**

are available from your own designs—from our standard designs—or from semi-special designs, as illustrated.

Furnished in all suitable materials.

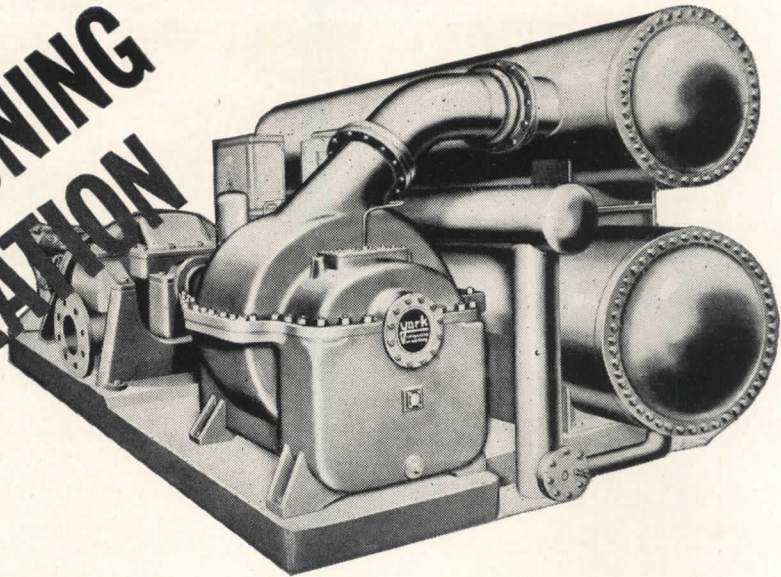
Catalog in Sweets

ESTABLISHED 1883

Cutler Mail Chute Co

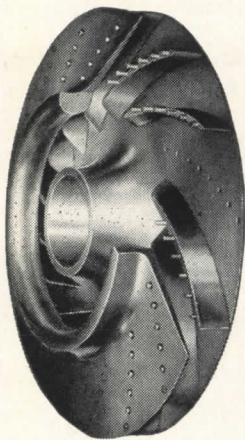
ROCHESTER 7, N. Y.

**AIR CONDITIONING
REFRIGERATION**



ONLY YORK HAS

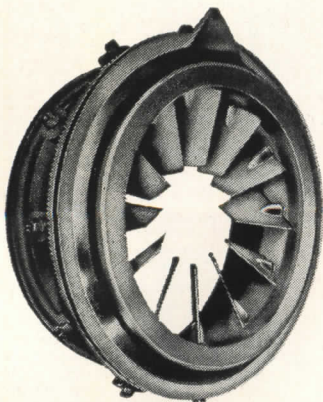
**Turbo Compressors with
Stainless Steel Impeller Wheels . . .**



Available on no other compressor, yet they're standard equipment on York Turbos! Wheels constructed *entirely* of turbine quality stainless steel, corrosion-proof . . . and erosion resistant . . . assure years of operation at initial high efficiency.

ONLY YORK HAS

Pre-Rotation Vane Control . . .



Exclusive with York, a *gradual acting* multi-radial vaned control, constructed of accurately machined non-ferrous materials. Ring and pinion gear movement insures smooth vane opening and closing—multiple vanes give *precise adjustment* of refrigerant flow down to minimum capacities . . . impart a *flow pre-rotation*. Result—inherent *stability of operation* over the widest capacity ranges.

York gives you these 2 exclusive features at no extra cost. They put the York Turbo in a class by itself!

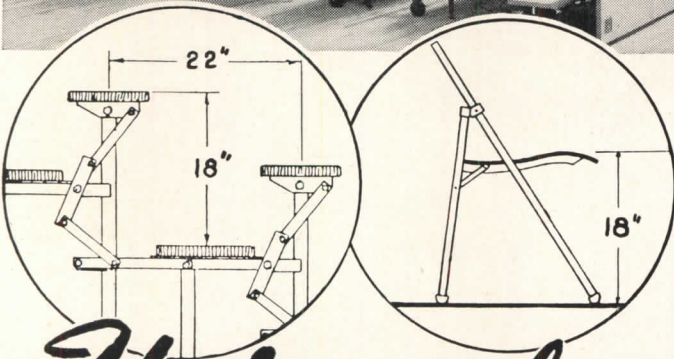
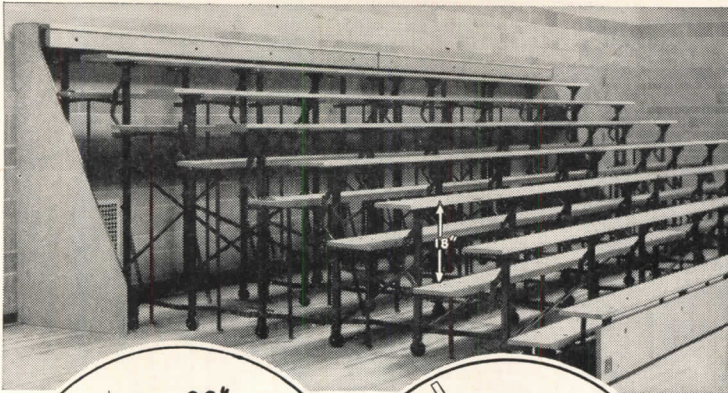
York Corporation, York, Pennsylvania.

YORK *Refrigeration and Air Conditioning*



HEADQUARTERS FOR MECHANICAL COOLING SINCE 1885

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

CHAMPAIGN

BLEACHER COMPANY

Bleacher Experts for Over 30 Years
606 SOUTH NEIL STREET

ILLINOIS

CHROMTRIM
METAL MOULDINGS

for home
industrial
and commercial
installations

"The ECONOMY
Metal Trim for
Every Building
Use!"

Long-Lived
OKOLITE-OKOPRENE
CABLES
have extra factors of protection

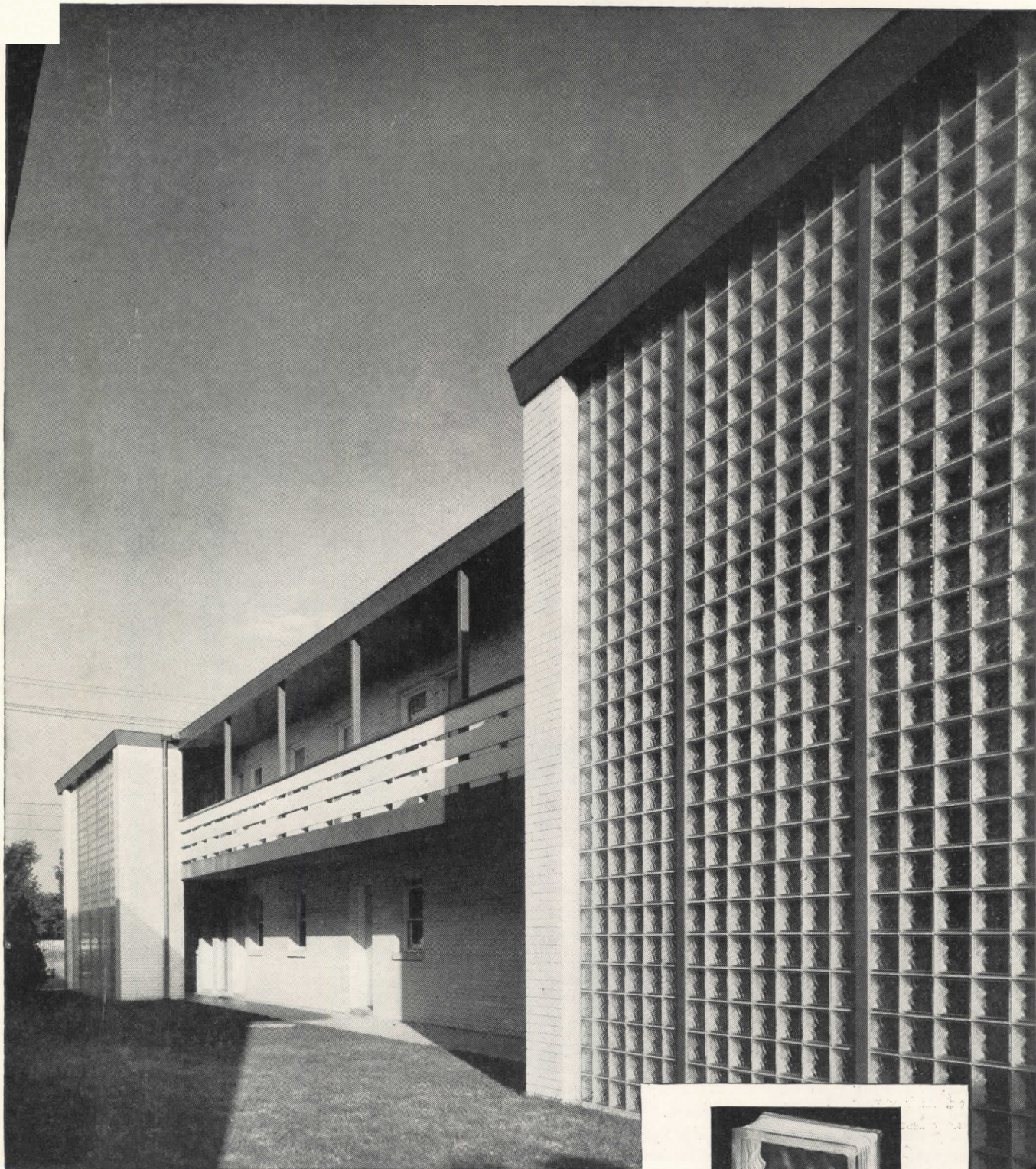
- 1 Conductors coated with corrosion-resistant Okoloy.
- 2 Internal corona cutting eliminated, dielectric strength increased by Semicon Tape (on Okolite-Okoprene cables operating at over 2000 volts).
- 3 Moisture-resisting, high voltage Okolite, an oil-base insulation proved in over 20 years of service, made with Up-River Fine Para rubber. U.L. approved as Type RWSN.
- 4 Weather-resistant Okoprene covering, pioneered in Okonite laboratories. Proved stable on millions of feet of cable installed since 1935.
- 5 Insulation and jacket applied together in single operation by strip-process. Uniformly vulcanized in continuous metal mold.
- 6 Insulation and covering receive but a single vulcanizing cure, eliminating life-shortening effects of double vulcanizing.
- 7 In addition to a-c tests, every cable is given high-voltage d-c tests more severe than those of other cable manufacturers.

For further data on the design, installation or electrical operating advantages of Okolite-Okoprene, write for your copy of Bulletin AR-1037 to The Okonite Company, Passaic, New Jersey.

OKONITE OKONITE SINCE 1917
insulated wires and cables

6783

Write today for the CHROMTRIM metal mouldings catalog.
R. D. WERNER CO., Inc., 295 Fifth Ave., N. Y. 16
In Canada: R. D. WERNER COMPANY, LTD., Port Dalhousie, Ontario

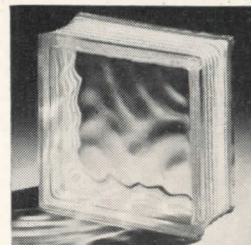


E. L. ANDERSON COMPANY, CHICAGO, DESIGNERS AND BUILDERS

Secret of the hidden stairs: Twin screens of Insulux Glass Block rise in plane surfaces from ground to roof, concealing the otherwise unsightly outside stairways of these new Chicago apartments.

Privacy is assured without a sacrifice of daylight.

American Structural Products Company is a wholly owned subsidiary of the Owens-Illinois Glass Company. It has taken over the manufacture and sale of Insulux Glass Block and other Owens-Illinois structural products. For information, address Dept. E13, P.O. Box 1035, Toledo 1, Ohio.



INSULUX

GLASS BLOCK

**AMERICAN STRUCTURAL
PRODUCTS COMPANY**

Subsidiary of

OWENS-ILLINOIS GLASS COMPANY

YOUNG BUILDS HEATING EQUIPMENT FOR ALL INDUSTRIAL APPLICATIONS



CONVECTORS FOR THE OFFICE

For private and general offices, i.e. Office of T. L. Fawick, President, Fawick Airflex Co., Inc. Cleveland, Ohio, (left), Young Convectors maintain uniformity of temperature so desirable for maximum comfort and human efficiency.



UNIT HEATERS FOR THE PLANT

This view of the Fawick Airflex plant shows typical installations of Young Unit Heaters. "Vertiflow" Units (center) deliver heat from above cranesway. Horizontal Units heat areas with low ceilings.

