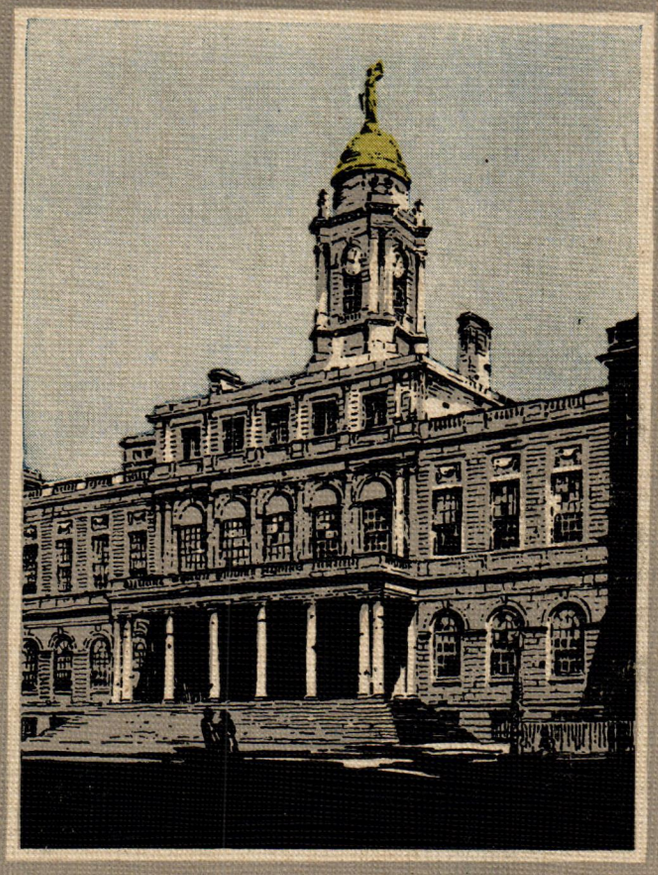
THE ARCHITECTURAL FORUM

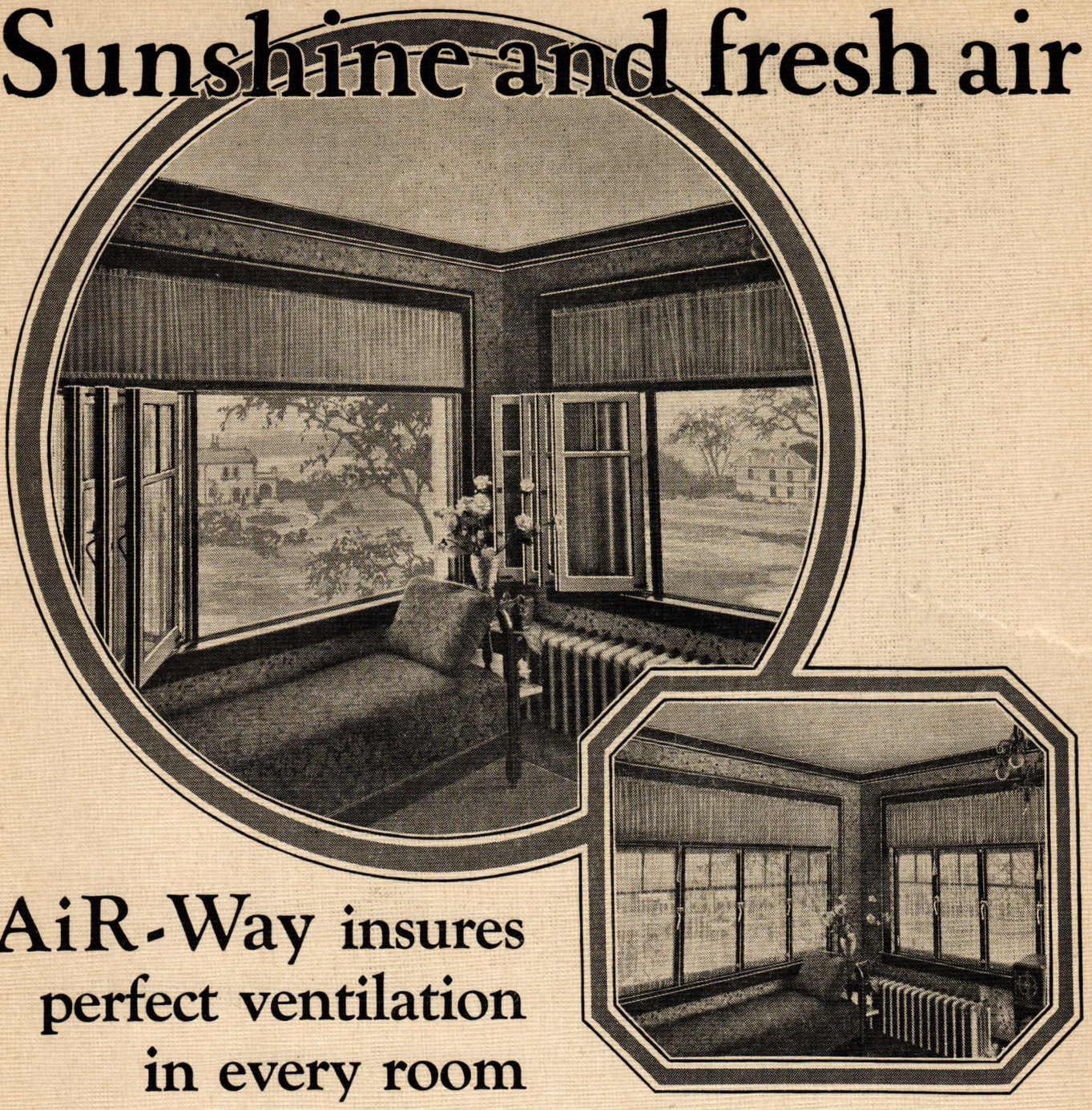


JUNE 1927

PUBLIC BUILDINGS REFERENCE NUMBER—PART I

PRICE $2

Sunshine and fresh air



AiR-Way insures perfect ventilation in every room

Window openings equipped with AiR-Way Multi-fold Window Hardware assure the desired amount of ventilation in any season.

When open the sash slide and fold to one or either side leaving a clear opening the full width and depth of the frame—there is no interference with screens or drapes.

The sash may be adjusted at any point to admit any desired amount of fresh air without draughts. When closed the windows are weather tight and rattle proof.

Cost no more than the most ordinary equipment.

Write for full information and working details of this most modern window equipment.

AiR-Way is furnished in complete units with hardware fitted to either steel or wood sash and assembled in frames ready to set in openings. Hardware is also furnished for assembly on the job if desired.

Richards-Wilcox Mfg. Co.

"A Hanger for any Door that Slides."

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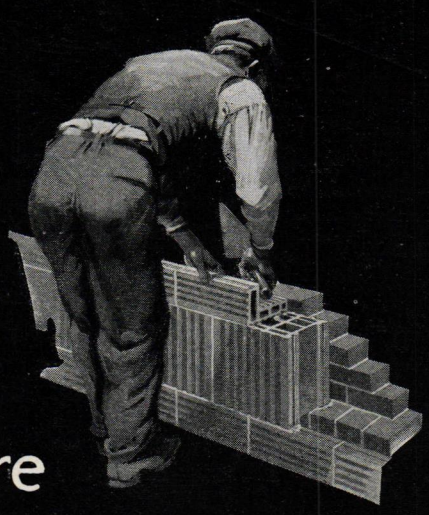
224-A

NATCO

THE *COMPLETE* LINE *of* HOLLOW BUILDING TILE



where "NATCO or equal" means NATCO or NONE

Header Backer provides a mechanical bond with brick or stone facing of such strength and permanence that full bearing value is allowed on the combined thickness of wall.

HEADER BACKER

ONLY in Natco Hollow Building Tile can you get the double shell construction that bars the passage of heat, cold, moisture—that meets every mortar joint condition—that provides maximum strength with minimum weight.

In Load Bearing Tile (for stucco exteriors); in Header Backer (for brick or stone facing); in Tex-Tile, and Combed Face (available in charming color combinations) the double shell construction adds to the attractiveness, utility, comfort, and permanence of every structure in which it is used.

If you want those advantages which double shell construction gives, the clause "or equal" in the specifications means absolutely nothing. "Double Shell" is Natco—or none.

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General Offices: Fulton Building, Pittsburgh, Pa.

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The Only Concern in the World Making a Complete Line of Structural Clay Products

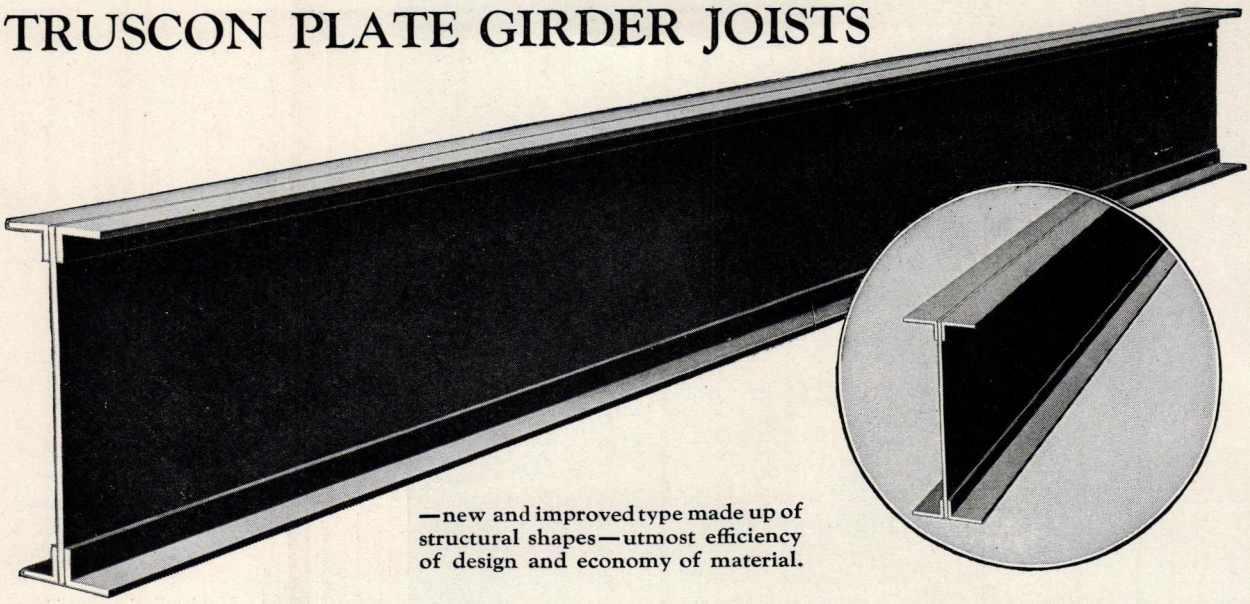
NATCO

Natco Hollow Building Tile is susceptible to use in both steel and concrete construction.

Volume XLVI THE ARCHITECTURAL FORUM Number 6

Published Monthly by Rogers & Manson Company, 383 Madison Avenue, New York, N. Y. Yearly Subscription: U. S. A., Insular Possessions and Cuba, $6. Canada, $6.75. Foreign Countries in the Postal Union, $7.50. Single copies, 60 cents. Entered as Second Class Matter at the Post Office, New York, N. Y., under the Act of March 3, 1879.

TRUSCON PLATE GIRDER JOISTS



—new and improved type made up of structural shapes—utmost efficiency of design and economy of material.

A Complete Line of STEEL JOISTS

For Fireproof Floor Construction

BOTH Truscon Plate Girder and Bar Joists are the most scientific, practical and useful designs, combining greatest possible strength with maximum economy of steel. Architects have the choice of either type to meet any requirement of fireproof construction. Truscon Engineers will gladly co-operate in developing the best design for any condition, in submitting estimates and in furnishing any desired information. Complete literature with designing data will be sent on request.

TRUSCON STEEL COMPANY, Youngstown, Ohio

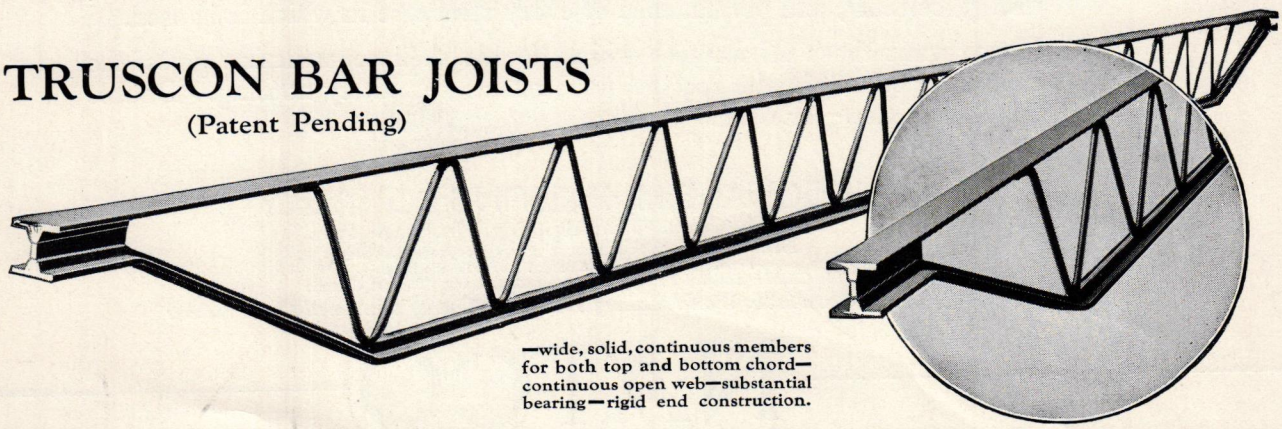
Established 1903

Warehouses and Offices in all Principal Cities

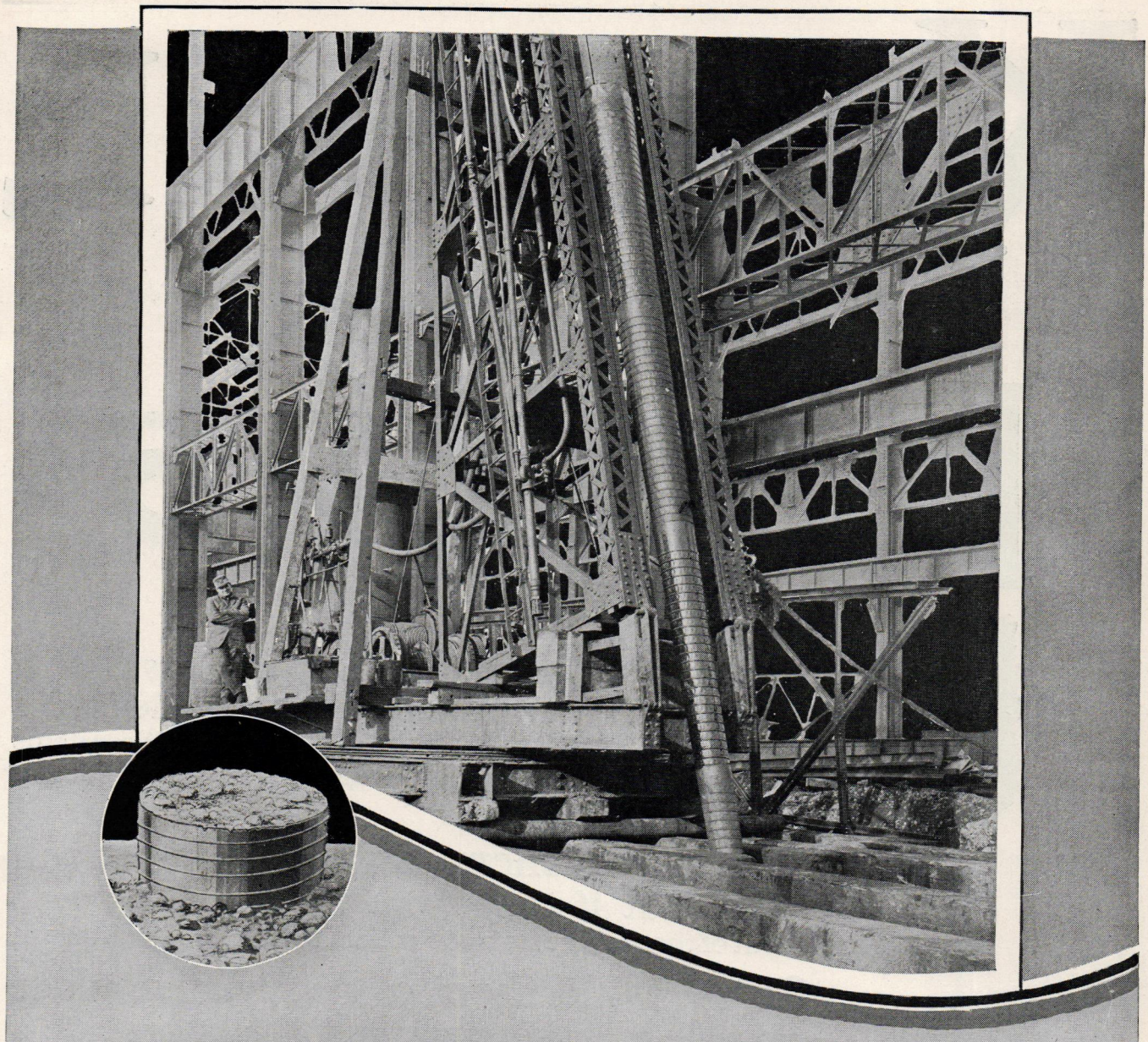
TRUSCON

TRUSCON BAR JOISTS

(Patent Pending)



—wide, solid, continuous members for both top and bottom chord—continuous open web—substantial bearing—rigid end construction.



There are many reasons for specifying these Concrete Piles (speed, economy, etc.)—but one of the chief reasons is because every Raymond Concrete Pile is poured into a driven, spirally reinforced steel shell that is left in the ground.

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Branch Offices in all Principal Cities
"A Form for Every Pile—A Pile for Every Purpose"

RAYMOND

KEWANEE

STEEL Riveted

BOILERS

What determines the "heating cost" of a building? The number of years the boiler stays on the job; the cost of the coal it uses; and repairs. These items —*not the first cost*—determine whether the boiler is a good or bad investment.

Kewanee Boilers could be made to sell for less. But if they were we would have to take out of them some features which keep heating costs low.

So we build them of heavy steel plate —*riveted*—because steel and rivets provide a strength that defies the ravages of time. We purposely make the fireboxes big and high because that means better combustion. And we built them up-to-size because an undersized boiler must be over crowded—and over crowding is wasteful.

Everywhere—the decided preference for Kewanee Boilers proves how thoroughly they have earned their reputation as the most economical boilers built.

KEWANEE BOILER COMPANY

Kewanee, Illinois *Branches in Most Leading Cities*

Lower Heating Costs

STEEL-STRENGTHENED PLASTERING

North-Western Metal Lath in Another Noted Hotel

PROBABLY none of the guests of the Boston Statler will ever catch even a glimpse of the 100,000 yards of KNO-BURN Metal Lath used in this great hostelry.

But the fact that the plastering therein *is* Steel-Strengthened is an added safeguard for its guests, as well as a wise provision on the part of Mr. Statler and his architects—Geo. E. Post & Sons, New York City—against the depreciation resulting from the unusually hard usage of hotel rooms.

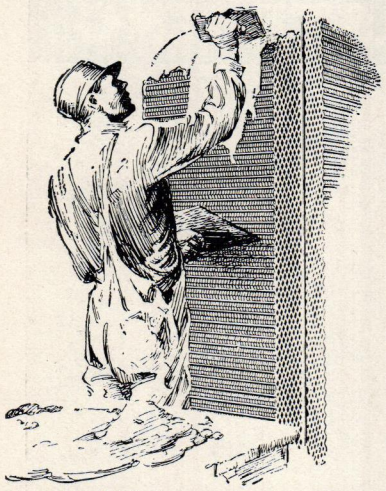
Architects who have hotel work should write for information on the space-saving, 2" metal lath and plaster partition, also a copy of our valuable new A. I. A. Metal Lath Reference and Sample Book.

NORTH WESTERN EXPANDED METAL CO.
1234 Old Colony Building
CHICAGO

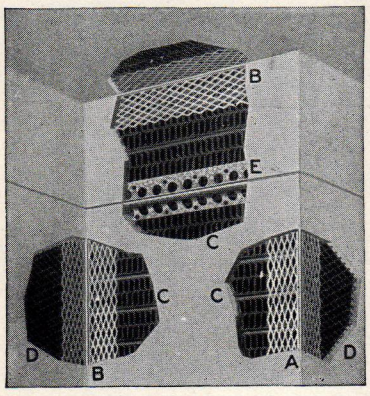
KNO-BURN Metal Lath for Boston-Statler supplied by Dillaby Fireproofing Company, Boston

Kno-Burn Metal Lath

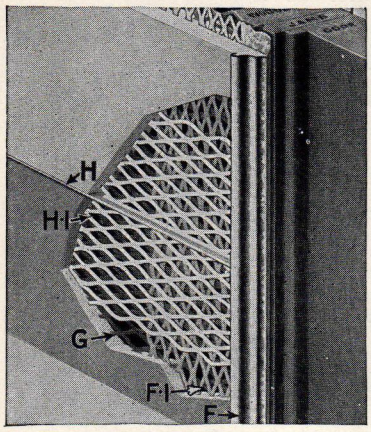
Copyright, 1927, North Western Expanded Metal Co.



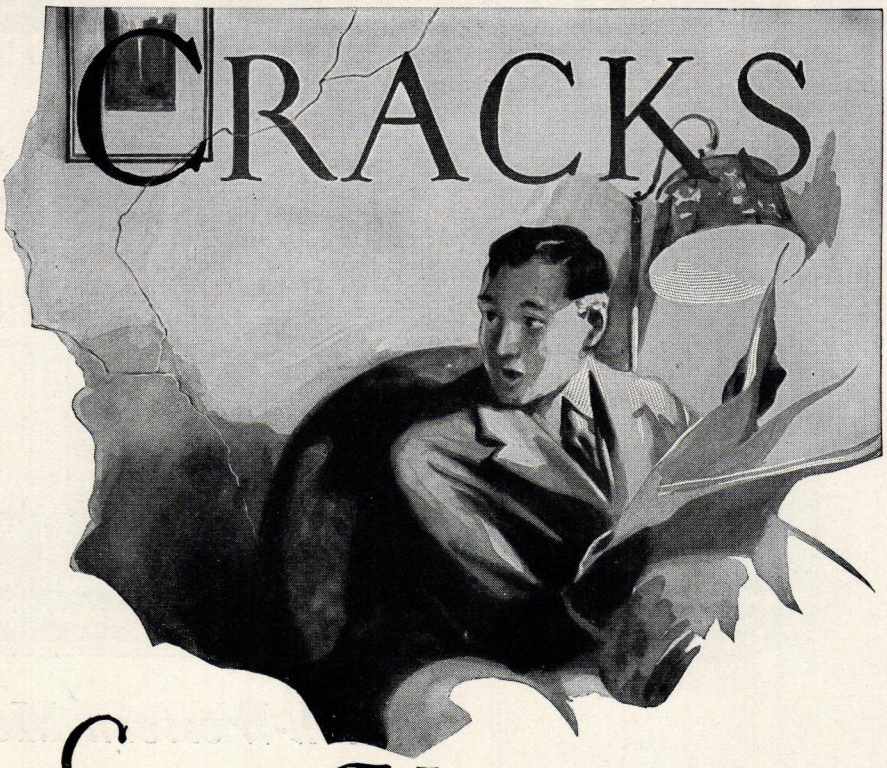
Milcor Stay-Rib Lath requires less plaster than ordinary metal lath and insures fire-safe, crackfree walls and ceilings at reasonable cost. "Expansion" Corner Beads (Pat'd.) insure straight, permanent corners.



A & B-Milcor (Pat'd.) "Expansion" Corner Bead No. 1 and No. 2 respectively; C—Stay-Rib Metal Lath No. 1. D—Netmesh Metal Lath. E—Concealed Metal picture molding.



"Expansion" Casings (Pat'd.) for door and window trim.



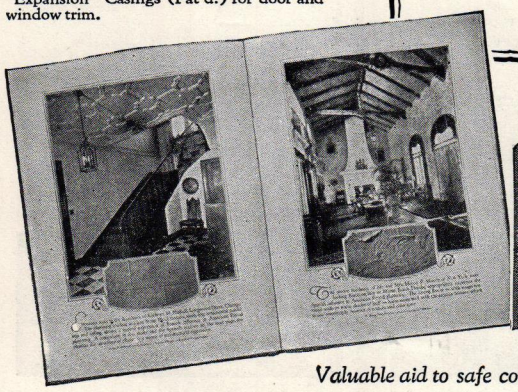
Ever Haunting
the Penny Wise Builder

HE who ignores the supreme safety provided by metal lath construction and makes penny-wise substitutions, is haunted constantly by fear of cracked walls and ceilings, falling plaster and frequent, costly repairs. The inevitable settling of his building, or even the careless slamming of a door, may send ugly cracks staggering across his walls and ceilings—cracks that endanger lives and slash hundreds, perhaps thousands of dollars from the resale value of his property!

Would you advise anyone to submit to the constant threat of poor plastering on an inferior base, when safe, permanently beautiful plastering can be assured economically on a base of Milcor Metal Lath and allied products?

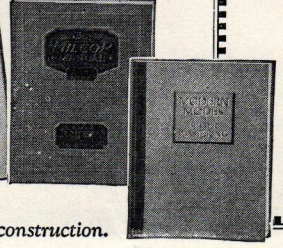
MILWAUKEE CORRUGATING COMPANY, *Milwaukee, Wisconsin*
Chicago, Ill. Kansas City, Mo. La Crosse, Wis.

MILCOR
METAL LATH *for* SAFETY



Valuable aid to safe construction.

Send for these books



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Milwaukee, Wisconsin

GENTLEMEN:—Without cost or obligation to me, please send the Books as checked:—

"Modern Modes in Better Plastering". (32 pages.)
"The Milcor Manual." (80 pages.)
Milcor Metal Tile Roofing Book.

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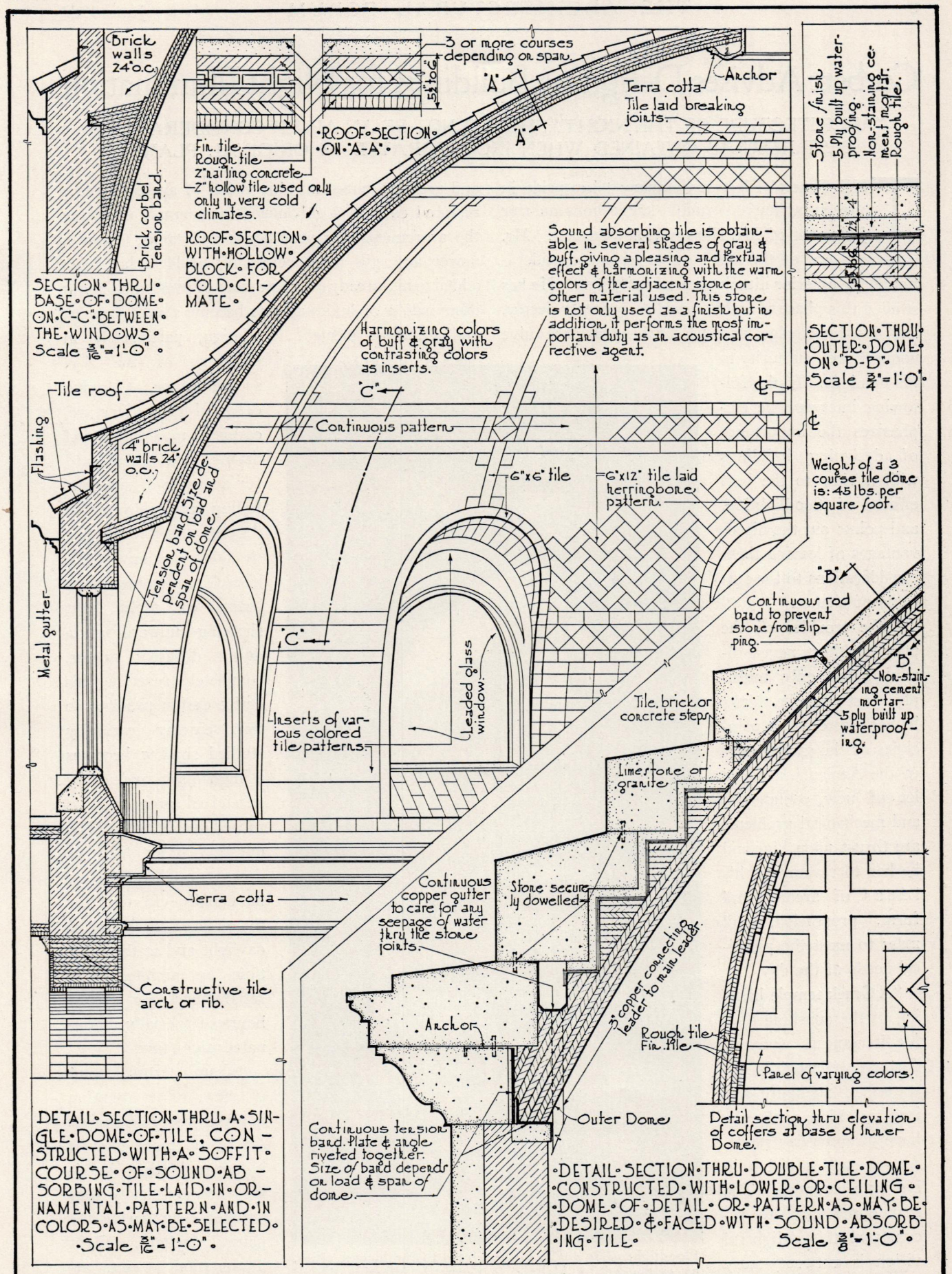

DETAIL SECTION THRU A SINGLE DOME OF TILE, CONSTRUCTED WITH A SOFFIT COURSE OF SOUND ABSORBING TILE LAID IN ORNAMENTAL PATTERN AND IN COLORS AS MAY BE SELECTED
Scale 3/16"=1'-0"

DETAIL SECTION THRU DOUBLE TILE DOME CONSTRUCTED WITH LOWER OR CEILING DOME OF DETAIL OR PATTERN AS MAY BE DESIRED & FACED WITH SOUND ABSORBING TILE
Scale 3/8"=1'-0"

R-Guastavino Company
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DETAIL SHEET

Corbett Advises Designing Buildings for Night Illumination

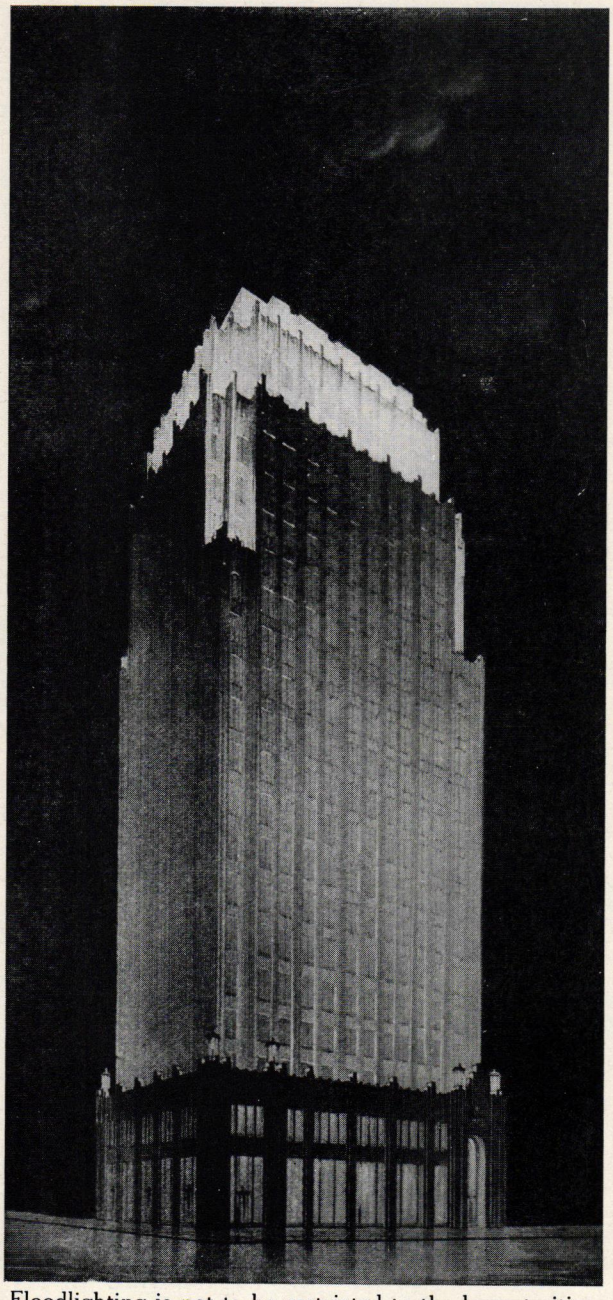
"ARCHITECTURE OF THE NIGHT" SHOULD NOT BE AN AFTER CONSIDERATION BEST RESULTS OBTAINED WHEN INCORPORATED IN ORIGINAL PLANS

THE General Electric Company takes pride in presenting the constructive suggestions and ripe judgment of Mr. Harvey Wiley Corbett. Mr. Corbett is one of the first to give serious consideration to the exterior illumination of buildings. He has studied this phase of architectural design very deeply, and his knowledge and personal experience give unquestioned authority to his opinions. In the following interview he emphasizes the importance of designing buildings with a view to the best effects of floodlighting, and points out the disadvantages of leaving these considerations to the outcome of chance.

"The troubles of the poor architect never diminish but only multiply. Just when he thinks he has mastered the principles of the architecture of the Ancients, a whole lot of new commercial and mechanical problems are thrust upon him and he has to revamp all his ideas of architectural form, proportion, and mass to meet the practical needs of the day.

"A Greek temple basking in the sunshine of a Mediterranean summer day and reflected in the waters of an azure sea, inspires him with the hope of some day reproducing such a vision in his own country. The first opportunity to reconstruct this delightful vision is a twenty-story loft building capped by an elevator pent house and pressure tanks, and his vision of ancient Greece restored ends in a galvanized iron temple enclosing the aforementioned pent house and tanks. Now a newer and still more confusing problem has been added to his already complete store of problems. Night illumination of buildings has become a very popular and effective element in design, particularly in buildings of the sky-scraper type. Having designed his architecture, cornices, mouldings, and details with due regard for an angle of sunshine falling from above at 45 degrees over the left shoulder, he now finds himself confronted with beams of night light shooting upward at a dozen different angles, completely reversing his entire design problem so that every carefully studied shadow becomes a high light and every studied proportion is turned upside down. The question arises, 'can we design our buildings to be equally effective for the eight or ten hours of daylight and at the same time be architecturally satisfactory for a few hours of specially illuminated night time?'

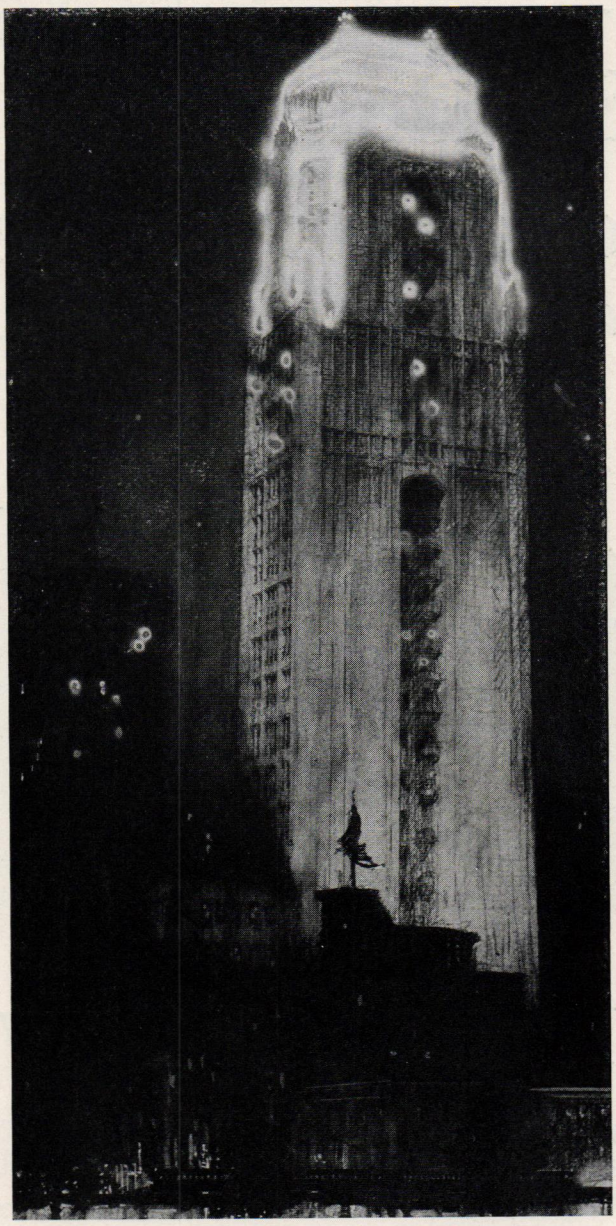
"From a critical point of view, more attention is given, more comments are made, more interest is aroused when buildings are artificially illuminated than during the natural daylight. Night illumination attracts attention like a spotlight on a stage. Buildings



Floodlighting is not to be restricted to the largest cities, as evidenced by Helmle & Corbett's effective design for the illumination of the new Pennsylvania Power & Light Co. Building at Allentown. G. E. floodlighting will transform this building into a magnificent beacon.

Advertisement

are noticed and commented on which otherwise would be passed by the casual observer without a thought, so that from one point of view the problem of architectural design with respect to night illumination is a very serious one, demanding a great deal of study and research. It will undoubtedly become of ever-increasing importance and one which no architect can afford entirely to overlook. Fortunately, modern commercial demands have made many of the old familiar architectural forms which have come down to us from a past generation inappropriate in modern work. In high buildings particularly, the cornice has practically disappeared. Many other familiar forms have gone with it. Mass, proportion, silhouette, and color have become the commanding factors, and they are not so materially influenced by reversing the angle of light; but we cannot let the matter rest with chance, simply hoping that the result of night illumination may be good. We must design those portions of the building which are to be illuminated with all due respect and regard for this new element which has become so important a factor in the appearance of the building.



Helmle & Corbett's famous Bush Tower. G. E. floodlighting adds a mystic quality to the beauty of this building after dark, and, as Mr. Corbett says, "gives the illuminated portion the appearance of a jewel in a setting."

"It happens too often in the design of buildings that illumination is an after consideration. The architect finds that spaces on which illumination is possible are not necessarily pleasing in mass and proportion, whereas with the thought in mind of planning these spaces for illumination, simple modifications in the plans would have made these same spaces pleasing in proportion. Architectural detail has not as much significance as one might imagine. Since the illuminating element is composed of many sources of light, the shadows are seldom equally divided, and the effect is more one of diffusion than of exactness.

"The problem, to begin with, is one of mass and proportion. That portion of the building which is illuminated stands out clearly against a dark sky and is separated quite distinctly from the portion of the building unilluminated. Special study must of course be given to the line of transition between these two portions. There is a tendency for the illuminated part to float unsupported and thereby loose its structural significance. The form of the illuminated portion should be so tied in with the rest of the building that it should appear as a jewel in a setting, forming a coherent part of the whole structure. In order to illuminate a building, two methods are generally in vogue,—one by means of floodlights placed on the set-backs or terraces, and the other by means of similar units placed on other buildings across the street or placed on the ground. The latter form is rarely possible in connection with commercial buildings, but it has been used with great success in the lighting of government buildings and other public structures. It will be readily seen that if there is a choice in the location of the set-backs and their depth, it has a very direct influence on the effectiveness of the lighting."