● Young Heating Equipment is the solution to the space heating problems of today's large, modern offices and multi-windowed, expansive plant interiors. Young Convectors and Unit Heaters furnish an abundance of healthful heat where it's needed. For example: Young Convectors provide a steady flow of clean, warm air . . . circulated by convection, augmented by radiation . . . with quick response to modern thermostatic controls. Likewise, Young Unit Heaters, last word in design, tested in service, deliver large quantities of heat for any industrial application. Write for free catalogs on the complete Young line of heating, cooling and air conditioning equipment and name of nearest engineering representative.

YOUNG HEAT TRANSFER PRODUCTS



T. M. REG. U. S. PAT. OFF.

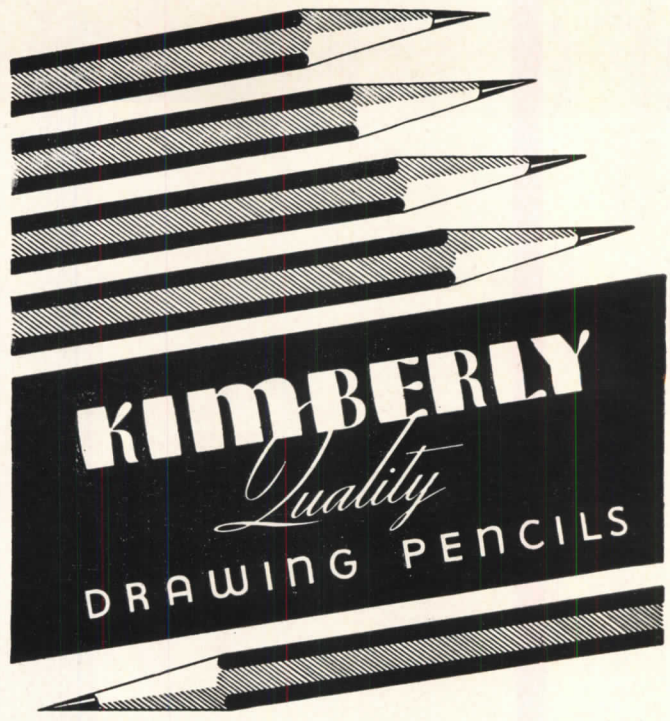
YOUNG RADIATOR CO.
Dept. 518-M

General Offices: Racine, Wisconsin, U. S. A.
Plants at Racine, Wisconsin, and Mattoon, Illinois

**HEATING, COOLING AND
AIR CONDITIONING PRODUCTS**
Convectors • Unit heaters • Heating coils • Cooling coils • Evaporators • Air conditioning units •

**AUTOMOTIVE AND INDUSTRIAL
PRODUCTS**

Gas, gasoline, Diesel engine cooling radiators • Jacket water coolers • Heat exchangers • Intercoolers • Condensers • Evaporative coolers • Oil coolers • Gas coolers • Atmospheric cooling and condensing units • Supercharger intercoolers • Aircraft heat transfer equipment



KIMBERLY *Quality* DRAWING PENCILS

Makers of Fine Pencils since 1889

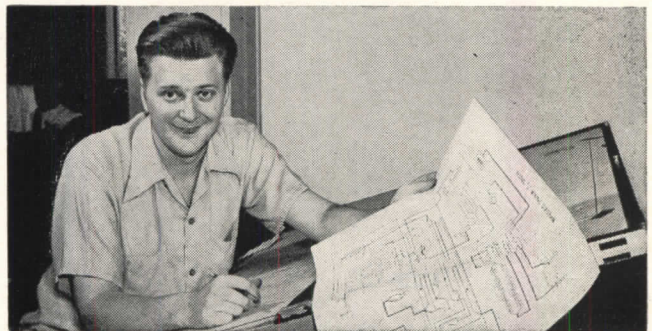
General Pencil Company

INCORPORATED

67 FLEET STREET



JERSEY CITY 6, N. J.



A new future for your drawings!

Now you can ask: "How will the prints be used?"

Then you can reproduce each drawing as the type of Ozalid print best suited for the job at hand.

Examples of your new versatility:

- You can reproduce your drawings on light, standard or heavy weight paper.

- You can produce "color coded" Ozalid prints—with lines in black, blue, red or sepia on a white background.

- You can save wear and tear on your drawings by producing translucent "master" copies, which can be used to produce the desired number of work prints.

- You can combine separate drawings on one work print—or on a translucent "master."

- You can produce plastic-coated work prints and translucent "masters," which are waterproof, oil-proof, resistant to wear.

Always the same simple operation—no matter what your choice. Exposure and Dry Development takes only seconds in an Ozalid machine. Your prints are delivered dry, ready for immediate use, positive copies (not negatives). Anyone can be the operator. Write for Free copy of Ozalid Streamliner booklet, containing 10 types of Ozalid Prints. DEPT. NO. 214

OZALID

A Division of
General Aniline & Film Corp.

Johnson City, New York

Ozalid in Canada—

Hughes Owens Co., Ltd., Montreal

ONLY *Olsonite* SEATS Have All These Selling Features!

Whether White, Black, Color or Pearlescent, It is the Same Solid Olsonite Throughout . . .

Long Life, Stain-proof Bumpers Used On All Olsonite Seats . . .

Complete line of Models and Colors

Scientifically Designed In Both Proportion and Contour with Smooth Curves and Edges . . .

When Installed, No Metal Fastenings Show — Brass Metal-Hinge Posts are Smartly Olsonite Covered . . .

Exclusive New, Patented Olsonite Hinge Design.

Absolutely Flat Under-Surface — Avoids Dirt and Germ Deposits!

Beautiful, Lustrous, Olsonite ALL THE WAY THROUGH!

NOT CONCAVE —
NOT CORE-COVERED —
NOT HOLLOW —
BUT LUSTROUS OLSONITE
ALL THE WAY THROUGH!

Lowest-Priced Seat of This Quality on the Market — and Guaranteed a Lifetime!

Olsonite Seats are far superior to ordinary wood, rubber, sheet-covered, or plastic-coated seats . . . and are far greater values! They won't crack, chip, peel, stain, or lose luster! Non-inflammable! No exposed metal. (Sold only through authorized plumbing and heating jobbers to Master Plumbers.) Contact your local jobber today. For full information write Olsonite Plastics Division.

Olsonite PLASTICS DIVISION

DIVISION OF SWEDISH CRUCIBLE STEEL COMPANY, DETROIT 11, MICH. (856) BUTLER AVE.



Announcing

HENDRICK

Bulator

the first practicable combination of an ornamental grille and a deflecting vane grille.

Recently developed by Hendrick, and tested by Professor G. L. Tuve of the Case Institute of Technology, Cleveland, the Hendrick BULATOR* meets every requirement of architect and engineer for a grille of attractive appearance with proper air throw and spread.

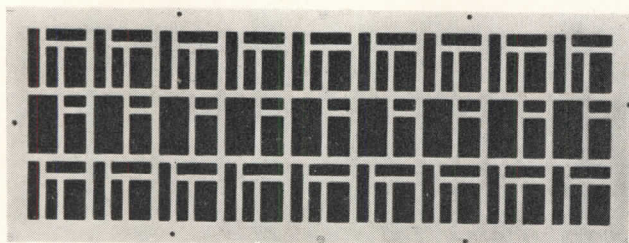
Mounted just behind the ornamental grille, the deflecting grille is not noticeable, but gives the air throw and spread that may be specified by the engineer. The tests made at the Case Institute showed that the presence of the ornamental grille made "very little difference on either the air stream pattern or the throw."

The vanes of the deflecting grille are adjustable so that the air flow can be deflected to right or left, up or down, or in a combination of directions.

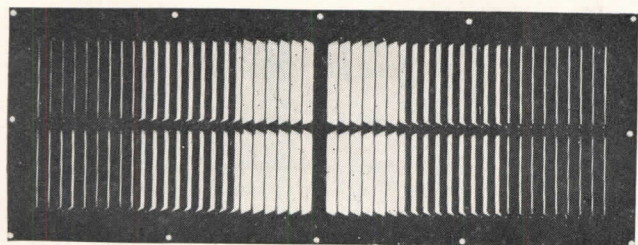
A wide variety of Hendrick ornamental grilles, with ample open area, are available, so that the BULATOR enables the architect to combine with the air-conditioning system of a building ornamental grilles which harmonize with the decorative scheme, without appreciably affecting the air throw.

*Beauty + Ventilator

Write for full information



Photograph taken with deflecting vanes less than an inch behind grille, shows that vanes are not noticeable.



Vertical deflecting vanes, showing how the vanes may be set to produce any desired air stream pattern.



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

New Triple-service OASIS

WATER-COOLER SENSATION FOR OFFICES OF EXECUTIVES, DOCTORS, DENTISTS!

1. COOL DRINKING WATER
2. 28 BIG ICE CUBES
3. REFRIGERATED STORAGE



This new addition to the extensive OASIS line is the most popular water cooler ever developed for executives, doctors, dentists, and professional men. The unit's Monel-metal lined, refrigerated compartment keeps beverages or pharmaceuticals at constant 35° to 38° F! Also holds 28-full-sized ice cubes in "Magic Touch" quick-release trays. All this in addition to properly cooled drinking water. Three important services in one space-saving unit! Write for specifications!

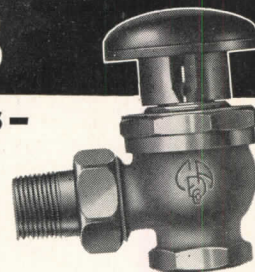


SPECIFY OASIS
pressure and bottle-type
electric drinking
water coolers for
every requirement

THE EBCO MFG. CO., 401 W. Town St., Columbus 8, Ohio
World's Oldest and Largest Maker of Electric Drinking Water Coolers

DUNHAM RADIATOR VALVES

HAVE WHAT IT TAKES —
WHERE IT TAKES IT



ON THE JOB

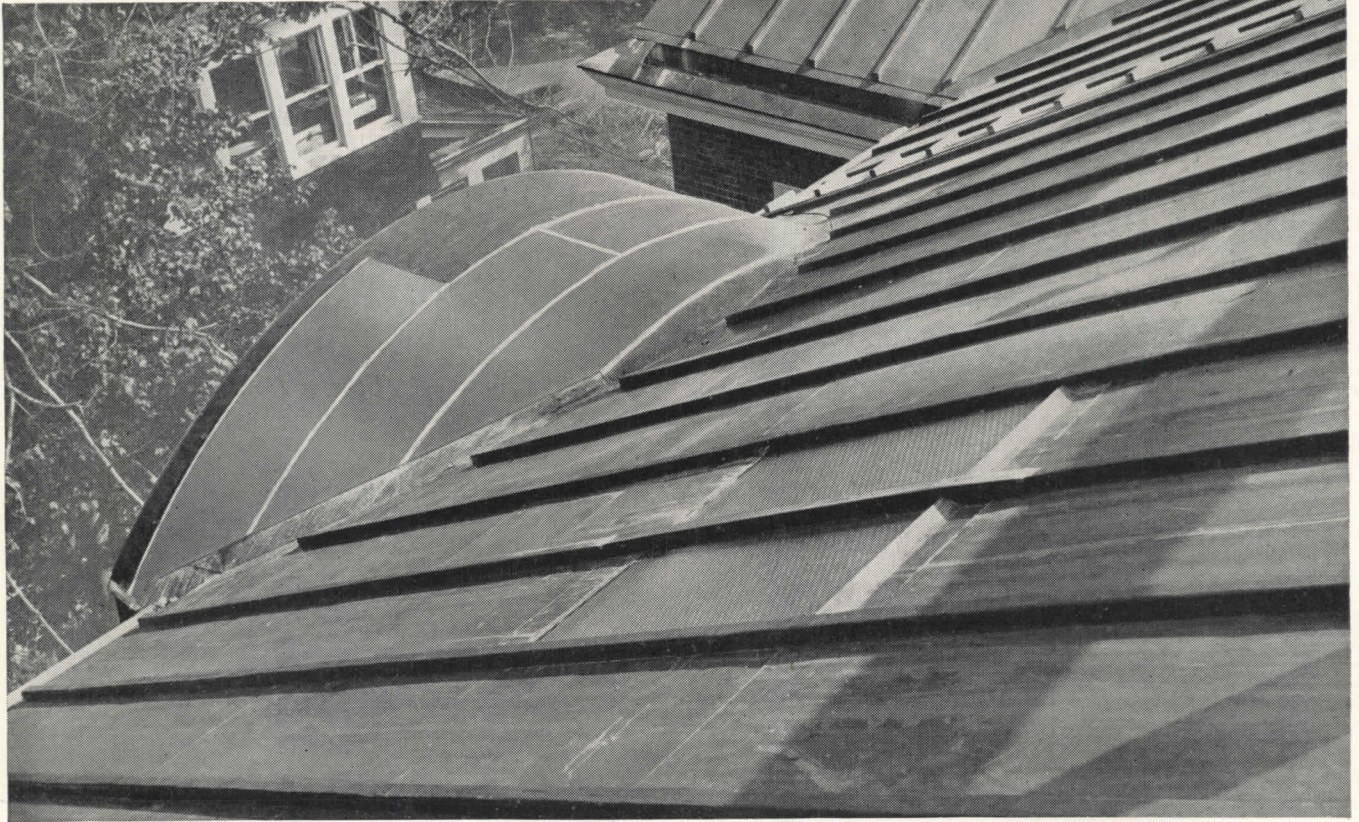
For Greater Efficiency — Longer Lasting Service

Packless, Spring Packed and Packed Stem. A Packless valve that is really packless—100% leak proof. All types have non-rising stem which permits quiet opening and closing and reduces wear caused by friction.