This is the second of a series of interviews with prominent architects published by General Electric Company, Schenectady, N. Y., to promote study and provoke discussion of the architectural possibilities of night illumination—a new instrument serving an ancient art.

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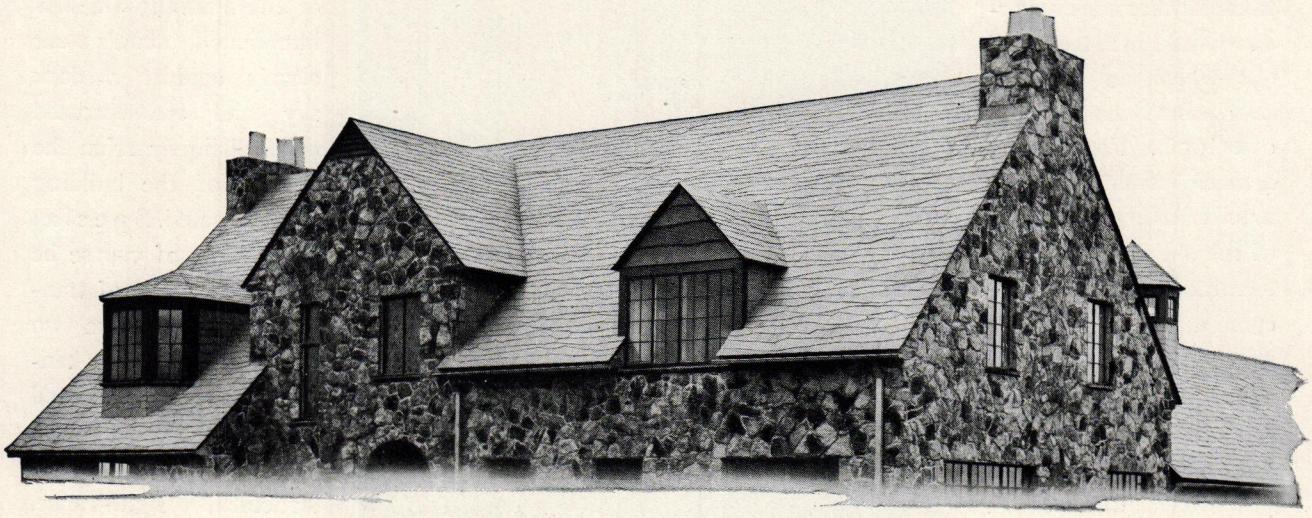
Permit Sheldon to introduce to you—a NEW "Roof of Eternal Youth"



It's the New Sheldon "Waveline"

Different from any slate roof heretofore attempted, a roof of decided individuality and beauty—

—in which the slate is applied with the long side parallel to the eave line or ridge, and a standard 3″ lap is maintained throughout.

One long side and the two ends are sawed, but the exposed long edge is left with the natural break of the rock. Hence the effect from which it derives its name: "Waveline."

We show the roof as large as is here possible; but an enlarged reproduction of the photograph is yours for the asking. Also full instructions for applying the roof.

The "Waveline" is being featured in our Semi-Weathering Greens and Grays, 3/16″ to ¼″ thick, and prompt delivery may be relied upon.

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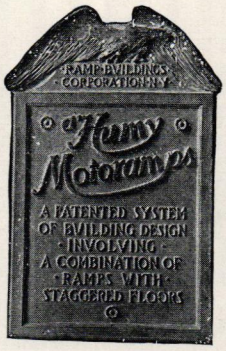
Hanna Garage, Cleveland, Ohio, designed by Hadlow Hick Company, Architects—5 stories high and 400 cars capacity. d'Humy Motoramps for customer convenience and operating profit.

It is a BUSINESS! It came into being by popular demand and a means of self-protection for office building, hotel, department store and other business interests. In practically every city there are 10 cars for every curb parking space—even where curb parking is still permitted. Business and the public demand relief.

Above is pictured the business home of a garage enterprise brought into being to serve the parking needs centering around the Statler Hotel and adjacent office buildings, and their customers.

Have realty and business men in your city taken the same forward step in all the places necessary? Then—take a copy of our "Building Garages for Profitable Operation" and start the ball rolling.

Or—if preliminary plans are under way—let us sketch-plan a miniature floor plan layout of maximum storage capacity. That is our free service to architects.



RAMP BUILDINGS CORPORATION

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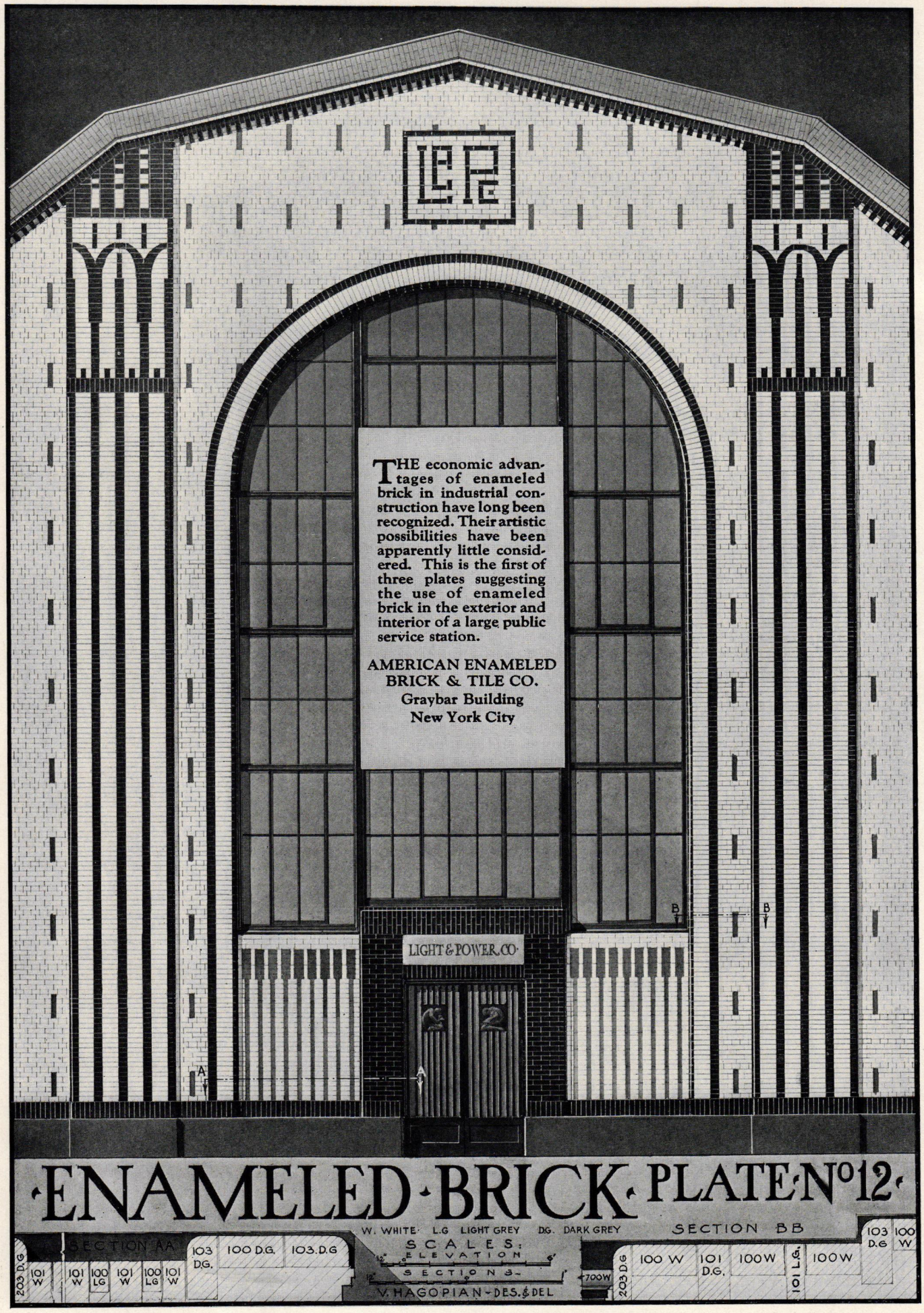
GARAGE ENGINEERS

CONSULTANTS ON PROMOTION AND GARAGE MANAGEMENT



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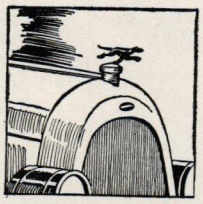

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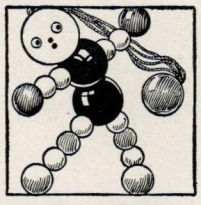

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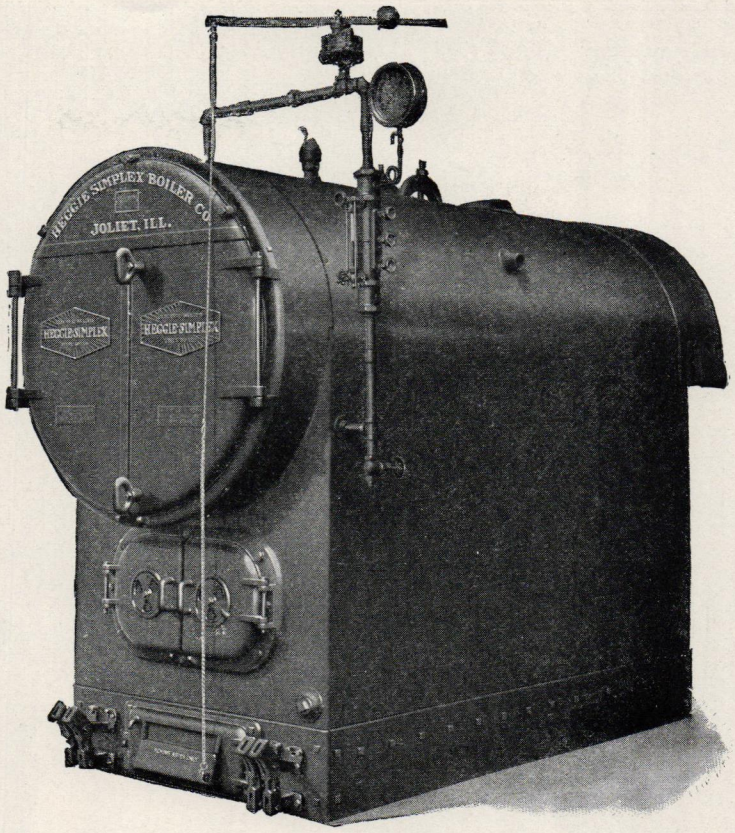


Leaders Buy From Leaders

LEADING corporations are distinguished for the certainty with which they buy the most modern equipment and secure the most satisfactory service at lowest final cost. That explains why these and many other of America's best known companies are installing Heggie-Simplex heating boilers in steadily increasing numbers. Heggie's 35 years of doing one thing well have culminated in a product whose performance has won their confidence.

Heggie-Simplex Boiler Co., Joliet, Illinois, Representatives in principal cities —telephone and address listed under "Heggie-Simplex Boiler Company."

HEGGIE-SIMPLEX

ELECTRIC-WELDED STEEL HEATING BOILERS

In modern merchandising, the Power of Suggestion is a prime factor in making sales. The goods themselves, well lighted and well displayed in a store front that bespeaks quality, present their own strongest appeal.

ZOURI KEY-SET
EXCLUSIVE
Safety
FEATURES
STORE FRONTS

Putting Value Into Business Property

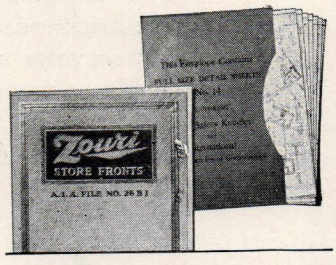
Zouri Store Fronts suit the client who wants his store to have that elusive thing called "individuality." Inside, a store can be made distinctive in hundreds of ways; outside, its character depends solely on its store front.

The Zouri moulding is made of heavy gauge copper, stamped in clean-cut and substantial designs. Underneath, Zouri's patented safety features furnish essential protection to both plate glass and copper. For the Key-Set construction prevents too much pressure at one point in setting, thus keeping the copper in shape and eliminating cracks at their point of origin.

Zouri quality construction is worth the care we put into its manufacture. It protects the architect who specifies and the contractor who installs Zouri Store Fronts.

Useful detail sheets and data book

This handbook has been written for architects, contractors and builders. It deals primarily with construction and gives plans and diagrams showing best approved methods of window and display space arrangement. The detail drawings will be welcomed by specification writers. A word from you will bring them—promptly.



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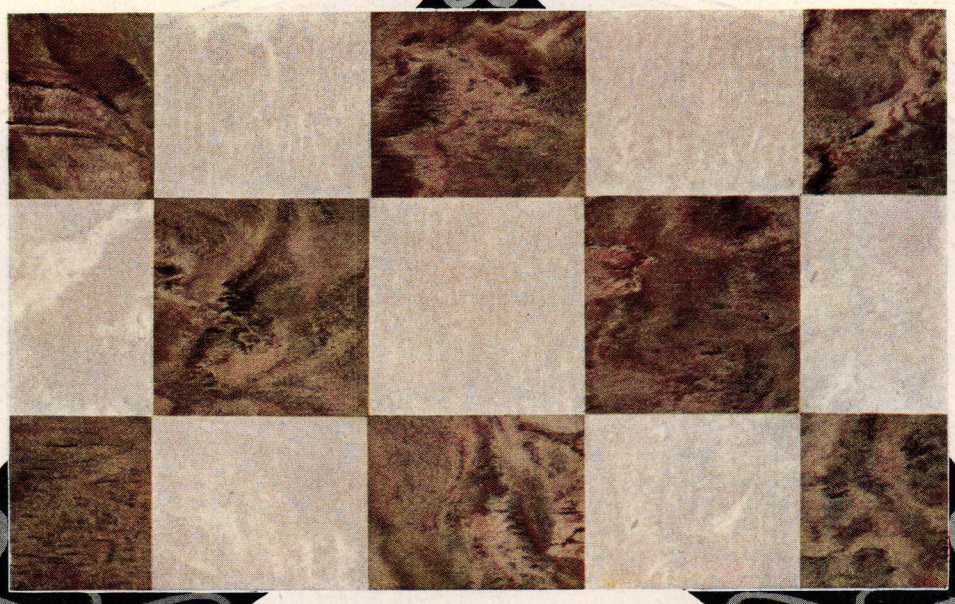
Oklahoma City, Okla.
Paris, Texas
Port Arthur, Texas
San Antonio, Texas
Shreveport, La.
Tulsa, Oklahoma
Tyler, Texas
Waco, Texas
Wichita Falls, Texas

Well-Burned Clays Never Decay ~ Specify "Acme"

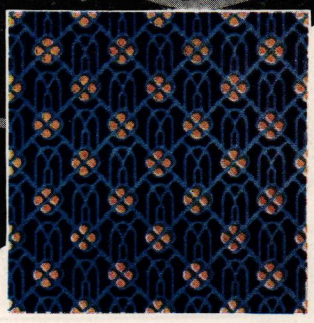
For the bedroom, a floor of the dainty carpet pattern shown below may be most appropriate, either in this or other color combinations. This design is Moulded Inlaid No. 5442. The 1927 Armstrong Pattern Book shows many other distinctive patterns.



For specifications, write for the 1927 file-size edition of "Armstrong's Linoleum Floors" or consult Sweet's Architectural Catalogue, pages 1400 to 1405.

Below is Armstrong's Green Jaspé No. 19.

Above is Armstrong's Marble Inlaid No. 84. The blocks are 9 x 9 inches.



An apartment... *how will it rent?*

—The floors you specify will help answer that question

As a designer of apartments, you know the importance of planning things that will appeal to the prospective tenant. So you specify such eye-catchers as rough textured walls, an arched doorway, or a built-in bookcase, perhaps.

A still further opportunity may be found in the use of floors of Armstrong's Linoleum. Prospective tenants respond immediately to the beauty, the practicability of these floors. Decorative possibilities are instantly suggested.

Such a floor has an added appeal to your client, the apartment house operator. For a floor of Armstrong's Linoleum requires no annual fixing up, no costly refinishing. Its first cost is its last. Upkeep is very low.

Today with modern building construction tending more and more toward the use of steel and concrete, you cannot select a more practical, more sensible floor than one of Armstrong's Linoleum. It can be cemented right over the concrete underfloor.

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We shall also be glad to assist you in planning color schemes for projects you will describe to us, complete even to the wall and woodwork finishes, draperies, and furnishings, as well as floors of correct color and designs. Armstrong Cork Company, Linoleum Division, Lancaster, Penna.

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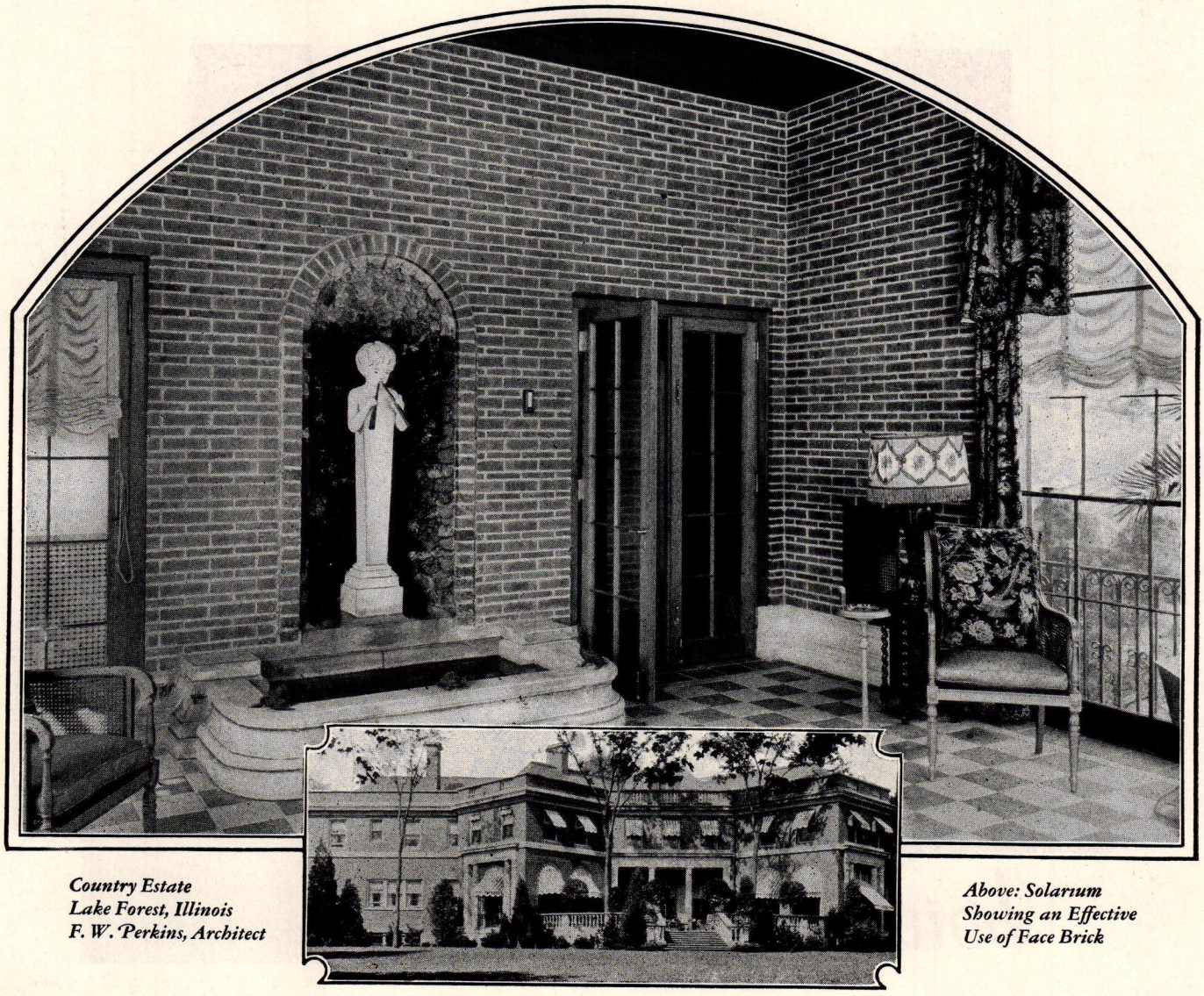

Country Estate
Lake Forest, Illinois
F. W. Perkins, Architect

Above: Solarium
Showing an Effective
Use of Face Brick

Inside and Outside—FACE BRICK

THE many advantages of Face Brick as a structural medium are unquestioned. Yet comparatively few realize the wide scope of beautiful effects Face Brick offers for *interior* use.

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Architect, Baum

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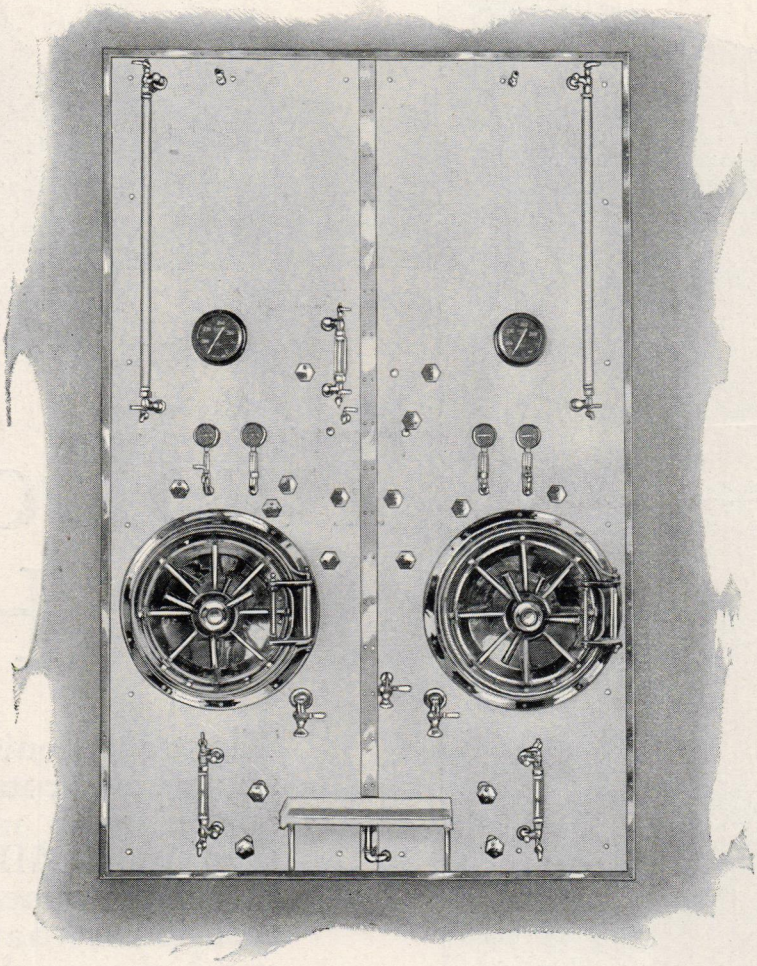

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CASTLE

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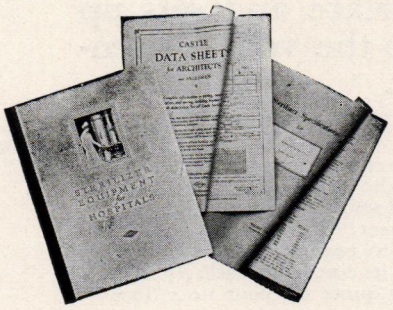

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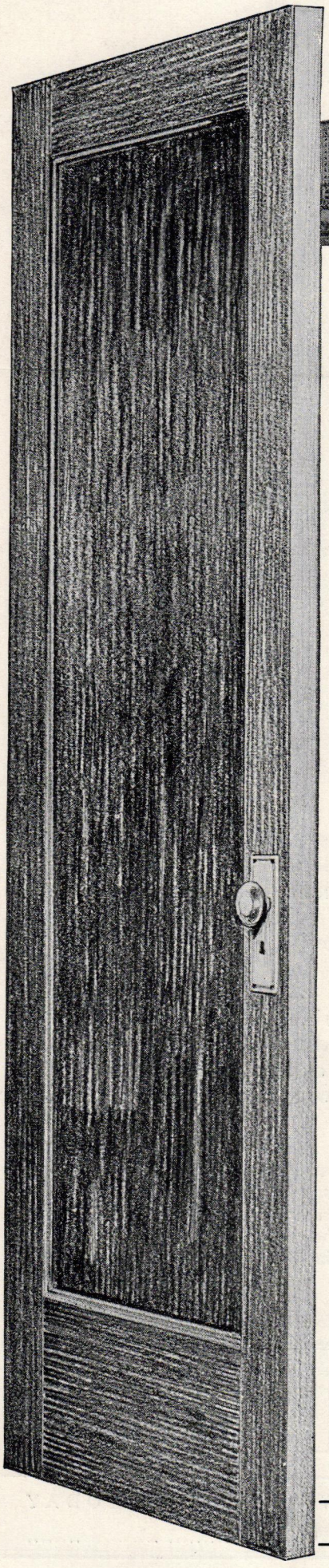

Drake Hotel, Chicago

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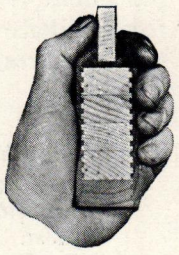

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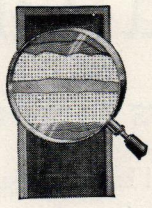

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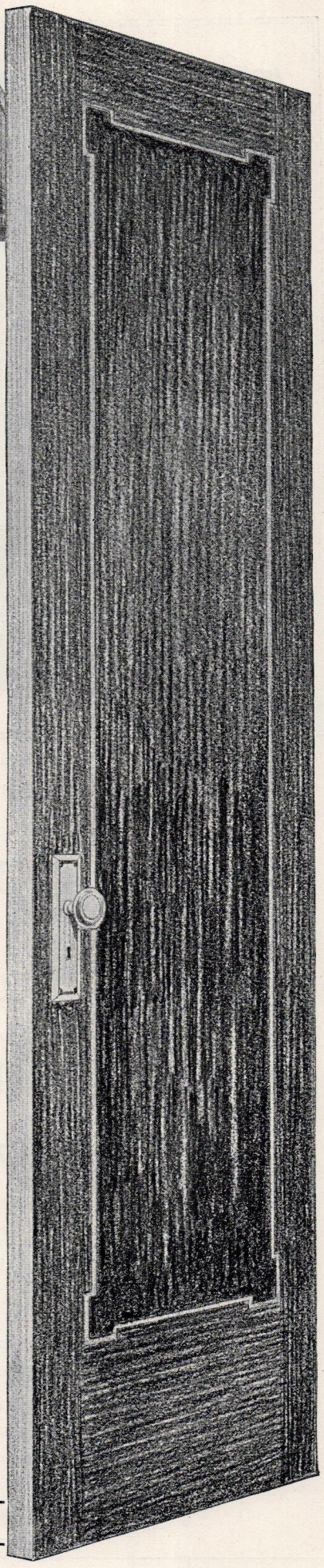

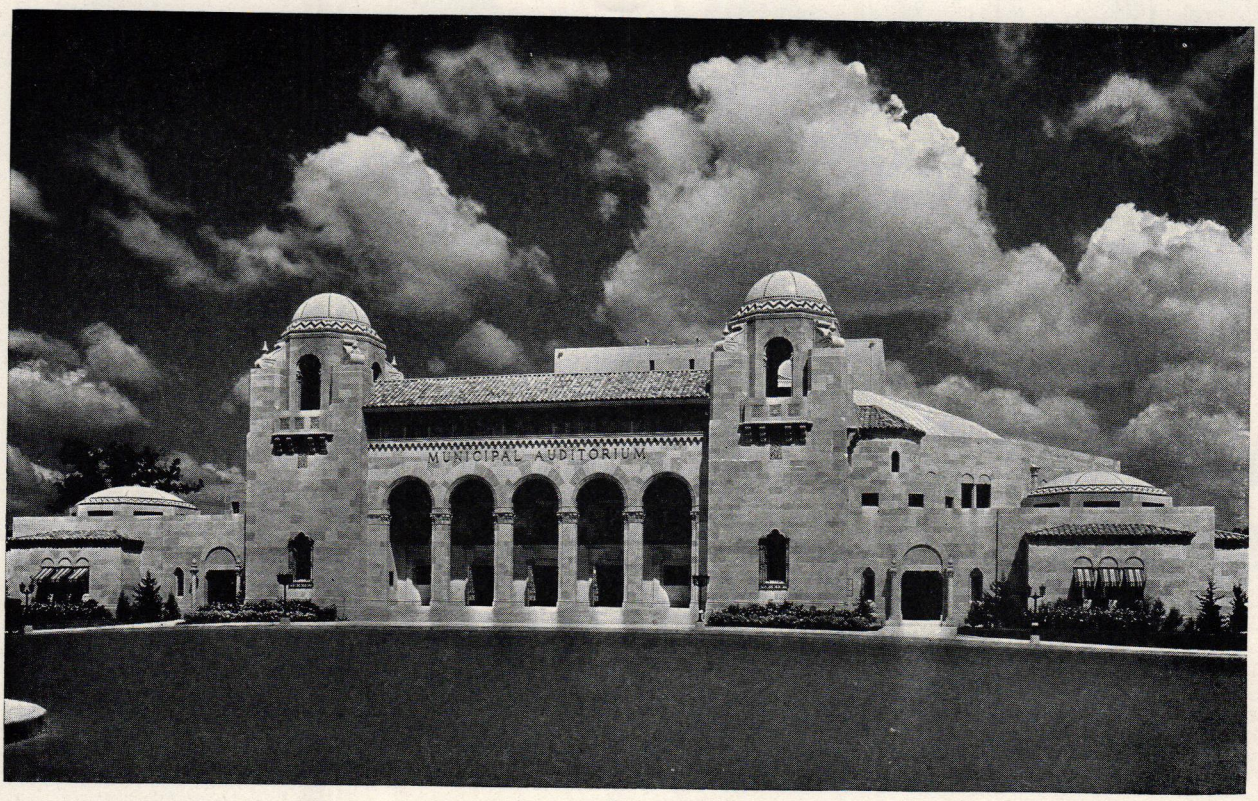

Municipal Auditorium, San Antonio, Texas. Atlee B. and Robt. M. Ayres, Geo. Willis and organization, and Emmett T. Jackson, Architects

San Antonio's Municipal Auditorium Is Built of Indiana Limestone

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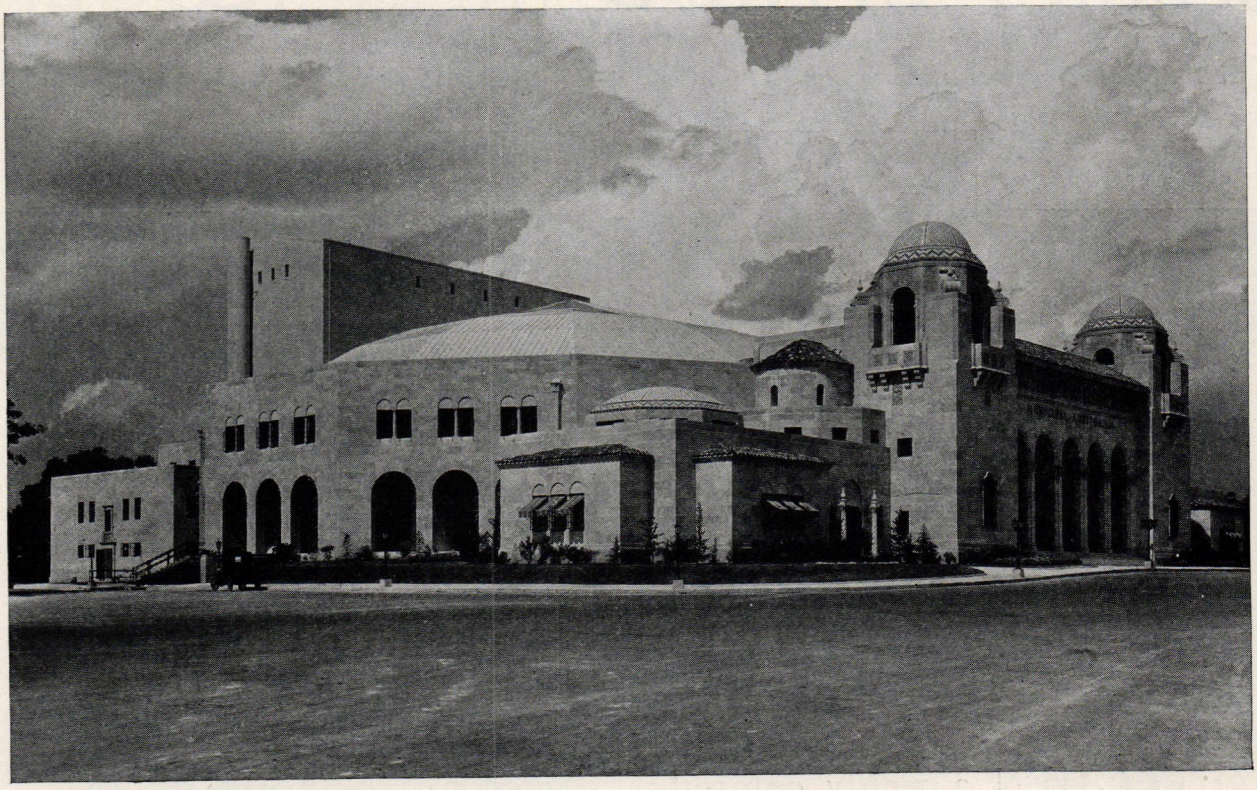

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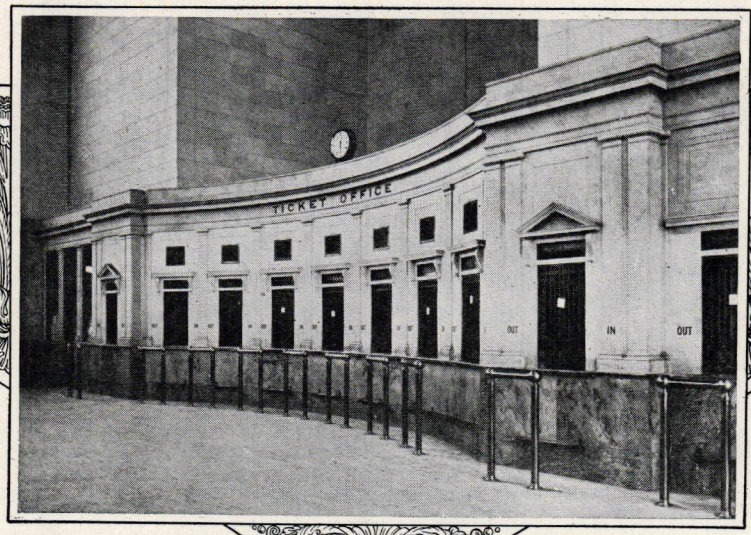

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Kenneth M. Murchison
Architect

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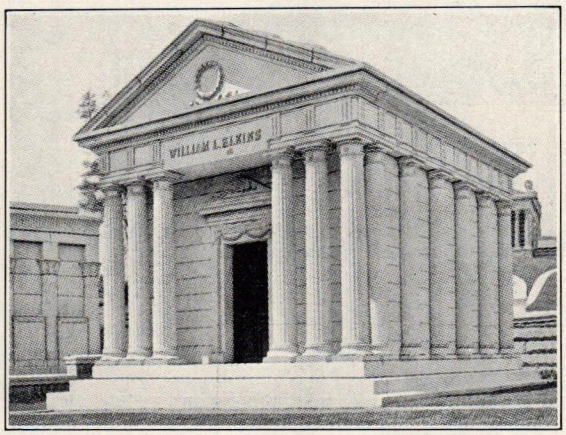

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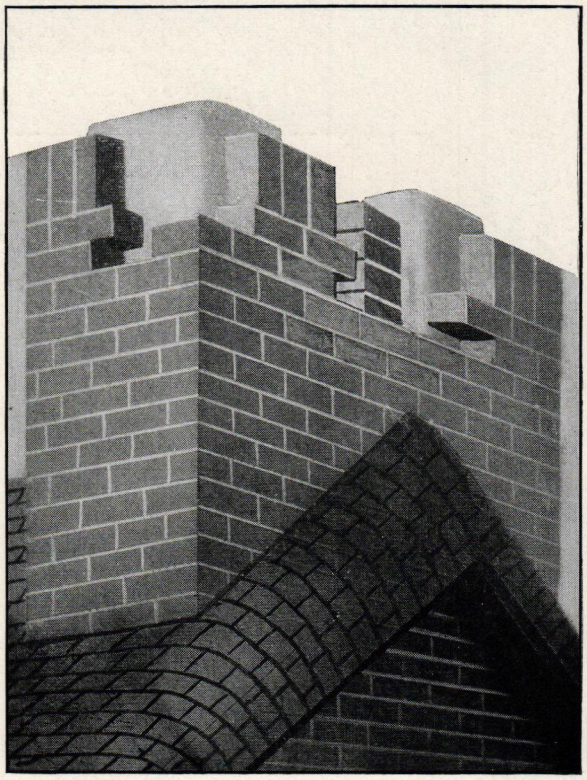

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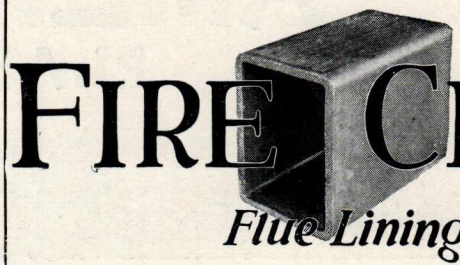

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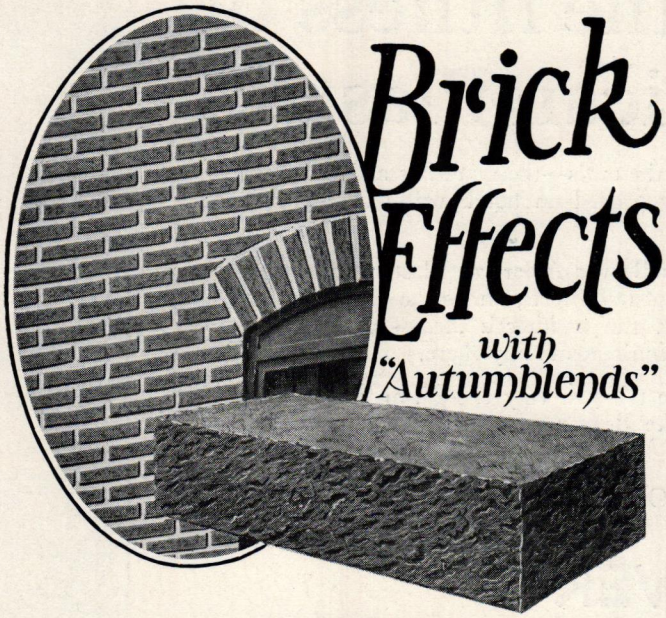

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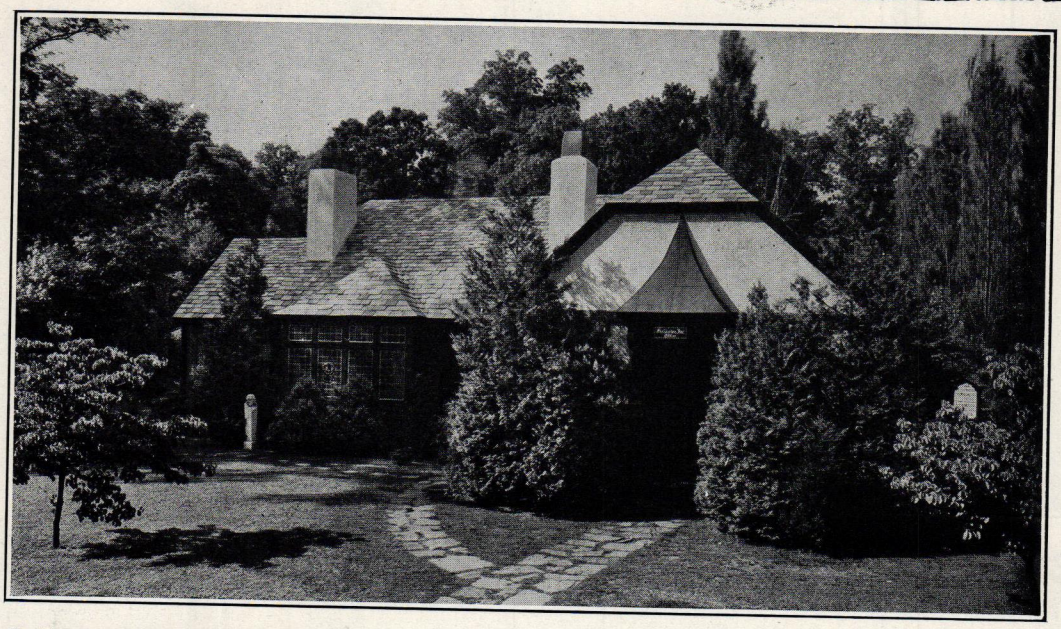

Studio of Architect Dwight James Baum
Riverdale, N. Y.