Precision built to Dunham's traditional high standards. Maintenance costs are lower because simple design permits easy disc replacements. Durable construction assures longer service than ordinary traps. Operates efficiently from 25 in. vacuum up to 15 lb. gage pressure. C. A. Dunham Co., 400 West Madison St., Chicago 6, Illinois.

DUNHAM HEATING MEANS
BETTER HEATING

COPPER AND COMMON SENSE



Architect: Jens Fredrick Larson, New York; Contractor: O. A. Petersen Construction Co., Montclair, N. J.; Sheet Metal Contractor: Moeltner Company, Montclair, N. J.

ANOTHER **LASTING** ROOF OF **REVERE COPPER**

A NEW dormitory is now being completed at Upsala College, East Orange, N. J. Among the quality features that will preserve this handsome building for generations of future students are a batten seam roof and box gutter utilizing more than 13,000 pounds of Revere copper sheet and copper strip.

Revere copper for roofs, flashings and gutter linings is the common sense choice whenever you want *extra* years of service. Not only is copper the most enduring of all the commonly used sheet metals when exposed to the elements, but the Revere Research Laboratories have developed design and installation data that help you provide the very finest sheet copper construction.

Whenever you are faced with a problem concerning the design or installation of copper, look first to the Revere sheet copper manual entitled "Copper and Common Sense"; and if you do not find the complete answer there, the Revere Technical Advisory Service,

Architectural, will be glad to help you. The chances are that they have already had experience with a similar problem. In any case, they'll do their best to help solve yours.

There is no charge or other obligation for this service. Simply call your Revere Distributor or the Revere Office nearest to you.

REVERE

COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801
230 Park Avenue, New York 17, New York

Mills: Baltimore, Md.; Chicago, Ill.; Detroit, Mich.; New Bedford, Mass.; Rome, N. Y.—Sales Offices in Principal Cities, Distributors Everywhere

HOLLOW METAL

5 ACRES OF ONE-FLOOR FACTORY designed for straight line, efficient production

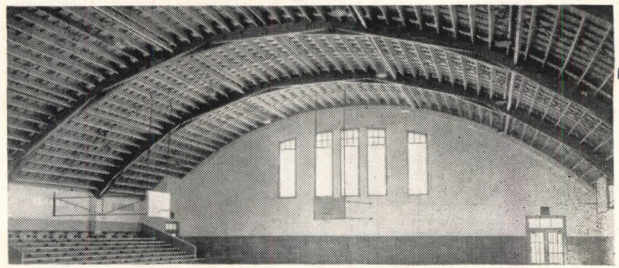


As specialists in the fabrication of bronze, aluminum, steel and stainless steel, we offer our services wherever hollow metal doors, interior trim, elevator enclosures, cold rolled mouldings and metal specialties are required.

JAMESTOWN METAL CORPORATION

104 Blackstone Avenue

Jamestown, N. Y.



Segmental ARCHES for Spacious Beauty

The gymnasium illustrated here employs four segmental arches with a clear span of 84 feet 6 inches. This type of arch combines full utilization of space with architectural beauty at a reasonable cost. ● The modern wooden arch, either segmental or glued laminated, is ideal for gymnasiums, auditoriums, skating rinks, basketball pavilions, super markets and similar buildings. Consultation available through our Engineering Departments without obligation.

Southern Oregon College of Education Gymnasium. Architect: the late John V. Bennes, Portland, Oregon



TIMBER STRUCTURES, INC.

Send for folder ENGINEERING IN WOOD

P. O. Box 3782, Portland 8, Oregon • 535 Fifth Ave., New York 17, New York • P. O. Box 25, Oakland 1, California • 120 S. La Salle St., Room 1720, Chicago 3, Illinois

IMPORTANT INFORMATION ON BANK VAULTS

FREE ON REQUEST!



Here is worthwhile information every bank architect should have on file:

● *Brief outline of fundamentals* in modern architectural techniques of bank vault design attractively presented in a well-illustrated folder . . . "Today's Master Architect and the Modern Bank."

● *Complete specifications manuals* for 7 1/2", 10", 12" and 16" bank vault entrances with the exclusive and revolutionary interlocking vestibule.

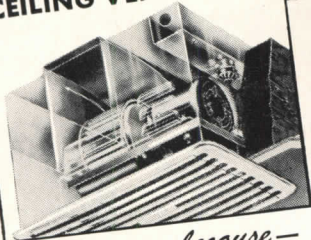
Write today for your copies. Specify manual or manuals you want.

HERRING-HALL-MARVIN SAFE COMPANY

General Offices & Factory
HAMILTON, OHIO

Only **TRADE-WIND** MAKES THE

CLIPPER CEILING VENTILATOR



... better 5 ways because —

1. Mounts in ceiling directly above stove — instantly catches heat, grease and odors as they rise.
2. Only an inconspicuous "dripless" ceiling grille is visible, yet unit easily installed.
3. Powerful squirrel-cage blower (not a fan!) creates fast-moving stream of air to do job efficiently.
4. Because of patented construction which isolates motor from greasy air stream, unit guaranteed 5 years.
5. Available everywhere. Stocked by dealers coast to coast.

See Sweet's A. I. A. File 30-D-1 or mail coupon.

Trade-Wind Motors, Inc.
5707 S. Main St., Los Angeles 37, Calif.

Name _____

Address _____

Announcing... A New Store Book

Ben Schnall Photo

"Planning Stores That Pay"

by Dr. Louis Parnes, A.I.A.

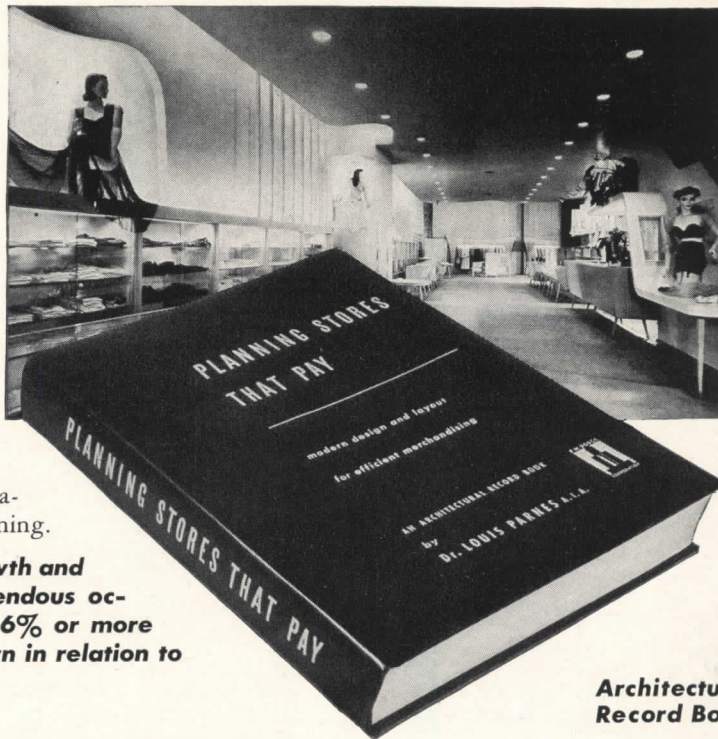
for

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.

Special Pre-Publication Price \$12.00

You can save \$3.00 by ordering your copy today. The regular price of "Planning Stores That Pay" will be \$15.00 after December 15, 1948. But orders received in advance of this publication date will be accepted at the special pre-publication price of only \$12.00. Mail the coupon at the right to acquire this brand new treatise on store planning at the special introductory price. Your copy of the book will be sent to you promptly on the day of publication.

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 $\frac{3}{4}$ x 11 $\frac{1}{4}$; 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. Fixtures. Service Stations. Flexible and Standardized Equipment. 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. Hutton
Morris Ketchum, Jr.
Ernest J. Kump
Stiles O. Clemens

Money-Saving Coupon

BOOK DEPARTMENT, ARCHITECTURAL RECORD
119 West 40th Street, New York 18, N. Y.

Enter my advance order for copies of "Planning Stores That Pay," by Dr. Louis Parnes, A.I.A., at the prepublication price of \$12.00. (Regular price \$15.00 after December 15, 1948.) For N. Y. C. add \$.24 for 2% sales tax — Total \$12.24.

Name

Address

City Zone State



**"Specify
Beauty and Utility—
Not Just Doors!"**

—And that means Modernfold Doors. They're fabric-covered for colorful beauty, metal-framed for rigidity and strength. Their accordion-like action in opening and closing enables them to save space . . . effect quick, easy room division. Write us for full details.

**modernfold
DOORS**

NEW CASTLE PRODUCTS
New Castle Indiana
In Canada: Raymond Mfg. Co., Ltd., Montreal
Consult your local telephone book
for the names of our Installing Distributors



Bird pioneered and continues to lead in the development of modern asphalt roofing. There is a Bird roof designed for your needs. Available in a wide range of distinctive types, colors and designs . . . see them today.

BIRD & SON, inc.
EST. 1795

East Walpole, Mass. - New York - Shreveport, La. - Chicago

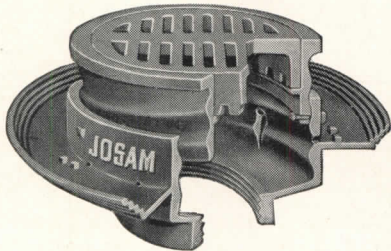
What goes UP?

What goes DOWN?

to meet variations in floor levels?
... THE NEW ADJUSTABLE TOP

Josam **LEVELEZE**
LEVELS EASY
FLOOR DRAIN

Now . . . where the drain has been set too high or too low . . . or where floor level is changed—for any reason—after the LEVELEZE drain is installed, simply raise or lower the adjustable top of the JOSAM LEVELEZE Floor Drain and presto—the new level is met, drainage is assured and the cost of adjustment is negligible. Send coupon below for literature.



SERIES 3610—with deep set tractor grate shown
SERIES 3510—with anti-tilting grate optional

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

Please send me literature on new Leveleze Floor Drain

Name

Firm

Address

City State



you can
see that

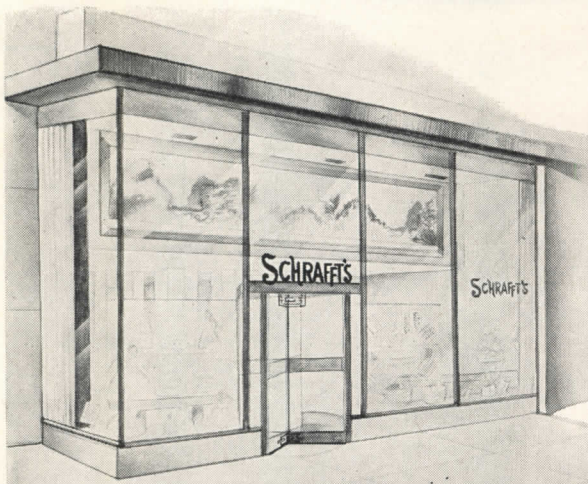
Trinity White

is the whitest
white cement!

You'll get fine results with this extra white cement. It's true Portland Cement made to ASTM and Federal Specifications. If your dealer does not have it, write the office nearest you: Trinity Portland Cement Division, General Portland Cement Co., 111 West Monroe St., Chicago; Republic Bank Bldg., Dallas; 816 W. 5th St., Los Angeles.

as white as snow





SCHRAFFT'S

Famous for Fine Food

Depends on AGITAIR

Famous for Fine Air Distribution



Versatile Agitair Type R's in Schrafft's Rockefeller Center, New York blend perfectly with surroundings, yet supply 100% air distribution. Other Schrafft's Located in New York, Boston, Syracuse, Philadelphia and Newark.

In the newest of Schrafft's 46 stores, you'll see the latest achievements in modern design. Naturally you'll see Agitair Type R Diffusers providing noiseless, draftless air distribution for complete customer comfort.

Look around—you'll find Agitair Type R's

in the smartest places . . . because no other diffuser offers so many advantages. *Write for Complete Data.*

AIR DEVICES, INC.