If This Isn't A Concluding Conclusion What Is It?

WHEN Architect Dwight James Baum, first built his office at Riverdale, N. Y., it was not roofed with Olde Stonesfield. But when an addition was made, the roof was replaced.

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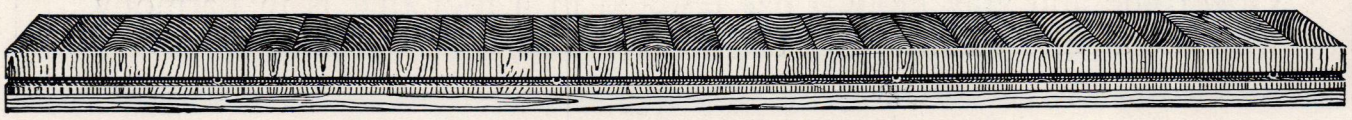
I will at any time be glad to show anyone you may bring with you our entire plant, especially our new gym floor.

Very truly yours,
Ralph D. Brown
Physical Director



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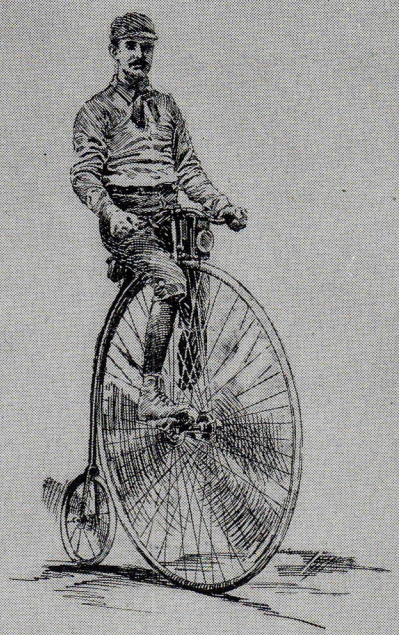
Mr. Bradley, being of the H. T. Lindeberg organization, has followed our successful progress in reproducing Old English Shingle Tiles—He has pronounced them altogether true to type.

The combination of Dull Antique, Dark Burgundy, Green (old moss) and Gray (blue and gray mould) has resulted in a roof that is in harmony with the architectural style of the house.



—the glories of the nineties are the jokes of today . . .

But the differences between the old order of things and the new are essentially matters of mechanical detail. Read in the column at the right how a little money invested in modernizing the heating system changed the whole complexion of things for a fine New York hotel.

- since 1888

Webster Systems of Steam Heating

Warren Webster & Company, Camden, New Jersey
Pioneers of the Vacuum System of Steam Heating
52 Branch Offices — *In Canada, Darling Bros., Ltd., Montreal*

More than 41,000 installations in America's finer buildings

MODERNIZATION of the heating system in the Endicott Hotel, New York, was an investment in economy—saving fuel costs . . . saving costs of redecorating ceilings and walls damaged by leaking radiators . . . saving cost of air valves, which required frequent replacements.

An eight-story, U-shaped corner structure, the Endicott was always difficult to heat. When first installed, the two-pipe gravity system was considered satisfactory, but with the development of the art of heating, the system was rapidly becoming obsolete and proving a handicap.

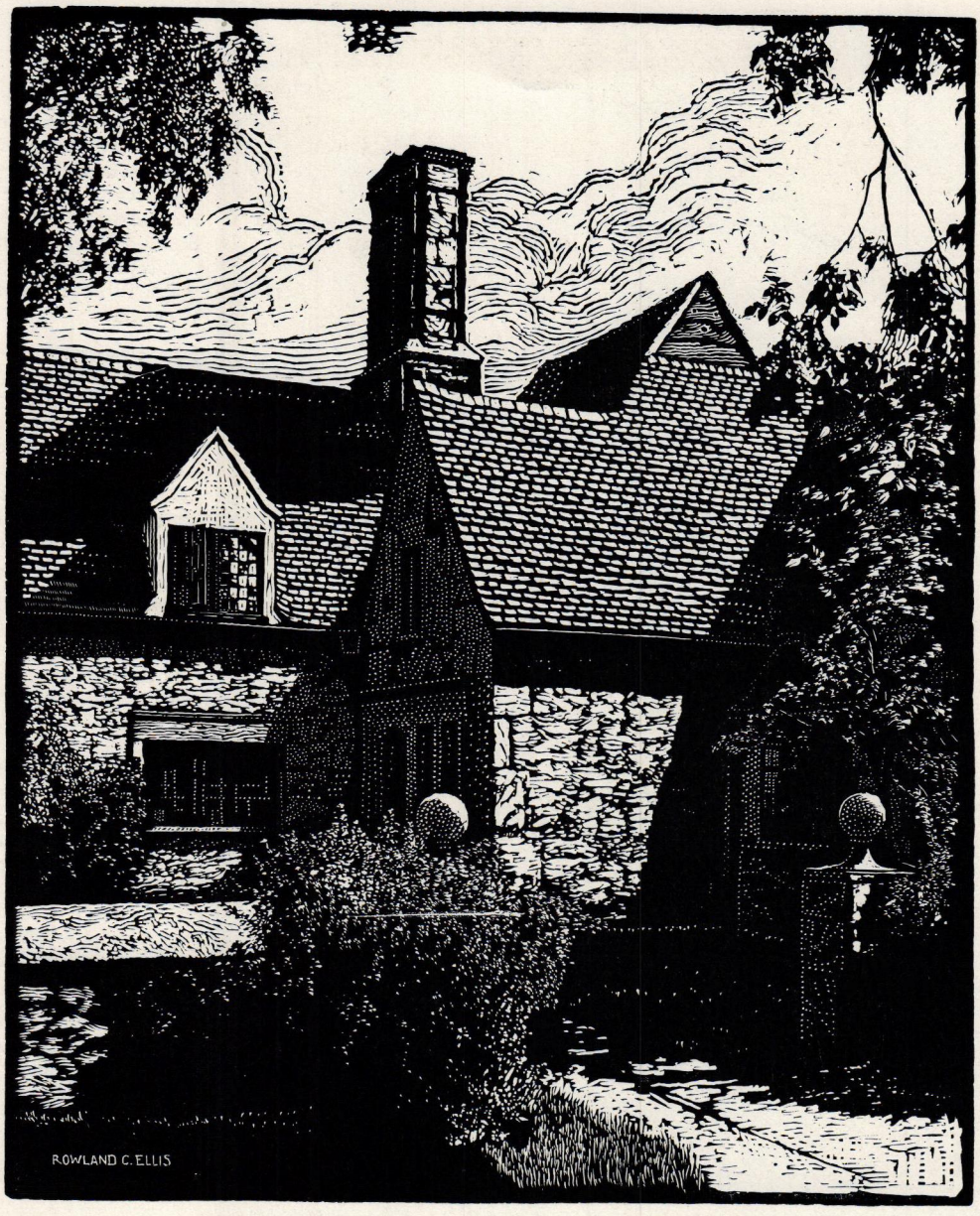
Three boilers were required to maintain any degree of comfort in outside rooms during cold weather . . . Even with a pressure of from five to seven lbs. the farthest rooms were not well heated. Complaints of insufficient heat and demands for more pressure made careful firing impossible, increasing the difficulty and waste in operating the boiler plant. Radiators were a source of constant annoyance to guests and expense to the house, due to noise and leakage.

In 1923, after an investigation by the Chief Engineer, the two-pipe gravity system was supplanted by a Webster Vacuum System of Steam Heating.

Now—the cold weather load is easily carried on one large boiler instead of three . . . Steam is generated at ten lbs. and reduced to about one lb. for distribution through the mains. Water does not accumulate in the radiators and does not leak out of the system.

Each guest is now able to regulate the heat in his own room . . . Complaints of insufficient heat are eliminated—for the same temperature is easily maintained in all 480 rooms. The modernization was an investment in economy and a builder of good will . . . a hotel's greatest asset.

The many sources of waste through continuing in operation obsolete and faulty heating systems is truly amazing. Let us give you the facts.



Studio of Lewis Bowman, Architect, Bronxville, N.Y. Roofed with IMPERIAL *Brittany Shingle Tiles in dull reds and sage browns.*

Ideal for the English-type dwelling

Somewhat cold and austere in themselves, English-type houses need the warmth of color which IMPERIAL Brittany Shingle Tiles impart. Architects find their soft, rich hues helpful in relieving the severity of such homes.

In addition, IMPERIAL Brittany Shingle Tiles give an effect of age which is singularly appropriate. Their massiveness and quaint irregularity are delightfully reminiscent of England's century-weathered roofs. Write for catalog.

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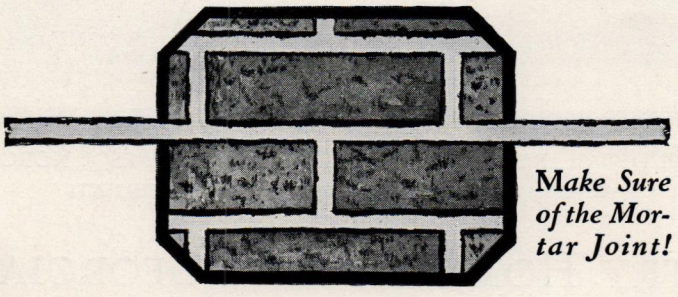
Chicago, 104 S. Michigan Ave. LUDOWICI-CELADON COMPANY *New York, 565 Fifth Ave.*

IMPERIAL
Roofing Tiles

color!

Glossy black or palest buff—make the mortar color you select *permanent* by using BRIXMENT for masonry. No free lime to cause fading, scaling or popping; grows stronger with age. Architects' handbook on request. Louisville Cement Co., *Incorporated;* General Offices: Louisville, Kentucky.



Make Sure of the Mortar Joint!

Use BRIXMENT *for Mortar*

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ELECTUS D. LITCHFIELD & PLINY ROGERS, ARCHITECTS

A Country Home of Pink Georgia Marble

PINK GEORGIA MARBLE, with its warmth of color bordering on old rose, contrasts beautifully with the entourage of planting and green lawns. The carved features are also pink Georgia Marble, showing its good working qualities.

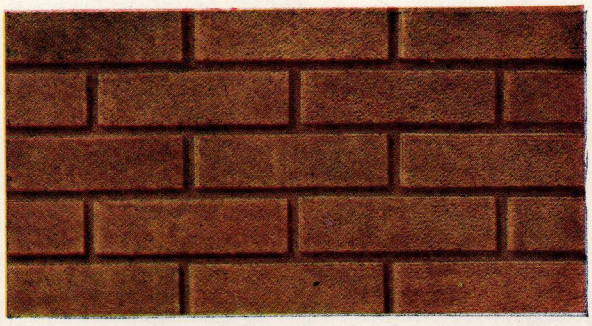
The Georgia Marble Company, Tate, Georgia; New York, 1328 Broadway; Atlanta, 511 Bona Allen Building; Chicago, 456 Monadnock Building

GEORGIA MARBLE

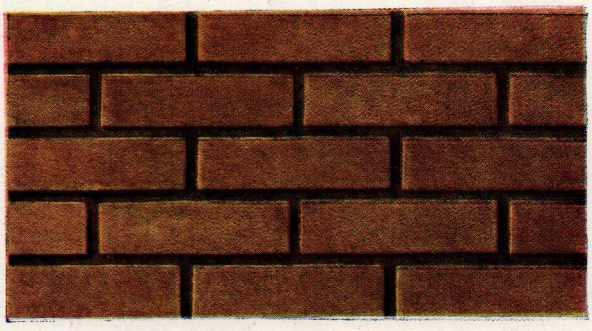
STUDIES IN MORTAR COLOR DESIGN

GETTING CHARACTER INTO BRICKWORK

Thirty years ago ideal brickwork was obtained when a wall was absolutely smooth and as nearly as possible of one unvarying hue, the mortar of its joints being carefully tinted to precisely the color of the brick themselves. Constantly improving standards of architectural taste and growing appreciation of the superb brickwork of the past have changed all this. The best architects now insist that their brickwork be given architectural character, and fully as vital as the color and texture of the brick themselves is the color of the mortar used, the color no longer being chosen to agree exactly with the brick but to present that interesting contrast and richness of variety which it is the function of color to supply.



Pecora Dark Brown Mortar Stain



Pecora Black Mortar Stain

These three panels, for example, show a single type of brick made by the Western Brick Co., variety and interest being given by using mortar of different colors. From the variety of colors made possible by using Pecora Mortar Stains it would be easy to secure, even when using the same brick, a wide range of effects, particularly since added to the variety to be obtained by differences in color there is the vast variety to be had by using different "bonds,"—Flemish bond, English bond, clip bond, and the like, and the almost equally great variety of joints,—raked joints, flush joints, etc.

Pecora Red Mortar Stain

Later plates will illustrate the same principle applied to popular brick of other important manufacturers. The complete series of Mortar Color Design Studies will shortly be available and will be sent without charge to any architect requesting it.

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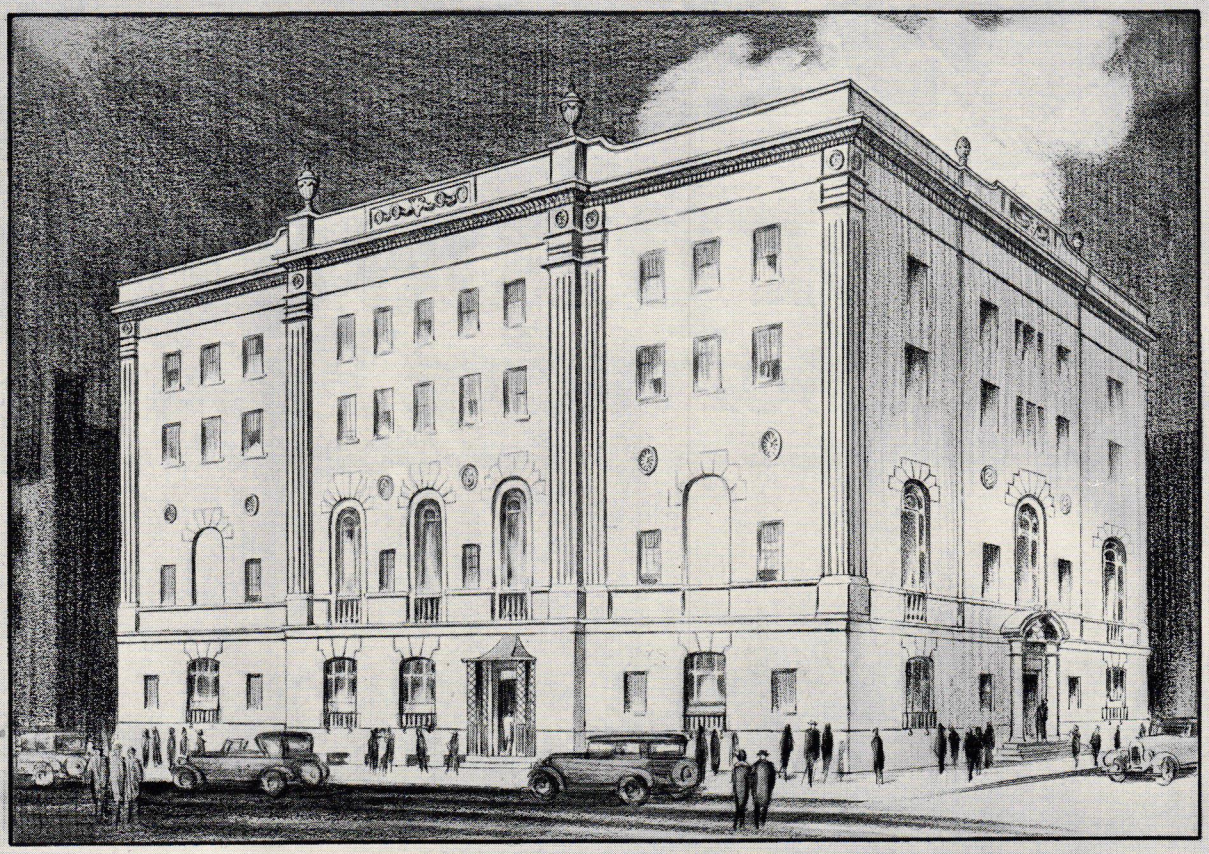

Queen City Club, Cincinnati, Ohio

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TYPIFYING the character of club buildings that leading American cities are now building, is the Queen City Club at Cincinnati. Classic beauty of design, with practical arrangement of interior space, give it unusual architectural interest.

Permanent, water-proof masonry, such as a fine building requires, necessitates using mortar of ample strength, and of low water absorption.

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The pleasing color of Kosmortar blends well with all masonry. Mortar color may be added without fear of Kosmortar reacting unfavorably upon it.

Kosmortar may be mixed as needed and used immediately. It is extremely plastic, working easily and without drag under the trowel.

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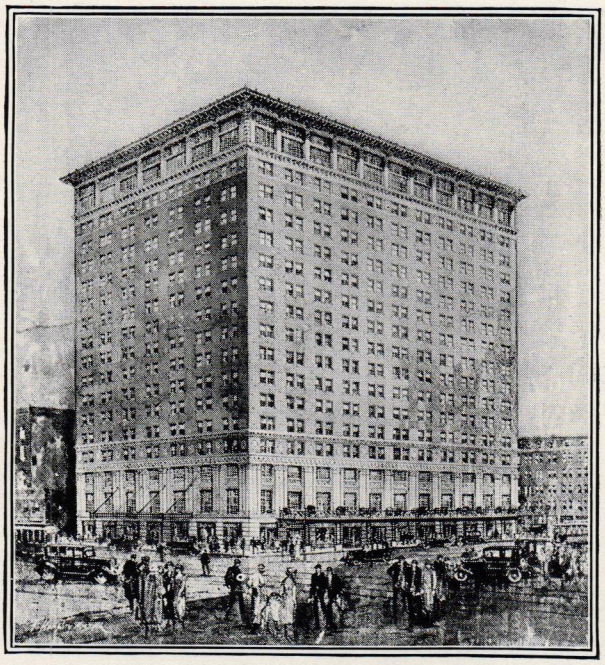

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THE recent installation of McCray refrigerators in the new Baker Hotel at Dallas, Texas, is striking evidence of our ability to meet every refrigerator need in the finest and largest hotels. Twenty-one separate units, from small chests to great storage coolers, comprise the McCray installation in the Baker.

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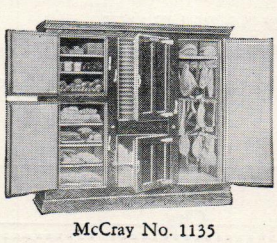

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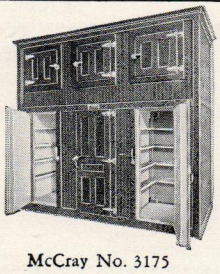

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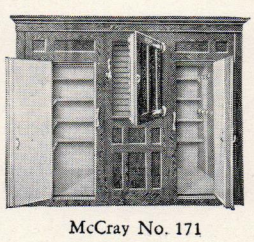
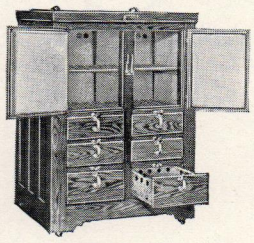
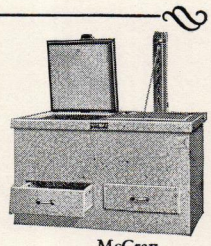


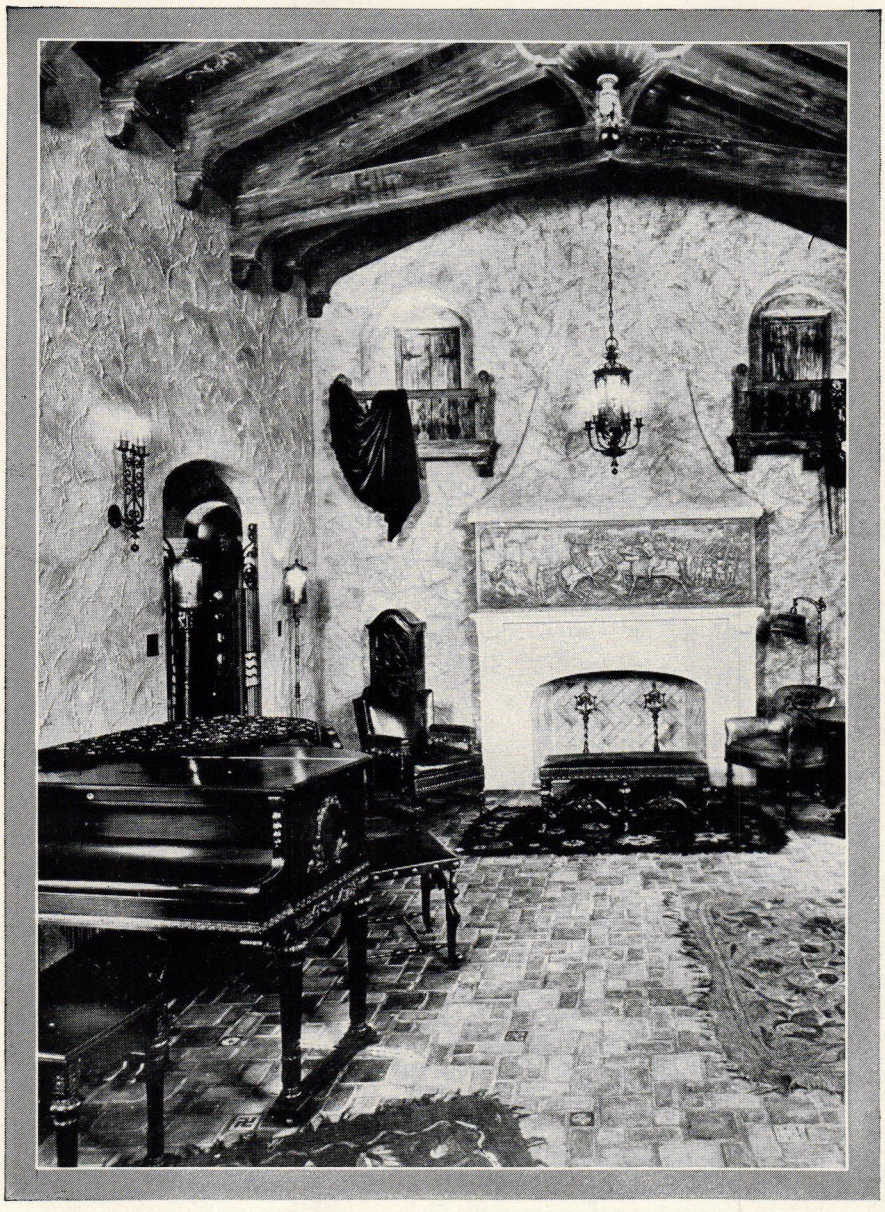
McCray No. 171



McCray No. 525



McCray No. 1223 Chest



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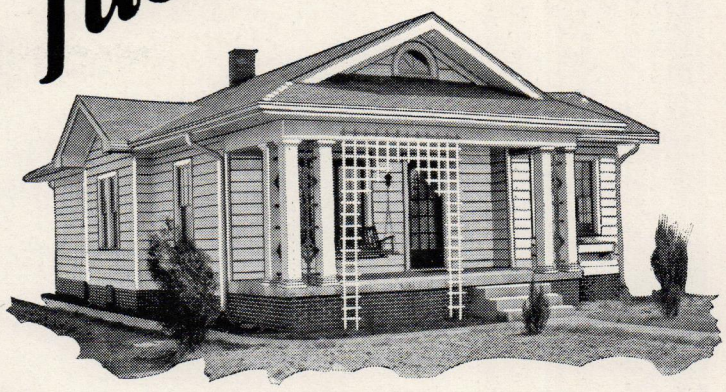
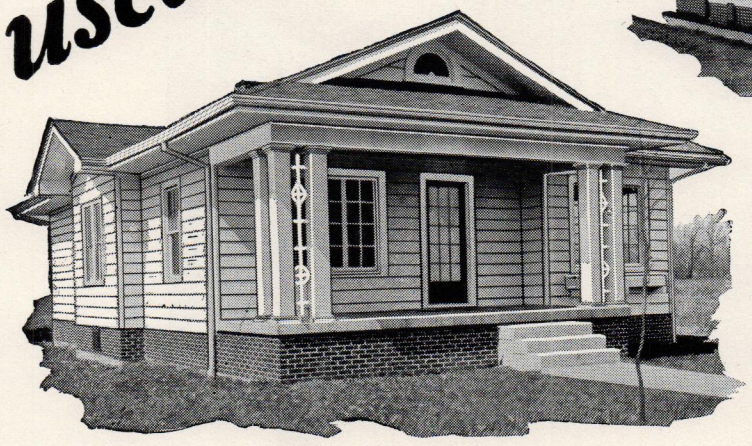


Ⓐ *This un-insulated house, finished with lath and plaster, consumes ⅓ more fuel than the Masonite house, shown below.*



Ⓑ *This house, an exact duplicate of the one shown above, was insulated with Masonite, the all-wood structural insulation, and assures a big saving in fuel bills.*

Test made by Prof. R. E. Robb proves economy of structural insulation

HERE is definite proof of the remarkable fuel-saving qualities of Masonite, the *all-wood structural insulator.*

We refer to a series of tests recently made in two houses identical in design and construction—except for one thing: House A is of standard lath and plaster construction, while Masonite Insulating Lath was used as the plaster base on walls and ceilings of House B.

Heat conditions were kept as nearly uniform as possible. A Minneapolis Heat Regulator was installed in each house. The furnaces were identical.

Results of the test, conducted by Professor R. E. Robb, a recognized authority on the subject of insulation, prove that the un-insulated house consumed one-third more fuel than the Masonite house!

[*Complete report of test will be sent on request; also a sample of Masonite*]

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Architect: MR. JOSEPH SCHEITLER

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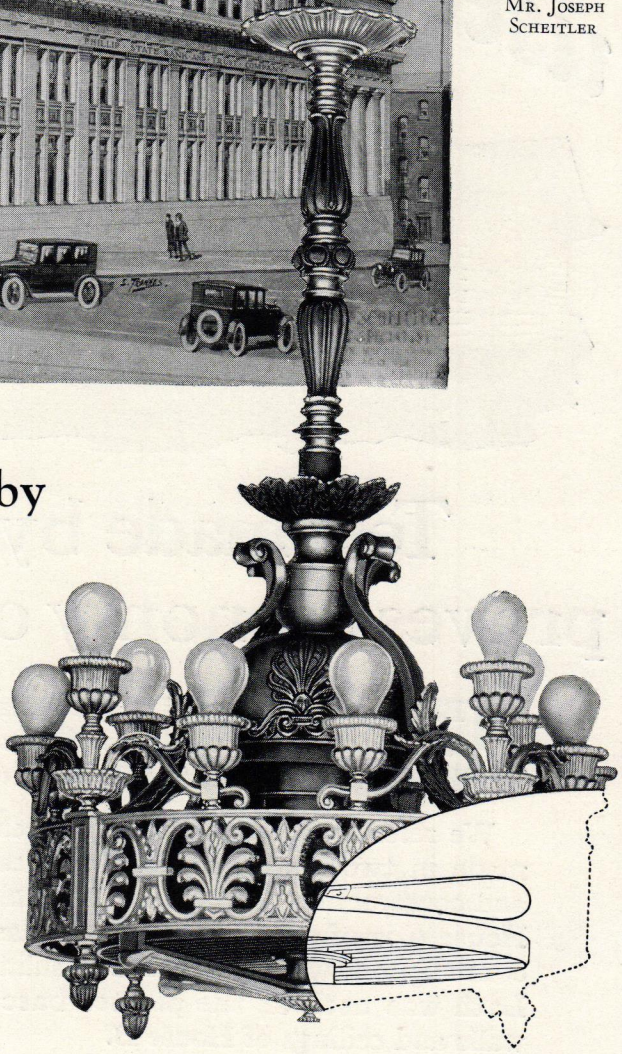

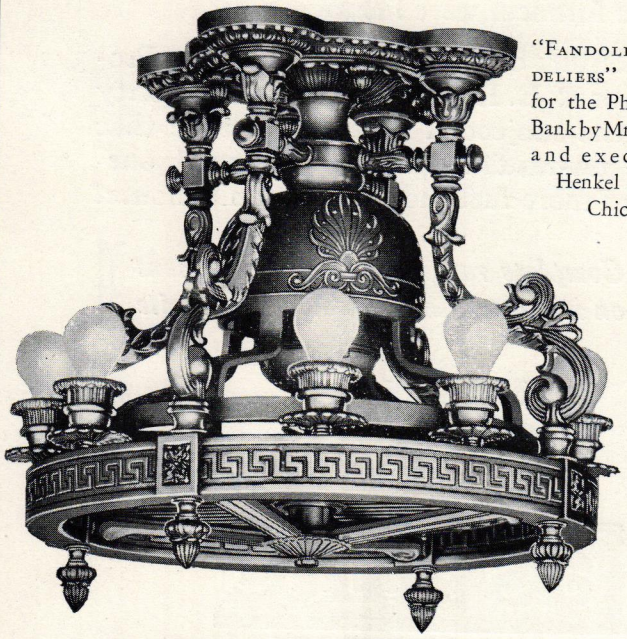

"FANDOLIER-CHANDELIERS" designed for the Phillip State Bank by Mr. Scheitler, and executed by Henkel & Best, Chicago

The "FANDOLIER STRIPT UNIT" is furnished to manufacturers for incorporating in fixtures of their own designing.

"Fandolier-Chandeliers"

and "FANDOLIERS" (FANS *alone*) are meeting conditions hitherto unsolved. No more "dead air" in any confined spaces, such as Vaults, Coupon Rooms, Elevators, Private Offices, etc.

A Catalogue of "FANDOLIERS" *or* "FANDOLIER-CHANDELIERS" *will be mailed upon request.*

THE SAFETY CAR HEATING AND LIGHTING COMPANY

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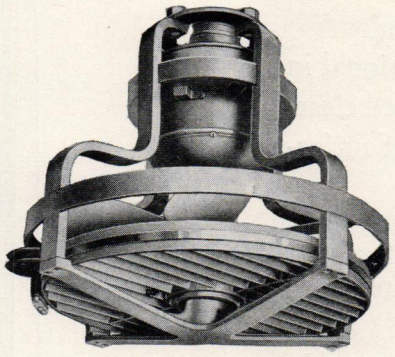
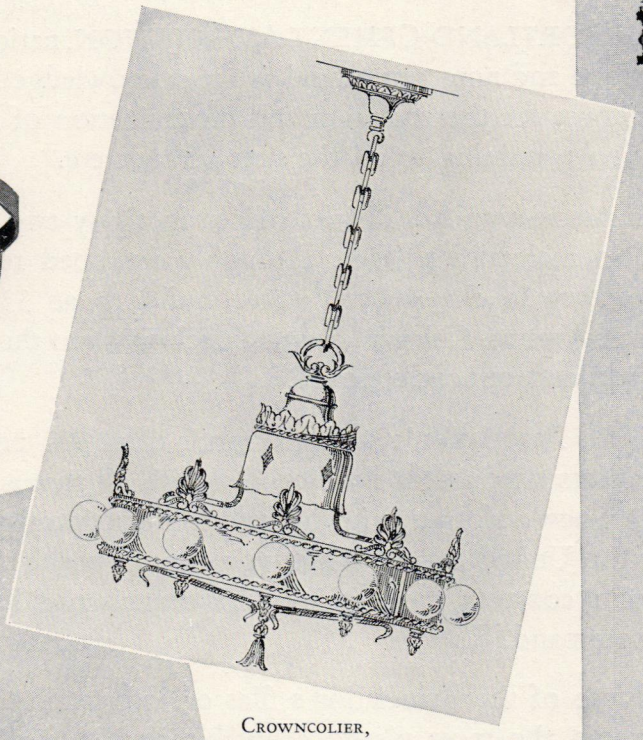
Architects, decorators and manufac-

turers are fast incorporating the FANDOLIER UNIT in fixtures of their own designing, as evidenced by these illustrations.

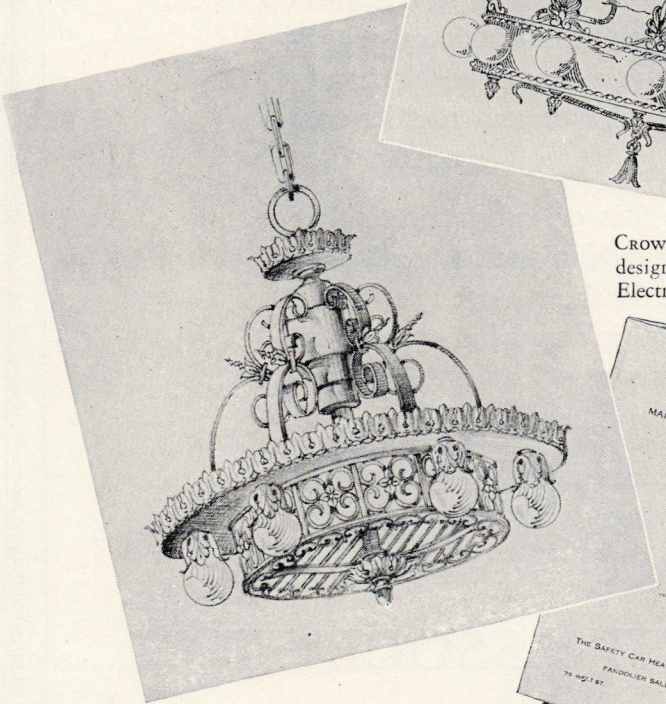
Fans always *will be necessary*, but usually they are an after-thought, therefore *never* are harmonious. The FANDOLIER permits the architect and decorator to provide fans to match any color scheme or motif decoration, and thereby *insure* their work against inartistic intrusion.



This is the FANDOLIER UNIT. It may be had in either 16-inch or 12-inch sizes. Full-sized blue prints will be gladly furnished as a guide for planning the lighting fixture.

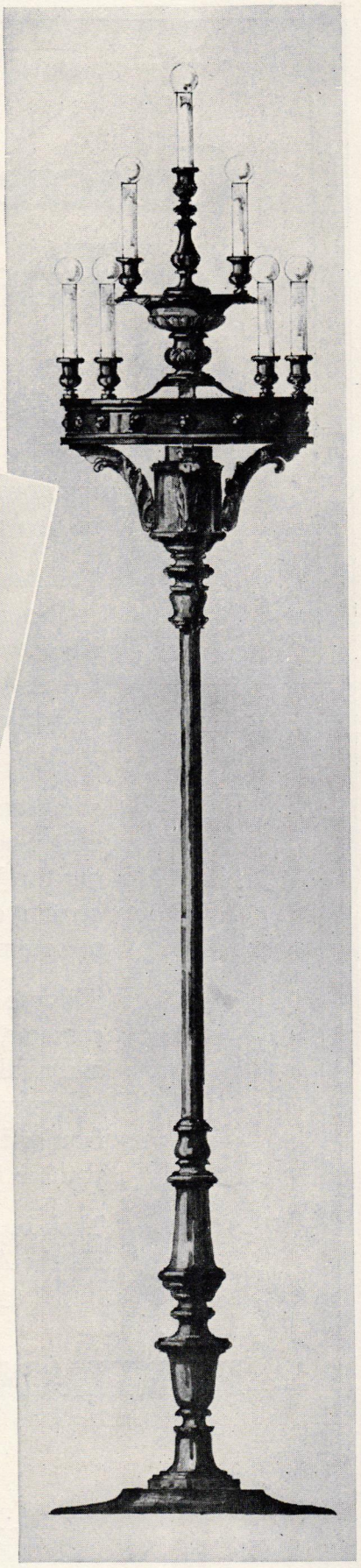


CROWNCOLIER, designed and executed by Crown Electrical Mfg. Co., St. Charles, Ill.



FANDOLIER-CHANDELIER designed and executed by Ferro Art Company, New York.

This book (*mailed free*) should be in the hands of every lighting fixture manufacturer.



Pedestal FANDOLIER-CHANDELIER designed and executed for the Insurance Co. of North America by Georgian Lighting Shops, Philadelphia.

THE SAFETY CAR HEATING AND LIGHTING COMPANY

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Concrete Co-operation *for* The Architect

The PORTLAND CEMENT ASSOCIATION, national in scope and non-commercial, is the acknowledged clearing-house for the reception and dissemination of imformation pertaining to all the uses of concrete.

The Association has district offices in thirty-two cities. It also maintains a large, throughly equipped research laboratory in the general office building at 33 West Grand Avenue, Chicago, devoted exclusively to the study of portland cement concrete.

On the Association's staff are more than 300 practical engineers who are in close contact with all that is interesting, new and unique in concrete construction throughout the United States. When you have a problem concerning concrete, the service of this organization is yours to command.

The use of the Association's files of information about concrete, the most plastic, adaptable and expressive of all building materials, is yours for the asking. The district offices will co-operate with you in supplying or securing facts and precedents about any uses of concrete in which you are interested.

You, in turn, may have ideas and information that will aid the Association in improving its service to architects.

PORTLAND CEMENT ASSOCIATION

Chicago

A National Organization to Improve and Extend the Uses of Concrete

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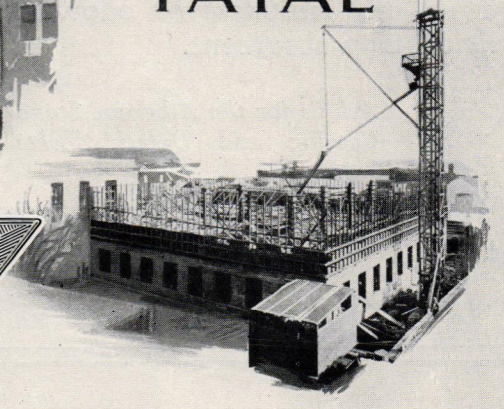

BUILDING CONSTRUCTION

This group indicates the variety of recent Stone & Webster building work at home and abroad. The buildings are for the Jefferson Hospital, Philadelphia, The Exchange National Bank, Tampa, and The Western Union Telegraph Company and associates at Fayal, Azores. We offer an experience of 39 years in the construction, reconstruction and extension of steam power stations, water power developments, transmission lines, industrial plants, office buildings and miscellaneous structures.

STONE & WEBSTER

INCORPORATED

Boston, 147 Milk Street
New York, 120 Broadway
Chicago, First National Bank Bldg.
San Francisco, Holbrook Bldg.
Pittsburgh, Union Trust Bldg.
Philadelphia, Real Estate Trust Bldg.

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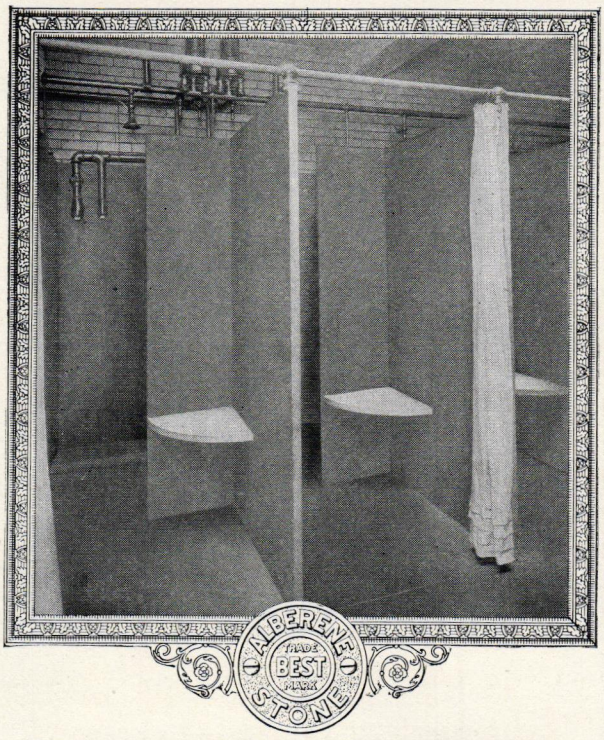
Alberene Stone has no superior as a material for light, attractive, 100%-sanitary shower stalls and dressing rooms. Its easy workability, without chipping or pitting, permits assembly in tongue-and-groove cemented joint structures with the solidity and permanence of one-piece construction. No metal is left exposed—no crevice to harbor dirt and germs—no dampness or odor because the stone is non-absorbent.

Ask us for the Alberene Stone Catalog and Detail Sheets



In shower construction like that above, maintenance is a negligible quantity—first cost is last cost.

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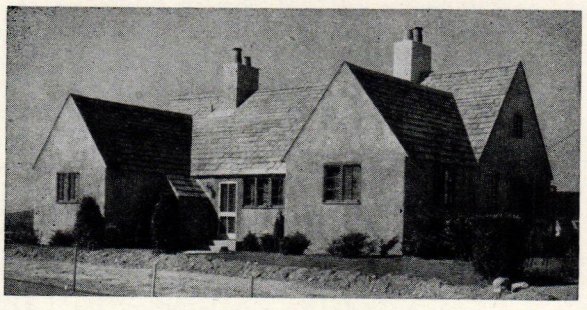

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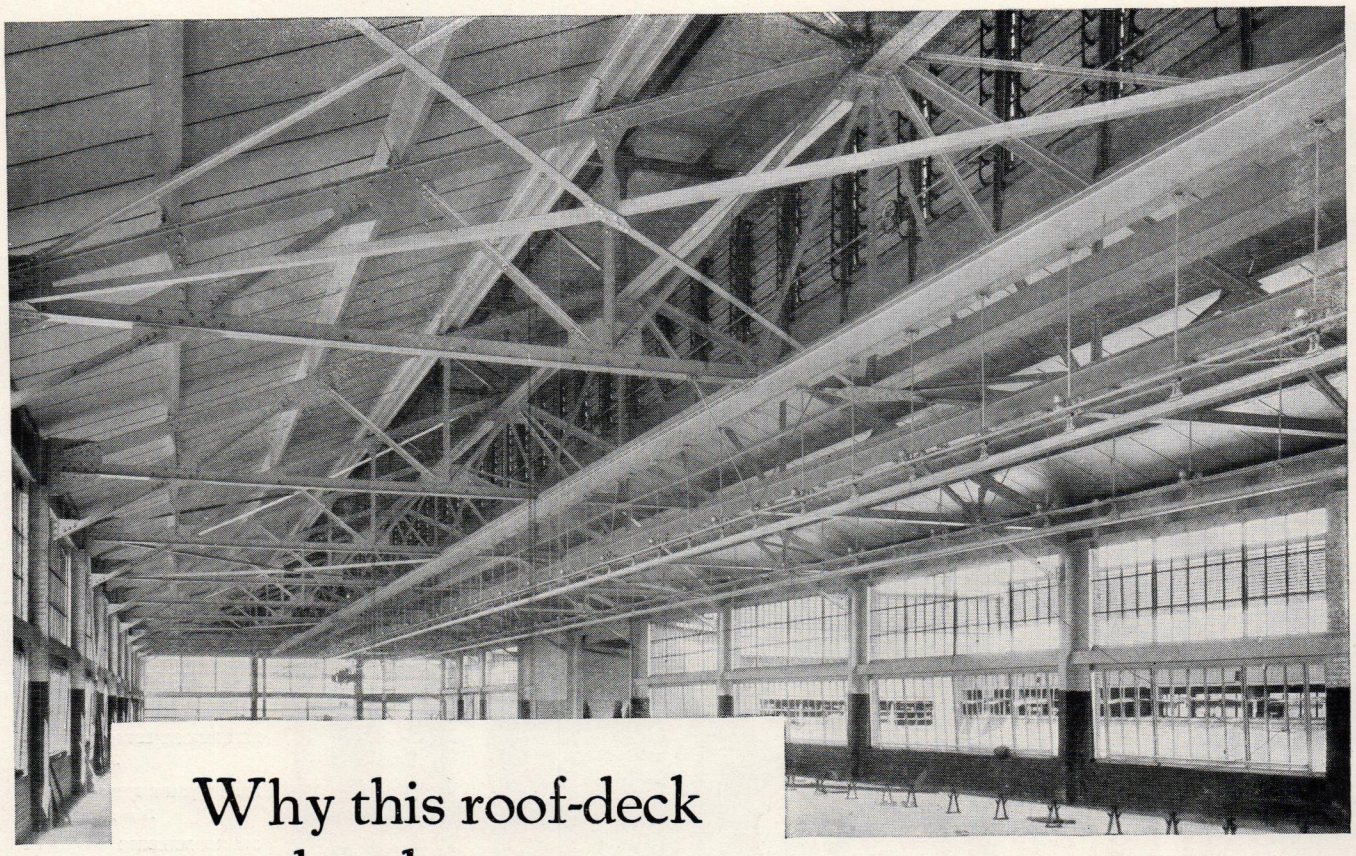

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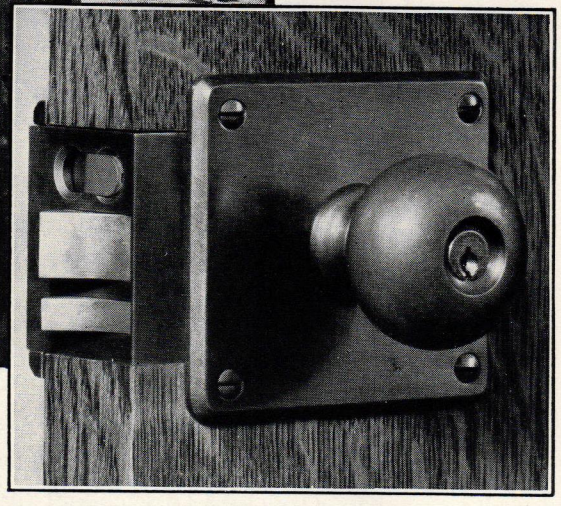

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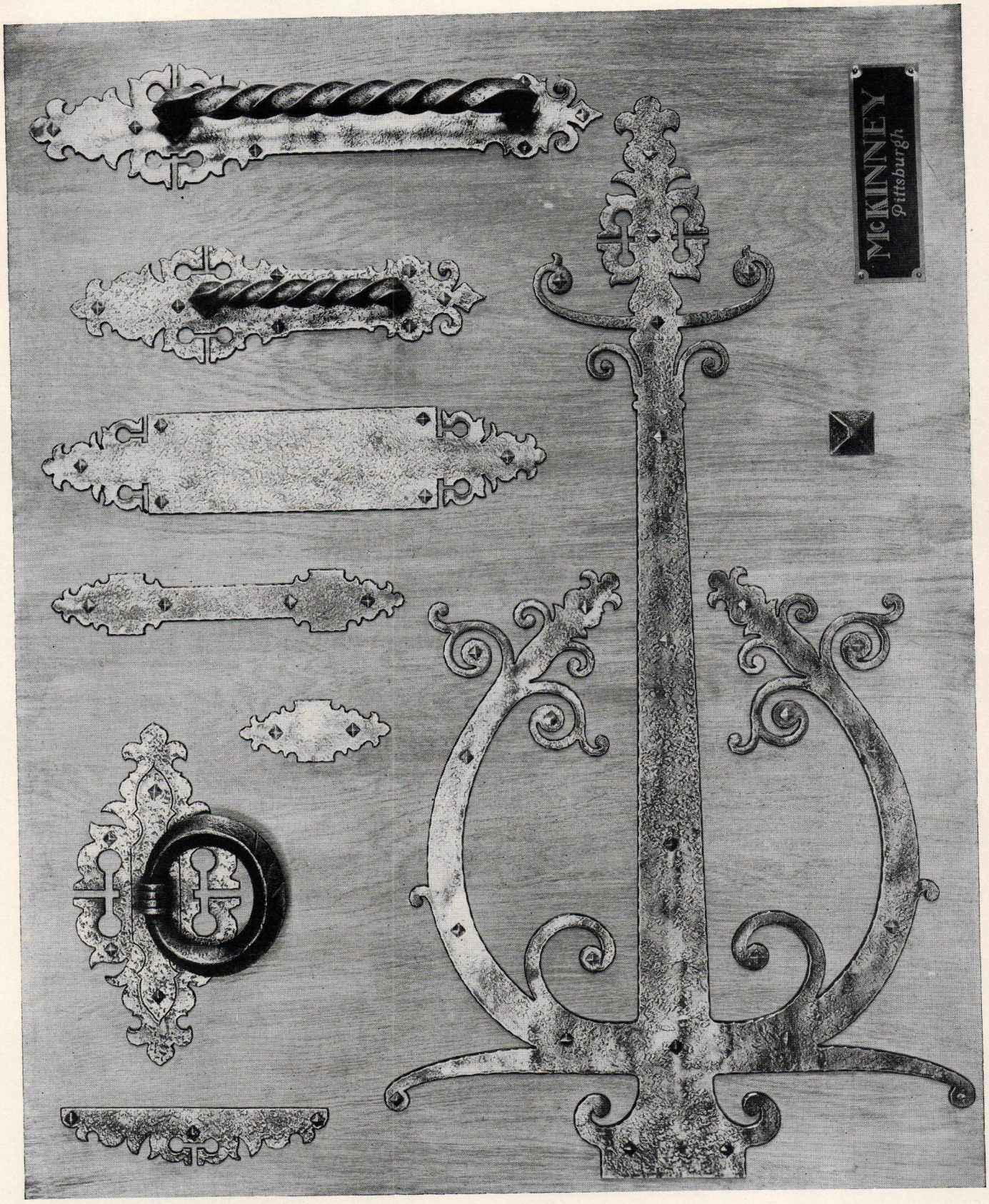

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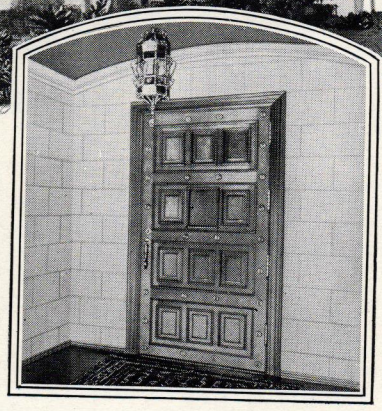

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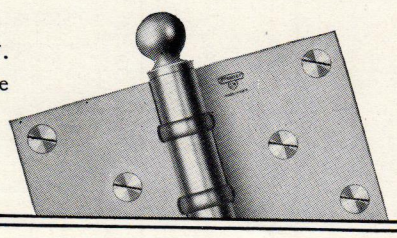

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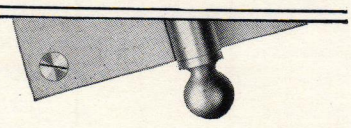

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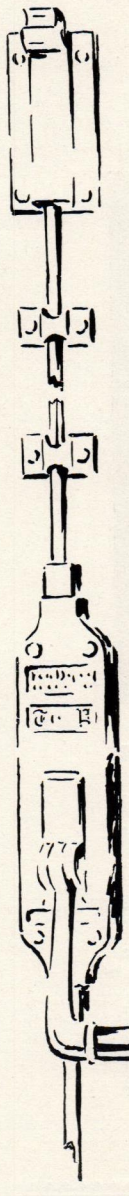

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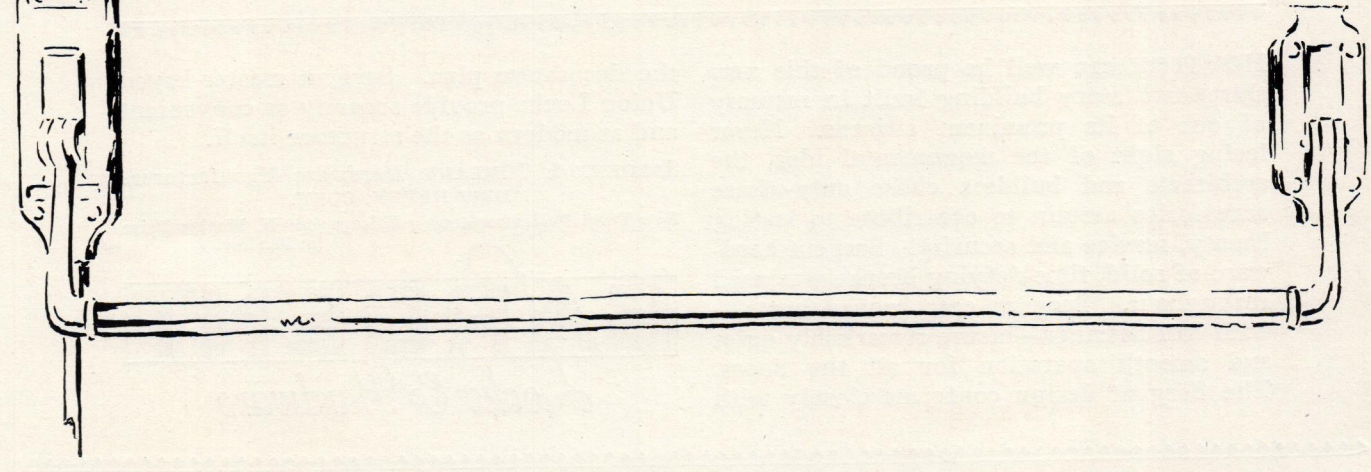

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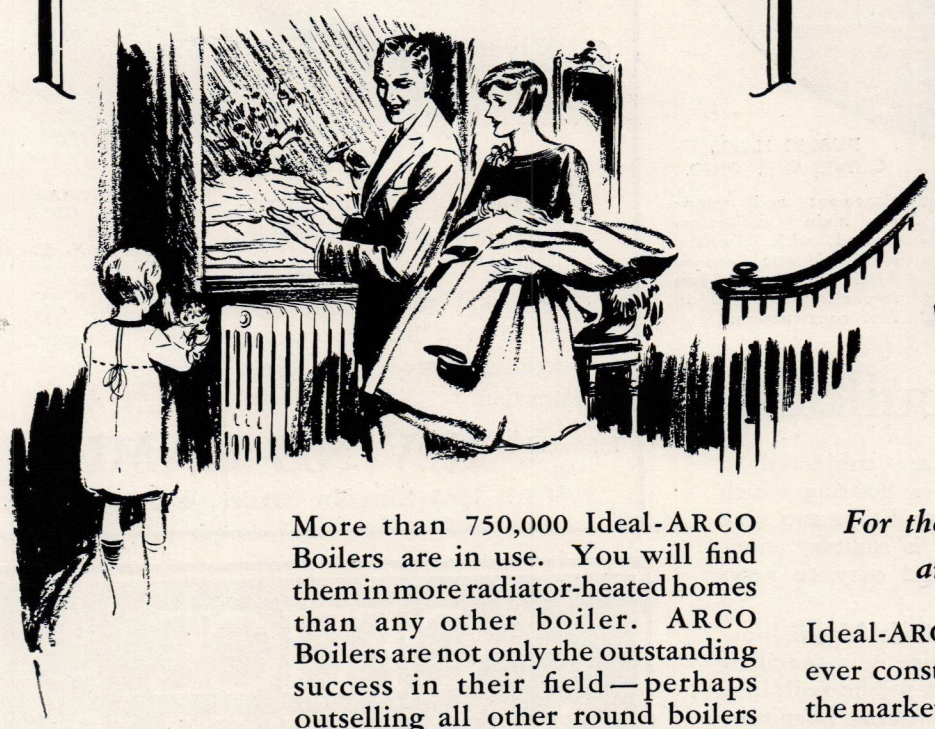

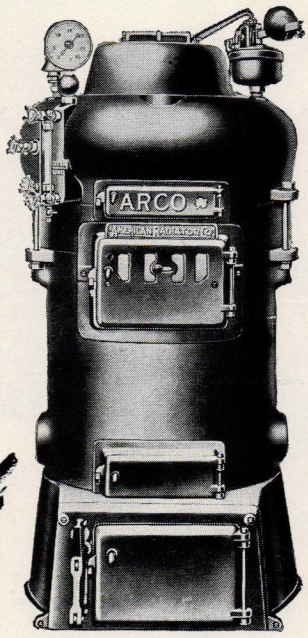

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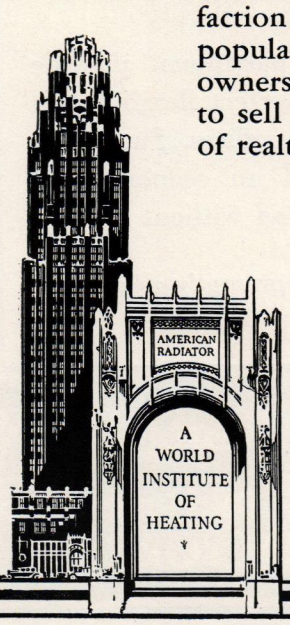

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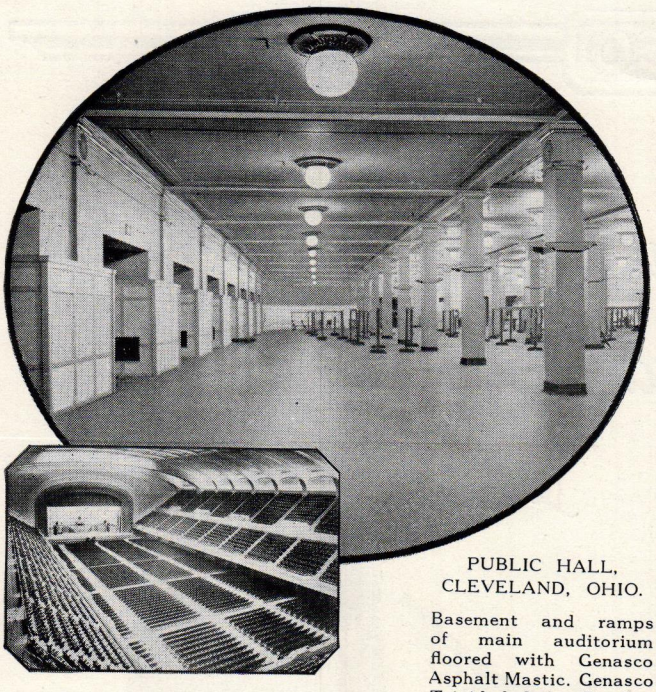

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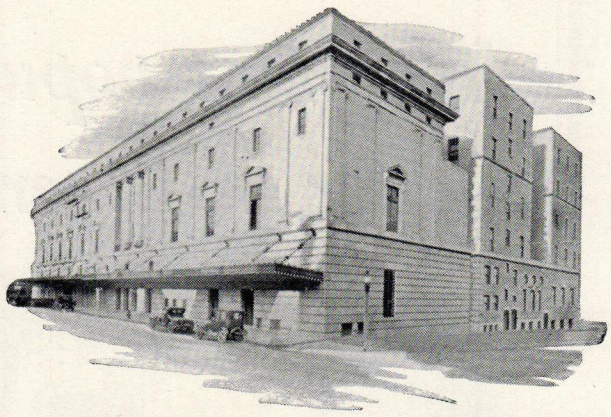

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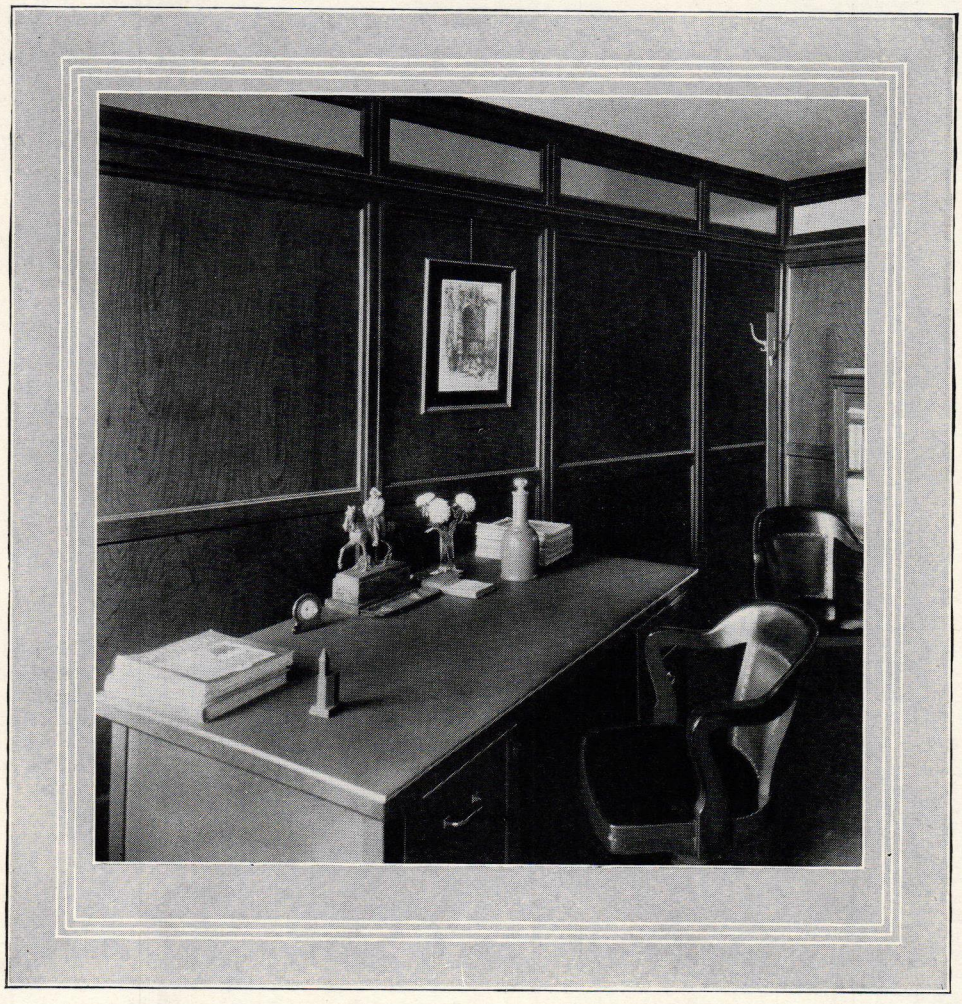

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You will be interested in our booklet, "Partitions." It tells more about these beautiful office walls. Send for a copy today.

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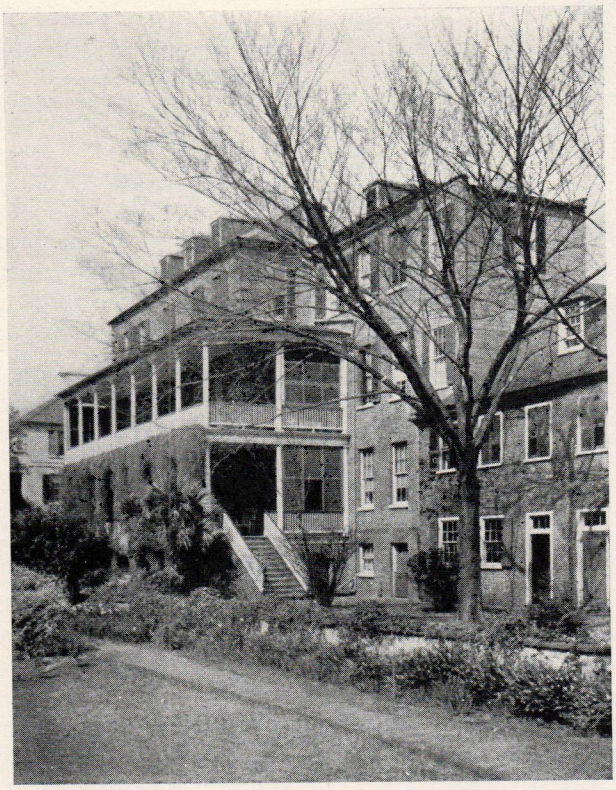
CIRCLE A PARTITIONS

BOOK DEPARTMENT

A Work on the Architecture of Old Charleston

Reviewed by HOWARD MAJOR

IN picking up "The Octagon Library of Early American Architecture, Volume I, Charleston, South Carolina," the first item of interest that strikes the reader is the advertisement. This proposes, when completed, a most stupendous program which will provide a complete survey of early American architecture. An architect possessing a set of these books, which will cover the entire area in which early American architecture flourished, will not need the hundreds of other volumes upon the same subject which contain such a tremendous amount of duplication of material. Therefore the complete work will mean a great financial saving to the coming generations of architects. To quote the advertisement upon the jacket will give a clear idea of what we may expect. "To make one complete work, carefully annotated and indexed, is the purpose that has inspired The Octagon Library. Some of the early American architectural work has been recorded in books long out of print. Some has been published in fugitive form. A great deal never has been recorded at all. The fact that this work has been undertaken very largely as a historical record has made it possible to include many buildings which hitherto have been closed to the seeker of measurements and the photographer by the owners, but which are now available."



Volume I before us, upon Charleston, contains approximately 280 illustrations. Volume X is proposed to be upon New York state. When we stop and consider the small number of old buildings in Charleston and the many throughout New York state we may well wonder if this stupendous program can be carried through. In other words, if the Charleston book has 280 illustrations I should estimate conservatively as necessary for the New York book 28,000 illustrations, providing, of course, that the New York volume is done as thoroughly as that on the comparatively small city of Charleston. However, the idea is excellent, and we wish it unqualified success. Volume I is purely an architectural reference work of great merit. It contains a short but concise resume, of about 10 or 12 pages, on the history, commerce and agriculture of the community, together with a sketch of the little that is known of Charleston's early architects and an outline of the architectural characteristics of the various periods. The remainder of the work, some 214 pages, is devoted to reproductions from photographs of exteriors and interiors of public, ecclesiastical and domestic buildings from the earliest extant examples to those built about the middle of the nineteenth century. The work is profusely interspersed with measured drawings and details. It is beautifully set up, the illustrations are clear and distinct, and the presswork is good.

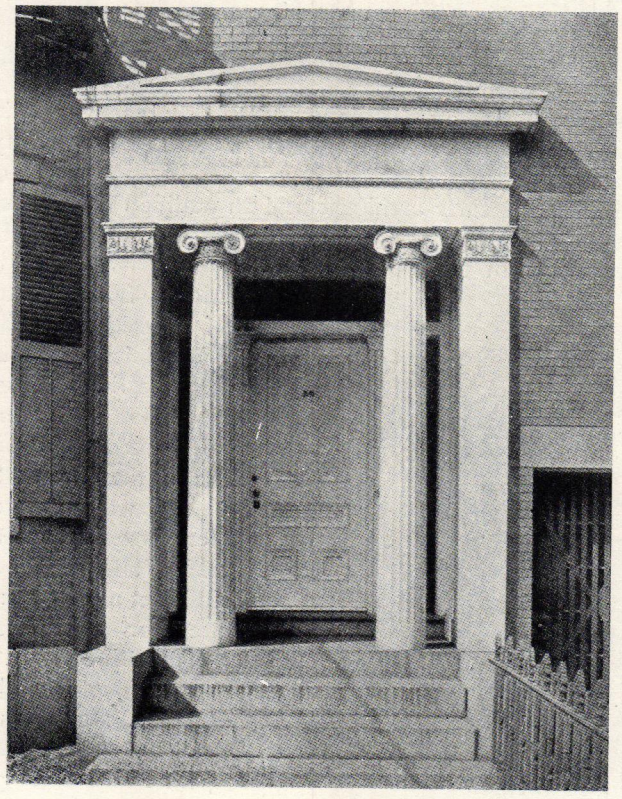
The great value of the book lies in the many illustrations of the quaint and charming little structures on the side streets and out of the way corners, heretofore not considered important enough to be reproduced, but which give to the architect a wealth of new material. Among these smaller buildings are shown many examples of the interesting corbeled and dentiled brick cornices which are seen everywhere in Old Charleston, but which are rarely reproduced. There can be seen on many of these quaint buildings red tiled roofs, a rather startling revelation. There are included slave quarters, coach houses, stables and gate lodges as well as the gates and gate piers in which Charleston abounds. The book contains a great wealth of exceptionally fine interiors and interior details. Many of the beautifully wainscoted rooms equal those of the mother country. The details include splendid doorways, chimneypieces and graceful stairways. Many of these interiors and details have been measured and drawn and offer splendid material for architectural study by designers of interiors.

Charleston is noted for its ironwork and balconies, and these features have not been overlooked during the compilation of this book. There are numerous examples of simple or rich iron gates and balconies, and the balconies are particularly interesting. The foreword says that "a clue to the character of Charleston and her peo-

An Authoritative Work on

"THE GREEK REVIVAL"

By HOWARD MAJOR



THE search for effective types of architecture for domestic use leads logically to the re-discovery of the style known as the "Greek Revival." In the hands of a few particularly skillful architects it is being used with marked success, their use being based largely upon study of such examples as have survived the period, just prior to the Civil War, when use of the type was widespread throughout the United States. It is an entirely American style, founded not upon a following of current English architecture but upon a study by Americans of classic types adapted to domestic uses.

Mr. Major's excellent work is the result of a careful study of the style as it was interpreted in the North and East, and particularly in the South. The illustrations of exteriors and interiors are full of suggestions for anyone seeking a variety of architecture bold, simple and effective, which supplies a fitting background for life in America. The book is richly illustrated, and shows existing work, large as well as small, in both city and country.

236 Pages; 7⅛ x 10¾ inches. Price $15

ROGERS & MANSON COMPANY
383 MADISON AVENUE, NEW YORK

ple is to remember that during their period of growth and greatest importance they were essentially of the eighteenth century." The illustrations abound in work of the eighteenth century style of the Adam brothers, and much of it is so good that it might have been done by Robert Adam himself. An interesting feature of the volume is its series of maps dating from 1739 to 1849, showing the development of the city in its various stages. It is unusual to find mill buildings included in a work of this character, but the editors justify themselves as may be gleaned from their text. "They (the mills) show that in this period the designing of commercial structures was given as much consideration as that of public buildings or dwellings. Essentially factories, their proportions, the proper relationships of voids and solids, and the light and shade effects of surfaces were all carefully studied and conformed admirably to the architecture of the city." Plans of many of the houses are reproduced along with exteriors and interiors.

THE OCTAGON LIBRARY OF EARLY AMERICAN ARCHITECTURE, Volume I, Charleston, S. C. Edited by Albert Simons and Samuel Lapham, Jr. 9¾ x 12¾ ins. Price $20. Press of the American Institute of Architects, Inc., New York.

HOUSE & GARDEN'S SECOND BOOK OF GARDENS. 233 pp., 9¾ x 12¾ ins. Price $5. The Conde Nast Publications, New York.

IN considering the now almost universal interest in gardens and gardening it might be difficult to decide whether it is the result of interest in country living or whether country living is the result of interest in gardening and gardens. It seems likely that each has had its effect on the other, aided powerfully by the motor, which by bringing vast reaches of real country into close touch with the town has made country living possible. The growth of interest in garden making might be measured or gauged to some extent by the skill or proficiency with which such gardening is done, and this constantly developing skill might be evaluated by examination of the publications of one kind or another which cater to garden makers and their varied interests.

Here, for example, is *"House & Garden's* Second Book of Gardens," made up of matter much of which has probably already seen the light of print in various issues of a monthly magazine, but here collected, collated, and amplified with new matter calculated to appeal strongly to garden makers. A considerable portion of the volume is devoted to illustrations of gardens large, small and of medium sizes, illustrations likely to arouse or increase enthusiasm. Then there follow consideration of various kinds of gardens,—rose gardens, rock gardens, wild gardens, and water gardens,—much matter relating to the culture of trees, shrubbery and bulbs, and finally a calendar for the 12 months of the year, a list of names and addresses of landscape architects and schools of landscape architecture, and a bibliography dealing with the subject. Architects could hardly fail to note from the illustrations in this volume the constantly increasing skill with which architecture and gardening are being brought into closer and more sympathetic relations. Architecture depends, in fact, upon the coöperation of gardening, just as it depends upon the aid of painting and sculpture, and the best interests of all are served when each contributes its part to the triumphs of the art which is the mother of them all, to which all owe tribute.

SAFETY : STRENGTH : *STEEL*

STEEL is not only the strongest and safest of all building materials—it affords most space with least weight per strength-unit. And it can be erected *faster* than any other material.

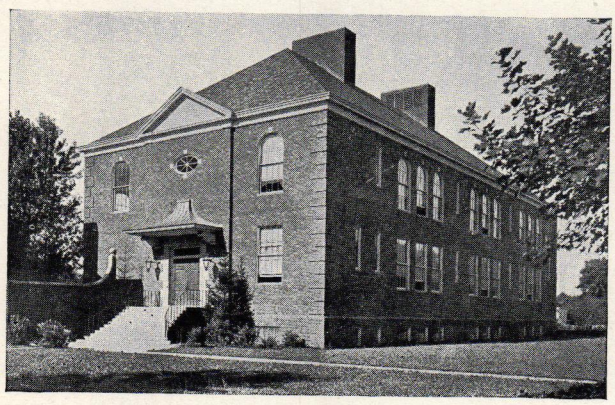
The floors of steel buildings may be laid and curtain walls built on several stories at the same time. This pleases the owner because he gets quicker returns on land and capital.

Steel is made in large quantities, under scientific control, and it is delivered to the job ready to erect. Even before it is constructed, steel is fool-proof. For small as well as tall buildings, there is nothing like STEEL.

This advertisement is published by the American Institute of Steel Construction, a non-profit service organization of 218 members comprising the structural steel industry in the United States and Canada. Contributing also to the educational fund are these great rolling mills: Bethlehem Steel Company, The Colorado Fuel and Iron Company, Inland Steel Company, Jones & Laughlin Steel Corporation, Scullin Steel Company. The purpose of the Institute is to extend the use of structural steel in construction work of every size and type from residences to skyscrapers and bridges. The Institute offers fullest co-operation with architects, engineers, the public and all branches of the building trades. Correspondence invited. Address: A. T. North (A. I. A.), Department of Architectural Relations, AMERICAN INSTITUTE OF STEEL CONSTRUCTION, INC., 285 Madison Avenue, New York City.

GRADE SCHOOL BUILDINGS; BOOK II

IN no department of architecture have the last ten years seen quite the progress which has been made with schoolhouses, a class of buildings of the first importance, since they exert a strong influence upon their communities, and by their architectural excellence or the lack of excellence they elevate or lower the architectural standards of entire districts. Study of school structures, particularly at the hands of a group of well known architects, has resulted in their being given a high degree of architectural distinction and dignity in the way of design, while study directed toward their planning and equipment has led to their being practical and convenient far beyond what was regarded as an advanced standard of efficiency even a few years ago.



Kensington Schoolhouse, Great Neck, N. Y.
Wesley Sherwood Bessell, *Architect*

THIS volume, a companion to another published in 1914, records the results of endless study and experiment in different parts of the country, summed up and presented. By illustrations of exteriors and interiors, by floor plans and carefully written descriptions and articles by well known architects and educators the present high standard of schoolhouse design is made plain, and these results which have been achieved by a few architects and school boards are thus made possible to all architects who are interested in schoolhouse design. The compiler has selected from almost 1000 exteriors and floor plans the school buildings to be illustrated, and the volume records "a process of innovation and elimination, namely, the introduction from time to time of features which have been deemed desirable and practical, and the elimination of things which, owing to changed school methods, are no longer required."

400 pages; 7¾ x 10½ inches
Profusely Illustrated; Price $10

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383 MADISON AVENUE NEW YORK

THE PRACTICAL BOOK OF LEARNING DECORATION AND FURNITURE. By Edward Stratton Holloway. 176 pp., 6½ x 8¾ ins. Price $4.50. J. B. Lippincott Company Philadelphia.

AN observer of the progress being made by architecture in America may well be puzzled by the almost complete separation which seems to prevail between architecture proper and interior decoration and furnishing, which are closely related thereto. While a few well known architects control the furnishing and decoration of the structures,—usually residences,—which they build, and while a few others work more or less closely in collaboration with interior decorators, there remains the fact that the great majority of American architects lose touch with even their best creations when they are turned over to their owners, their final appearance, with all that it involves, to be made or marred by the taste and skill,—or the lack of these qualities,—possessed by the owners or their decorators. One may well ask if architects really understand and appreciate the importance of decoration and furnishing, and it would seem that few indeed do, though they may well remember the great care which he gave to details of furniture, and the critical taste with which even the great Adam designed such minor accessories as the shovels and tongs for fireplaces and the patterns for damasks, details comparatively trivial.

This excellent work has been prepared, possibly, with a view to its use by precisely the class of readers who would seem to be most in need of its teachings. That it is in no wise an elementary text book or primer, written for the use of that large number of people who are vaguely interested in decoration and wish to acquire a smattering of information regarding it, is quite evident, since it presupposes,—and quite properly,—some knowledge of the decorative styles and the historic periods which witnessed their rise and development. Mr. Holloway considers the entire subject under four headings: Renaissance, Baroque, Rococo, and Neo-Classic, and under each of these heads he discusses its developments.

THE TREATMENT OF INTERIORS. By Eugene Clute. 200 pp., 8½ x 11¾ ins. Price $6. The Pencil Points Press, New York.

THAT the field of modern interior decoration is indeed broad is abundantly proved when one examines a work which deals therewith. In this volume, by a former editor of *Pencil Points,* there is given a glimpse of what is being done and what has been done during recent years, the work containing illustrations of domestic interiors of various kinds, from the simplest and most austere, such as were favored by the colonists around Massachusetts Bay in the early part of the seventeenth century to the most elaborate and ornate,—English, French, Italian or Spanish,—such as are being affected by the very rich in and about New York almost exactly three centuries later. It is hardly probable that Americans can ever be prevailed upon to give more than a polite and casual interest to the vagaries of modern European decorative art; the utter impossibility of arousing enthusiasm was demonstrated a year or two ago when quite an exhibition of it was given in New York, and the very mild interest then stimulated is not likely to be encouraged by the illustrations of recent achievements which are given in this volume. The text of the work, dealing with the various phases of interior decoration, is valuable and interesting and more important.