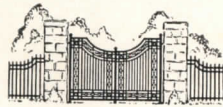
17 East 42nd Street • New York 17, N. Y.
Air Diffusers • Air Filters • Roof Exhausters



Stewart Iron Picket Fence

● Stewart Chain Link Wire as well as Plain and Ornamental Iron Fences are made in a wide range of types and sizes to cover the fencing requirements of all classes of property.

DON'T OVERLOOK STEWART
If your plans call for Iron or Wire fencing



Stewart Ornamental Iron Gates



Stewart 3TH Chain Link Wire Fence

In addition to fence, Stewart produces many other products for the protection and beautification of residential and industrial property. If you do not have a complete file of Stewart Catalogs, we suggest you write for them.

Stewart IRON and WIRE FENCES

THE STEWART IRON WORKS CO., INC.
1577 Stewart Block
CINCINNATI 1, O.
Experts in Metal Fabrications since 1886

Send for

Paddock
Swimming Pool Equipment
PRICE LIST

Fully Illustrated
CONDENSED PRICE LIST
OVER 300 ITEMS, INCLUDING...

- Filter Accessories
- Chlorinators
- Chemicals
- Pool Heaters
- Pumps and Motors
- Diving Boards
- Filters
- Coco Matting
- Ladders
- Underwater Lights
- Pool Paint
- Leaf Skimmers
- Paddock Silicite
- Complete Fittings for Recirculating Systems
- Suction Cleaners
- Cleaner Parts
- Brushes
- Brush Rebristling
- Strainers
- Chemical Feeders
- Automatic Surface Skimmer
- Automatic Water Level Control
- Life Buoys
- Life Guard Chairs
- Life Line



"The Nation's Finest"

This is the equipment designed for and widely used in famous Paddock Swimming Pools.

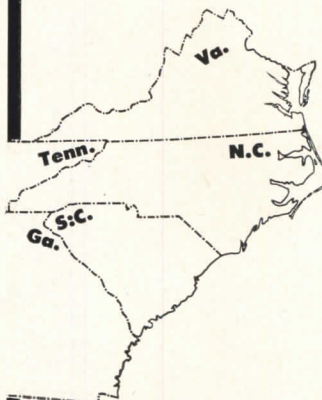
Paddock Pool Equipment Co.
8400 Santa Monica Blvd., Los Angeles 46, Calif.

Send Illustrated Paddock Equipment Price List.

NAME _____
ADDRESS _____
CITY _____ STATE _____

MONARCH Elevators are a Southern Institution

... preferred by Southern industry because Monarch engineers are thoroughly familiar with Southern needs and because Monarch is close by to give prompt service. If it's for the South, always call on Monarch for an estimate.



Electric Freight and Passenger Elevators and Lifts
Oil Hydraulic Elevators
Residence Elevators
Dumbwaiters

Monarch Elevator and Machine Co.

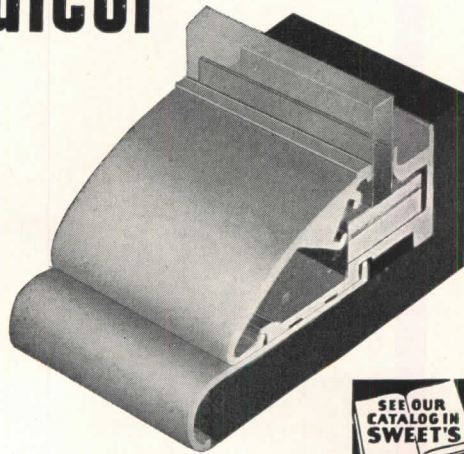
GREENSBORO, N. C.

The Largest Builder of Freight and Passenger Elevators in the Southeast

MONARCH Elevators

METAL FOR STORE FRONTS
FULLY EXTRUDED
ALUMILITED ALUMINUM

Matcor



SEE OUR CATALOG IN SWEET'S

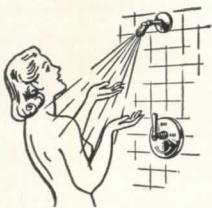
20
5

FOR DETAILS WRITE

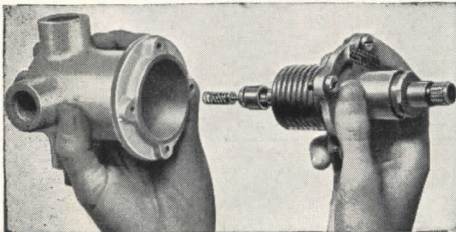
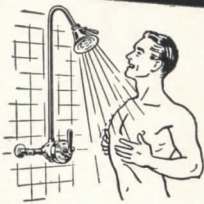
Matcor STORE FRONTS

PROVIDENCE 9 RHODE ISLAND

For SAFETY • COMFORT • ECONOMY



Bathers can really relax and enjoy a Powers regulated shower. No danger of scalding. No unexpected temperature changes.



ONLY ONE MOVING PART

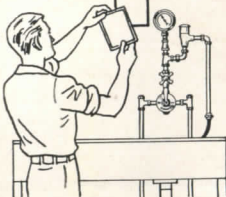
SIMPLICITY and durable construction insure many years of efficient carefree operation. Mixer body is made of bronze and parts subject to wear have a hard chromium finish.



For modern showers the Safety of Powers Mixers is indispensable.



Safest for use by children, the aged or infirm. Powers mixers are widely used in hospitals on hydrotherapeutic and infant baths.

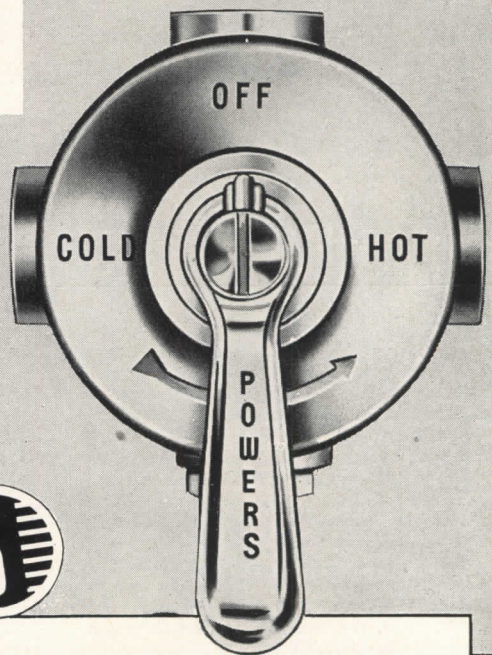


Accurate within $\frac{1}{2}$ ° F. Powers mixers are used by leading builders of X-Ray and color film developing units.



Back in 1923 Powers introduced the first and original pressure equalizing type water mixer. Now it offers the SAFEST thermostatic water mixer made.

TYPE H MIXER For exposed piping $\frac{1}{2}$ " pipe connections. Capacity: 6 to 10 gals. per min. at 45 lbs. pressure. Dial diam. $3\frac{1}{4}$ ". Mixer for Concealed Piping has 6" diam. dial.



use

POWERS

Thermostatic SHOWER MIXERS

they are **SAFE** against scalding caused by

1 PRESSURE or **2** TEMPERATURE

fluctuations in water supply lines

To assure the safety and comfort required of today's modern showers specify POWERS Type H Mixers.

Being *thermostatic* they give positive two-way protection against scalding or jumpy shower temperatures caused by pressure or temperature changes in water supply lines . . . two dangerous variables in all shower installations.

POWERS mixers are modern, really safe and non-scald. They're economical too. They save time and there is no waste of hot or cold water while waiting for a shower at the right temperature.

48HA

Phone or write our nearest office for Circular H48

CHICAGO 14, ILL. 2720 Greenview Ave. Phone BUckingham 1-7100
NEW YORK 17, N. Y. 231 East 46th St. Phone Eldorado 5-2050
LOS ANGELES 5, CAL. 1808 West Eighth St. Phone Drexel 2394

THE POWERS REGULATOR CO.

OFFICES IN 50 CITIES • SEE YOUR PHONE BOOK

Over 55 Years of Water Temperature Control

ARCHITECTURAL RECORD

Published by F. W. Dodge Corporation, 119 West 40th Street, New York 18

Copyright 1948. All rights reserved

SEMI-ANNUAL INDEX • VOLUME 104 • JULY-DECEMBER 1948

BTS—Building Types Study • TSS—Time-Saver Standards • AE—Architectural Engineering section

A

Abraham, Pol. See "Public Housing In Orléans."
Abrahams, David J., & Assocs., Archts. Own office, Boston, Mass.—July, pp. 100-101.
"Acoustical Design of the Theater." Article by Vern O. Knudsen and Cyril M. Harris—Nov., pp. 139-144.
Acoustics. See "Acoustical Design of the Theater"; Architectural Acoustics.
Aggregates. See "Lightweight Aggregates Cut Costs in Two Buildings"; "Lightweight Aggregates Win New Attention."
Ahuntsic, P. Q. Railroad Station. See Canadian National Railways.
A.I.A., Eightieth Convention, Salt Lake City, Ut.—Aug., pp. 88-91, 174.
Ain, Gregory, Joseph Johnson & Alfred Day, Archts. House for Mr. & Mrs. Albert Tarter, Los Angeles, Cal.—BTS—Sept., pp. 117-119.
Alcohol plant. See "Change House" for Alcohol Plant.
Allen F. Ellwood, and Weaver W. Pangburn. Articles, "The Planning of Recreational Centers"—BTS—Dec., pp. 110-114.
Allen, F. Ellwood, Organization, Park and Recreation Planners. See Raymond, Antonin.
Amstel Station, Amsterdam—BTS—Oct., pp. 128, 137.
"Architects Anonymous." Editorial by Kenneth K. Stowell—July, p. 87.
Architects' Collaborative, The. See Gropius, Walter.
Architects' Offices. See Offices, Architects'.
Architectural Acoustics—Reverberation Time Calculations, by Vern O. Knudsen and Cyril M. Harris—TSS—AE—Nov., pp. 157, 159.
"Architecture of Railroads, The." Article—BTS—Oct., pp. 123-129.
Ariston Restaurant, Mar del Plata, Argentina. Marcel Breuer, Carlos Coire and Eduardo F. Catalano, Archts.—BTS—July, pp. 136-139.
Aspirin factory. See Bayer Co. Div. Factory.
Assembly plant. See Chevrolet-Flint Assembly Plant.
Astor Theater, Boston, Mass. William Riseman Assocs., Dsnrs.—BTS—Nov., pp. 129-130.
Aul, Henry B., Landscape Archt. "Indoor-Outdoor Planting Beds." Part I—July, pp. 146-148; Construction Details—TSS—July, pp. 153, 155; Part II—Aug., pp. 143-144; Construction Details—TSS—Aug., pp. 155, 157.
Austin Co., The, Dsnrs. and Bldrs. Western Electric Co. plant, Allentown, Pa.—Dec., pp. 130-134.
Austin Company, Engrs. & Bldrs. Bayer Co. Div. Factory, Sterling Drug, Inc., Trenton, N. J.—BTS—Aug., pp. 124-127; Square D Company, Los Angeles, Cal.—BTS—Aug., pp. 132-135.
Automobile factory. See Chevrolet-Flint Assembly Plant.
Avenue Theater, Montreal, Quebec. Luke, Little and Mace, Archts.—BTS—Nov., p. 138.

B

Baker, C. H., Shoe Store, Glendale, Cal. Gruen & Krummeck—Victor Gruen, Archt.—Sept., pp. 132-134.
Bank. See Citizens National Trust and Savings.
Barahona, Mario. See Solano, Gabriel.
Barnum, Phelps. See Thompson, W. Stuart.
Bartholomew, Harland, and Assocs., City Planners. Summary of Study and Report on Traffic and Parking in Beverly Hills, Calif.—Dec., pp. 94-99.
Baseball Stadium, Cartagena, Colombia, S. A. Gabriel Solano, Jorge Gaitán, Alvaro Ortega, Edgar Burbano, Archts.—July, pp. 88-93.
Basements. See "Comparative Costs of Basements vs. Utility Rooms."
"Basis for the Highest Honor, The." Editorial by Kenneth K. Stowell—Nov., p. 91.
Bath house. See Municipal Bath House and Park, Austin, Tex.
Bayer Co. Div. Factory, Sterling Drug, Inc., Trenton, N. J. Austin Co., Engrs. & Bldrs.—BTS—Aug., pp. 124-127.
Beach house for Mr. & Mrs. Welton Becket, Cal. Wurdeman & Becket, Archts.—BTS—Sept., pp. 109-111.
Becket, Mr. & Mrs. Welton, Beach house, Cal. Wurdeman & Becket, Archts.—BTS—Sept., pp. 109-111.
Beverly Hills, Calif. Summary of Study and Report of Harland Bartholomew and Associates, City Planners, on Traffic and Parking—Dec., pp. 94-99.
Bissner, Harold J.; Harold B. Zook, Archts. Gwinn's Restaurant, Pasadena, Cal.—BTS—July, pp. 126-128.
Bloomington, Ill. Recreation Center. Antonin Raymond and L. L. Rado, Archts.—BTS—Dec., pp. 126-129.
Bonnet, Mr. & Mrs. Ted, House, Hollywood, Cal. Richard J. Neutra, Archt.—BTS—Sept., pp. 103-105.
Bourgeois, Victor. Projects for Brussels International Station, and Central Station, Brussels—BTS—Oct., p. 127.
Box factory. See Mengel Co. Plant.
Breuer, Marcel, Carlos Coire and Eduardo F. Catalano, Archts. Ariston Restaurant, Mar del Plata, Argentina—BTS—July, pp. 136-139.
Breuer, Marcel. Own house, Conn.—Oct., pp. 92-99.
Brussels, Belgium, Railroad Stations. Projects for Brussels International Station, and Central Station, Brussels. Victor Bourgeois, Archt.—BTS—Oct., p. 127.
Burbano, Edgar. See Solano, Gabriel.
Burlington, Ia. Railroad Station. Holabird & Root, Archts.—BTS—Oct., p. 141.