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SKETCHES OF NORTHERN SPANISH ARCHITECTURE. By Samuel Chamberlain. Text and 51 Plates, 9 x 12 ins. Price $10. Architectural Book Publishing Co., New York.

AS travelers and writers are continually pointing out, Spain is at present the only country in Europe,—and possibly in the entire world,—which is still really "mediæval." Even in Japan and China the milestones of progress are plainly manifest in the form of steel-framed buildings and tall factory chimneys emitting clouds of black smoke,—but Spain slumbers on, stirring sometimes with a tremor of revolution, but always falling back into that sleep which followed her retirement from world affairs as one of the most powerful countries of Europe.

In looking through this enchanting portfolio, one scarcely knows whether to admire more the few pages of graphic text with which Mr. Chamberlain prefaces his sketches or the drawings themselves. The text makes record of the charm, romance and mystery of Spain as they impressed an American traveler in search of that old-world beauty which Spain offers in such variety and abundance, and yet the sketches themselves record in a way not to be misunderstood the actual, tangible realities which the text describes. Mr. Chamberlain possesses the two gifts most necessary for an artist,—an almost unerring discrimination in choosing subjects for his sketches, and an equally discerning taste in composition and use of technique. These gifts have been made the most of in traveling through a country so abounding in subject matter as northern Spain, where, perhaps, composition almost suggests and disposes itself, tempting the traveler to transfer to paper the pictures into which the details group themselves. It is indeed the sketcher's delight.

For an architect the value of Mr. Chamberlain's sketches is great indeed, and the drawings abound in practical suggestions. Spanish architecture and decoration derive much of their mystery and charm from the very abruptness of contrast which they present,—the richness of carved ornament, perhaps, with surrounding walls of austere plainness to act as a foil, or lavish use of color used possibly within the reveals or for the voussoirs of arches in walls which are themselves severely simple. This element of striking and dramatic contrast, so valuable in architecture and decoration, has of course been made the most of in sketches as subtle as those of Mr. Chamberlain. The drawings are never overelaborated or so full of minute and intricate detail as to be almost photographic, nor are they so sparse and thin as to convey merely a suggestion of what is portrayed. Mr. Chamberlain understands, even without the use of color, just what to dwell upon in a drawing, this suggested if not portrayed by deft and telling strokes or lines of pen or pencil,—giving neither more nor less than the shading which throws into sharp relief the desired details.

The present interest of architects is directed largely toward types which have been developed in Spain, and Spain, upon the other hand, offers in profusion just the suggestions which give Spanish architectural character to a building which may be simple to the point of severity or elaborate to the last degree; the variety of these drawings is calculated to increase considerably this interest.

The Practical Book of Tapestry

By George Leland Hunter

THE intimate connection between tapestry and architecture as well as the frequent use of architectural motifs in tapestry design gives to tapestry and its history an interest to architects which is strong. Primarily associated with the Gothic age, which saw what were perhaps the most brilliant of its triumphs, tapestry has been identified with the development of all of western Europe and with the different periods—the Renaissance, early and late; the Baroque age; the eras of the different Louis; and in later days with the various places where looms have been set up and where present-day workers are engaged in creating by use of old-time methods those marvelous weaves which add to any surroundings where they are placed a richness of decoration which confers dignity and splendor to the place where they are used. No study is more absorbing than that of tapestry.

IN this volume is given a complete review of the subject of tapestry. The author has made a deep study of tapestry's history and is familiar with every important example in the world. The volume deals also with the technique of tapestry weaving, the changes and development of its design in different countries at different times, and it goes at length into descriptions of modern looms where this ancient art has been successfully revived. The illustrations, many in full color, add to the reader's interest. All are from photographs made especially for this work, and many show the student for the first time examples of tapestry weaving of the first importance. The volume is particularly valuable by reason of its accurate documentation and full bibliography and because of its giving the names of places where there are to be seen the most important tapestries now in existence.

Richly illustrated in half-tone and full color. 302 pages; 6½ x 8¾ inches. Price $10.

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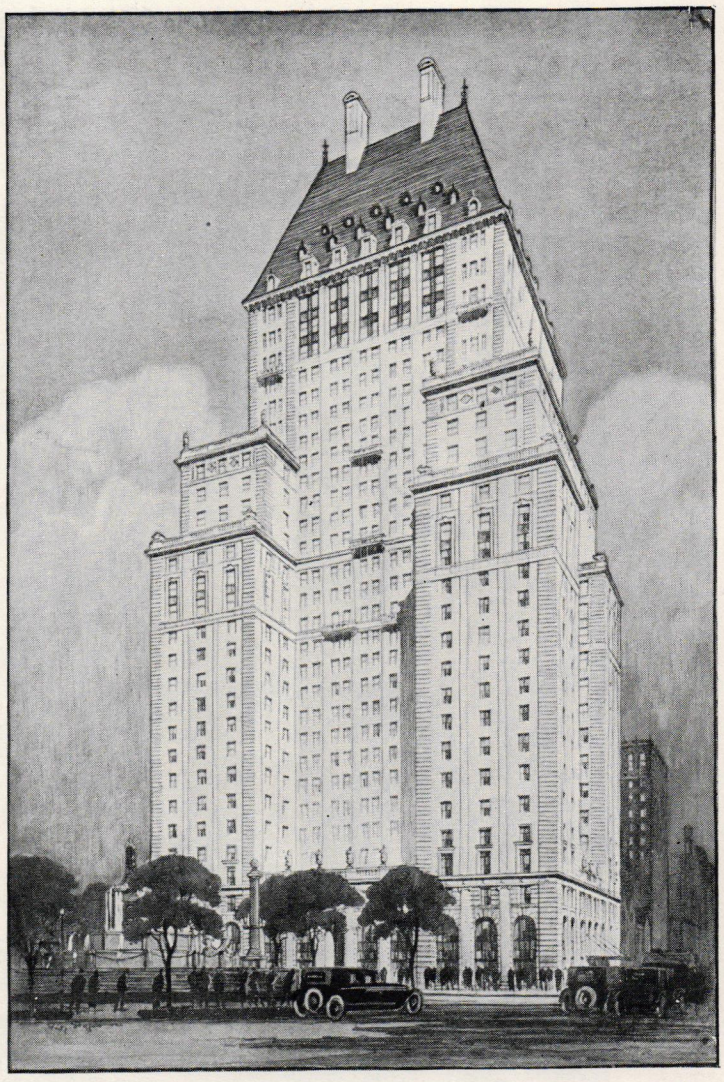

The beautiful new Savoy Plaza Hotel, New York City. McKim, Mead and White are the Architects and the Geo. A. Fuller Co., General Contractors. Savoy Plaza is owned and operated by Savoy-Plaza Corporation. Columbia Window Shades have been selected to equip this most modern structure.

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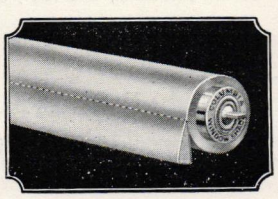

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The ARCHITECTURAL FORUM

VOLUME XLVI — *Established 1892* — NUMBER 6

CONTENTS *for* JUNE 1927

Public Buildings Reference Number, Part I

PLATE ILLUSTRATIONS	Architect	Plate
Rhode Island Capitol, Providence	*McKim, Mead & White*	97
Missouri Capitol, Jefferson City	*Egerton Swartwout*	98-100
Minnesota Capitol, St. Paul	*Cass Gilbert*	101
Nebraska Capitol, Lincoln	*Bertram Grosvenor Goodhue Associates*	102
Insular Capitol, Manila	*Ralph Harrington Doane*	103
Porto Rico Capitol, San Juan	*Carmaega & Nichols*	104
New York County Court House	*Guy Lowell*	105
Catawba County Court House, Newton, N. C.	*Willard Rogers*	106
Hamilton County Court House, Cincinnati	*Rankin, Kellogg & Crane*	107
Court House, Memphis	*Jones & Furbringer*	108
Essex County Court House, Newark	*Cass Gilbert*	109
Hardin County Court House, Kenton, O.	*Richards, McCarty & Bulford*	110
Ouachita Parish Court House, Monroe, La.	*J. W. Smith, H. H. Land, and D. Curtis Smith*	111
Mesa County Court House, Grand Junction, Colo.	*Eugene G. Groves*	112
Town Hall, Lebanon, N. H.	*Jens Fredrick Larson*	113
Municipal Building, Teaneck, N. J.	*Ludlow & Peabody*	114
Town Hall, Milford, Conn.	*Egerton Swartwout*	115
City Hall, Yuma, Ariz.	*Lyman & Place*	116
Town Hall, Littleton, Colo.	*J. B. Benedict*	117
Municipal Building, White Plains, N. Y.	*Joseph H. Freedlander*	118
City Hall, Plattsburg, N. Y.	*John Russell Pope*	119
Fire House and Town Hall, Larchmont, N. Y.	*Frank Moore*	120
Vermilyea Avenue Fire House, New York	*Dennison & Hirons*	121
Byberry Fire House, Philadelphia	*Rankin, Kellogg & Crane*	122
Fire Station, Arlington, Mass.		123
Fire House, Mariemont. O.	*Charles F. Cellarius*	124
Fire Station and Police Headquarters, Milburn, N. J.	*Horatio W. Olcott*	125
Fire House, Salem, Mass.	*Kilham, Hopkins & Greeley, and P. H. Smith*	126
Town Hall and Fire Station, Swedesboro, N. J.	*Simon & Bassett*	127
Fire House and Auditorium, Larchmont, N. Y.	*Charles F. Mink and Otto R. Eggers*	128

LETTERPRESS	Author	Page
Cover Design: New York City Hall	*From a Sketch by Francis Keally*	
The Editor's Forum		71
West Virginia Capitol, Charleston	*Cass Gilbert, Architect* *From a Drawing by Hugh Ferriss*	Frontispiece
Designing Capitol Buildings	*Joseph H. Freedlander*	505
Essex County Hall of Records, Newark	*Guilbert & Betelle, Architects*	509
Designing and Planning Court Houses	*A. Ten Eyck Brown*	513
Capitol of Philippine Islands, Manila	*Charles G. Loring* *Ralph Harrington Doane, Architect*	537
Police Department Headquarters, Boston	*Ritchie, Parsons & Taylor, Architects*	539
City and Town Halls	*Charles G. Loring*	561
Fire House and Auditorium, Larchmont, N. Y.	*Charles F. Mink, Architect, Otto R. Eggers, Associated*	585
On the Designing of Fire Houses		586
Fire Alarm Headquarters, Boston	*O'Connell & Shaw, Architects*	609
Heating and Ventilating Public Buildings	*Alfred J. Offner*	613

PARKER MORSE HOOPER, A.I.A. Editor

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Published Monthly by

ROGERS & MANSON COMPANY

383 Madison Avenue, New York

Howard Myers, Pres.; James A. Rice, Vice-Pres.; Robert Sweet, Sec. and Treas.; Paul W. Hayes, Asst. Treas.

Yearly Subscription Payable in Advance, U.S.A., Insular Possessions and Cuba, $6.00. Canada, $6.75. Foreign Countries in the Postal Union, $7.50

Single Copies, 60 cents. All Copies Mailed Flat

Trade Supplied by American News Company and its Branches. Entered as Second Class Matter at the Post Office at New York, N. Y.

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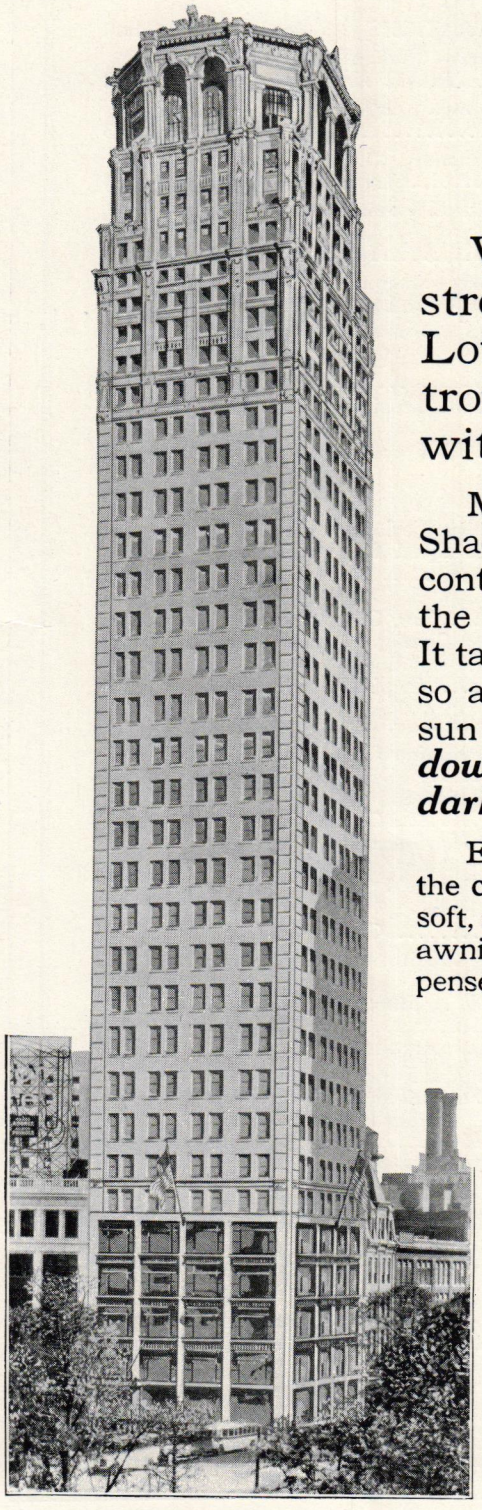
Detroit's 34 Story Eaton Tower is being equipped throughout



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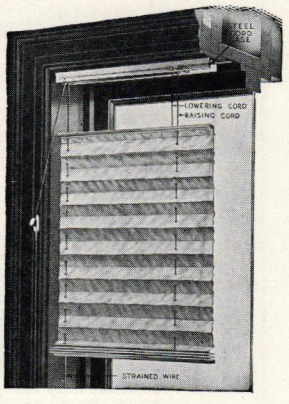

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THE EDITOR'S FORUM

SUMMER COURSES IN EUROPE

NEW YORK UNIVERSITY, Department of Fine Arts, announces courses for architects and decorators to be given in Paris, London and Munich during July and August, 1927. Summer courses in London (Victoria and Albert Museum): English architecture, sculpture, and decorative art, mediæval to modern; English furniture, arts and crafts in London museums and collections; English interior design, old London (sketching course); classroom and field lectures; week-end visits to Canterbury, Oxford, Cambridge, Winchester, Windsor, Exeter or Salisbury Cathedral. Transportation by sea and land, subsistence, lodging, six week-end trips and tuition, $500. Absent from New York for the two-month period from June 29 to August 29.

Summer courses in Munich (University and Museums): German architecture, mediæval to modern; modern German applied art; German handicrafts; old and new masterpieces of decorative art (field lectures). Week-end visits to Regensburg, Augsburg, Landeshut, Fuessen, Ulm, the Rhine, and tuition (option of return via Paris), $500. Absent from New York, July 2 to September 15. Summer courses in Paris (Musee du Louvre): French architecture, decorative art and furniture, from Gothic to modern; French interior design; architecture of Paris; architectural design and theory of composition. Classroom and field lectures, week-end visits to Versailles, Amiens, Fontainebleau, Chartres, Chantilly, Reims, Rouen, and the chateaux of the Loire, transportation by sea and land, subsistence, lodging, six week-end trips and tuition, $450. Absent from New York June 25 to September 1. Other courses are offered in history, painting, sculpture, allied arts, and music. Those interested will please write to the Department of Fine Arts, New York University, Washington Square East, New York.

A FELLOWSHIP FOR RESEARCH

THE Committee on Colonial and National Art of the Archæological Institute of America is prepared to assign a grant or fellowship of $1,000 for the year 1927-28, for research in the history of art in the original area of the United States either during the colonial period or the early period of the republic. The field of research may lie in architecture, painting, sculpture, or the crafts. This grant will be open to persons of unusual attainments in advanced study, as shown by the previous publication of contributions to knowledge of high merit, or by exceptional aptitude for research, who shall submit plans for their proposed study. It is the intention of the Committee to finance some work of permanent value which could not otherwise be accomplished. Accordingly, applications will be entertained from established scholars, as well as from younger applicants. In any case candidates will be expected to have capacity for independent research, as distinct from supervised research ordinarily done toward the degree of Doctor of Philosophy. Projects which have already been begun, and in which the prospects of success can thus be more readily appraised, will be gladly entertained by the Committee.

As it is the expectation that those applying will have completed their formal academic training and be of responsible maturity, there is no requirement of residence in any seat of learning, neither is it requisite that an entire academic year be devoted exclusively to this study. On the other hand, the candidate would be expected to give his whole time to the work during the proposed period of study, which should be adequate to accomplish the object desired. Applications giving particulars of the candidate's age, education, published work, and proposed plan of research should be sent to the Chairman, Memorial Hall, Fairmount Park, Philadelphia.

TO STUDY BUILDING CRAFTS

EXPEDITIONS by the drafting staffs in the offices of New York architects to the shops and studios of workers in the arts and crafts involved in the production of buildings will be made under the direction of the New York Chapter of the American Institute of Architects. The aim is to establish closer relations between draftsmen and the craftsmen of the building trades, according to a report of the Chapter's Committee on Education, made public recently. Better buildings, it is believed, will result from schooling the draftsmen in problems of craftsmen.

A COMPETITION IN TEXAS

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Further details, entry blanks and the rules of the contest can be had by writing to the San Antonio Art League, Witte Memorial Museum, San Antonio.

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Main gallery of Morgan Wing, Metropolitan Museum of Art, New York City

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The WHITTALL
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Their fascinating history, linking them with all the great decorative periods, may be glimpsed in the widespread use that damasks enjoy today. They are used for covering walls and furniture, for paneling, for hangings against which paintings or mirrors may be hung, for draperies, for cushions or an occasional chair.

And since there are many decorative schemes in which a large design cannot be used, damasks with small designs have come much into use.

The damasks shown here are representative of the small-patterned damasks to be found at Schumacher's, in a wide variety of designs and an excellent color selection.

There are Schumacher fabrics for every decorative use—brocades, brocatelles, damasks, velvets, tapestries, hand-blocked and printed linens, toiles de Jouy, chintzes, and satins and taffetas in plain or figured weaves.

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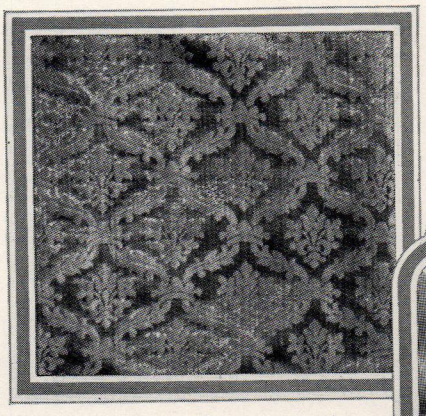
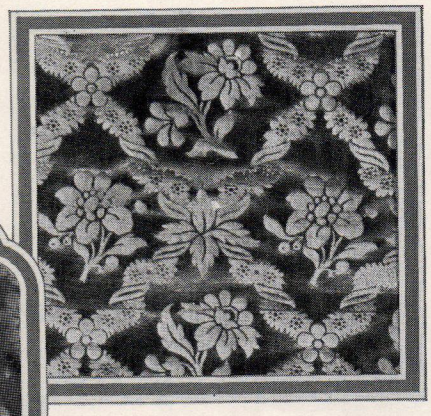


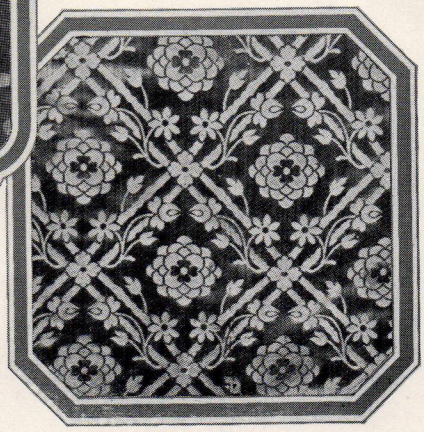
A damask from France, cleverly simulating, by the introduction of a lighter thread into its weave, the mellowness of an antique fabric



Here the design is brought out in a fine taffeta weave, on a satin ground. A damask particularly suitable for furniture coverings, draperies, etc.

In orchid, vert, blue or peach, this satin damask reflects in its beribboned bouquet the influence of Marie Antoinette's time

This satin damask, imported in a wide range of colors and color combinations is especially charming with French furniture



A latticed design reminiscent of William Morris, is shown on a jaspé ground. In mulberry, vert, crimson and gold

A Booklet for your Prospective Clients

Beautifully illustrated in color, the booklet, "Your Home and the Interior Decorator," is being mailed to decorators, upholsterers and the decorating service of department stores. If you have not received a copy, please write us. And let us explain our special offer, whereby you may send this book to your prospective clients. F. Schumacher & Co., Dept. J-6, 60 West 40th Street, New York. Importers, Manufacturers and Distributors to the trade only, of Decorative Drapery and Upholstery Fabrics. Offices also in Boston, Chicago, Philadelphia, Los Angeles and Paris.

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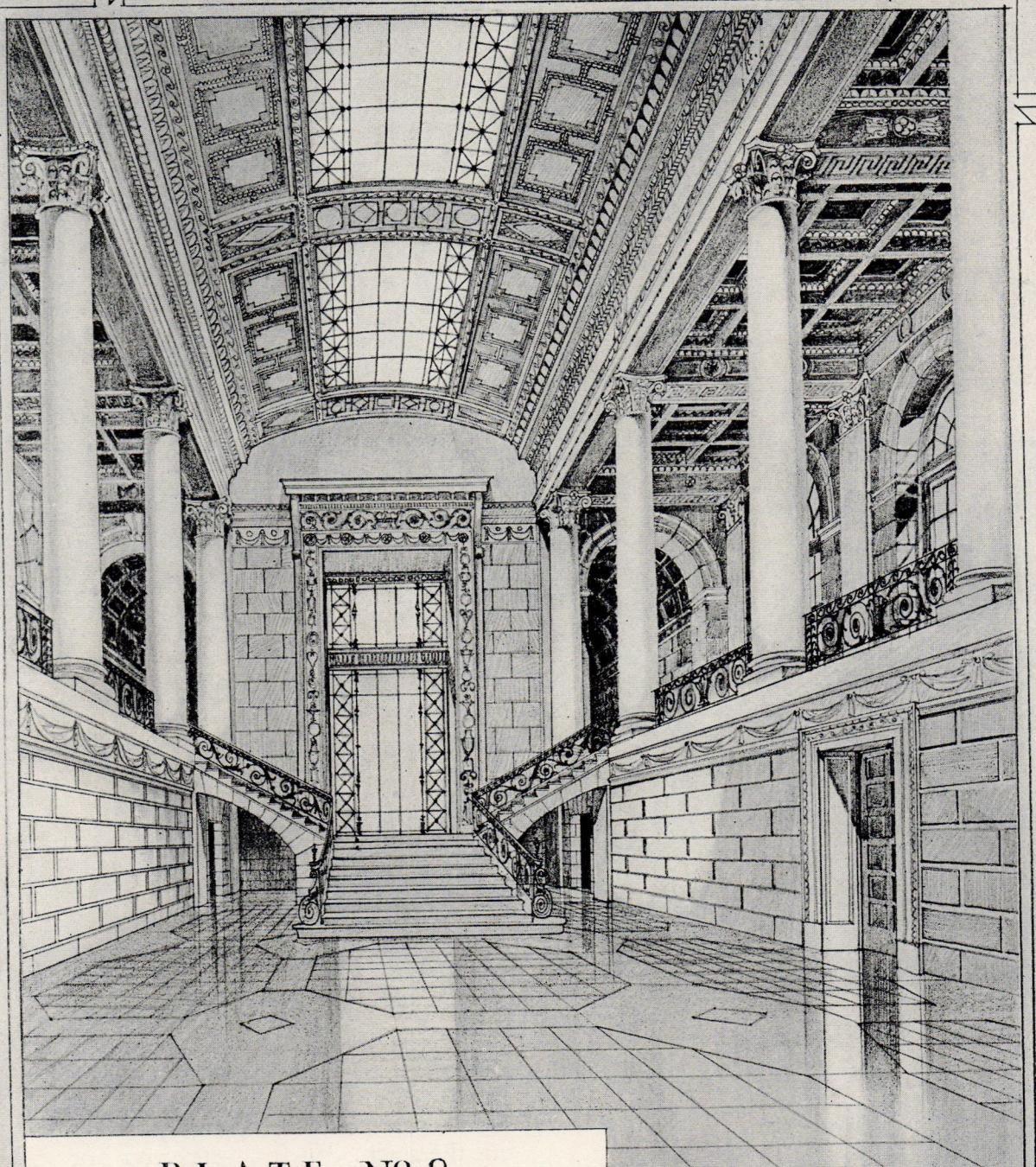

PLATE Nº 8

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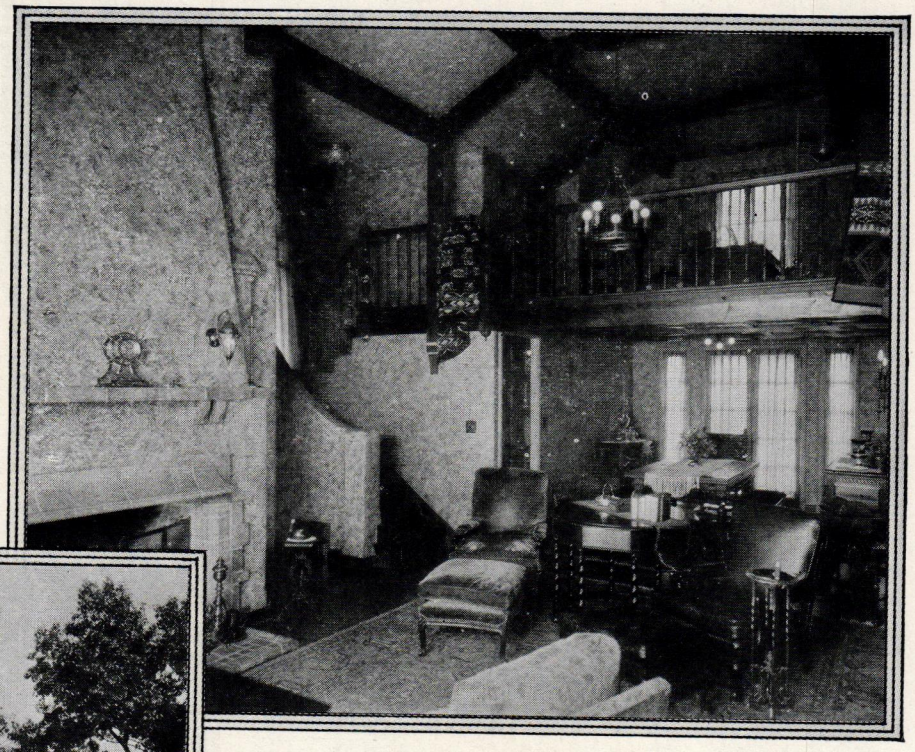
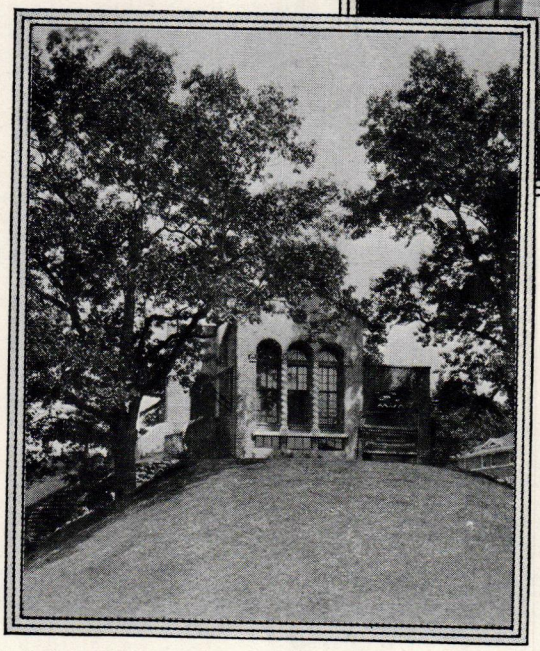
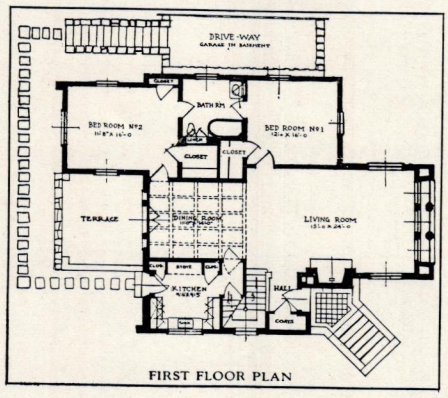


Residence of Dr. Evans,
Davenport, Iowa
Clausen, Kruse & Klein, Architects



Above—Exterior
Below—First Floor Plan



FIRST FLOOR PLAN

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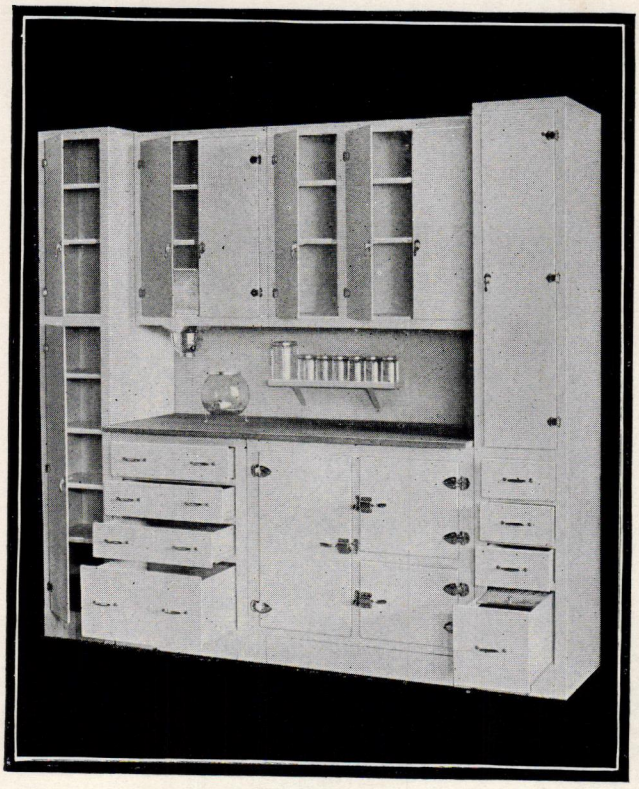

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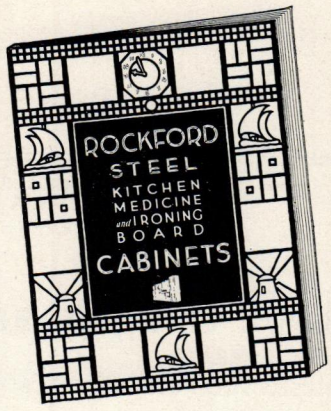

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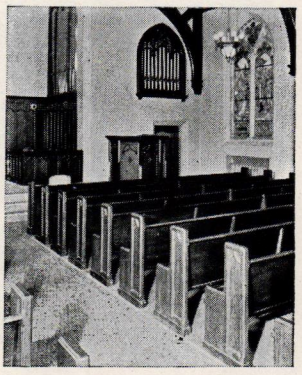

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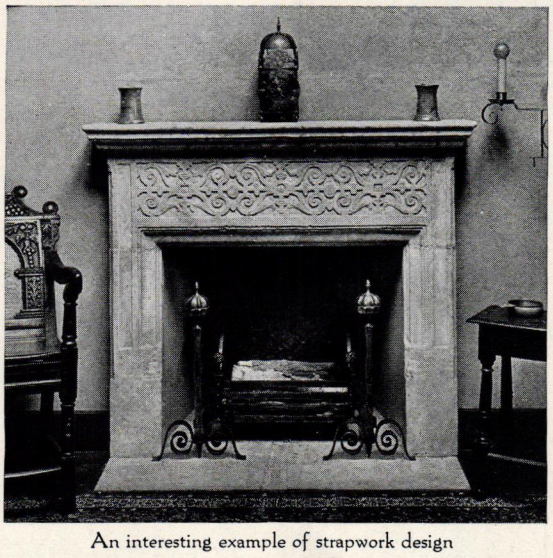

An interesting example of strapwork design

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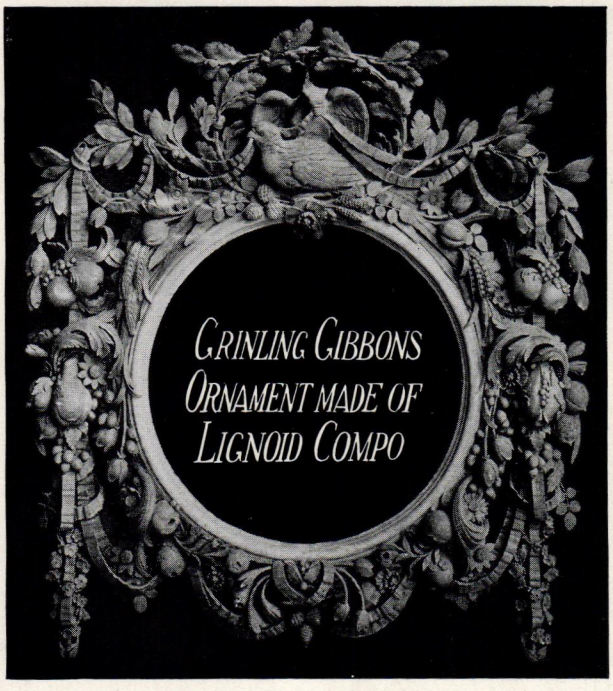

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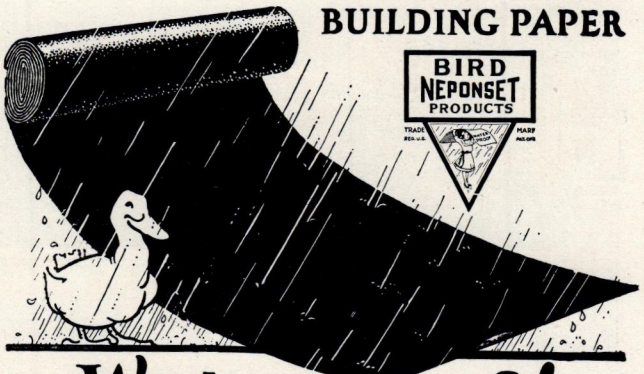

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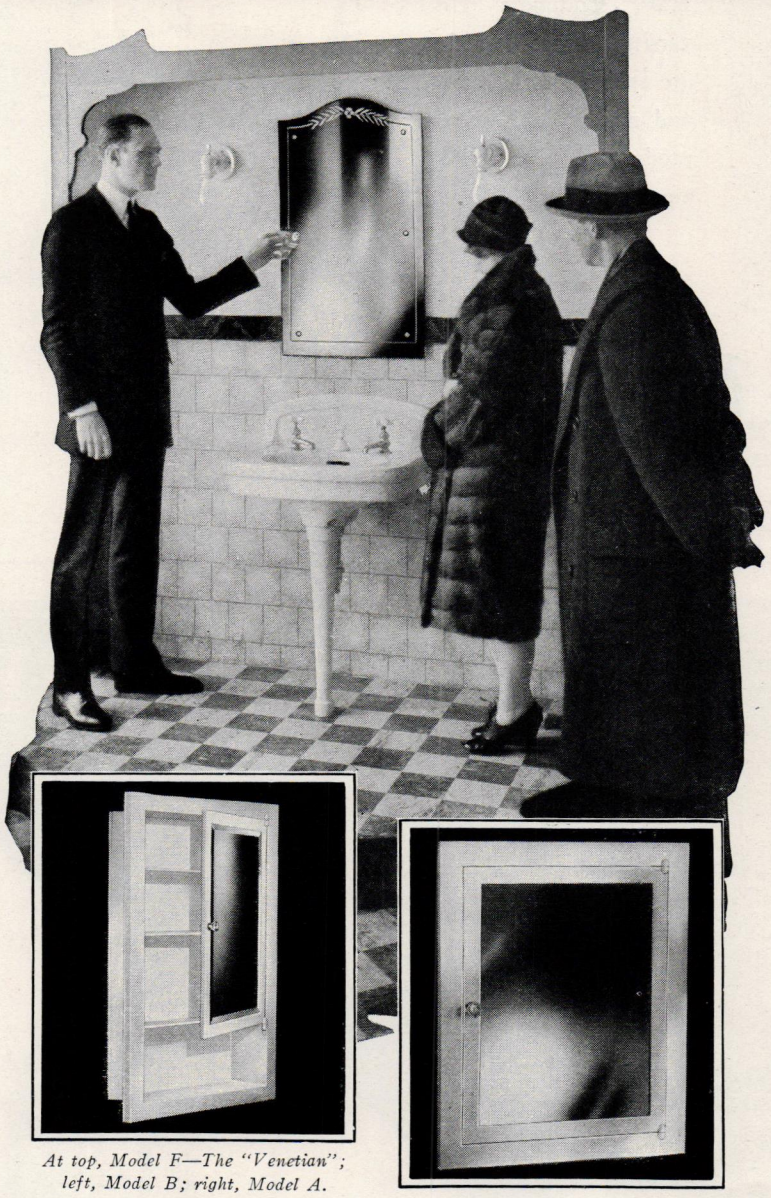
4 Logical Reasons *for installing* MORTON BATHROOM CABINETS



At top, Model F—The "Venetian"; left, Model B; right, Model A.