Buttress & McClellan, Inc., Los Angeles, Cal. Developed process, "Precast Method Eliminates Vertical Forms."—AE—Nov., pp. 151-152.

C

Canadian National Railways. Station at Midland, Ont. John Schofield, Chief Archt.; Stations at Ahuntsic, P. Q. and Pointe aux Trembles, P. Q.—BTS—Oct., p. 142.
Canadian Pacific Railway. Station at Leaside, Toronto, Ont.—BTS—Oct., p. 142.
Catalano, Eduardo F. See Breuer, Marcel.
Central Station, Milan.—BTS—Oct., p. 125.
Century's Meadows Theater, Fresh Meadows, N. Y. Voorhees, Walker, Foley & Smith, Archts. & Engrs. New York Life Insurance Co., Owners—BTS—Nov., pp. 134-135.
Chamberlain, Mr. & Mrs. R. W., House, Kensington, Conn. Moore & Salisbury, Archts.—BTS—Sept., pp. 97-99.
"Change House" for Alcohol Plant. See Shell Union Oil Corp.
Chevrolet-Flint Assembly Plant, Flint, Mich. Albert Kahn Assoc. Archts. & Engrs.—BTS—Aug., pp. 112-117.
Chitarin, Capt. & Mrs. W. S., House, Carmel, Cal. Albert Henry Hill, Dsnr.—BTS—Sept., pp. 100-102.
Citizens National Trust and Savings Bank, Los Angeles, Cal. Stiles Clements Assoc., Archts. & Engrs.—Oct., pp. 116-121.
City planning. See Superblock scheme; Beverly Hills.
Clements, Stiles, Assoc., Archts. & Engrs. Citizens National Trust and Savings Bank, Los Angeles, Cal.—Oct., pp. 116-121.
Clubs. See Downtown Club, Dallas, Tex.
Coire, Carlos. See Breuer, Marcel.
Color in industrial buildings. See "Functional Color in Industrial Buildings."
Commy, E. W. (G.E.) Kitchen Lighting Tests—TSS—AE—Sept., pp. 143-144, 149, 151.
"Comparative Costs of Basements vs. Utility Rooms." Study by Engineers of Housing and Home Finance Agency—AE—Nov., pp. 148-151.
Concrete Baseball Stadium. See Baseball Stadium, Cartagena, Colombia.
"Construction Outlook for 1949." Article by Thomas S. Holden and Clyde Shute—Dec., pp. 108-109.
Convection heating. See "Radiant and Convection Heating Combined."
Crawford, Mr. & Mrs. H. Barney, House, Oklahoma City, Okla. Walter T. & Robert W. Vahlberg, Archts.—BTS—Sept., pp. 120-121.

D

Davidson, J. R., Dsnr. House for Mr. & Mrs. Rubin

Sabsay, Los Angeles, Cal.—BTS—Sept., pp. 114-116.
Davidson, J. R., Dsnr. Landscaping by Ernest Wertheim. House for Mrs. Paul Kingsley, Pacific Palisades, Cal.—Aug., pp. 92-99.
Davison, Mr. & Mrs. M. P., House, Fresno, Cal. Wurster, Bernardi & Emmons, Archts.—BTS—Sept., pp. 88-91.
Day, Alfred. See Ain, Gregory.
Doner, H. Creston, Director of Design, Libbey-Owens-Ford Glass Co. Public Relations Offices, Toledo, O.—AE—Sept., pp. 135-137.
Downtown Club, Dallas, Tex. George Foster Harrell, Archt.—BTS—July, pp. 132-133.
Dreyfuss, Henry. Train design—BTS—Oct., p. 140.
Driscoll, Dan J., Archt. Municipal Bath House and Park, Austin, Texas—Dec., pp. 86-93.

E

Eastern Main Line Railroad Station. Lester Tichy, Archt.—BTS—Oct., pp. 143-146.
Eckbo, Royston & Williams. See Hill, Albert Henry. "Electric Radiant Heating Systems." Article—AE—Sept., pp. 138-142.
Electronics plant. See Western Electric Company.
Engine shed types, selection of, from Wasmuth's *Baulexikon*—BTS—Nov., p. 124.
"Enlightened Look at a Factory, An." Article concerning Gen. Robert Johnson's definition of the ideal factory building. (Illus. with photos of Johnson & Johnson factories)—BTS—Aug., pp. 108-111.
Eppenstein, James F. and Raymond Schwab, Archts. Felix Ruvalo, Mural. Henrici's Restaurant, Mdse. Mart, Chicago, Ill.—BTS—July, pp. 129-131.
Erick, Murray & Assocs. See Wurdeman & Becket. "Europe, Railroad Architecture in." See "Railroad Architecture in Europe."

F

Felciano, J. Clarence, Archt. Own office, Santa Rosa, Cal.—July, pp. 97-99.
Ferguson, H. K., Co., Indus. Engrs. & Bldrs. Mengel Co. Plant, Fulton, N. Y.—BTS—Aug., pp. 136-139.
Fern Creek Elementary School, Orlando, Fla. L. Alex Hatton, Archt.—Aug., pp. 101-104.
Flight Bar, La Guardia Airport, N. Y. Lester C. Tichy, Archt.—BTS—July, pp. 140-141.
"Functional Color in Industrial Buildings." Article by Julian Ellsworth Garnsey, Colorist—BTS—Aug., pp. 118-123.

G

Gaitán, Jorge. See Solano, Gabriel.
Garnier, Tony. Railroad station project—BTS—Oct., p. 127.
Garnsey, Julian Ellsworth, Colorist. Article, "Functional Color in Industrial Buildings"—BTS—Aug., pp. 118-123.
Gateway to Music, Inc., Store, Los Angeles, Cal. Rolf Sklarek, A.I.A., Archt.—Aug., pp. 105-107.
General hospital. See Radiographic Suite for 30-Bed General Hospital.
General Petroleum Bldg., Los Angeles. See "Lightweight Aggregates Cut Costs in Two Buildings."
Geneva-Cornavin Railroad Station. See Stam, Mart.
George Theater, Wapakoneta, O. Lyman T. Strong, Archt.—BTS—Nov., pp. 136-137.
Gloucester House Restaurant, N. Y. C. Francis Keally, Archt.—BTS—July, pp. 134-135.
González, Guillermo. See Solano, Gabriel.
Goodwin and Stone, Archts. Theater, Museum of Modern Art, N. Y. C.—BTS—Nov., p. 123.
Grand Central Station, N. Y. C., 1871—BTS—Oct., p. 125.
Greenstein, Robert. See Weismann, Walter.
Gropius, Walter, and The Architects' Collaborative. Proposed Graduate Center, Harvard Univ., Cambridge—Nov., pp. 118-119.
Gruen & Krummeck—Victor Gruen, Archt. C. H.

Baker Shoe Store, Glendale, Cal.—Sept., pp. 132-134.
Gruen, Victor. See Gruen & Krummeck.
Gwin's Restaurant, Pasadena, Cal. Harold J. Bissner, Harold B. Zook, Archts.—BTS—July, pp. 126-128.

H

Hall of Machines, Paris, 1889—BTS—Oct., p. 125.
Harrell, George Foster, Archt. Downtown Club, Dallas, Tex.—BTS—July, pp. 132-133.
Harris, Cyril M. See Knudsen, Vern O.
Harrison, Laurence S. Article, "Museum Lighting Studied in Laboratory"—AE—Dec., pp. 137-142.
Hartje, Mr. Richard A., House, Los Angeles, Cal. Rolf Sklarek, Archt.—Dec., pp. 100-103.
Harvard University, Proposed Graduate Center, Cambridge. Walter Gropius and The Architects' Collaborative—Nov., pp. 118-119.
Hatton, L. Alex, Archt. Fern Creek Elementary School, Orlando, Fla.—Aug., pp. 101-104.
Heating. See "Electric Radiant Heating Systems"; "Radiant and Convection Heating Combined."
Henrici's Restaurant, Mdse. Mart, Chicago, Ill. James F. Eppenstein & Raymond Schwab, Archts.—BTS—July, pp. 129-131.
Hickory, N. C. Community Center. Antonin Raymond and L. L. Rado, Archts.—BTS—Dec., pp. 118-125.
Hill, Albert Henry, Dsnr. Eckbo, Royston & Williams, Landscape Archts. House for Capt. & Mrs. W. S. Chitarin, Carmel, Cal.—BTS—Sept., pp. 100-102.
Hohaus, William I., Archt. & Engr. Park Avenue Theater, N. Y. C.—BTS—Nov., pp. 132-133.
Holabird & Root, Archts. Burlington, Ia. Station—BTS—Oct., p. 141.
Holden, Thomas S., and Clyde Shute, Article, "Construction Outlook for 1949"—Dec., pp. 108-109.
Hosiery factory. See Sapphire Hosiery Corp.
Hospital X-Ray Departments. See "Planning X-Ray Departments for Hospitals," and Radiographic Suite for 30-Bed General Hospital.
House of Italian Handicraft, N. Y. C. Gustavo F. Pulitzer, Archt.—Nov., pp. 100-103.
HOUSES. BTS No. 141—Sept., pp. 82-121.
Houses. Mr. & Mrs. Welton Becket, Cal.—Sept., pp. 109-111; Mr. & Mrs. Ted Bonnet, Hollywood, Cal.—Sept., pp. 103-105; Marcel Breuer, Conn.—Oct., pp. 92-99; Mr. & Mrs. R. W. Chamberlain, Kensington, Conn.—Sept., pp. 97-99; Capt. & Mrs. W. S. Chitarin, Carmel, Cal.—Sept., pp. 100-102; Mr. & Mrs. H. Barney Crawford, Oklahoma City, Okla.—Sept., pp. 120-121; Mr. & Mrs. M. P. Davison, Fresno, Cal.—Sept., pp. 88-91; Mr. Richard A. Hartje, Los Angeles, Cal.—Dec., pp. 100-103; on Lake Michigan (Ill.)—Sept., pp. 92-96; in California Canyon—Dec., pp. 104-107; Mr. L. Brooks Martin, Bryan, Tex.—Sept., pp. 112-113; Igor B. Polevitsky, house and office combined, Miami, Fla.—July, pp. 94-96; Mrs. Paul Kingsley, Pacific Palisades, Cal.—Aug., pp. 92-99; Harold Rappaport, Tucson, Ariz.—July, pp. 110-115; Mr. and Mrs. Rubin Sabsay, Los Angeles, Cal.—Sept., pp. 114-116; Mr. and Mrs. William B. Schimmel, Tucson, Ariz.—Sept., pp. 106-108; Mr. and Mrs. Albert Tarter, Los Angeles, Cal.—Sept., pp. 117-119; Dr. Rudolph von Urban, Carmel, Cal.—July, pp. 116-118; Mr. and Mrs. Robert Wile, White Plains, N. Y.—Nov., pp. 104-107; Mr. and Mrs. John Lloyd Wright, Del Mar, Cal. Oct., pp. 100-103.
Housing and Home Finance Agency Engineers. Study, "Comparative Costs of Basement vs. Utility Rooms"—AE—Nov., pp. 148-151.
Housing in Orleans, France. See "Public Housing in Orleans."