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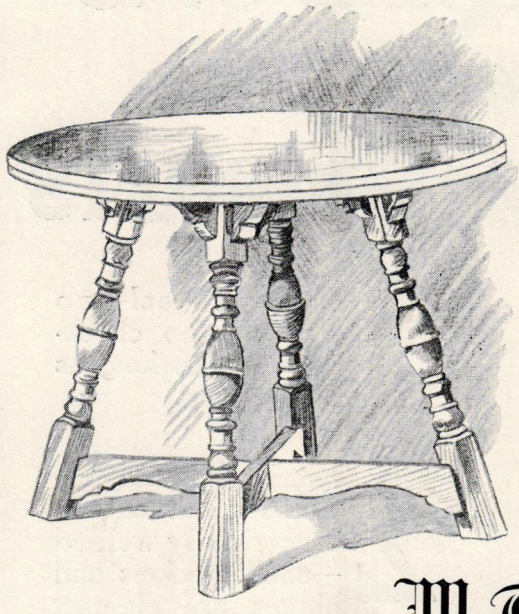

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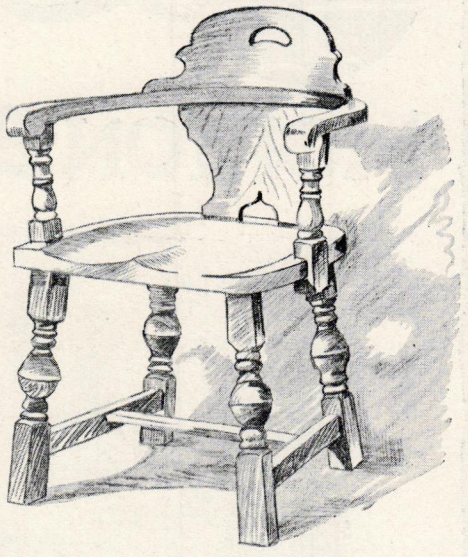

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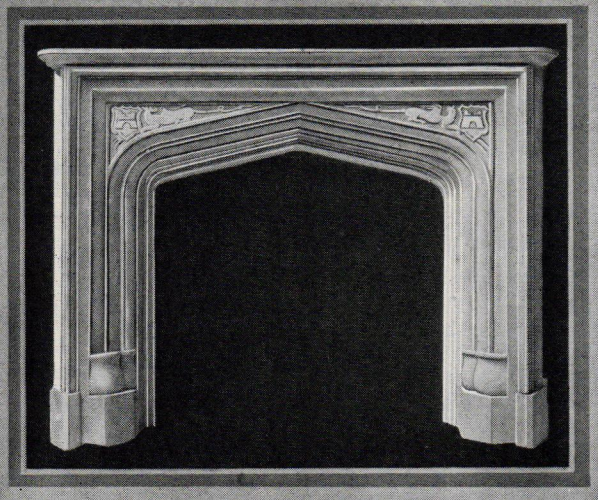

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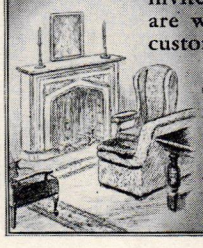

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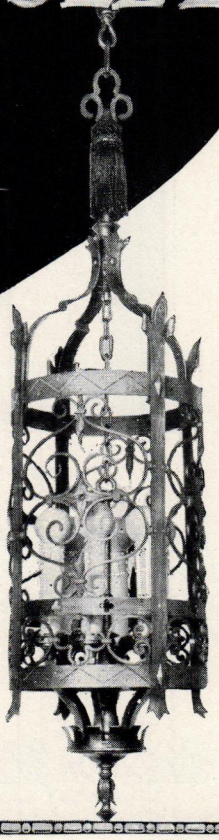

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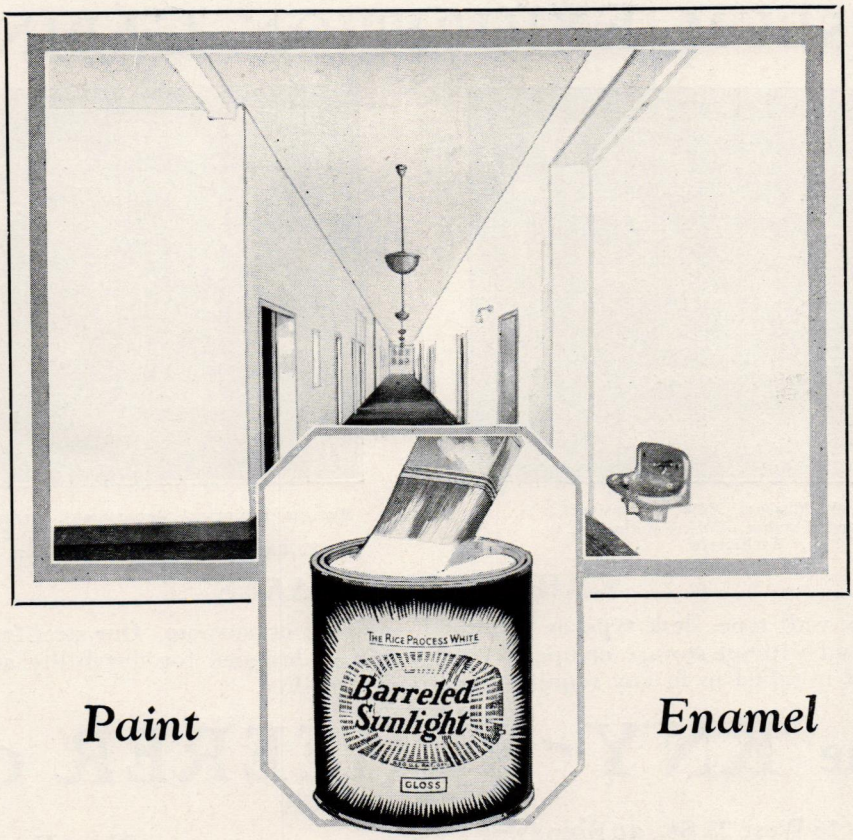

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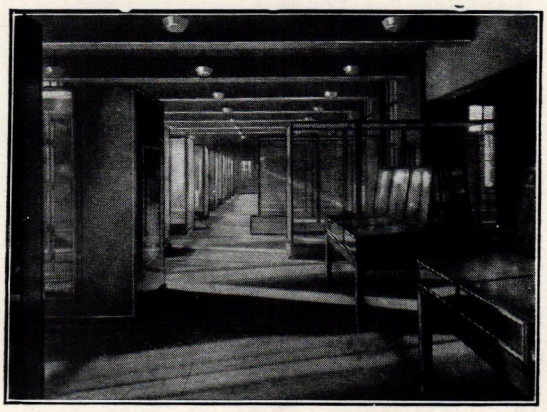

Peabody Museum, Yale University
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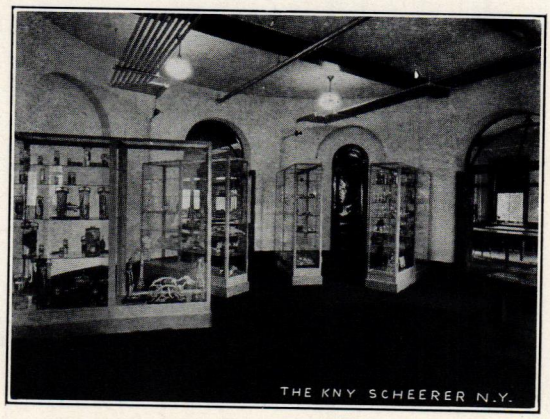
Architects



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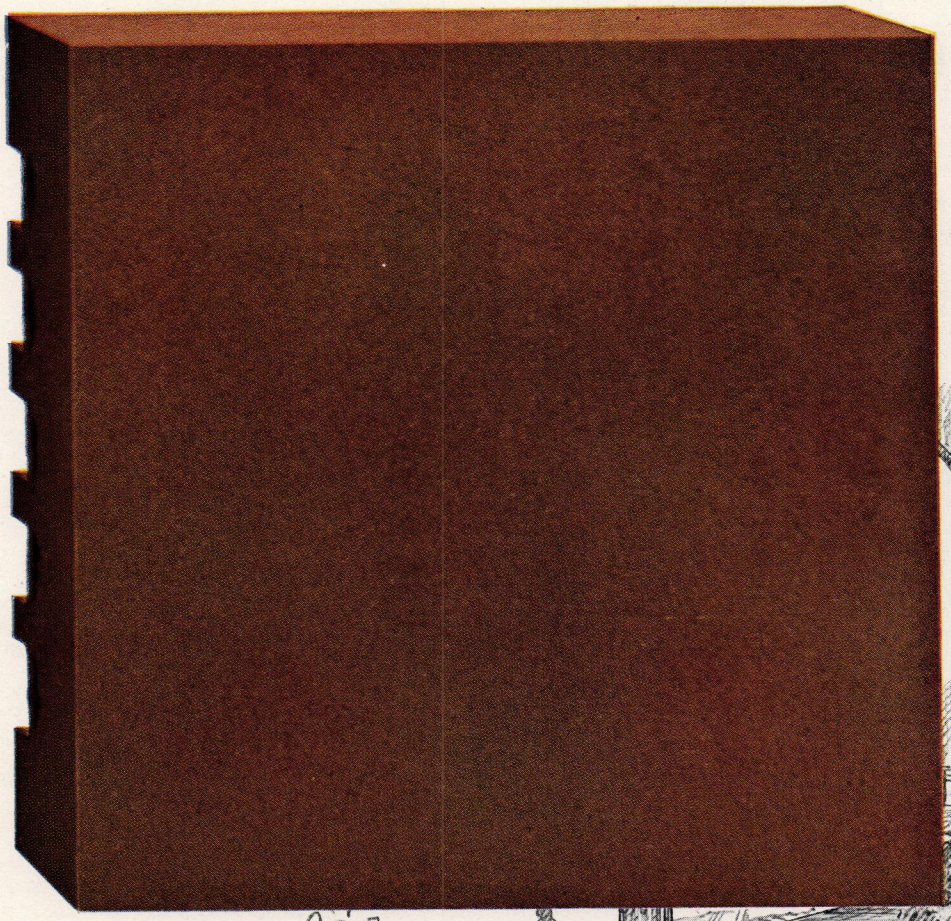
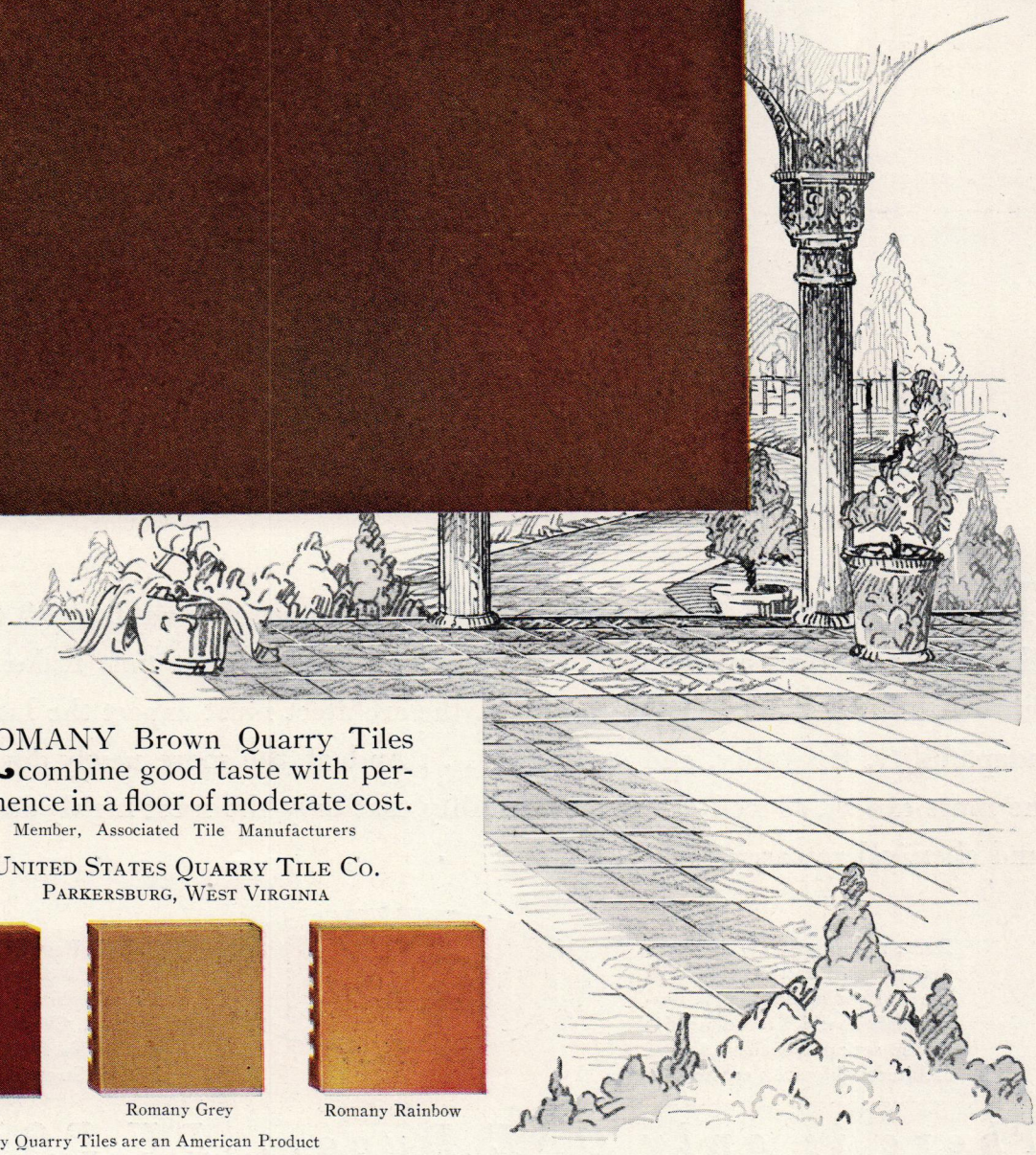


Romany Brown Quarry Tile reproduced in exact color from the original.



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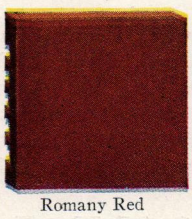

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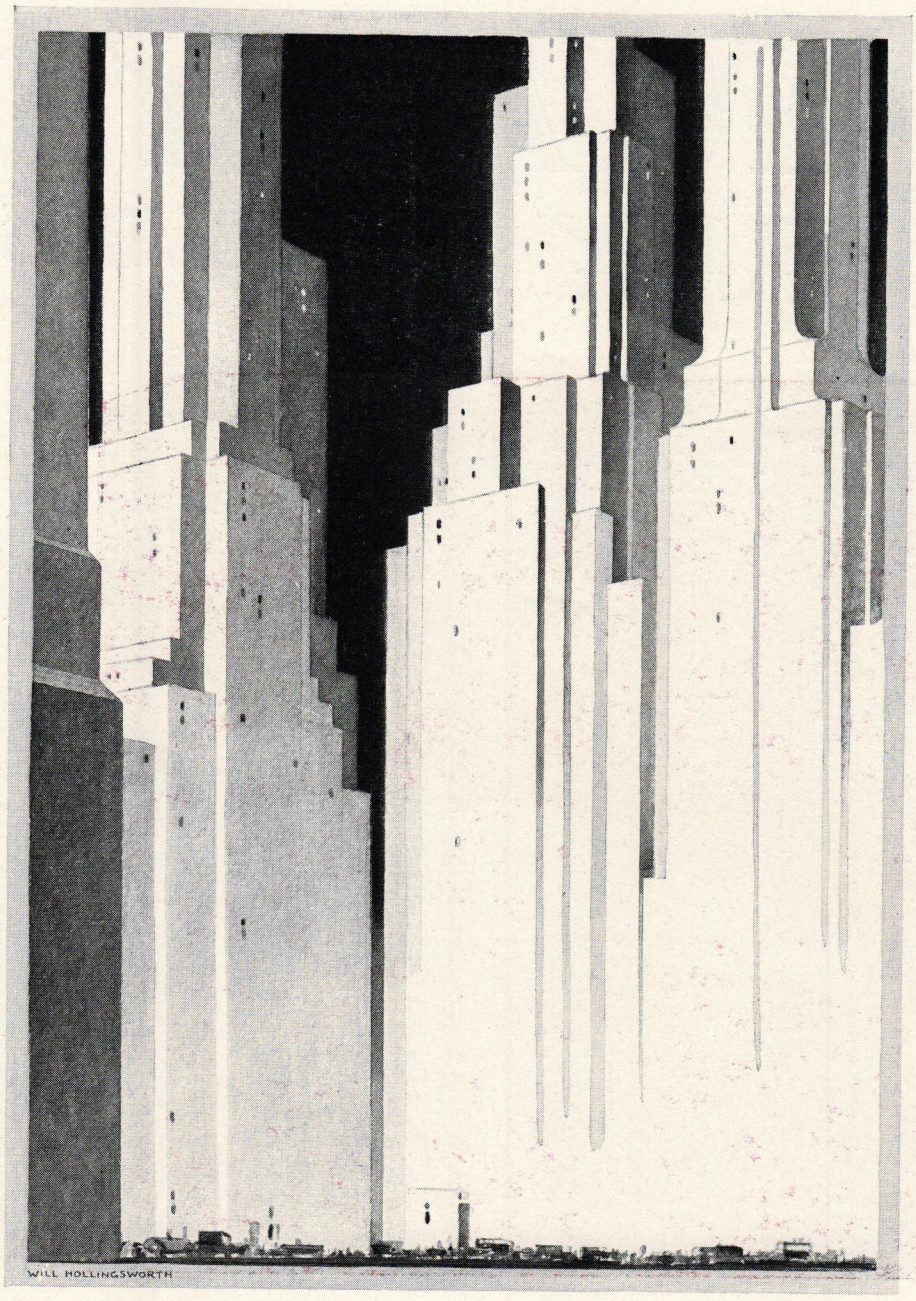

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Duco, the unique and modern finish created and developed in the du Pont laboratories, possesses qualities which recommend it to the serious consideration of architects. Inquiries are invited.

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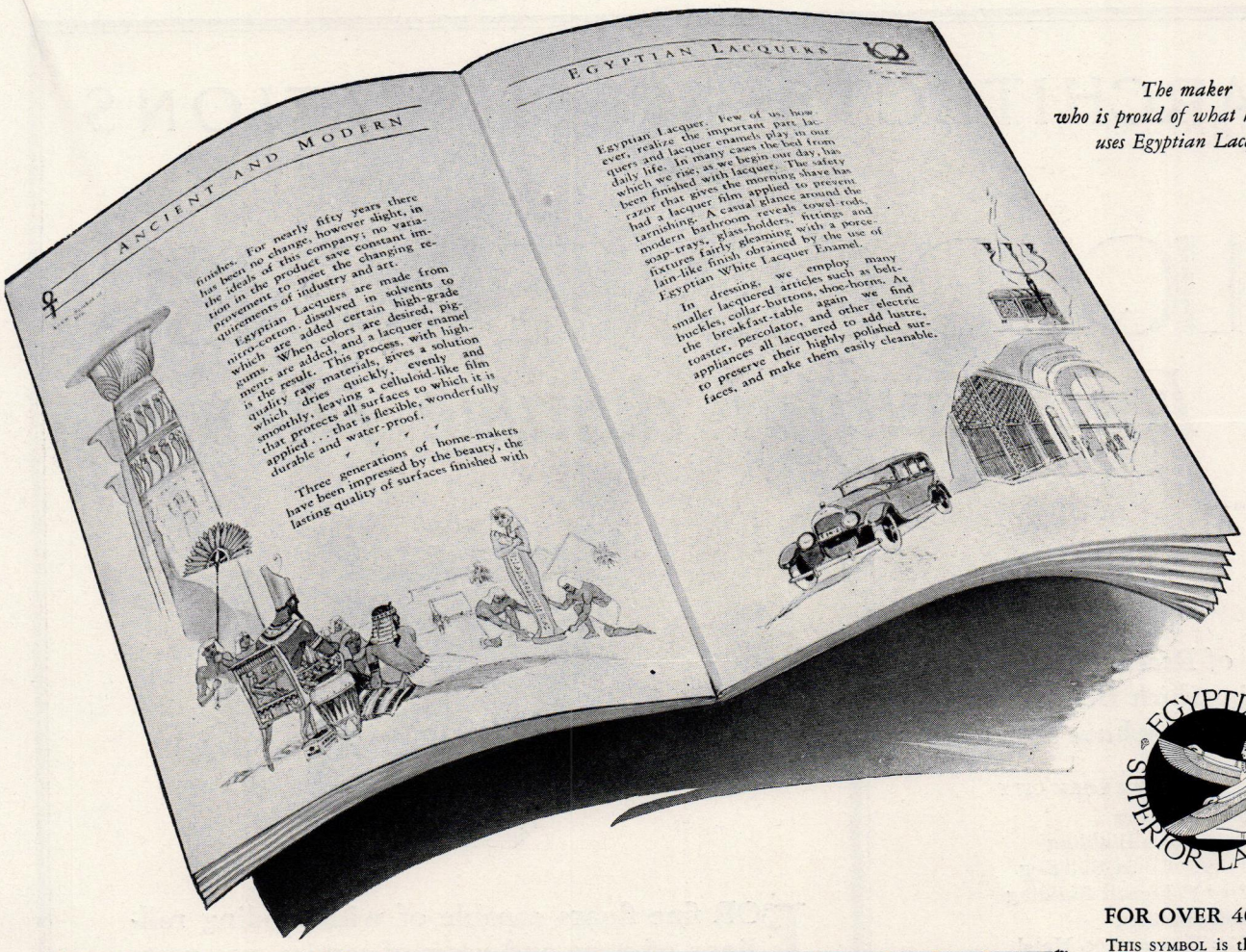
There is only ONE Duco . . . DU PONT Duco



The maker who is proud of what he makes, uses Egyptian Lacquer

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FOR OVER 40 YEARS

THIS SYMBOL is the Egyptian Lacquer trade-mark. Its central figure is that of MAAT, *the Egyptian Goddess of Truth.* It typifies the integrity with which all Egyptian Lacquer products are made . . . their precision, balance, and true quality.

A Valuable Link between you and the public

"ANCIENT AND MODERN EGYPTIAN LACQUERS" outlines the whole story of Egyptian Lacquer—what it is—what it does—where it is used. Handsomely illustrated in color. Written in a lively, interesting new way. 16 pages and cover.

Egyptian Lacquer national advertising in *The Saturday Evening Post* affords a powerful reason why you should include "Egyptian Lacquer Finishes" in your specifications — and a perusal of this new book will convince you that you will be right in doing so. The coupon, properly filled out and mailed, will bring you a copy.

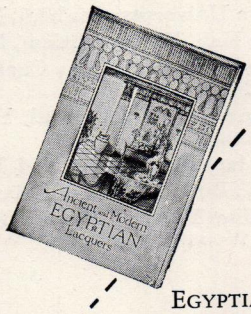
If you would like one of our representatives to call—or want advice on any special finishing problem—a letter to the New York office will get immediate attention.

THE EGYPTIAN LACQUER MFG. CO., INC., 90 West Street, New York

Completely equipped branches in charge of practical men *are maintained in the following cities:*

ATLANTA, BOSTON, CHICAGO, CLEVELAND, DALLAS, DETROIT, LOS ANGELES, PHILADELPHIA, PORTLAND, ORE., SALT LAKE CITY, SEATTLE, SAN FRANCISCO, ST. LOUIS

EGYPTIAN Lacquers



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Gentlemen:

I understand you are distributing free copies of your new booklet "Ancient and Modern Egyptian Lacquers." Please send me a copy.

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ARCHITECT'S SPECIFICATIONS *for* LIQUID GRANITE VARNISH

For beautiful, durable floors

Some Buildings of Recent Construction in which Berry Brothers' Finishes have been Used:

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OTHER CITIES
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K. C. Building, Gary, Indiana
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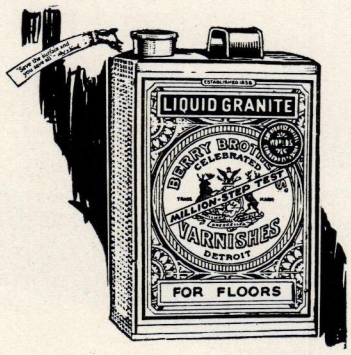

FOR fine floors capable of withstanding millions of steps and years of service, use paste filler of the color desired and three coats of Liquid Granite Floor Varnish—the last coat rubbed.

When it is necessary to reduce labor, a finish of equal durability that closely resembles a rubbed surface may be obtained by blending Liquid Granite dull and Liquid Granite gloss.

Any desired degree of luster may be provided. Three parts dull and one part gloss is a good formula.

Liquid Granite is a product that can be depended on to give superior results when specifications are followed. It is one of few varnishes that can be blended successfully by any painter.

For further information address Architectural Department

B-AA

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Varnishes Enamels Stains
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DISTINCTIVE DUTCH BOY INTERIORS

[Sixth of a series of advertisements describing interiors decorated with Dutch Boy white-lead and Dutch Boy flatting oil]

The Grand Ballroom *of the* Buffalo Consistory

An interesting room in the new Scottish Rite building—Harold Jewett Cook, architect—T. H. McElvein, decorator

A STRIKING feature of the Buffalo Consistory is the colorful decoration on the walls and vaulted ceiling of the Grand Ballroom. This elaborate treatment was achieved almost wholly through the use of paint.

Although the ceiling is intricate in design, little of its beauty is dependent upon relief work. Colorful mural paintings form the dominant note, combined with intricate borders and a wealth of decorative detail.

The basic tone in the ceiling is a warm lavender, with borders and conventional motives in four shades of blue-gray—although more than ten different colors have been employed.

The side walls and columns are notable for their lack of ornamentation. The decorator relied solely on the beauty of plain painted finishes to support and set off the lavish colors and delicate detail of the ceiling. This treatment demonstrates the adaptability of paint as a decorative medium.

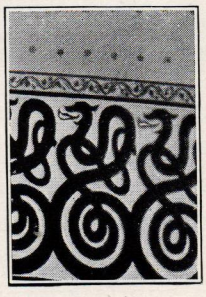
The walls are treated in a light gray-green. The columns, engaged columns and pilasters are painted a pale salmon pink. Both these colors possess exactly the same light-reflective value—a fact of special interest. The panel borders are in Russian blue—one of the colors found in the ceiling decoration.

The dado is glazed down to a deep umber which harmonizes with the scheme of decoration.

These interesting painted effects and those in other parts of the Buffalo Consistory were obtained with paint made of Dutch Boy white-lead and Dutch Boy flatting oil. This paint is especially suitable for interior decorating work since it can be tinted to any desirable color. And it produces a handsome flat finish which repeated soap-and-water washings will not mar.

Write our Department of Decoration

The services of our Department of Decoration are at your disposal without obligation. Color specialists in this department will be glad to work with you on any decorative problem. Address them in care of our nearest branch.



A corner of the Grand Ballroom, showing the elaborately painted ceiling. Murals set in gold mosaics are the dominant note.

An unusual stencil treatment applied to the dado in the auditorium of the Buffalo Consistory. The serpent motive appears in two shades of tan over a background of light Cerulean blue.

"Save the surface and you save all"—Dutch Boy

NATIONAL LEAD COMPANY

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THE ORIGINAL HOLLAND ENAMEL PAINT

The master painter of long experience is always glad when Ripolin is specified for the interior trim and built-in furniture that will get the hardest wear. He knows that his work will be fully appreciated because it will be admired for so long.

It is quite natural—and fitting—that the architect chooses Ripolin, the original Holland enamel paint, to preserve the beauty he has created. He knows very well that in its porcelain-like surface, resisting the ravages of time and repeated scrubbing, is a subtle compliment to his ability of discrimination.

Send for the Ripolin Book and Specifications.

The GLIDDEN Companies

EVERYWHERE ON EVERYTHING

PAINTS · VARNISHES · LACQUERS · ENAMELS

It is significant that Ripolin, the definition of which appears in French dictionaries, should acquire a similar position in the lexicon of American architects. Its distinguishing differences, however, are obvious—need no dictionary translation

Adriaan Joyce
President

T. L. Blood & Company, St. Paul
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"Opacity" and "Leafing"

Cut the Waste in Industrial Painting

—*One coat of Aluminum Paint* completes *the interior job*

OPACITY and leafing are properties native to Aluminum Paint. They have substantially reduced the cost of treating factory walls and ceilings for light-improvement.

On interiors one coat of Aluminum Paint *completes* the job. Your client saves the labor and material costs of second and third coats so necessary with ordinary paints.

Aluminum Paint lasts longer and keeps its lustre longer than ordinary paints. Fumes and gases common to many industrial plants have little effect upon its reflectivity. Dirt and dust may be readily removed by air blast or washing.

Aluminum Paint consists of thin opaque flakes of pure metallic aluminum (Aluminum Bronze Powder) mixed with a suitable vehicle of oil or varnish. These flakes "leaf" together, forming a continuous lustrous coat of aluminum over the surface.

Greater durability results from this "coat-of-metal" covering. And lasting reflectivity—because its metallic pigment stays bright longer.

Write today for our new illustrated booklet—"Aluminum Paint—A Step Ahead in Industrial Painting." It gives complete details in an interesting, understandable way.

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The best grade of Aluminum Paint consists of ALBRON (Aluminum Bronze Powder) and a suitable vehicle of oil or varnish. ALBRON pigment is always made of pure ALCOA Aluminum.

ALUMINUM IN EVERY COMMERCIAL FORM

PURE WHITE LEAD IN OIL

A. I. A. File No. 25A21

Because the architectural beauty of outside surfaces must be permanently protected—specify this strong, enduring paint

FROM the architect's point of view, long time protection of beautiful exterior surfaces is essential—because rapid changes of weather, dust and dirt will wear away inferior paints and expose to deterioration the wood or brick beneath.

Eagle Pure White Lead in Oil, properly mixed and applied by a master painter, provides the most enduring protection for exteriors.

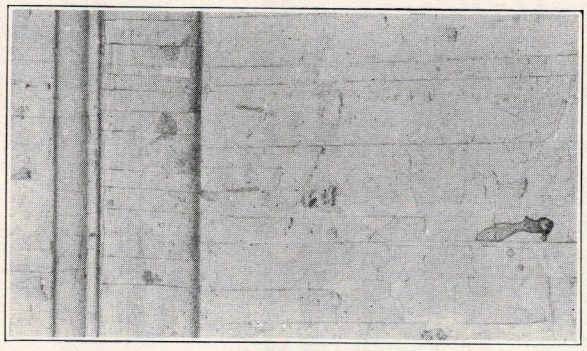
Pure lead paint—the remedy for excessive cracking and scaling

Paints that do not contain sufficient lead will crack and scale with age, marring the surface, and increasing maintenance cost. Excessive cracking and scaling is avoided by the use of Eagle Pure White Lead in Oil because:

[1] Eagle penetrates deeply—anchors firmly in the pores of the surface.

[2] Eagle, made from pure lead, makes an elastic paint which expands and contracts with the surface during temperature changes.

[3] The tendency to crack and scale is largely determined by the relation between two forces: adhesion of paint film to the surface, and cohesion within the paint film. When cohesion remains strong while adhesion lessens naturally with age, cracking and scaling is inevitable. The cohesion of paint made from Eagle Pure White Lead lessens as adhesion lessens—wears away gradually.

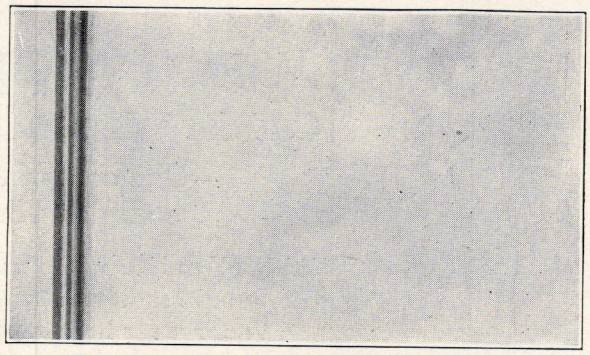


An example of cracking and scaling caused by use of inferior paint

"Chalking," as this is called, is a necessary characteristic of all good paints. Paints that do not chalk will scale, and must be burned or scraped off before repainting—a very expensive operation, sometimes destructive to the surface.

Specifications for Pure White Lead Paint

Pure white lead paint, mixed according to these formulae, may be tinted any desired color. It is enduring protection for beautiful outside surfaces.



This surface is painted with Eagle pure white lead paint

PRIMING COAT

100	pounds Eagle Pure White Lead
4-5	gallons pure raw linseed oil
1½-1	gallons pure turpentine
1½	pints best Japan drier
8½-9	gallons pure white lead paint

SECOND COAT

100	pounds Eagle Pure White Lead
1¾	gallons pure raw linseed oil
1½	gallons pure turpentine
1	pint best Japan drier
6⅛	gallons pure white lead paint

THIRD COAT

100	pounds Eagle Pure White Lead
3½-4	gallons pure raw linseed oil
½-1	pint pure turpentine
1	pint best Japan drier
6¼-7	gallons pure white lead paint

Write for technical information, A. I. A. *numbered*

The Eagle-Picher Lead Company has compiled technical information on the preparation and painting of interior and exterior surfaces. This information, A.I.A. numbered for specification files, is available to architects, without charge.

The EAGLE-PICHER LEAD COMPANY
134 *North La Salle Street, Chicago*

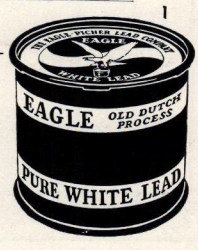
Please send me, A. I. A. numbered for my files, technical information on the preparation and painting of interior and exterior surfaces.

*Name*_____

*Address*_____

EAGLE *Pure* WHITE LEAD

OLD DUTCH PROCESS



At last a free flowing Lacquer
without unpleasant odor

Following the specifications of 2000 master painters, the Murphy Varnish Company have produced a new line of Brushing Lacquers which are entirely practical for professional use on large or small finishing jobs. These products are called Murphy Varnish Lacquer for Master Painters and Murphy Velvet White Enamel Lacquer for Master Painters. These new finishes possess the following characteristics:

1 Brushing—excellent brushing and working qualities.

2 Dry—typical lacquer dry; set in three or four minutes, to recoat in four to six hours.

3 Odor—absence of offensive, harmful, choking or lingering odor.

4 Durability—tough and elastic.

5 Tinting—Murphy Velvet White Enamel Lacquer may be tinted readily with ordinary oil colors, broken up with Murphy Varnish Lacquer before mixing into the white.

6 Finish—technique of application may be varied to secure either a velvet, soft lustre or a gloss finish.

In these new brushing lacquers we have succeeded in overcoming the handicaps of too quick setting and unpleasant odor which have held back the wide use by professionals of former brushing lacquers. Professional painters and architects may now avail themselves of the new speed made possible by the use of these new type materials without the sacrifice of high quality. Two coats a day are now made possible. Labor and time, the two greatest cost factors in painting work, are both saved with these new finishes.

We urge every painter and architect to try out these new Murphy finishes. We invite comparison in respect to quality of work, speed and cost with any other interior finishing system.

Write us to have a representative call and demonstrate these new type lacquers to you.

Murphy
MASTER PAINTERS' BRUSHING Lacquer

"For sixty years the Murphy Varnish Company has been making varnish. Sixty years is a long time—long enough to test any finish, or any reputation. If the Murphy Company has a reputation for making good finishes, it must be because throughout that sixty years it always tried to make the best it could."

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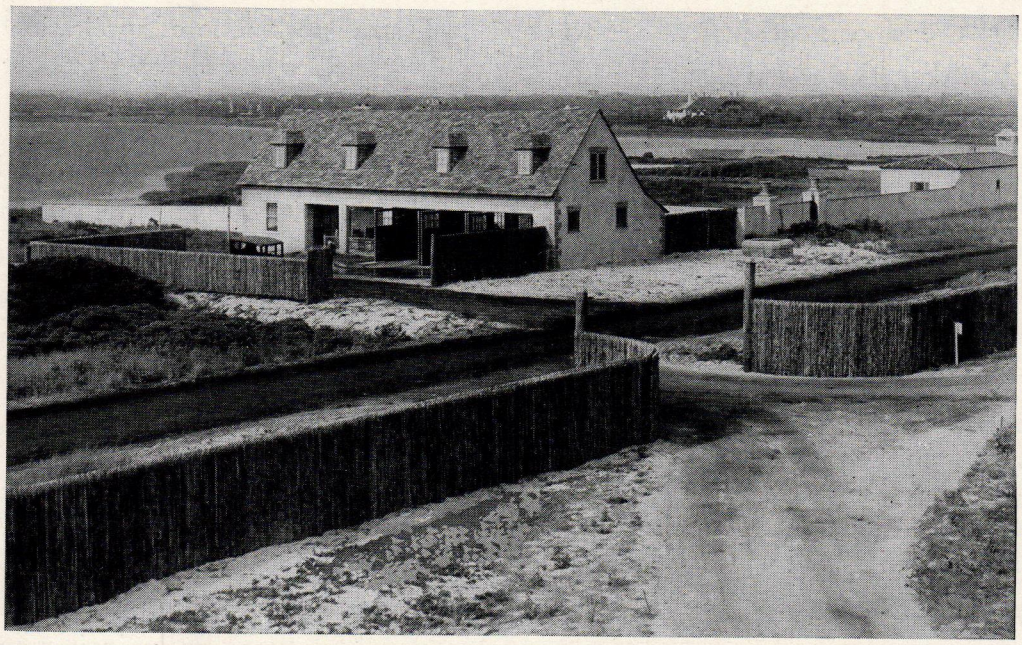
DUBOIS Woven Wood Fence

THE problem on this Southampton estate was to find something that would relieve the severity of the sandy shore land, and blend readily with the white stucco buildings.

That Dubois provided the solution may be seen at a glance, and the more the situation is studied, the more the versatile nature of Dubois is realized.

It has charm, and great strength as well. It graces a lovely garden, yet it can perform the most rugged type of duty. It is highly individual, and yet there never was a fence that could give more all-round service, for country or town, at so reasonable a figure.

Prices and Erection Data may be had upon request from Robert C. Reeves Co., 187 Water St., New York.



Made in France of split, live chestnut saplings bound to horizontal braces with heavy, rust-proof Copperweld wire. Comes in 5-ft. sections, in two heights, 4 ft. 11 in. and 6 ft. 6 in.

Photo by Amemya.

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Reg. U.S. Pat. Off.

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IN Valspar, architects find a finish of all-round satisfaction. Its water-proofness, durability, toughness and elasticity; the beauty of colors in the Valspar-Enamels and Varnish-Stains are all features that will appeal to the discriminating architect. Valspar is truly economical in reducing maintenance costs.

VALENTINE & COMPANY

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The Varnish That Won't Turn White

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Better and longer protection as well as lower cost per year of service are direct results of its use.

The pigment, flake silica-graphite, is unusual in its durability and water-repellent qualities. Being of flake formation it expands and contracts with temperature variation without cracking or peeling.

Write for new color cards No. 224-B showing colors of Aluminum and Light Gray.

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JERSEY CITY, NEW JERSEY

1827 ONE HUNDREDTH ANNIVERSARY 1927

Another notable example of woodwork preserved and beautified with

"38"

PRESERVATIVE VARNISH

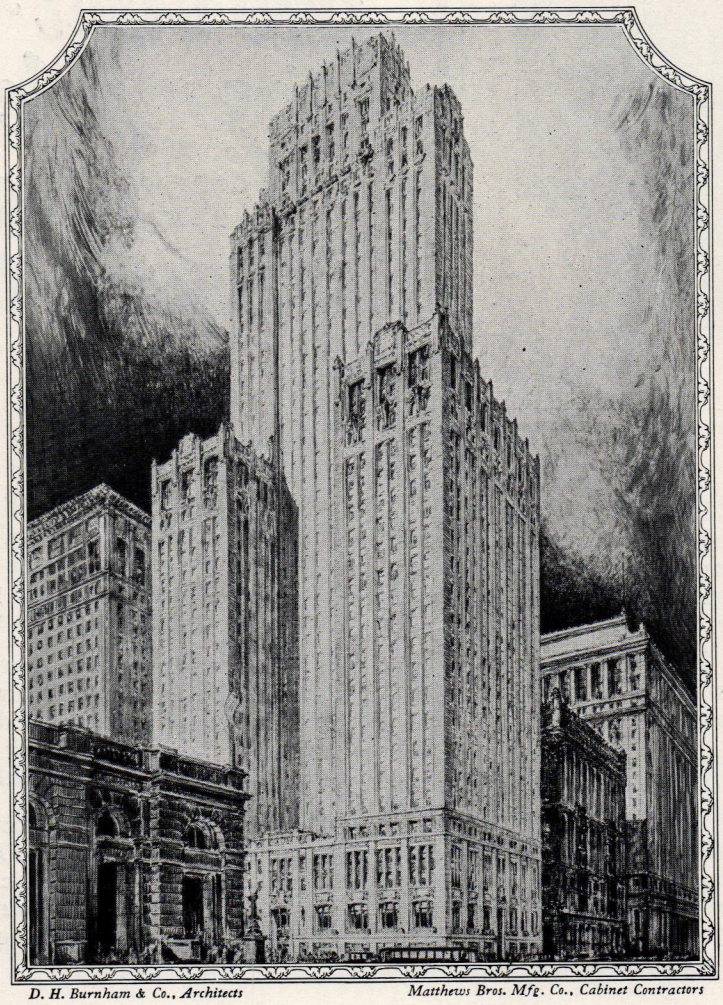
RISING majestically from a group of less lofty, but substantial structures, the Bankers' Building, Chicago, stands out conspicuously as a striking example of modern architecture. Its graceful lines are admirably enhanced by appropriate, restrained decoration.

Inside, the woodwork of this thirty-seven story building is beautified with a protective film of "38" Preservative Varnish. Time can only mellow this truly beautiful finish. A small thing in itself, perhaps, yet this durable varnish adds that last touch which sets off the architect's work to full advantage.

"38" Preservative Varnish is not new to the architectural profession. It has been used to embellish and protect woodwork in fine homes and buildings of distinction for many years. It is an economical varnish because it is durable; a "38" job pleases the architect, owner and tenant alike.

No higher compliment can be paid Pratt & Lambert Varnish Products than to say that for over three-quarters of a century they have been the choice of leading architects in the United States and Canada.

Let the Pratt & Lambert Architectural Service Department help you solve your finishing problems; its members will be pleased to assist you. Write to Pratt & Lambert-Inc., 122 Tonawanda St., Buffalo, N.Y. Canadian Address: 34 Courtwright St., Bridgeburg, Ontario.



D. H. Burnham & Co., Architects *Matthews Bros. Mfg. Co., Cabinet Contractors*

BANKERS' BUILDING, CHICAGO

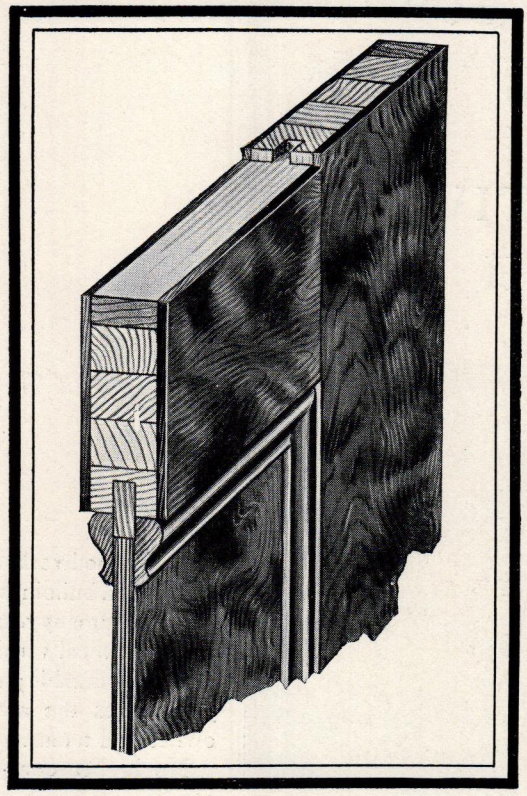
"Save the surface and you save all" Paint & Varnish

PRATT & LAMBERT VARNISH PRODUCTS

Vitralite *The Long-Life Enamel*

Available in gloss and eggshell finish, in white and six attractive tints. It produces a porcelain-like finish of rare beauty, and is so durable that it is guaranteed for three years inside or outside. It is specified by architects on modest homes and large city buildings.

The CUSTOM BUILT DOOR—



Exactly the door you want at a reasonable price—delivered almost immediately

IN Roddis CUSTOM BUILT Doors you are offered any width of stile and rail, any thickness of panel, any design of moulding and any variety of surface veneer.

Despite these CUSTOM BUILT features, there is little difference in price and almost no delay in delivery.

Roddis has met the demand for individual design with no excessive premium for these "made to measure" features.

Like all doors built by Roddis, the CUSTOM BUILT employs those principles of construction that assure permanence. The stiles and rails are built up of narrow strips of softwood, literally welded together with water-proof glue. Around the outside edges of the core is a ¾" band of hardwood. This prevents moisture from reaching the core.

Fine thin veneers are matched with expert skill and joined so precisely that the joints can scarcely be detected. Once sealed, they are forever proof against swelling, peeling and cracking.

Building managers are invited to inspect samples of Roddis CUSTOM BUILT Doors. In all principal cities there are Roddis representatives ready to serve and quote on your requirements.

RODDIS LUMBER AND VENEER COMPANY
MARSHFIELD, WISCONSIN
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RODDIS DOORS

Made by the World's Largest Producer of

FLUSH AND FRENCH DOORS

With stock designs alone

Benham and Richards, Columbus, Ohio, have produced this interesting interior with Curtis Woodwork

SOME promising things are being done in residential architecture down in Columbus, Ohio. This enterprising city has a half dozen or so suburbs in which good architecture is the first qualification for every house erected.

The Russell Paul house is in Bexley. In it, Benham and Richards, the architects, have achieved some interesting results through the use of Curtis Woodwork.

They have shown what can really be done with good stock forms of woodwork in the hands of someone who knows good forms and how they should be used.

In the photograph above, note especially the restraint in the treatment of the stairway. The newel, balusters, rail and easing are all stock forms, as detailed in the office of Frederick Lee Ackerman, New York, especially for production by Curtis.

The trim is Curtis Standard Trim C-1650, with a molded casing with a back-band effect that is easily mitred and matched at the corners.

And, after the wise selection of these simple, appropriate forms, the woodwork has been finished in a warm, soft brown that brings out the curves of the moldings and the natural beauty of the wood.

Every architect who really cares about such details and who knows how to get the right effects with them, can build such an interior. What Benham and Richards have done here, we are glad to report, a great many architects are equalling in other parts of the country. The successful results that such members of the profession are securing with Curtis Woodwork is proof that the time is certainly ripe for a *line* of stock woodwork of architectural character.

With Curtis stock forms the certainty of adherence to details, of quality in materials and construction up to a definite standard, and of on-time deliveries greatly simplify the architect's work.

1866 CURTIS WOODWORK

The Curtis Companies Service Bureau, 659 Curtis Bldg., Clinton, Iowa

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Before *After*

Amazing new beauty for old homes!

There is no better way to renew the beauty and attractiveness of old, time-worn homes than with a new Hartmann-Sanders Entrance. Adding such an entrance is like adding a brilliant "high light" to the artist's canvas. It literally makes all the difference in the world, as is clearly shown by the home pictured above.

No small part of the charm of Hartmann-Sanders Entrances is due to the masterful craftsmanship of those skilled men who have given their lives to creating things of beauty.

When first architects utilize the genius of these craftsmen, either for interior or exterior work, they are surprised at the sympathetic understanding with which these men interpret their requirements.

Hartmann-Sanders Entrances are built to the architect's or our specifications — built complete, ready to erect. Their beauty is given permanence by the use of Koll Lock-Joint Columns.

Catalog of Entrances I-52, Koll Columns I-47, or Garden Equipment I-34, gladly sent on request. Hartmann-Sanders Co., 2151 Elston Ave., Chicago. Eastern Office and Showroom: 6 East 39th Street, New York City.

KOLL LOCK-JOINT COLUMN

THEY CANNOT COME APART

HARTMANN-SANDERS

Pergolas
Rose Arbors

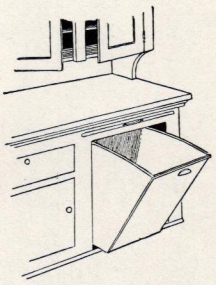
Colonial Entrances
Garden Equipment

Koll
Columns

205

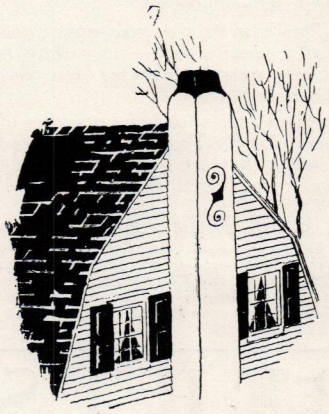
Here are some facts about Sitka Spruce *non-warping, smooth, odorless*

Sitka Spruce is the world's most important airplane wood and the standard material for piano sounding-boards. The same toughness, strength, flexibility, resilience, lightness, easy of working and uniformity of texture have made Sitka Spruce valuable for bevel siding and many other building purposes.

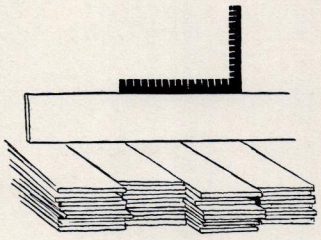


SITKA SPRUCE grows in the Douglas Fir forests of the Pacific Northwest. It is a large tree, sometimes reaching a height of 180 feet and a diameter of 12 feet. The wood is decidedly uniform in quality, having great toughness and strength combined with lightness. The grain of Sitka Spruce is smooth, the fibres are long, and the wood contains no resin—thus it is easy to work and takes finishes readily.

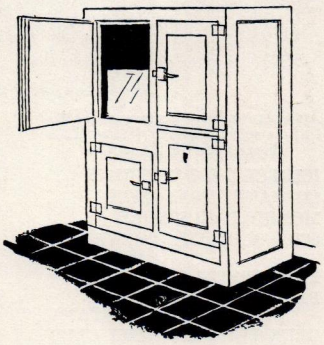
Sitka Spruce is much used for bevel siding and for exterior trim, because of its great percentage of heartwood, its resistance to warping and its ability to take and hold paint. An average shipment of Sitka Spruce finish will contain 95% heartwood.



Sitka Spruce is a superior wood for interior trim, because it is of even grain and texture, is easy to work and because few, if any, other woods can give such a glass-like enamel finish.

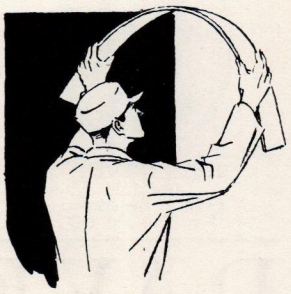


Being odorless, and tasteless, this West Coast wood is ideal for kitchen cabinets, cupboards, flour and sugar bins, coolers, refrigerators and other compartments where food is kept.



Sitka Spruce resists warping and shrinking to a remarkable degree, hence it is highly favored for drain boards. Architects who specify Sitka Spruce for the entire finish and cabinet work of kitchens can be assured of giving their clients complete service and satisfaction.

Due to the large size of the tree, wide widths of vertical grain clear lumber are readily available in any length at reasonable prices.



We will be glad to answer inquiries about the uses of Sitka Spruce if you will address West Coast Lumber Bureau, 560-CC Stuart Building, Seattle, Washington.

Important West Coast Woods — Douglas Fir - West Coast (Sitka) Spruce - West Coast Hemlock - Western Red Cedar

Reproduction from a painting made on the estate of Vice President Charles G. Dawes, Evanston, Illinois, by Frank Swift Chase

© The D. T. E. Co., Inc., 1927

Among prominent persons and institutions served by the Davey Tree Experts are the following:

HERBERT L. SATTERLEE
COLGATE UNIVERSITY
MORRIS L. CLOTHIER
OHIO BELL TELEPHONE COMPANY
E. M. STATLER
BALTIMORE & OHIO RAILROAD COMPANY
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COL. ROBERT R. McCORMICK
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JOHN DAVEY
1846-1923
Father of Tree Surgery
Reg. U. S. Pat. Off.

A $2,000,000.00 business in saving trees in 1926

Yet 70% of Davey clients paid less than $100 each

Davey Tree Experts served nearly 15,000 clients in 1926, from Boston to Kansas City and from Canada to the Gulf.

These clients included private home owners and country clubs; municipal, state and federal parks and institutions; schools and colleges; churches, cemeteries and philanthropic organizations; corporations and other business concerns.

Nearly 800 Davey Tree Experts are now serving 25% more clients than last year. The present year's business will amount to approximately $2,500,000.00.

There were 250 men in the Davey Institute of Tree Surgery last winter receiving scientific training, all carefully selected—the only school of its kind in the world.

Every Davey man is thoroughly trained in the Davey organization—no man is permitted to experiment on your priceless trees.

26 years ago John Davey was working alone in the practice of his new science prior to the publication of his first book, "The Tree Doctor." Since then the business has grown steadily year by year in annual volume, number of trained employes, and the number of clients served.

Not a man is retained in the Davey organization who is dishonest or lazy or careless. Irrespective of the investment in him, if a man is found to be the wrong kind he is quickly eliminated.

These Davey Tree Experts give you proven and reliable service at moderate cost — no carfare is charged and you pay only for working time plus material and delivery costs.

Write or wire nearest office for free inspection of your priceless trees. Davey Tree Experts live and work in your vicinity; they are quickly and easily available for large or small operations.

THE DAVEY TREE EXPERT CO., Inc., 757 City Bank Bldg., Kent, Ohio

Branch offices with telephones: New York, 501 Fifth Ave., Phone Murray Hill 1629; Albany, City Savings Bank Bldg.; Boston, 705 Statler Bldg.; Pittsfield, Mass., Stevenson Bldg.; Providence, R. I., 36 Exchange Pl.; Philadelphia, Land Title Bldg.; Baltimore, American Bldg.; Washington, Investment Bldg.; Pittsburgh, 331 Fourth Ave.; Buffalo, 110 Franklin St.; Cleveland, Hippodrome Bldg.; Detroit, General Motors Bldg.; Cincinnati, Mercantile Library Bldg.; Louisville, Todd Bldg.; Indianapolis, Fletcher Savings & Trust Bldg.; Chicago, Westminster Bldg.; St. Louis, Arcade Bldg.; Kansas City, Scarritt Bldg.; Minneapolis, Andrus Bldg.; Montreal, Insurance Exchange Bldg.; Toronto, 71 King St., West; Stamford, Conn., Gurley Bldg.; Hartford, Conn., 36 Pearl St.

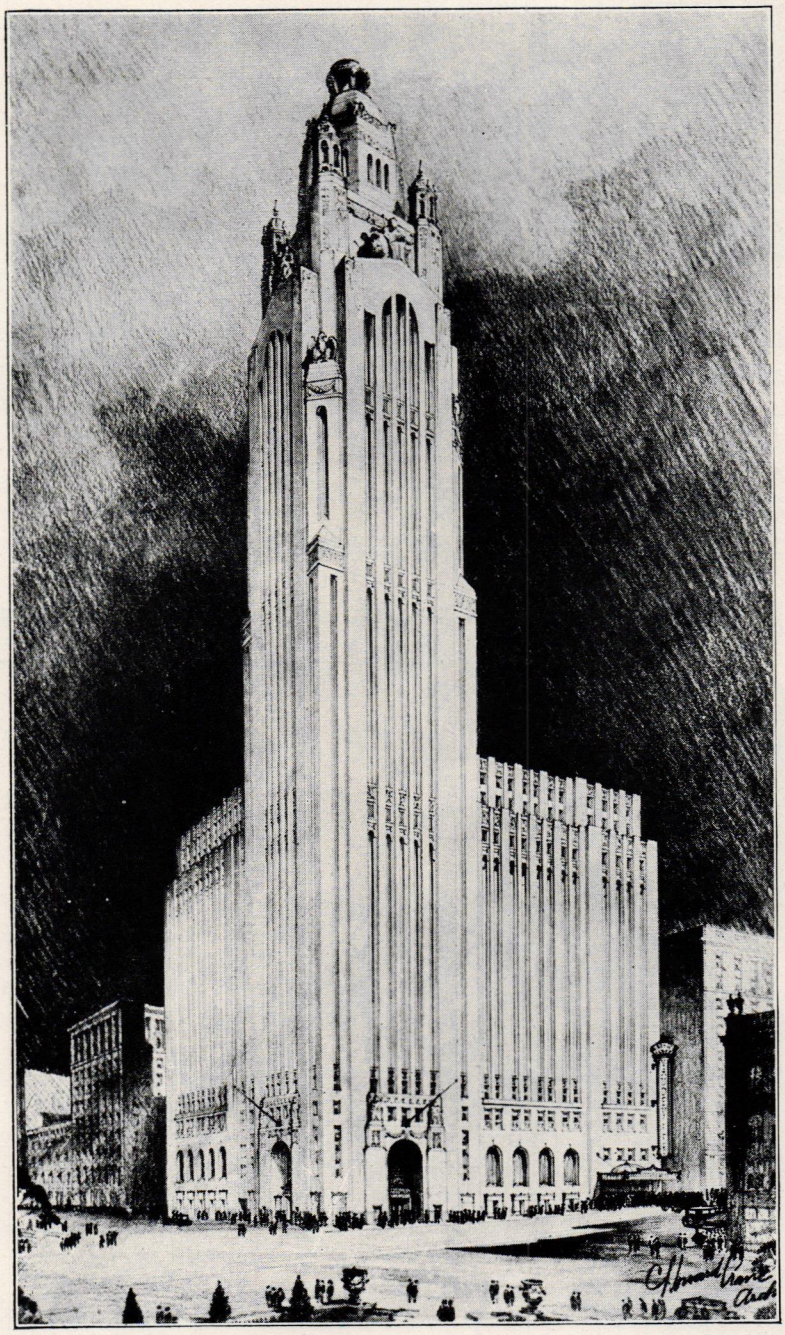
DAVEY TREE EXPERTS

Every real Davey Tree Expert is in the employ of The Davey Tree Expert Co., Inc., and the public is cautioned against those falsely representing themselves. An agreement made with the Davey Company and not with an individual is certain evidence of genuineness. Protect yourself from impostors. If anyone solicits the care of your trees who is not directly in our employ and claims to be a Davey man, write headquarters for his record. Save yourself from loss and your trees from harm

World's Fifth Tallest Building

is floored with

Ritter Appalachian Oak



THE new Citadel of the American Insurance Union at Columbus, Ohio, is 55 stories high, and is rated the tallest skyscraper outside of New York and the fifth tallest in the world.

The great Hall of Mirrors, modeled after the original at Versailles, is floored with Ritter's finest grade of quartered white Oak, laid in a special design to harmonize with the interior decorations.

Seventeen floors have been leased by the Hotel Deshler for hotel purposes, and on each one of these floors are several fine apartments. It was desired to make these apartments as homelike as possible, accordingly the architects specified Ritter Oak Flooring. The flooring was laid under the supervision of the West Woodworking Company of Chicago.

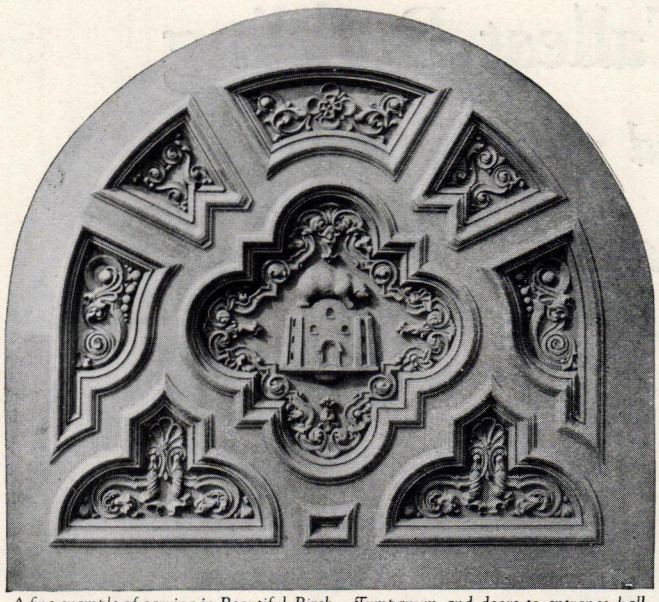
The American Insurance Union is only one of the many conspicuous buildings throughout the country that are floored with Ritter Appalachian Oak Flooring. Let us tell you why architects and builders prefer it. No obligation is incurred in asking for complete details. Address

W. M. RITTER LUMBER CO.
Appalachian Lumbermen since 1890
General Offices, Dept. F
Columbus, Ohio

Architect: C. Howard Crane, Detroit. Consulting Architect: J. Upton Gribben, Columbus

John Gill & Sons, Cleveland, Contractors

RITTER
APPALACHIAN OAK
FLOORING



A fine example of carving in Beautiful Birch. Tympanum and doors to entrance hall, California Institute of Technology, Pasadena, Cal. Mr. Bertram G. Goodhue, Architect.

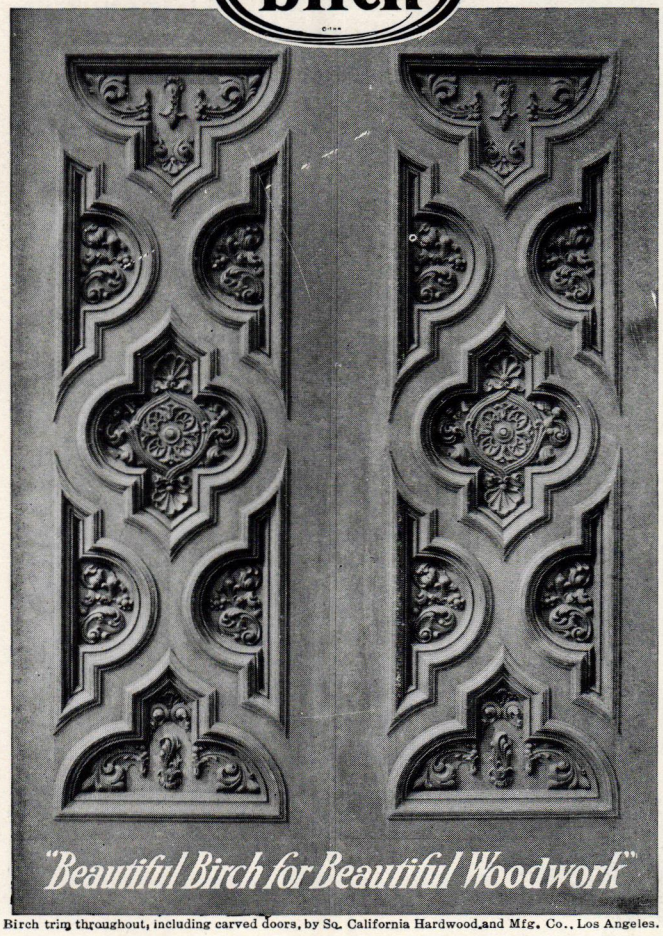
"Autumn brown" birch doors & trim satisfy every practical and artistic requirement. The fine, close grain of the wood permits the execution of any motif of decorative design and nearly "mar-proof" hardness assures its preservation to posterity.

Complete data, including the advantages of ***beautiful, non-checking, rotary-cut birch veneers*** *for large expanses, sent promptly upon request.*

THE BIRCH MANUFACTURERS

205 F. R. A. Bldg. Oshkosh, Wis.

Beautiful birch



Birch trim throughout, including carved doors, by So. California Hardwood and Mfg. Co., Los Angeles.

Hard Maple Flooring

Investigate its merits and you will find it to have no equal for wearing qualities.

When specifying $1\frac{9}{32}$" and $1\frac{25}{32}$" thicknesses of Maple Flooring for warehouses and industrial buildings, you are assured of a floor that will outwear concrete or any composition.

Write us for samples and detailed information

ROBBINS FLOORING CO.
RHINELANDER, WISCONSIN

Where does your responsibility stop?

Not with your release by your client! Not with the payment for your professional services! Long after the house is done, whatever proves unsatisfactory reflects back to you. Your client knows very little about lumber. But your client expects you to know and care! The most pleasing exterior, the happiest arrangement of floor plan, will not save you from the owner's wrath if dimensional work, siding, exterior or interior trim in time proves defective. You can absolutely eliminate this possibility. Specify trademarked Pondosa Pine. For particulars address Dept. 29, Western Pine Manufacturers Association of Portland, Oregon.

Pondosa Pine

The Pick o'the Pines

Floor in sun-room "U. S." Tile types T-46, T-41
Living room T-52, T-38

THERE is a cheerful lilt of warm color in a floor of "U. S." Tile that deftly, subtly rounds out and enhances the beauty of any room. In sun-porch or living room, in hall, kitchen, or bath—these skilfully built floors of fine rubber combine decorative distinction with practical utility. "U. S." Tile has opened up new possibilities in residential floors. "U. S." Tile is durable, noiseless, and comfortably resilient. It can be kept in perfect condition at minimum maintenance cost. Behind every installation stands the United States Rubber Company—builders of fine floors in rubber since 1897. Our latest catalog in full colors should be in your files. May we send you one?

UNITED · STATES · US · RUBBER · COMPANY

Scores of Theatres Under One Roof Deck

THE architects for all these theatres, while differing radically in their ideas of design and appearance, agree in one vital respect—the roof deck.

In theatre roof construction where fire-safety, strength, light weight that saves structural steel, and permanence are primary requisities, more and more theatre designers are specifying precast concrete roof decks. And theatre-owners' books—blank as to maintenance costs on these roofs—confirm the wisdom of the architect's choice.

Federal Cement Tile is the ideal adaptation of concrete for every part of the theatre roof. Channel or flat slabs, covered with a composition roofing, may be used on either flat or pitched surfaces. If the building has a sloping roof, interlocking tile will present a fine appearance and eliminate the need of a waterproof covering.

All the advantages of Federal Cement Tile for theatre roof construction apply equally to schools, churches, public and industrial buildings.

Complete details and specifications have been condensed for ready reference. Ask for them.

Made, Laid and Guaranteed by
FEDERAL CEMENT TILE COMPANY
608 *South* Dearborn Street
CHICAGO

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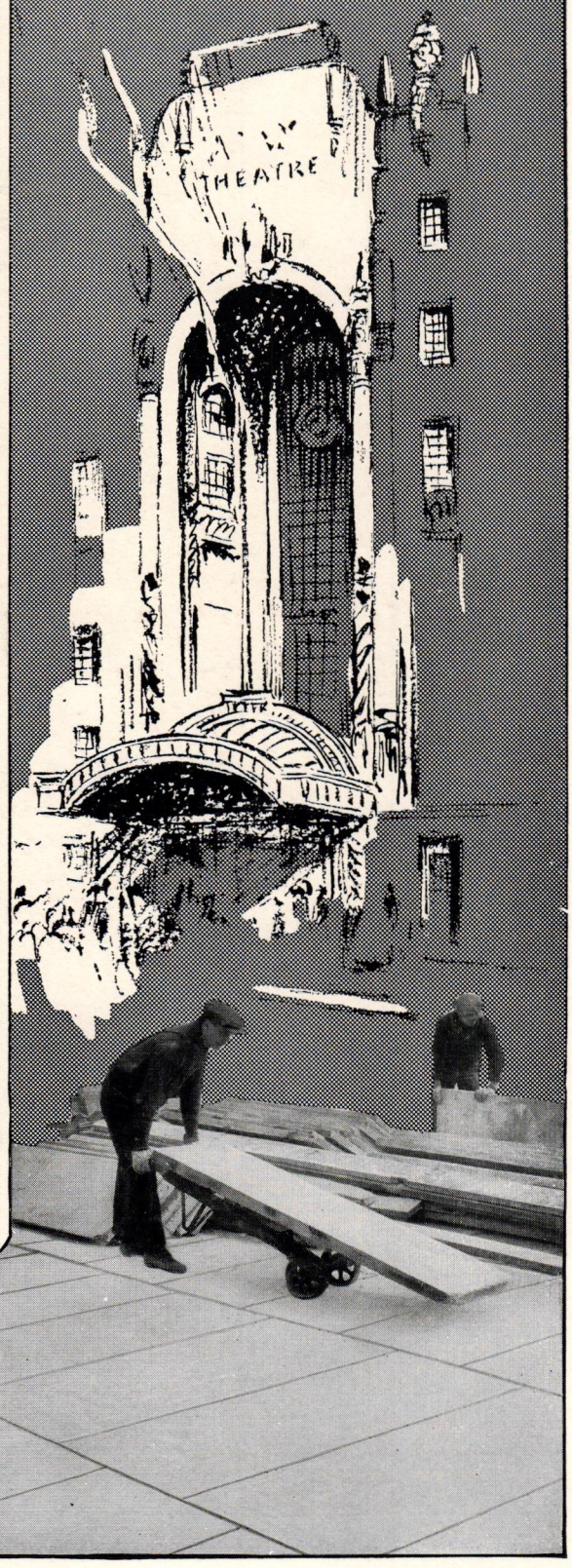
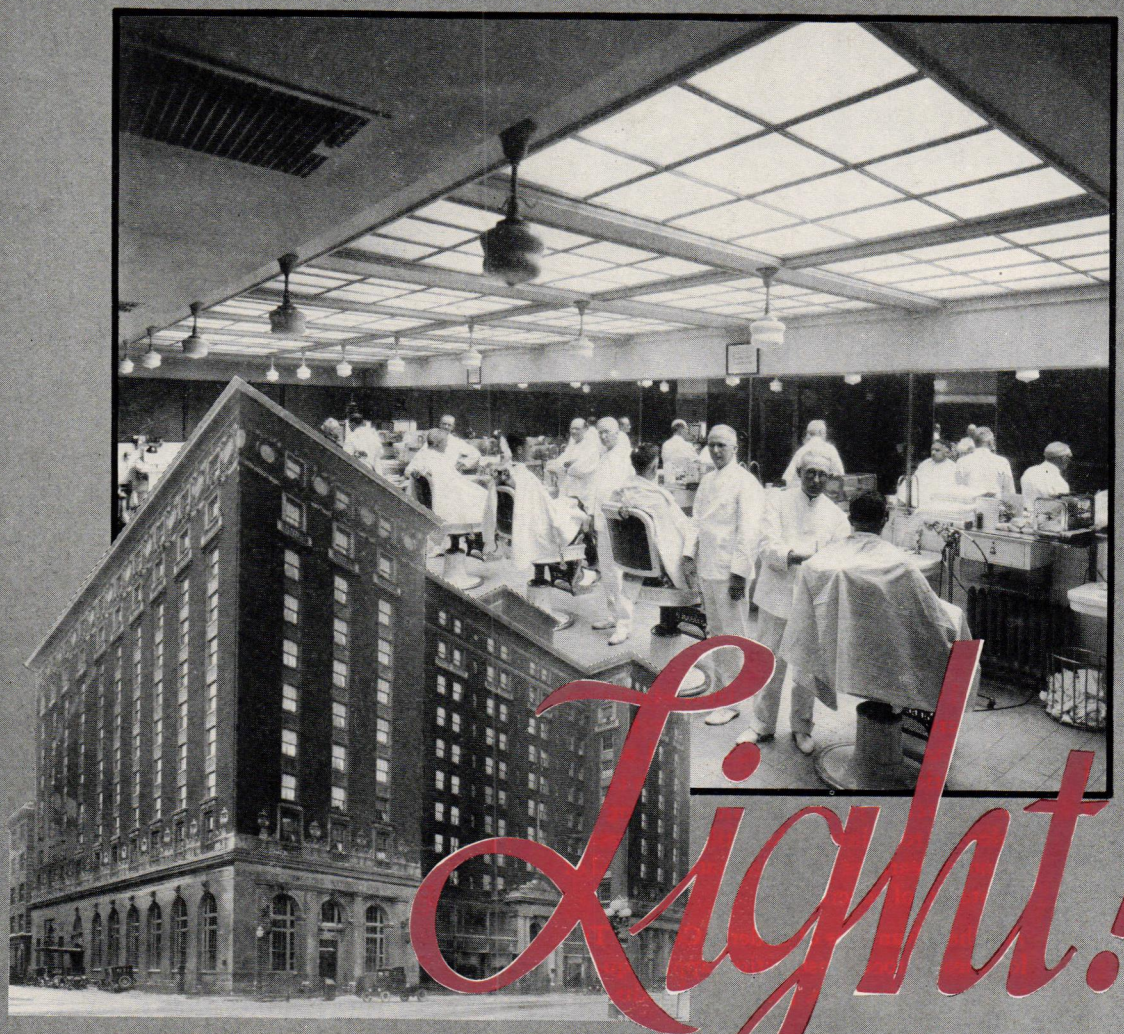
CEMENT TILE
For Every Type of Permanent Building





Light!

The Light That's Free

Millions of dollars are spent for light. Yet the light that's free is the best light of all.

Hotel Pantlind (Grand Rapids, Mich.) utilizes free light most efficiently, by Grauer Sidewalk Lights. The unretouched photo, reproduced above, shows the result. Other notable installations give equal satisfaction for laundries, restaurants, etc., etc.

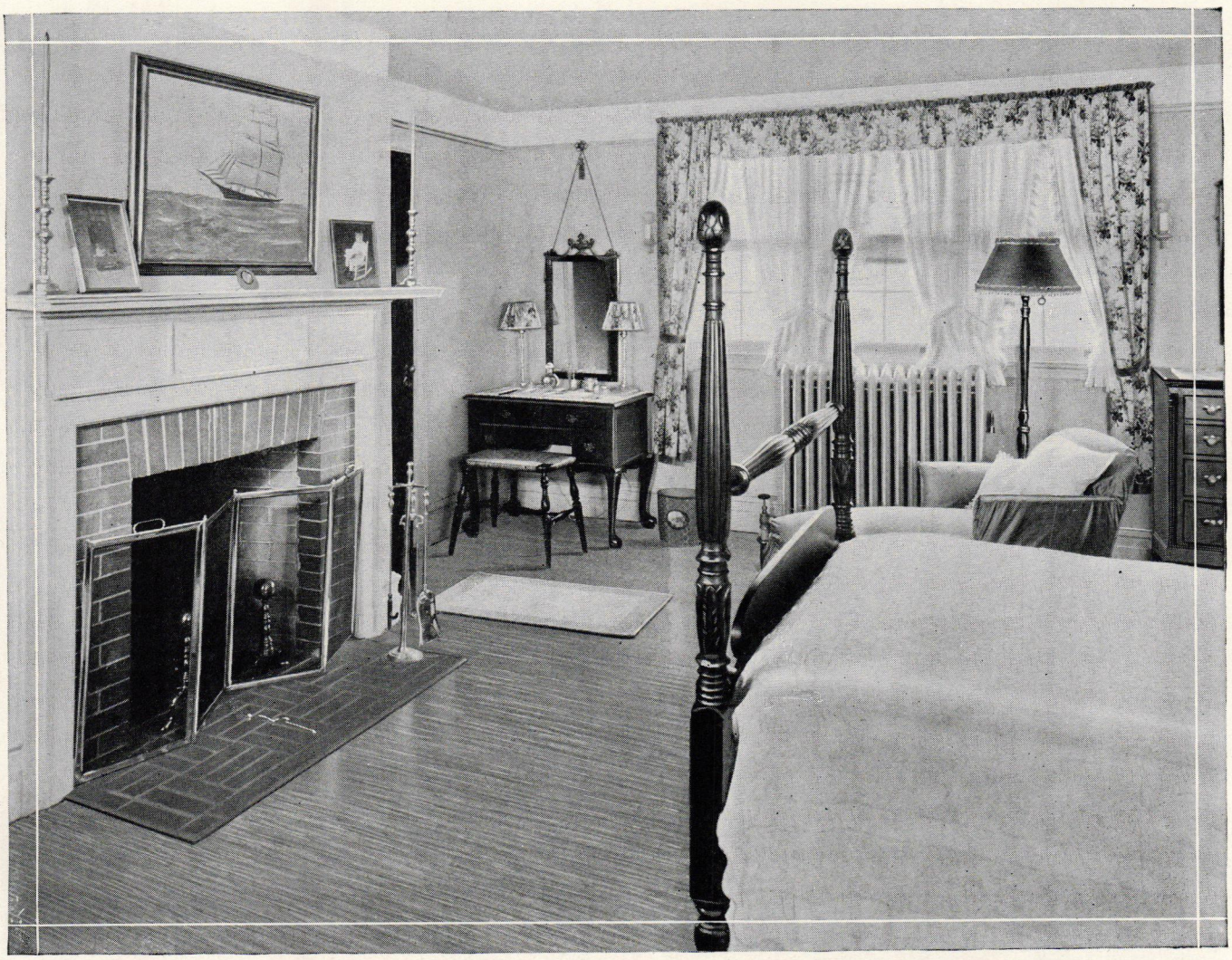
Grauer equipment is permanent,—guaranteed. Write us for specifications and quotations.

GRAUER LEADERS

FLOORS	DAY-LIGHTING
Red Asphalt	Sidewalk Lights
Acid Proof Asphalt	
Rubber, Linoleum and Cork Tile	Sky Lights
Mastic and Composition	
Cement Floor Finish	Floor Lights

Albert Grauer & Co.

1408 17th ST. DETROIT, MICH.



GOLD SEAL JASPÉ *in rich tones of gray is used for every room on the second floor of the home of A. E. Van Bibber, Esq., Bronxville, New York.*

Gold Seal Jaspé Linoleum

Home-owner, architect and laying contractor—each member of this important trio finds that GOLD SEAL JASPÉ has features which appeal to him especially.

GOLD SEAL JASPÉ Linoleum pleases the architect artistically and practically. For this linoleum makes a handsome, rich-toned floor suitable for almost any room in a new or remodeled home. Moderate in price and guaranteed to give satisfaction.

Home-owners like the softness of color and of lustre in GOLD SEAL JASPÉ Linoleum. And, of course, they appreciate the life-long durability, the sanitary cleanliness and the moderate cost of this type of floor.

The increased flexibility of GOLD SEAL JASPÉ Linoleum appeals especially to the laying contractor. For it permits him to do a quicker and better installation job. Every Gold Seal product is worthy of the architect's complete confidence. Back of every yard stands Nairn's forty-year reputation for quality.

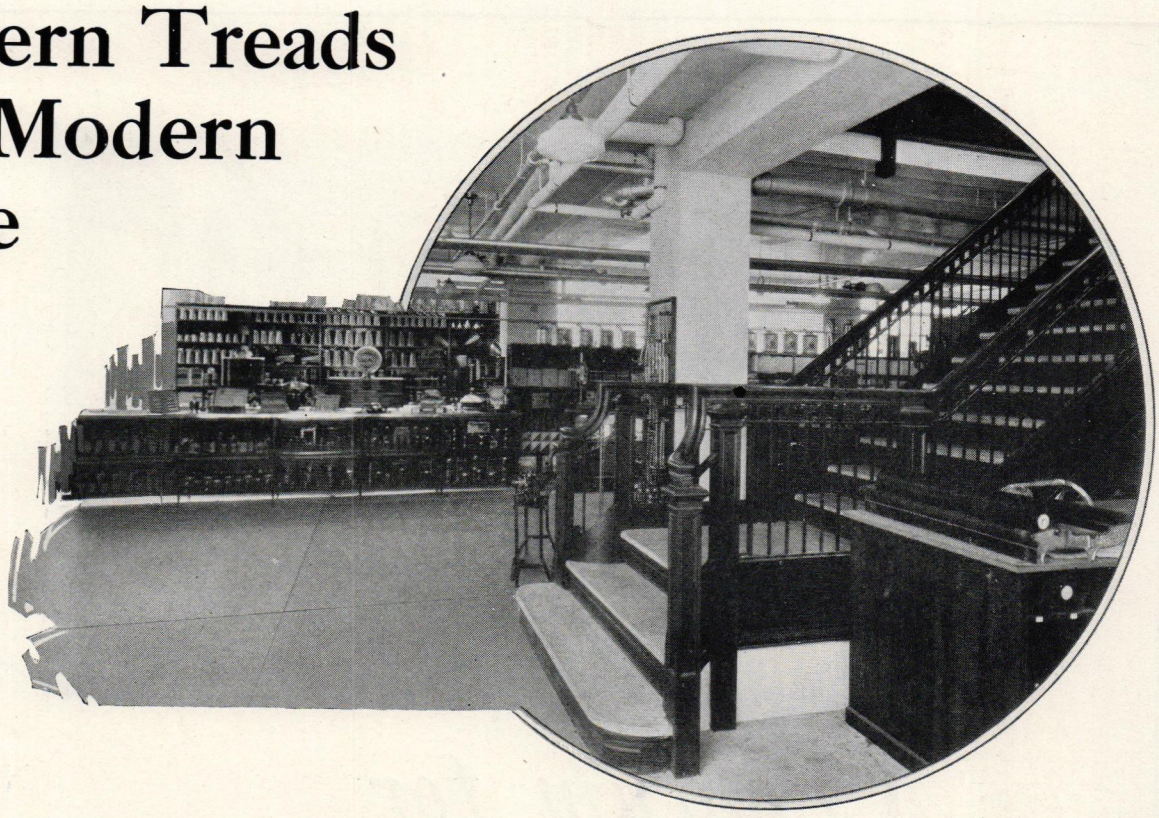
CONGOLEUM-NAIRN INC.