I

"Indoor-Outdoor Planting Beds." Article by Henry B. Aul, Landscape Archt.—Part I, July, pp. 146-148; Part II—Aug., pp. 143-144; Construction

Details—TSS—July, pp. 153, 155; Aug., pp. 155, 157.
INDUSTRIAL BUILDINGS. BTS No. 140—Aug., pp. 108-142.
Industrial Buildings. See Bayer Co. Div. Factory; "Functional Color in Industrial Buildings"; Mengel Co. Plant; Phillips, Chas. H., Co.; Sapphire Hosiery Corp.; Shell Union Oil Corp.; Square D Company; Western Electric Company.
Italian Handicraft, House of. See House of Italian Handicraft.

J

Johnson & Johnson factories. Illustrated and discussed in article, "An Enlightened Look at a Factory"—BTS—Aug., pp. 108-111.
Johnson, Gen. Robert. See "Enlightened Look at a Factory, An."
Johnson, Joseph. See Ain, Gregory.

K

Kahn, Albert, Assoc. Archts. & Engrs. J. A. Utley, Gen. Contr. Chevrolet-Flint Assembly Plant, Flint, Mich.—BTS—Aug., pp. 112-117.
Kaufmann, Lippincott and Eggers, Archts. Shell Union Oil Corp. Alcohol Plant, Office Bldg., Martinez, Cal.—Oct., pp. 112-115; Ammonia Plant, Office Bldg., Shell Point, Cal.—Oct., pp. 108-111.
Keally, Francis, Archt. Gloucester House Restaurant, N. Y. C.—BTS—July, pp. 134-135.
Keck, George Fred and William, Archts. House on Lake Michigan, Ill.—BTS—Sept., pp. 92-96.
Keck, William. See Keck, George Fred.
King's Cross Station, London, 1852—BTS—Oct., p. 125.
Kingsley, Mrs. Paul, House, Pacific Palisades, Cal. J. R. Davidson, Dsnr.—Aug., pp. 92-99.
Kitchen Lighting Tests. E. W. Comery (G.E.)—TSS—AE—Sept., pp. 143-144, 149, 151.
Knoll Assocs., Inc., Showroom, N. Y. C. Knoll Planning Unit, supervised by Florence Knoll—Nov., pp. 92-99.
Knoll, Florence. See Knoll Assocs., Inc.
Knudsen, Vern O., and Cyril M. Harris. Article, "Acoustical Design of the Theater"—BTS—Nov., pp. 139-144; Architectural Acoustics—Reverberation Time Calculations—TSS—AE—Nov., pp. 157, 159.

L

La Guardia Airport, N. Y. C. Flight Bar. Lester C. Tichy, Archt.—BTS—July, pp. 140-141.
Landscaping. See "Indoor-Outdoor Planting Beds."
Leaside, Toronto, Ont., Railroad Station. See Canadian Pacific Railway.
LeTourneau, R. G., Inc. Wm. Radkovich Co., Contr. Tournalayer houses, Muroc Air Force Base, Lake Muroc, Cal.—Aug., pp. 180, 182.
Levy, Leon and Lionel, Archts. Lily of France Corset Co. Offices and Showrooms, N. Y. C.—Sept., pp. 128-131.
Lewis, Samuel R., and Assocs. See Skidmore, Owings & Merrill.
Libbey-Owens-Ford Glass Co. Public Relations Offices, Toledo, O. H. Creston Doner, Director of Design—Sept., pp. 135-137.
Library (modular) State College of Washington, Pullman, Wash. John W. Maloney, Archt.—July, pp. 102-109.
Lighting. See Kitchen Lighting Tests; Museum Lighting.
"Lighting Movie Theater Interiors." Article by H. L. Logan—AE—Nov., pp. 145-147.
"Lightweight Aggregates Cut Costs in Two Buildings." Prudential Insurance and General Petroleum Bldgs., Los Angeles, Cal. Wurdeman & Becket, Archts., Murray Erick & Assocs., Engrs.—AE—Oct., pp. 147-148.
"Lightweight Aggregates Win New Attention." Article—AE—July, pp. 143-145.
Lily of France Corset Company Offices and Showrooms, N. Y. C. Leon and Lionel Levy, Archts.—Sept., pp. 128-131.

Lockwood Greene Engrs., Inc., Dsnrs. A. Carl Stelling, Landscape Archt. Sapphire Hosiery Corp. Plant, Telford, Pa.—Aug., pp. 140-142.
 Loewy, Raymond, Assocs. Train Designs—BTS—Oct., pp. 140, 141.
 Logan, H. L. Article, "Lighting Movie Theater Interiors"—AE—Nov., pp. 145-147.
 Luke, Little and Mace, Archts. Avenue Theater, Montreal, Quebec—BTS—Nov., p. 138.
 Lyndon, Maynard, Archt. Santa Fe ticket office, Los Angeles, Cal.—BTS—Oct., p. 141.

M

"Main Roads to Better House Architecture." Article by Arthur McK. Stires—BTS—Sept., p. 81.
 Maloney, John W., Archt. Library (modular) State College of Washington, Pullman, Wash.—July, pp. 102-109.
 Marsh Lane Station, British Railways—BTS—Oct., pp. 129, 134, 135.
 Martin, J. L. Article, "Railroad Architecture in Europe"—BTS—Oct., pp. 130-139.
 Martin, L. Brooks, Archt. Own house, Bryan, Tex.—BTS—Sept., pp. 112-113.
 McNamara, John J. See Voorhees, Walker, Foley & Smith.
 Medical Center for Ohio State University. Skidmore, Owings & Merrill, Archts.—Nov., pp. 108-117.
 Mejía, Alfonso. See Solano, Gabriel.
 Mendelsohn, Eric. Sketch of Railroad Station, 1914—BTS—Oct., p. 126.
 Mengel Co. Plant, Fulton, N. Y. H. K. Ferguson Co., Indus. Engrs. & Bldrs.—BTS—Aug., pp. 136-139.
 Midland, Ont., Railroad Station. See Canadian National Railways.
 Milk of Magnesia factory. See Phillips, Chas. H., Co.
 Mitchell & Ritchey, Archts. House for Lloyd A. Young, Bradfordwoods, Pa.—Oct., pp. 104-107.
 Montenegro, Julio Noel. See Solano, Gabriel.
 Moore & Salisbury, Archts. House for Mr. & Mrs. R. W. Chamberlain, Kensington, Conn.—BTS—Sept., pp. 97-99.
 Morse, John M. Article, "Radiant and Convection Heating Combined"—AE—Dec., pp. 135-136.
 Morse, Richard A., and William Y. Peters, Archts. House for Mr. & Mrs. William B. Schimmel, Tucson, Ariz.—BTS—Sept., pp. 106-108.
 Moscow Railroad Station, 1935—BTS—Oct., p. 126.
 Moving Picture Theaters. See THEATERS.
 Muiderpoort Station, Amsterdam—BTS—Oct., p. 136.
 Municipal Bath House and Park, Austin, Texas. Dan J. Driscoll, Archt.—Dec., pp. 86-93.
 Muroc Air Force Base, Lake Muroc, Cal. (Tour-layer Houses)—Aug., pp. 180, 182.
 Museum of Modern Art. See Theater, Museum of Modern Art.
 Museum Lighting. See "Museum Lighting Studied in Laboratory."
 "Museum Lighting Studied in Laboratory." Article by Laurence S. Harrison—AE—Dec., pp. 137-142.
 Music Shop. See Gateway to Music, Inc.
 Myers, George B. Article, "Planning X-Ray Departments for Hospitals"—AE—Oct., pp. 149-152.

N

Neutra, Richard J., Archt. House for Mr. & Mrs. Ted Bonnet, Hollywood, Cal.—BTS—Sept., pp. 103-105.
 "New Architecture for the Movie Theater, A." *Innovations* by Ben Schlanger, Theater Archt.—BTS—Nov., pp. 121-123.
 New York Life Insurance Co. See Voorhees, Walker, Foley & Smith.
 Noyon, France, Railroad Station—BTS—Oct., p. 126.

O

Oak Wood Station, London. Passenger Transport Board—BTS—Oct., p. 129.
 Office and house combined, architect's, Miami, Fla. Igor B. Polevitzky, Archt.—July, pp. 94-96.
 Office Buildings. See Shell Union Oil Corp.
 Office of David J. Abrahams & Assocs., Archts., Boston, Mass.—July, pp. 100-101.
 Office of J. Clarence Felciano, Archt., Santa Rosa, Cal.—July, pp. 97-99.
 Offices. Lily of France Corset Co.—Sept., pp. 128-131; Public Relations Office, Libby-Owens-Ford Glass Co.—Sept., pp. 135-137; Prudential Insurance Building—AE—Oct., pp. 147-148; Santa Fe ticket office—BTS—Oct., p. 141; Shell Union Oil Corp.—Oct., pp. 108-115.
 Offices, Architects'. David J. Abrahams & Assocs., Boston, Mass.—July, pp. 100-101; J. Clarence Felciano, Santa Rosa, Cal.—July, pp. 97-99; Igor B. Polevitzky, Miami, Fla.—July, pp. 94-96.
 Ohio State University. See Medical Center. Skidmore, Owings & Merrill, Archts.—Nov., pp. 108-117.
 Orléans. See "Public Housing in Orléans."
 Ortega, Alvaro. See Solano, Gabriel.

P

Panero, Guy B. See Thompson, W. Stuart.
 Pangburn, Weaver W. See Allen, F. Ellwood.
 Paper box factory. See Mengel Co. Plant.
 Park. See Municipal Bath House and Park, Austin, Tex.
 Park Avenue Theater, N. Y. C. William I. Hohaus, Archt. & Engr.—BTS—Nov., pp. 132-133.
 Parking. See Beverly Hills, Calif.
 Peters, William Y. See Morse, Richard A.
 Phillips, Chas. H., Co. Div. of Sterling Drug, Inc., Gulfport, Miss. W. Stuart Thompson and Phelps Barnum, Archts.—BTS—Aug., pp. 128-131.
 "Planning of Recreational Centers, The." Article by F. Ellwood Allen and Weaver W. Pangburn—BTS—Dec., pp. 110-114.
 "Planning X-Ray Departments for Hospitals." Article by George B. Myers—AE—Oct., pp. 149-152.
 Planting Beds. See "Indoor-Outdoor Planting Beds."
 Pointe aux Trembles, P. Q., Railroad Station. See Canadian National Railways.
 Polevitzky, Igor B., Archt. House and office combined, Miami, Fla.—July, pp. 94-96.
 Pools, Swimming. See Swimming Pool Design Data; West Coast Innovations in Swimming Pool Design; Municipal Bath House.
 "Precast Method Eliminates Vertical Forms." Process developed by Buttress & McClellan, Inc., Los Angeles, Cal.—AE—Nov., pp. 151-152.
 Prefabricated Railroad Station, project. Lester Tichy, Archt.—BTS—Oct., p. 129.
 Prudential Insurance Bldg., Los Angeles. See "Lightweight Aggregates Cut Costs in Two Buildings."
 "Public Housing in Orléans." (Pol Abraham, Chief Archt. of French Gov't). Article by Léandre Vaillat—Sept., pp. 168, 170, 172.
 Public Relations Offices. See Libby-Owens-Ford.
 Pulitzer, Gustavo F., Archt. House of Italian Handicraft, N. Y.—Nov., pp. 100-103.

Q

Queen's Park Railroad Station, near London—BTS—Oct., p. 132.

R

"Radiant and Convection Heating Combined." Article by John M. Morse—AE—Dec., pp. 135-136.
 Radiant heating. See "Electric Radiant Heating Systems."
 Radiographic Suite for 30-Bed General Hospital—TSS—AE—Oct., p. 157, 159.

Radkovich, Wm., Co. See LeTourneau, R. G., Inc.
 Rado, L. L. See Raymond, Antonin.
 "Railroad Architecture in Europe." Article by J. L. Martin—BTS—Oct., pp. 130-139.
 "Railroad Architecture in North America Today." Article—BTS—Oct., pp. 140-142.
 RAILROAD BUILDINGS. BTS No. 142—Oct., pp. 122-146.
 "Railroads, The Architecture of." See "Architecture of Railroads, The."
 Rappaport, Harold, House, Tucson, Ariz. William & Sylvia Wilde, Design Cons. William Wilde, Archt.—July, pp. 110-115.
 Raymond, Antonin, and L. L. Rado, Archts.; F. Ellwood Allen Organization, Park and Recreation Planners. Bloomington, Ill. Recreation Center—BTS—Dec., pp. 126-129; Hickory, N. C. Community Center—BTS—Dec., pp. 118-125; Summit, N. J. Recreation Center—BTS—Dec., pp. 115-117.
 RECREATION BUILDINGS. BTS No. 144—Dec., pp. 110-129.
 RESTAURANTS. BTS No. 139—July, pp. 119-142.
 Riseman, William, Assocs., Dsnrs. Wareham Theater, Wareham, Mass.; Strand Theater, Hartford, Conn.; Astor Theater, Boston, Mass.—BTS—Nov., pp. 124-130.
 Roundhouse, railway, Avignon, France—BTS—Oct., p. 139.
 Ruvalo, Felix. See Eppenstein, James F.

S

Sabsay, Mr. & Mrs. Rubin, House, Los Angeles, Cal. J. R. Davidson, Dsnr.—BTS—Sept., pp. 114-116.
 Salmon, Edwin A. See Skidmore, Owings & Merrill.
 San Elia, Antonia. Multi-level railroad station, 1914—BTS—Oct., p. 126.
 Sanders and Malsin, Archts. House for Mr. and Mrs. Robert Wile, White Plains, N. Y.—Nov., pp. 104-107.
 Santacruz, Carlos. See Solano, Gabriel.
 Santa Fe ticket office, Los Angeles. Maynard Lyndon, Archt.—BTS—Oct., p. 141.
 Sapphire Hosiery Corp. Plant, Telford, Pa. Lockwood Greene Engrs., Inc., Dsnrs.—BTS—Aug., pp. 140-142.
 Saunders, L. M., Dsnr. Welch's Restaurant, Long Beach, Cal.—BTS—July, p. 120-125.
 Schimmel, Mr. & Mrs. William B., House, Tucson, Ariz. Richard A. Morse & William Y. Peters, Archts.—BTS—Sept., pp. 106-108.
 Schlanger, Ben, Theater Archt. See "A New Architecture for the Movie Theater"; Studio Theater, N. Y. C.—BTS—Nov., p. 131.
 Schofield, John, Chief Archt. Station at Midland, Ont. Canadian National Railways—BTS—Oct., p. 142.
 School. See Fern Creek Elementary School.
 Schwab, Raymond. See Eppenstein, James F.
 Shell Union Oil Corp. Alcohol Plant, Office Bldg. and "Change House," Martinez, Cal. Ammonia Plant, Office Bldg., Shell Point, Cal. Kaufmann, Lippincott and Eggers, Archts.—Oct., pp. 108-115.
 Shoe store. See C. H. Baker Shoe Store.
 Showroom. See Knoll Assocs., Inc.
 Showrooms. House of Italian Handicraft—Nov., pp. 100-103; Knoll Assocs., Inc.—Nov., pp. 92-99; Lily of France Corset Co.—Sept., pp. 128-131.
 Showrooms and offices. See Lily of France Corset Co.
 Shute, Clyde. See Holden, Thomas.
 Skidmore, Owings & Merrill, Archts. Edwin A. Salmon, Hospital Cons. Samuel R. Lewis and Assocs., Cons. Mechn. Engrs. Medical Center for Ohio State University—Nov., pp. 108-117.
 Sklarek, Rolf, A.I.A., Archt. Gateway to Music, Inc., Store, Los Angeles, Cal.—Aug., pp. 105-107; House for Mr. Richard A. Hartje, Los Angeles, Cal.—Dec., pp. 100-103.
 Solano, Gabriel, Jorge Gaitán, Alvaro Ortega, Edgar Burbano, Archts.; Guillermo González, Struct. Engr.; Alfonso Mejía, Mario Barahona, Julio Noel Montenegro, Construct. Engrs.; Carlos Santacruz, Coordinator. Baseball Stadium, Car-

tagena, Colombia, S. A.—July, pp. 88-93.
 Square D Company Plant, Los Angeles, Cal. Austin Co., Indus. Engrs. & Bldrs.—BTS—Aug., pp. 132-135.
 Stadium. See Baseball Stadium, Cartagena, Colombia, S. A.
 Stam, Mart. Project for railroad station at Geneva-Cornavin, 1924—BTS—Oct., p. 127.
 State College of Washington, Pullman, Wash. John W. Maloney, Archt.—July, pp. 102-109.
 Stelling, A. Carl. See Lockwood Greene Engrs., Inc. Sterling Drug, Inc. See Bayer Co. Div. Factory and Chas. H. Phillips Co. Factory.
 Stires, Arthur McK. Article, "Main Roads to Better House Architecture"—BTS—Sept., pp. 82-87.
 Stores. C. H. Baker Shoe Store—Sept., pp. 132-134; Gateway to Music, Inc.—Aug., pp. 105-107.
 Stowell, Kenneth K. Editorials: "Architects Anonymous"—July, p. 87; "The Basis for the Highest Honor"—Nov., p. 91; "This Vicarious Experience—Plus"—Oct., p. 91; "We Need the Facts on Housing"—Dec., p. 85; "Which Way Lies Freedom?"—Aug., p. 87; "Who Designs America's Houses?"—Sept., p. 81.
 Strand Theater, Hartford, Conn. William Riseman Assocs., Dsnrs.—Nov., pp. 126-128.
 Stratford, Conn. Railroad Station, 1867—BTS—Oct., p. 128.
 Strong, Lyman T., Archt. George Theater, Wapakoneta, O.—BTS—Nov., pp. 136-137.
 Studio Theater, N. Y. C. Ben Schlanger, Archt.—BTS—Nov., p. 131.
 Stuttgart (Germany) Station, 1914-27—BTS—Oct., p. 126.
 Summit, N. J. Recreation Center. Antonin Raymond and L. L. Rado, Archts.—BTS—Dec., pp. 115-117.
 Superblock scheme. Walter Weissman & Robert Greenstein—Sept., pp. 122-125.
 Swimming Pool. See Municipal Bath House.
 Swimming Pool Design. See West Coast Innovations in Swimming Pool Design; Swimming Pool Design Data.
 Swimming Pool Design Data—TSS—AE—Dec., pp. 149-151.

T

Tarter, Mr. & Mrs. Albert, House, Los Angeles, Cal. Gregory Ain, Joseph Johnson & Alfred Day, Archts.—BTS—Sept., pp. 117-119.
 Theater, Museum of Modern Art, N. Y. C. Goodwin and Stone, Archts.—BTS—Nov., p. 123.
 THEATERS. BTS No. 143—Nov., pp. 120-144.
 "They Are Planned for Food and for Atmosphere." Article—BTS—July, p. 119.
 "This Vicarious Experience—Plus." Editorial by Kenneth K. Stowell—Oct., p. 91.
 Thompson, W. Stuart, and Phelps Barnum, Archts. Guy B. Panero, Engr. Chas. H. Phillips Co. Factory, Div. of Sterling Drug, Inc., Gulfport, Miss.—BTS—Aug., pp. 128-131.
 Tichy, Lester, Archt. Eastern Main Line Railroad Station—BTS—Oct., pp. 143-146; Flight Bar, La Guardia Airport, N. Y. C.—BTS—July, pp. 140-141; Prefabricated Railroad Station, project—BTS—Oct., p. 129.
 Ticket office. See Santa Fe ticket office.
 Tournalayer houses. See LeTourneau, R. G., Inc.
 Traffic and Parking. See Beverly Hills.
 Train designs. Henry Dreyfuss, Raymond Loewy Assocs.—Oct., pp. 140, 141.
 Twin Bills for Beverly Hills. Summary of the Report of the City Planners. Harland Bartholomew and Assocs.—Dec., pp. 94-99.

U

University Buildings. See Harvard University; Ohio State University; State College of Washington.
 Utility rooms. See "Comparative Costs of Basements vs. Utility Rooms."
 Utley, J. A. See Kahn, Albert, Assoc. Archts. & Engrs.

V

Vahlberg, Walter T. & Robert W., Archts. House for Mr. & Mrs. H. Barney Crawford, Oklahoma City, Okla.—BTS—Sept., pp. 120-121.
 Vaillat, Léandre. Article, "Public Housing in Or-léans"—Sept., pp. 168, 170, 172.
 von Urban, Dr. Rudolph, House, Carmel, Cal. George H. Woolsey, Archt.—July, pp. 116-118.
 Voorhees, Walker, Foley & Smith, Archts. & Engrs. John J. McNamara, Cons. Archt. for Tenant, Century Theaters. New York Life Insurance Co., Owners. Century's Meadows Theater, Fresh Meadows, N. Y.—BTS—Nov., pp. 134-135.

W

Walker, Rodney, Archt. House in California Canyon—Dec., pp. 104-107.
 Wareham Theater, Wareham, Mass. William Riseman Assocs., Dsnrs.—BTS—Nov., pp. 124-125.
 Weissman, Walter, and Robert Greenstein. Superblock scheme—Sept., pp. 122-125.
 "We Need the Facts on Housing." Editorial by Kenneth K. Stowell—Dec., p. 85.
 Welch's Restaurant, Long Beach, Cal. L. M. Saunders, Dsnr.—BTS—July, pp. 120-125.
 Wertheim, Ernest. See Davidson, J. R.
 West Coast Innovations in Swimming Pool Design—AE—Dec., pp. 143-144.
 Western Electric Company, Allentown, Pa.—Dec., pp. 130-134.
 Western Electric Company Plant, Allentown, Pa. The Austin Co., Dsnrs. & Bldrs.—Dec., pp. 130-134.
 "Which Way Lies Freedom?" Editorial by Kenneth K. Stowell—Aug., p. 87.
 "Who Designs America's Houses?" Editorial by Kenneth K. Stowell—Sept., p. 81.
 Wiesbaden-Biebrich Railroad Station, about 1928—BTS—Oct., p. 128.
 Wilde, William, Archt. William & Sylvia Wilde, Design Consultants. House for Harold Rappaport, Tucson, Ariz.—July, pp. 110-115.
 Wile, Mr. and Mrs. Robert, House, White Plains, N. Y. Sanders and Malsin, Archts.—Nov., pp. 104-107.
 Woolsey, George H., Archt. House for Dr. Rudolph von Urban, Carmel, Cal.—July, pp. 116-118.
 Wright, John Lloyd, Archt. Own house, Del Mar, Cal.—Oct., pp. 100-103.
 Wurdeman & Becket, Archts. Beach-house for Mr. & Mrs. Welton Becket, Cal.—BTS—Sept., pp. 109-111; Murray Erick & Assocs., Engrs. Lightweight aggregates used in Prudential Insurance and General Petroleum Bldgs., Los Angeles—AE—Oct., pp. 147-148.
 Wurster, Bernardi & Emmons, Archts. House for Mr. & Mrs. M. P. Davison, Fresno, Cal.—BTS—Sept., pp. 88-91.

X

X-Ray Departments. See "Planning X-Ray Departments for Hospitals," and Radiographic Suite for 30-Bed General Hospital.

Y

Young, Lloyd A., House, Bradfordwoods, Pa. Mitchell & Ritchey, Archts.—Oct., pp. 104-107.

Z

Zook, Harold B. See Bissner, Harold J.

BOOKS REVIEWED

AGE OF ADAM, THE. By James Lees-Milne—Oct., p. 28.
 ANATOMY FOR INTERIOR DESIGNERS. By Francis de N. Schroeder—July, p. 28.
 CAMP SITE DEVELOPMENT. By Julian Harris Salomon—Dec., pp. 28, 30.
 COMMUNITY CENTERS AS LIVING WAR MEMORIALS: A SELECTED BIBLIOGRAPHY WITH INTERPRETIVE COMMENTS. Compiled by James Dahir—Dec., p. 30.
 CONURBATION. A SURVEY OF BIRMINGHAM AND THE BLACK COUNTRY. West Midland Group—Aug., p. 204.

EARLY CONNECTICUT MEETINGHOUSES: Being an Account of the Church Edifices Built before 1830, Based Chiefly upon Town and Parish Records. By J. Frederick Kelly—Sept., p. 28.
 ELIEL SAARINEN. By Albert Christ-Janer—Nov., p. 28.
 HOME AND ENVIRONMENT. By Walter Segal—Oct., pp. 30-220.
 HOUSES FOR MODERATE MEANS. By Randal Phillips—Nov., p. 28.
 INTRODUCTION TO ARCHITECTURAL DESIGN, AN. By Donald A. Fletcher—Dec., p. 28.
 INTRODUCTION TO COLOR, AN. By Ralph M. Evans—Sept., p. 28.
 LE CORBUSIER. Edited by Stamo Papadaki, with essays by Joseph Hudnut, S. Giedion, Fernand Leger, J. L. Sert, and James Thrall Soby—Aug., p. 28.
 MADE IN AMERICA: THE ARTS IN MODERN CIVILIZATION. By John A. Kouwenhoven—Dec., p. 28.
 MASONRY SIMPLIFIED. VOL. I: TOOLS, MATERIALS, PRACTICE. VOL. II: PRACTICAL CONSTRUCTION. By J. Ralph Dalzell and Gilbert Townsend—Oct., pp. 28, 30.
 MODERNIZING OLD HOUSES. By Henry Lionel Williams and Ottilie K. Williams—Sept., p. 30.
 MODERN PLYWOOD. 2nd ed. By Thomas D. Perry—Oct., pp. 220, 222.
 NEW DESIGNS OF SMALL PROPERTIES: A BOOK FOR THE HOME-OWNER IN CITY AND COUNTRY. 2nd ed. By M. E. Bottomley, M.L.D.—Oct., p. 222.
 NEW HOUSES FROM OLD: A GUIDE TO THE PLANNING AND PRACTICE OF HOUSE REMODELING. By R. R. Hawkins and C. H. Abbe—July, p. 28.
 NEW INTERNATIONAL 1948 YEAR BOOK, THE. By Henry E. Vizetelly, Editor-in-Chief—July, p. 28.
 NEW WORLD OF SPACE. By Le Corbusier—Aug., p. 28.
 OXFORD REPLANNED. By Thomas Sharp—Aug., pp. 28, 30.
 PAINTING AND SCULPTURE IN THE MUSEUM OF MODERN ART. Edited by Alfred Barr, Jr.—Dec., p. 30.
 PLANNER'S NOTEBOOK, THE: A COMPENDIUM OF INFORMATION ON TOWN AND COUNTRY PLANNING AND RELATED SUBJECTS. Edited by H. Myles Wright, M.A., A.R.I.B.A.—Oct., p. 220.
 PLANNING: THE ARCHITECT'S HANDBOOK. 5th ed. By E. and O. E., with an additional section on farm buildings by Edwin Gunn—Oct., p. 222.
 PLANNING THE NEIGHBORHOOD. American Public Health Assoc. Committee on the Hygiene of Housing—Aug., p. 204.
 REGENCY STYLE: 1800-1830. By Donald Pilcher—Sept., pp. 28, 30.
 SCIENTIFIC AND TECHNICAL ABBREVIATIONS, SIGNS AND SYMBOLS. By O. T. Zimmerman and Irvin Lavine—July, p. 30.
 SEARCH FOR FORM: A FUNDAMENTAL APPROACH TO ART. By Eliel Saarinen—Aug., p. 28.
 SHOPS AND STORES. By Morris Ketchum—Nov., p. 28.
 SIMPLIFIED ENGINEERING FOR ARCHITECTS AND BUILDERS. 2nd ed. By Harry Parker—Oct., p. 222.
 STRESS ANALYSIS AND DESIGN OF ELEMENTARY STRUCTURES. 2nd ed. By James H. Cissel—July, pp. 28, 30.
 THEORY OF LIMIT DESIGN. By John A. Van Den Broek—July, p. 30.
 URBAN HOME OWNERSHIP: A SOCIO-ECONOMIC ANALYSIS WITH EMPHASIS ON PHILADELPHIA. By Henry McCulley Miller—Aug., pp. 30, 204.
 VISION OF ENGLAND: CORNWALL. By Peggy Pollard—July, p. 28.
 VISION OF ENGLAND: DERBYSHIRE. By Nellie Kirkham—July, p. 28.
 VISION OF ENGLAND: SUSSEX. By Reginald Turner—July, p. 28.
 WINDOWS IN MODERN ARCHITECTURE. By Geoffrey Baker and Bruno Funaro—Dec., p. 28.

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, 1948
 b—Sweet's File for Builders, 1948
 e—Sweet's File, Engineering, 1948

abe Adam, Frank Electric Co.....	63	ae Frink Corporation.....	73	ab National Oak Flooring Mfrs. Assoc.....	16
a Adams & Westlake Co.....	58	General Anilin & Film Corp.....	230	a National Radiator Company.....	215
Aerofin Corporation.....	220	General Controls.....	206	a National Terrazzo & Mosaic Assoc.....	226
Air Devices, Inc.....	237	abe General Electric Co.—Air Conditioning.....	195	a New Castle Products.....	236
a Alberene Stone Corporation of Virginia.....	184	a General Electric Co.—Plastics.....	41	a Norton Door Closer Co.....	212
Allegheny Ludlum Steel Corp.....	202	General Motors Co.....	44	Ohio Chemical & Mfg. Co.....	161
ae Aluminum Company of America.....	13-31	General Pencil Company.....	230	ae Okonite Company.....	228
a Aluminum Window Manufacturers Association.....	208	a General Portland Cement Co.....	236	Olsonite Plastics Division.....	231
ae American Abrasive Metals Co.....	176	a Goodrich, B. F. Co.....	80	Onan, D. W. & Sons, Inc.....	186
a American Brass Company.....	27	ab Grand Rapids Hardware Co.....	214	ae Otis Elevator Company.....	35
ae American Lumber & Treating Co.....	43	abe Great Lakes Steel Corporation.....	50-51	abe Owens-Illinois Glass Co.....	229
American Radiator & Standard Sanitary Corp.....	39	e Grasselli Chemicals Department.....	218	Ozalid Products Division.....	230
abe American Structural Products Co.....	229	Haws Drinking Faucet Co.....	218	Paddock Pool Equipment Co.....	238
ab American Telephone & Telegraph Co.....	48	a Haynes Products Company.....	212	ab Parker, Charles Company.....	174
a American Tile & Rubber Co.....	172	ae Hendrick Mfg. Company.....	232	Permanente Products Company.....	34
a American Zinc Institute.....	190	a Herring-Hall Marvin Safe Co.....	234	a Petroleum Heat & Power Company.....	187
ae Anaconda Copper Mining Co.....	27	Holothane Company, Inc.....	189	abe Pittsburgh Plate Glass Company.....	152-153-209
ae Anchor Post Products, Inc.....	188	a Hood Rubber Co.....	80	a Pittsburgh Reflector Co.....	157
ae Anemostat Corp. of America.....	171	a Hope's Windows, Inc.....	38	Plywood, Inc.....	70
Anthracite Institute.....	183	a Horn, A. C. Company, Inc.....	29	a Portland Cement Association.....	165
a Armstrong Cork Company.....	23	a Horn Brothers Company.....	68	a Powers Regulator Company.....	239
a Asbestone Corporation.....	14	House & Garden.....	194	Pumice Producers Association.....	61
Asphalt Roofing Industry Bureau.....	21	a Imperial Brass Mfg. Co.....	6	Pyle-National Company.....	213
Baker Ice Machine Co., Inc.....	30	ab Independent Lock Co.....	40	abe Revere Copper & Brass, Inc.....	233
ab Barber-Colman Company.....	15	a Infra Insulation Inc.....	210	ab Reynolds Metals Company.....	71
ab Bell & Gossett Company.....	59	a Ingersoll Utility Unit Division.....	69	a Richards-Wilcox Mfg.....	164
ab Bell Telephone System.....	48	In-Sink-Erator Mfg. Co.....	190	ab Richmond Radiator Company.....	71
ae Benjamin Electric Mfg. Co.....	75	ab Insulite Division.....	11	ae Robertson, H. H. Company.....	64-65
a Bethlehem Steel Company.....	42-211	International Heating & Ventilating Exposition.....	12	a Rotary Lift Co.....	79
b Bird & Son, Inc.....	236	International Nickel Company, Inc.....	191	Royal Heaters, Inc.....	222
a Blank, Frederic & Co., Inc.....	207	a Jackson & Church Co.....	3rd Cover	ae Russell, F. C. Company.....	206
Books.....	192-193-204-210-212-235	a Jamestown Metal Corp.....	234	Sarco Company, Inc.....	216
a Borg-Warner Corporation.....	69	Jenkins Bros.....	53	a Schlage Lock Company.....	166
a Brasco Mfg. Co.....	175	ae Johns-Manville.....	54	a Scott Washroom Advisory Service.....	167
a Brass & Bronze Ingot Institute.....	56-57	ae Josam Mfg. Co.....	236	a Seaport Metals, Inc.....	224
ab Bruce, E. L. Co.....	46	ae Keasbey & Mattison Company.....	78	ab Servel, Inc.....	36-37
Burnham Corporation.....	225	a Kennedy, David E., Inc.....	67	ab Sisalkraft Co.....	214
ae Burt Mfg. Co.....	18	Kewaunee Mfg. Co.....	168	a Sloan Valve Company.....	4th Cover
Byers, A. M. Co.....	4	ab Kimberly-Clark Corp.....	52	ab Smith, A. O. Corporation.....	77
ab Cabot, Samuel, Inc.....	162	Koh-I-Noor Pencil Co.....	80	a Smith, H. B. Co., Inc.....	188
a Cambridge Tile Mfg. Co.....	55	Kohler Co.....	197	Solar Light Mfg. Co.....	208
ae Carrier Corporation.....	66	L.C.N. Door Closers.....	205	ae Sperzel Company.....	224
a Caco Steel Products Corp.....	155	abe Libbey-Owens-Ford Glass Company.....	181	ae Stewart Iron Works Co., Inc.....	238
abe Celotex Corporation.....	147	ab Lockwood Hardware Mfg. Co.....	40	abe Stran-Steel Division.....	50-51
a Century Lighting, Inc.....	220	Lone Star Cement Corporation.....	1	Swedish Crucible Steel Co.....	231
Certified Ballast Manufacturers.....	8-9	ab Louisville Cement Co.....	49	Symmons Engineering Co.....	220
a Chase Brass & Copper Co.....	163	a Macomber, Incorporated.....	20	Thermoseal Division.....	206
a Cheney Flashing Co.....	212	ae Mahon, R. C. Company.....	83	Timber Engineering Company.....	208
ab Clayton & Lambert Mfg. Co.....	226	Marble Institute of America, Inc.....	82	ae Timber Structures, Inc.....	234
Combustion Equipment Division.....	184	ab Marsh Wall Products, Inc.....	200	Todd Shipyards Corp.....	184
Committee on Steel Pipe Research.....	198	a Martin-Parry Corp.....	25	ab Trade-Winds Motorfans, Inc.....	234
Connor, W. B. Engineering Corp.....	199	Masland Duralath Co.....	19	abe Trane Company.....	2-3
Connor Lumber & Land Co.....	224	a Medusa Portland Cement Co.....	216	a Trinity Portland Cement Division.....	236
ae Cork Insulation Co., Inc.....	216	ab Mengel Company.....	185	Union Carbide & Carbon Corp.....	223
Corning Glass Works.....	45	Mesker, Geo. L. Steel Corp.....	22	a United States Gypsum.....	74
ab Coyne & Delany Co.....	206	Metal Tile Products Co., Inc.....	178	ab United States Plywood Corp.....	33-185-196
b Crane Co.....	60	Michaels Art Bronze Co.....	156	ae United States Steel Corporation Subsidiaries.....	154
a Cutler Mail Chute Co.....	226	ab Minneapolis-Honeywell.....	84	a Universal Atlas Cement Company.....	154
ae Day-Brite Lighting, Inc.....	150	ab Minnesota & Ontario Paper Co.....	11	a Universal Bleacher Company.....	228
abe Detroit Steel Products Company.....	72-173	abe Modine Manufacturing Co.....	203	a Universal Corporation.....	217
a Douglas Fir Plywood Association.....	169	Monarch Elevator & Machine Co.....	238	ab Upson Company.....	76
ae Dunham, C. A. Co.....	232	Monroe, Lederer & Taussig, Inc.....	218	Wade Manufacturing Co.....	182
ae DuPont, E. I. de Nemours & Co.....	218	ab Natcor Store Fronts.....	238	ae Wakefield, F. W. Brass Company.....	24
a Duriron Co., Inc.....	170	ab National Chemical & Mfg. Co.....	177	ae Walker Brothers.....	221
Durisol, Inc.....	17	National Electric Products Corp.....	47	a Webster, Warren & Co.....	81
a Dwyer Products Corp.....	180	ae National Gypsum Company.....	179	a Werner, R. D. Co., Inc.....	228
Ebcro Mfg. Co.....	232			ae Wing, L. J. Mfg. Co.....	158
a Elkay Manufacturing Co.....	159			a Worthington Pump and Machinery Corp.....	219
Electro Metallurgical Co.....	223			ae York Corporation.....	227
Employment Opportunities.....	222			a Young Radiator Co.....	230
Enterprise Engine & Foundry Co.....	32				
Faber, A. W.—Castell Pencil Co., Inc.....	186				
ae Facing Tile Institute.....	62				
ae Federal Enterprises, Inc.....	201				
abe Fiat Metal Mfg. Co.....	160				
a Fitzgibbons Boiler Company.....	148				
a Fleur-O-Lier Manufacturers.....	8-9				
abe Flintkote Company.....	2nd Cover				
Frigidaire Division.....	44				

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, Room 816, 816 West 5th St.; PHILADELPHIA—Tom Tredwell, 1321 Arch St.; PORTLAND—Bob Wettstein, 3325 N. E. Maywood Court; SAN FRANCISCO—Bob Wettstein, 1003 TWA Bldg., 240 Stockton St.; SEATTLE—Bob Wettstein, 3039-31st West.