Philadelphia New York Boston Chicago Kansas City Atlanta
Minneapolis Cleveland Dallas Pittsburgh San Francisco New Orleans Rio de Janeiro

The Gold Seal serves as a symbol for first-class materials and expert workmanship. It is, also, a protection to the architect and his clients, for it guarantees absolute satisfaction.

GOLD SEAL *Jaspé* LINOLEUM

Modern Treads in a Modern Store



A hardware and mill supply store also can be a roomy, attractive place for modern merchandising. Here is one that has been pronounced one of the finest and most up-to-date in the country. And the many stairways connecting the basement, main and mezzanine sales floors and the balconies are as modern as the other features of the store. All have been made both non-slip and wear-resisting by precast Alundum Treads.

In the entrance vestibules, too, this modern floor material has been used. Precast Alundum Tile is assuring a walking surface that is permanently non-slip—wet or dry.

NORTON COMPANY, WORCESTER, MASS.

New York Chicago Detroit Philadelphia Pittsburgh Hamilton, Ont.

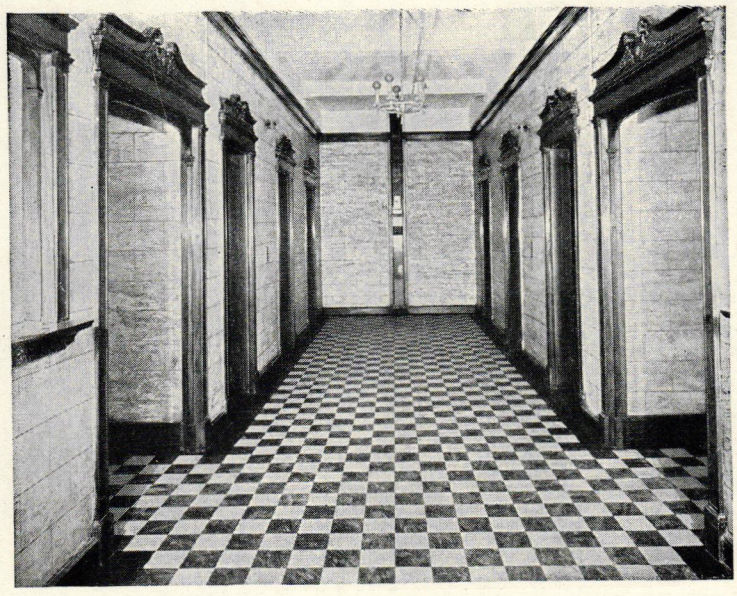
Duncan & Goodell Company
Worcester, Mass.

Frost, Chamberlain & Edwards, Architects

Keefe Brothers, Building Contractors

Bianchi Brothers, Tile Contractors

NORTON FLOORS
Alundum Tiles, Treads & Aggregates



Lobby in office of B. Geller & Sons, Furriers, 333 Seventh Ave., New York City. W. & J. Sloane Contract Marble Tile Inlaid Pattern No. 130, with black border, installed by Max Rothman, Inc., New York.

Linoleum for Architectural Uses

ARCHITECTS who wish to specify floors in keeping with their original plans will find unusual opportunities in W. & J. Sloane Linoleum.

For decades W. & J. Sloane have cooperated closely with architects in the selection and manufacture of appropriate floor coverings. From this association they gained a real appreciation of architectural needs.

This is reflected in their new line of linoleum, especially in the Contract Marble Tiles. These are heavy linoleums, designed particularly for long wear and made by the straight-line method. They are available in a selection of strikingly beautiful patterns, distinguished alike in design and coloring.

Due to improved manufacturing processes and the most careful workmanship, these linoleums are of exceptional quality. In pliability, elasticity, density and uniformity they greatly surpass old accepted standards.

Our selling agents will gladly supply you with patterns and quality samples. They also cooperate with architects in preparing specifications for linoleum floors. W. & J. Sloane Mfg. Co., Trenton, N. J.

W. & J. SLOANE LINOLEUM

BRANCHES AT:
BOSTON, PHILADELPHIA,
BALTIMORE, DETROIT,
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The Linoleum of Quality

BRANCHES AT:
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W. & J. SLOANE *Sole Selling Agents* . . . 577 FIFTH AVE. *at* 47th ST. NEW YORK

In 1878, a roof of Barrett Pitch and Felt was laid on the Baeder & Adamson Company building, Philadelphia, by the Warren-Ehret Company of that city. After 49 years the roof is still giving satisfactory service.

IN THE SEDATE 70'S THEY BROUGHT IN A VERDICT THAT STILL HOLDS GOOD

". . . and it was during this period that architects and building contractors saw the solution of their roofing troubles . . . Built-up roofs of coal-tar pitch and felt, with wearing surface of slag or gravel were established as the soundest kind of building practice."

* * * * *

The past half-century has definitely proved the superiority of pitch and felt built-up roofs. Today the majority of our finest buildings are protected with The Barrett Specification Roof.

When you specify this roof, the owner receives a surety bond guaranteeing against maintenance expense for 20 years. And back of every surety bond stand these factors:

When the roof is laid all work must be done by an experienced roofer approved by The Barrett Company—a Barrett Inspector supervising each step of the job to see that The Barrett Specification is followed every inch of the way.

Directly after the roof is down the Barrett Inspector makes the famous "cut test." And not until this test is made does his O.K. release the surety bond.

Two years after the roof is finished The Barrett Inspector again checks up—makes a thorough re-examination of the roof.

. . . Little wonder that Barrett Specification Roofs give dependable service many years after the 20-year guarantee has run out.

THE BARRETT COMPANY
40 Rector Street New York

In Canada:
The Barrett Company, Limited
5551 St. Hubert St., Montreal, Quebec

1927

A Barrett Specification Bonded Roof covers the Insurance Company of North America building, Philadelphia. Architect: Stewartson & Page. General Contractor: Stone & Webster. Roofer: Ehret Roofing Co. All of Philadelphia.

A time-proved fact

The slag or gravel wearing surface which holds in place the heavy poured (not mopped) top coat of Barrett Specification Pitch permits the use of more than twice the amount of waterproofing material that is possible where no wearing surface is applied. And the life of a built-up roof depends largely on the amount of waterproofing material that goes into it.

Barrett Specification Roofs

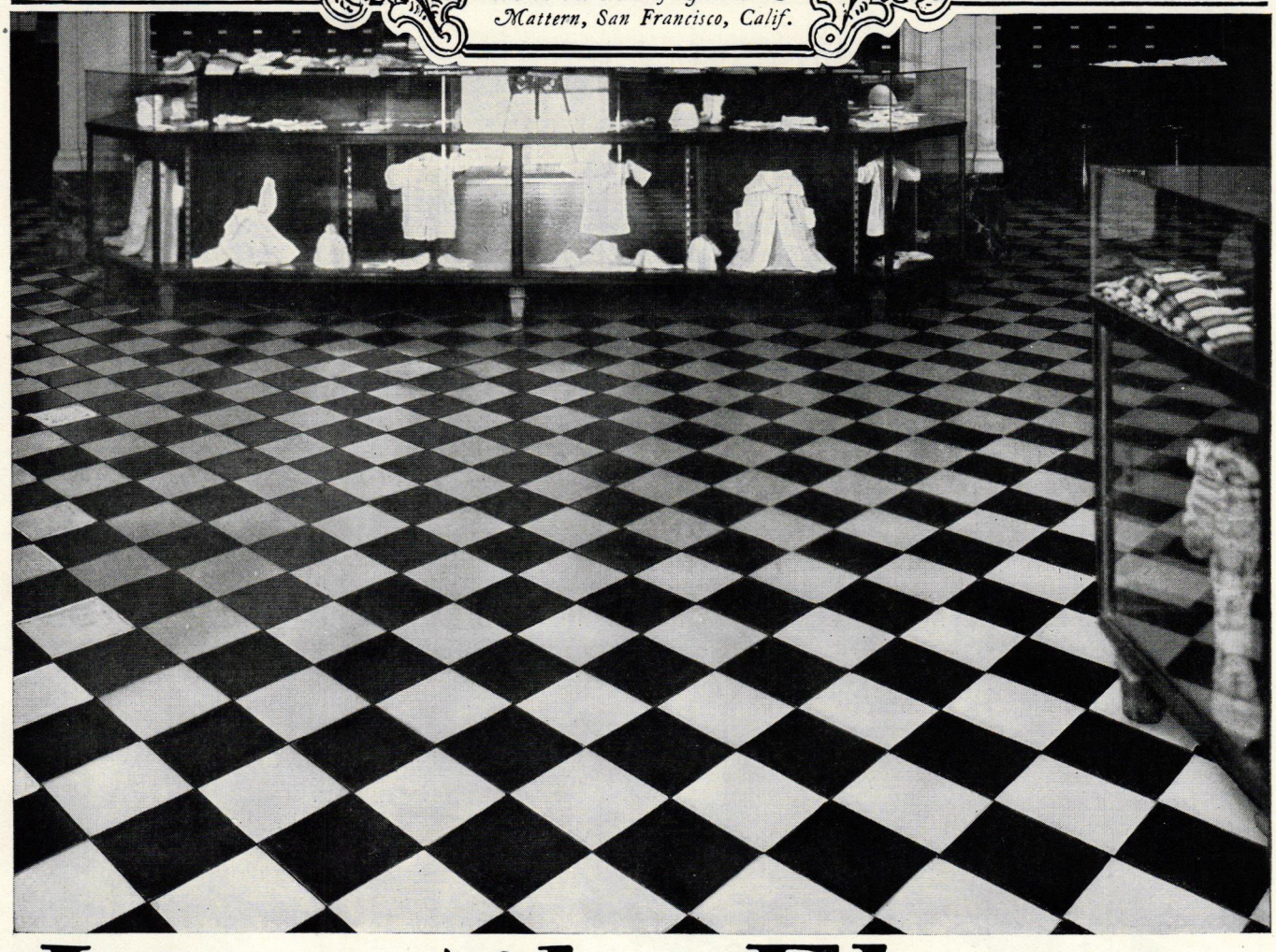
Make the Floor a Business Asset

A LINOTILE floor is decidedly an asset in a store or business room. Customers are attracted by and pleased with its color and design and are grateful for its comfort and quietness. Employees appreciate the relief it affords from the fatigue of working on hard floors.

Linotile is a *resilient* tile of cork composition, "springy" and restful underfoot, nonslippery and practically noiseless. It is made in a great variety of sizes and shapes and in twelve colors so that designs can be varied almost endlessly and thus adapted to any area or decorative scheme. Exceedingly durable under heavy wear, easy to clean, and with upkeep cost that is practically negligible, Linotile also meets every requirement of service and economy.

Samples and complete information will be supplied promptly on request. Address Armstrong Cork & Insulation Company, 132 Twenty-fourth Street, Pittsburgh, Pa.

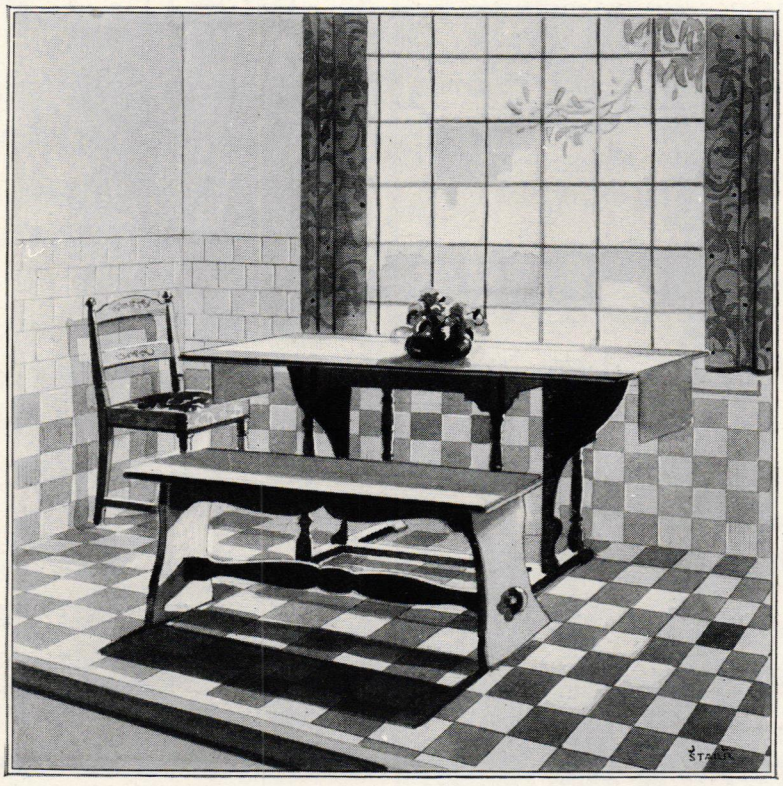
Floor of Black and White Linotile in the store of Gantner & Mattern, San Francisco, Calif.



Linotile Floors

K R A F T I L E

a high fired faience tile that can be laid with a close joint



Kraftile's high fired body and enamel are proof against cracking, crazing, wear and extremes of heat and cold. It is suitable for *floors* as well as *walls*.

Sized to 1-32nd. of an inch, Kraftile may be laid with a close joint that enhances its suave beauty of tone and richness of texture, and offers no lodging place for dust.

Kraftile, because of its beveled edges and accurate sizing, need not be spaced in the wall; therefore it is laid twice as fast as ordinary faience tile.

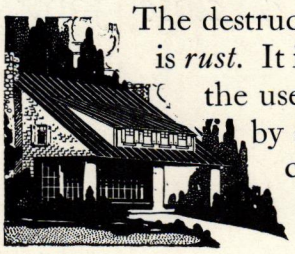
Carried in stock shades of ceil and azure blue, apple and glacier green, fawn, old ivory, cream, white, orchid, blossom pink and black. Semi-mat finish. Special shades to order.

Available through reliable tile contractors. Samples will be furnished architects on request.

HIGH FIRED
Kraftile
Faience

KRAFTILE COMPANY · · · 962 Battery Street, San Francisco

Sheet Metal Work that Resists Rust!



The destructive enemy of sheet metal is *rust*. It is successfully combated by the use of protective coatings, or by scientific alloying to resist corrosion. Well made steel alloyed with Copper will last longest. Insist upon

KEYSTONE
Rust-Resisting Copper Steel
Sheets
AND ROOFING TIN PLATES

Add safety to satisfaction, with full protection from lightning, fire, and weather. Keystone Copper Steel gives superior service for roofing, siding, gutters, spouting, flashings, metal lath, tanks, and all uses to which sheet metal is adapted. Look for the Keystone included in brands. It means better sheet metal work. Send for our *Roofing Tin* booklet—valuable to architects and specification writers. We manufacture Black and Galvanized Steel Sheets and Roofing Tin Plates for every requirement in the building construction field.

Black Sheets for all purposes
Apollo Best Bloom Galvanized Sheets
Apollo-Keystone Galvanized Sheets
Formed Roofing and Siding Products
High Grade Roofing Tin Plates
Fire Door Stock, Long Ternes
Bright Tin Plates, Black Plate, Etc.

APOLLO-KEYSTONE Galvanized Sheets give increased service and added permanence to your building construction—the highest quality sheets produced for galvanized sheet metal work.
KEYSTONE COPPER STEEL Roofing Tin Plates make clean, safe, attractive and satisfactory roofs. Supplied in grades up to 40 pounds coating, specially adapted to residences and public buildings. Added to general excellence, metal roofs may be painted to harmonize with the color scheme of the building—an important feature which is often overlooked. KEYSTONE quality products are sold by leading metal merchants, and are used by first-class roofers and sheet metal workers.

American Sheet and Tin Plate Company
General Offices: Frick Building, Pittsburgh, Pa.

DISTRICT SALES OFFICES
Chicago Cincinnati Denver Detroit New Orleans New York
Philadelphia Pittsburgh St. Louis
Pacific Coast Representatives: UNITED STATES STEEL PRODUCTS COMPANY, San Francisco
Los Angeles Portland Seattle
Export Representatives: UNITED STATES STEEL PRODUCTS COMPANY, New York City

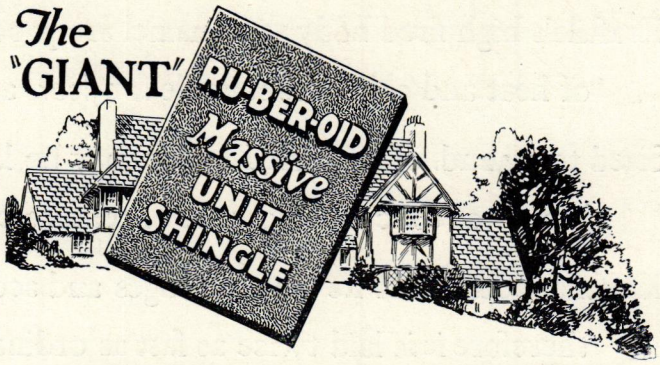
THE CUTLER MAIL CHUTE

Contracts, on the form required by the Post Office Department, are written in all cases, to cover the equipment complete ready to be turned over to the Government for Post Office use. Rough floor openings are not included and are usually provided for in the General Masonry Specification.

Send for Details GX 8 and 9

CUTLER MAIL CHUTE CO.
GENERAL OFFICES AND FACTORY
ROCHESTER, N.Y.

The "GIANT"



A shingle of extra size, extra weight, and unusual rigidity—outstanding in thickness and dependability. Six colors, conservative yet distinctively rich—offering a wide opportunity to express good taste as well as individuality.

So that you may see the superiority which Ruberoid Massive Units have over ordinary asphalt shingles we will be glad to send you samples upon request.

The RUBEROID Co.
Executive Offices: New York
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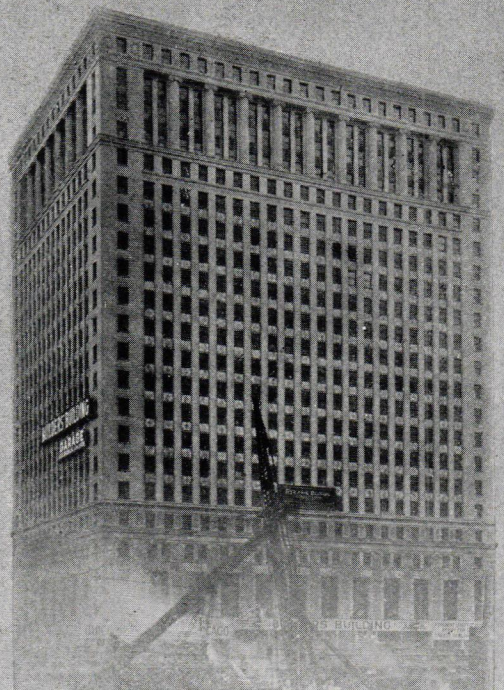
Montreal

When Builders Build for Themselves!



Builders Building
Chicago

Graham, Anderson, Probst and White; Architects
John Griffiths and Son Company; Contractors

CELITE *is an "ultra-fine" aggregate* that is added to a concrete mix to improve its workability, and to prevent separation of the heavier aggregate during handling and placing. It is pure amorphous silica which is chemically inactive. It does not take the place of Portland cement.

Write for our booklet X-325 on better concrete at less cost.

MR. GORDON, of John Griffiths & Son Company who built the Builders' Building in Chicago, writes "We used 3 lbs. of Celite per bag of cement in all of our concrete placed on the Builders Building .... We found that your claims on economies effected by Celite were true and that the use of Celite enabled us to place the concrete with a drier consistency."

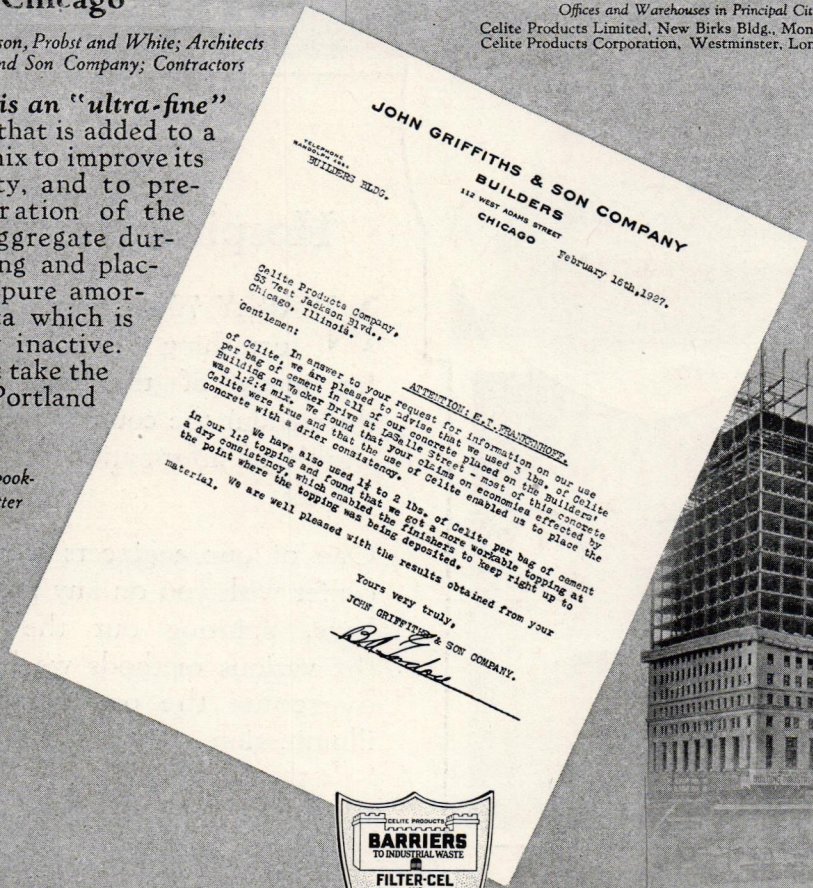
CELITE

"We have also used 1½ to 2 lbs. of Celite per bag of cement in our 1:2 topping and found that we got a more workable topping at a dry consistency, which enabled the finishers to keep right up to the point where the topping was being deposited."

Very little more could be claimed by the manufacturers of Celite than is said for it every day by the contractors and engineers who are using it.

CELITE PRODUCTS COMPANY

New York—11 Broadway Chicago—53 W. Jackson Blvd.
Los Angeles—1320 So. Hope St. San Francisco — 140 Spear St.
Offices and Warehouses in Principal Cities
Celite Products Limited, New Birks Bldg., Montreal, Quebec
Celite Products Corporation, Westminster, London, England



JOHN GRIFFITHS & SON COMPANY
BUILDERS
112 WEST ADAMS STREET
CHICAGO

February 16th, 1927.

Celite Products Company,
53 West Jackson Blvd.,
Chicago, Illinois.

Gentlemen:

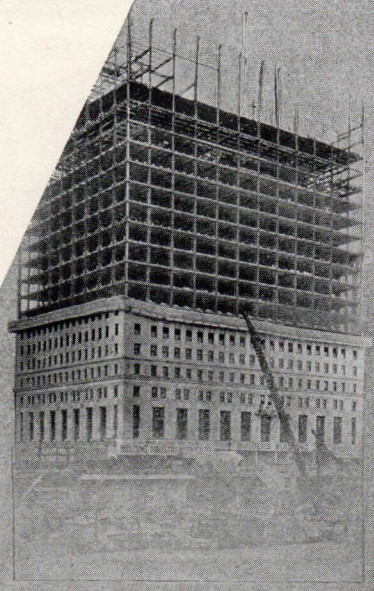
ATTENTION: E. J. MANCHESTER.

In answer to your request for information on our use of Celite, we are pleased to advise that we used 3 lbs. of Celite per bag of cement in all of our concrete placed on the Builders' Building on Thacker Drive at LaSalle Street most of this concrete was 1:2½ mix. We found that your claims on economies effected by Celite were true and that the use of Celite enabled us to place the concrete with a drier consistency.

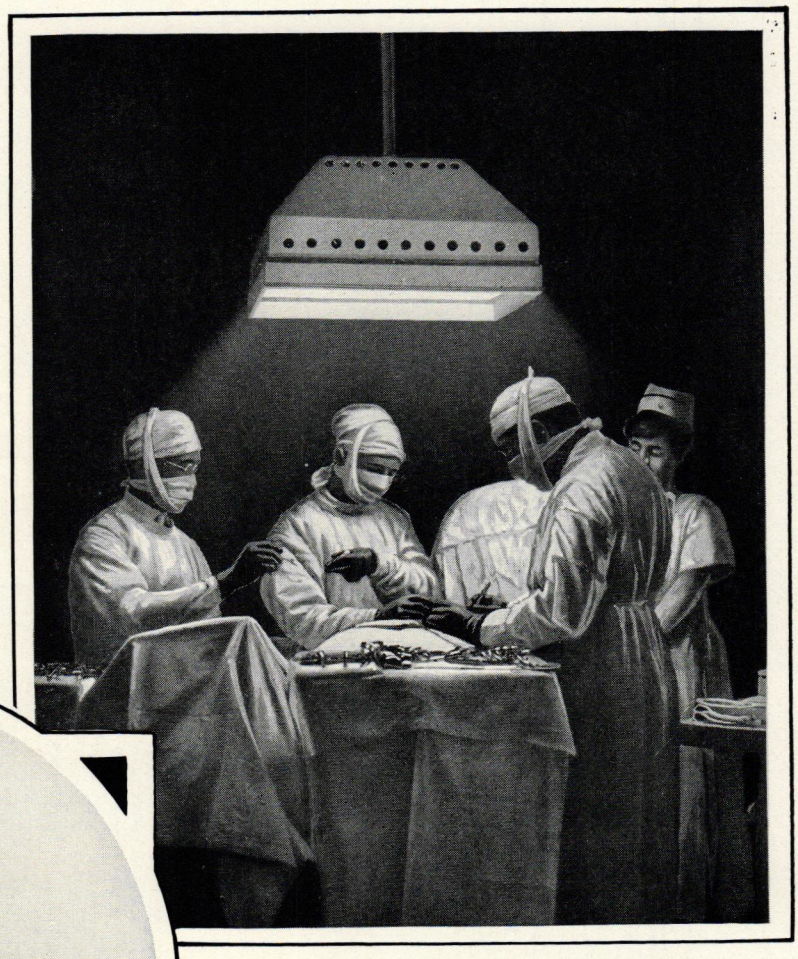
We have also used 1½ to 2 lbs. of Celite per bag of cement in our 1:2 topping and found that we got a more workable topping at a dry consistency, which enabled the finishers to keep right up to the point where the topping was being deposited.

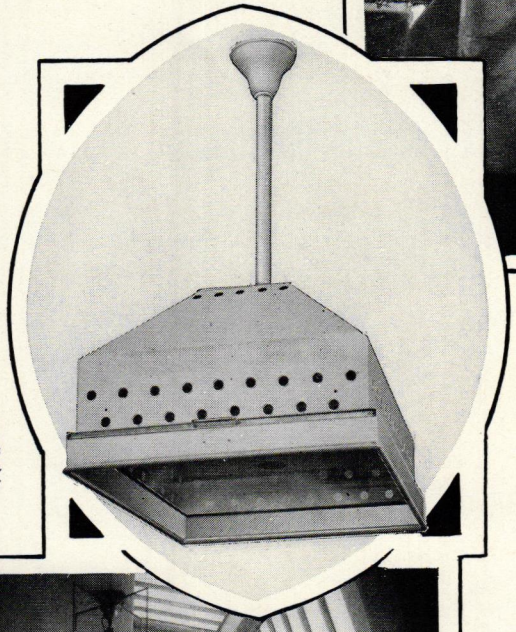
We are well pleased with the results obtained from your material.

Yours very truly,
JOHN GRIFFITHS & SON COMPANY.

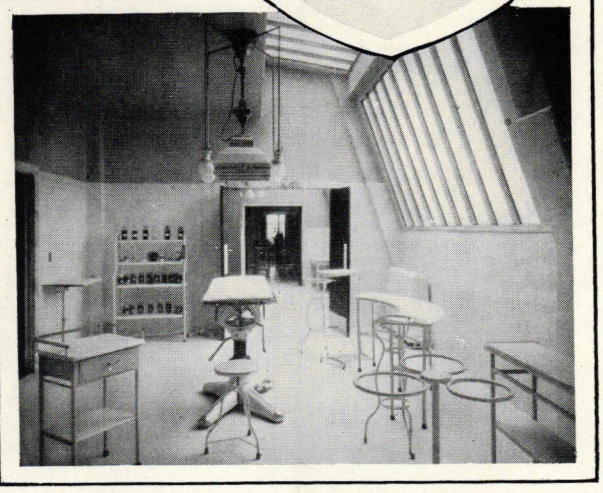


CELITE PRODUCTS
BARRIERS TO INDUSTRIAL WASTE
FILTER-CEL AND SUPER-CEL FOR FILTRATION
SIL-O-CEL FOR HEAT INSULATION
CELITE FOR BETTER CONCRETE
©





Self-ventilating operating table light. Heat of lamps drawn off through top. Raised or lowered by hand.



FRINK
Hospital Illumination

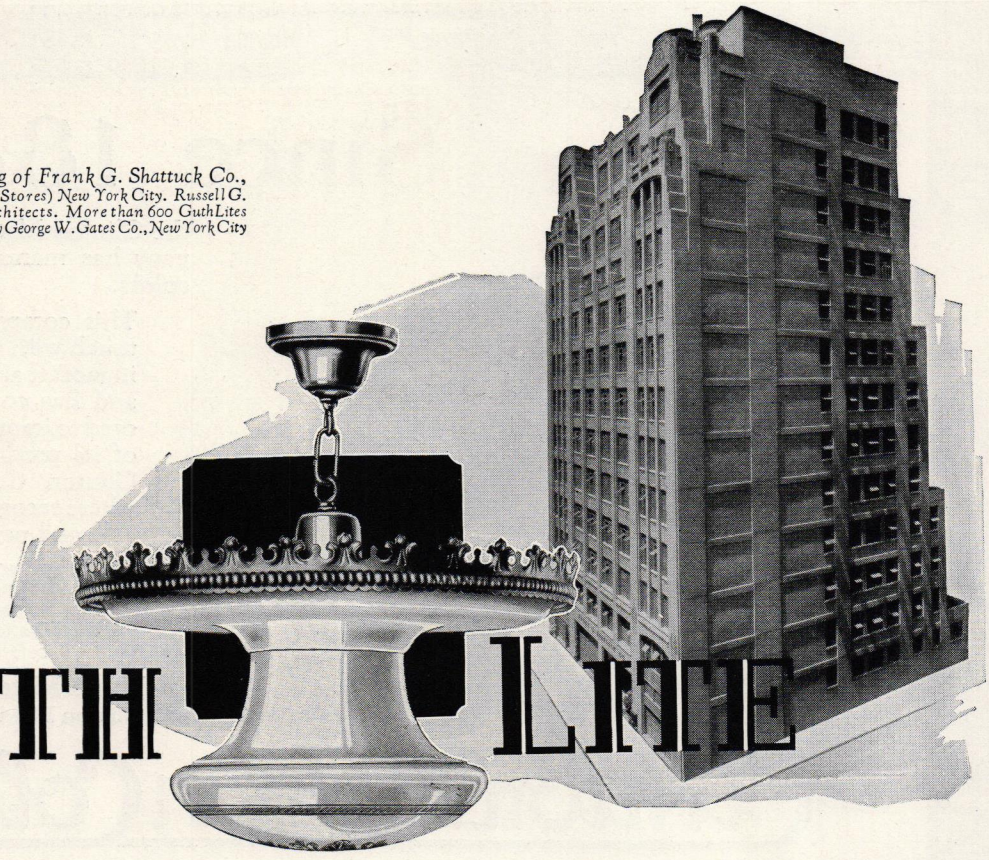
NEARLY 70 years' research and study furnishing special lighting equipment for many of the important hospitals throughout the country has left us with a wealth of information on this important subject.

One of our engineers would be glad to confer with you on any problem you may have, pointing out the advantages of the various methods we have devised to overcome the problems of hospital illumination.

THE FRINK CO. Inc.

241 Tenth Avenue, New York City

Branches in Principal Cities



Building of Frank G. Shattuck Co., (Schrafft's Stores) New York City. Russell G. Cory, Architects. More than 600 GuthLites installed by George W. Gates Co., New York City

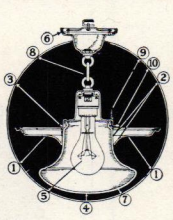
GUTHLITE

Less than a year old
—but the result of 25 years experience

GUTHLITE is less than a year old, yet its scientific design is the result of 25 years experience in designing and manufacturing illuminators for every type installation.

Architects and Illuminating Engineers pronounce it "the greatest invention since Brascolite" and they must mean it the way they specify GuthLite for all type commercial buildings.

New principles of design give lighting results never before accomplished. It eliminates all ceiling shadows and the adjustable reflector controls the direction of light vertically and horizontally. This means more light where most needed—light that is easy on the eyes because it eliminates all shadows on the working plane.



10 Superior Features

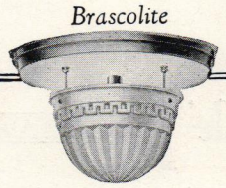
1. *Adjustable white porcelain enameled reflector controls direction of light vertically and horizontally.*
2. *Light reflected to the ceiling as well as to the working plane.*
3. *Ceiling light increased or diminished by raising or lowering reflector.*
4. *Low brightness at the source. No glare and no spots of high intensity.*
5. *Lamp so placed that most of the light rays are diffused through neck of globe to reflector; directs them to working plane.*
6. *Adaptable for installation to any type electric outlet or ceiling construction.*
7. *Glass globe scientifically designed to produce efficient total output and low brightness at the visible part of the globe.*
8. *Easily and quickly installed. Open link hanger, so additional chain can be added if desired.*
9. *Patented, self-adjusting spring globe holder permits expansion of glass, preventing rattling or breaking.*
10. *Globe quickly applied or released. Cleaned and re-lamped in a minute.*

Totally enclosed the globe can be quickly and easily removed for cleaning and relamping. The design of the glass globe produces the maximum volume of light with low brightness at the source.

GuthLites give such wide light distribution that fewer units are needed to light a given area. They are furnished in plain or decorative types at prices that are surprisingly low. Its beauty of design and remarkable efficiency makes it the ideal light for hotels, schools, office buildings, hospitals or any other commercial installation.

Write for illustrated literature giving full details, specifications and prices.

Brascolite



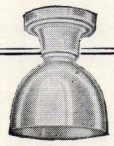
The EDWIN F. GUTH COMPANY

DESIGNERS - ENGINEERS - MANUFACTURERS

Lighting Equipment

ST. LOUIS, U.S.A.

Aglite



Natures Mineral Colors

Clinton Mortar Color advertisement from Dec. 1893 issue of Brickbuilder.

"A LITTLE TALK ON METALLIC PAINTS AND MORTAR COLORS," ILLUSTRATION FROM THE CLINTON METALLIC PAINT CO., OF CLINTON, N. Y., Manufacturers of High-Grade Mortar Colors and Metallic Paints. Write for this book, mailed free on application.

Since 1887 -

the Clinton Metallic Paint Company has manufactured mortar colors.

This company has kept in touch with all developments in mortar and stucco coloring and has constantly endeavored to improve every feature of its products; that is why Clinton Colors are everywhere recognized as dependable and permanent.

Write for free literature printed in color, illustrating numerous interesting combinations of brick and colored mortar.

Clinton Metallic Paint Co.
467 Clinton Road Clinton, N. Y.

Clinton Mortar Colors

CLINTON METALLIC PAINT COMPANY CLINTON N. Y.

Made Since 1887

Reflooring?

Then you should investigate Moulstone. For regardless of the condition of the old floors, or whether the foundation be wood or cement, Moulstone can be laid quickly, economically and effectively.

A life time Floor

The durability of Moulstone is well recognized.

Moulstone is laid smooth with no seams or joints and always over a special cushion coat.

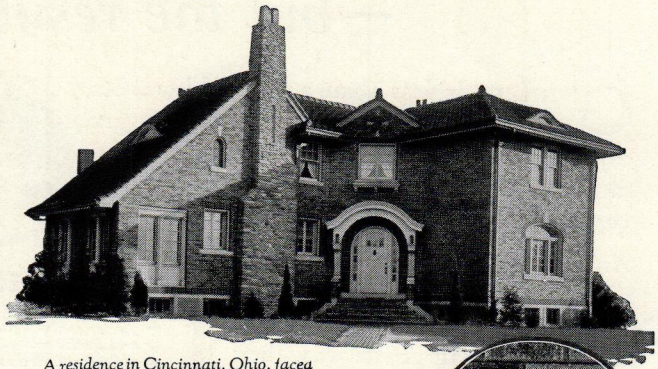
A full range of permanent rich colors is available. Moulstone can be scored to resemble tile. Beautiful effects can be achieved.

The cost of Moulstone is surprisingly low as compared with other approved materials. Write for an actual performance record of Moulstone in stores, lobbies, reception rooms, offices, theatres and hotels.

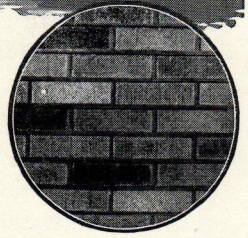
THOS. MOULDING BRICK CO.

151-169 W. Wacker Drive Chicago, Ill.
Grand Central Terminal Bldg. New York City, N. Y.

Sixty Years of Responsibility



A residence in Cincinnati, Ohio, faced with a blend of GREENDALE Rug Shades. Kunz & Beck, Architects.



GREENDALE Face Brick is manufactured from a superior clay which stands high temperature and vitrifies to a dense body. It is therefore indestructible and moisture proof. It will no effloresce or discolor.

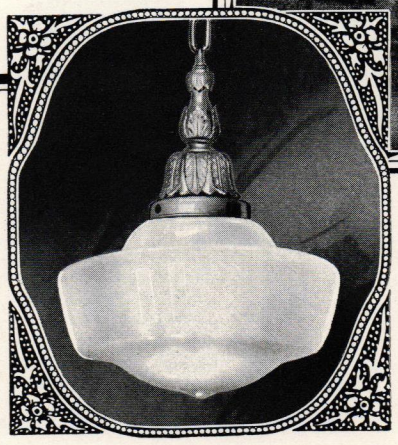
NO matter what the climate, purpose or type of building, the architect is certain to find in GREENDALES the shades and tones which will enable him to give perfect expression to his conception. In their range of color, in their variety of shades, in their excellence of texture, and in their adaptability GREENDALES afford unlimited possibilities for attaining individual and beautiful effects.

For literature and color plates, address

Hocking Valley Products Co.
General Offices: Logan. Ohio

GREENDALES "Greendale" FACE BRICK FOR BEAUTY

South Office Building, Harrisburg, Pa., Arnold W. Brunner Associates, Inc., N. Y., Architect



Monax Globe No. 5130 used in the South Office Bldg.

The Shadow Chasers

Light in High Places

OFFICIALS of the Commonwealth of Pennsylvania, a host of stenographers, clerks, junior clerks, secretaries, under-secretaries executives, messengers, janitors, sighed with relief, gasped amazement as they moved from dingy, overcrowded quarters to the magnificent new South Office Building at Harrisburg. High-ceilinged, marble-wainscoted corridors, spacious offices, handsome new desks, excited their admiration.

Over it all was shed a bountiful flood of soft, clean light, enriching the building's classic beauty, illuminating every niche and corner of its vastness. This abundant shower of light came from approximately five hundred MONAX GLOBES distributed throughout the corridors and offices.

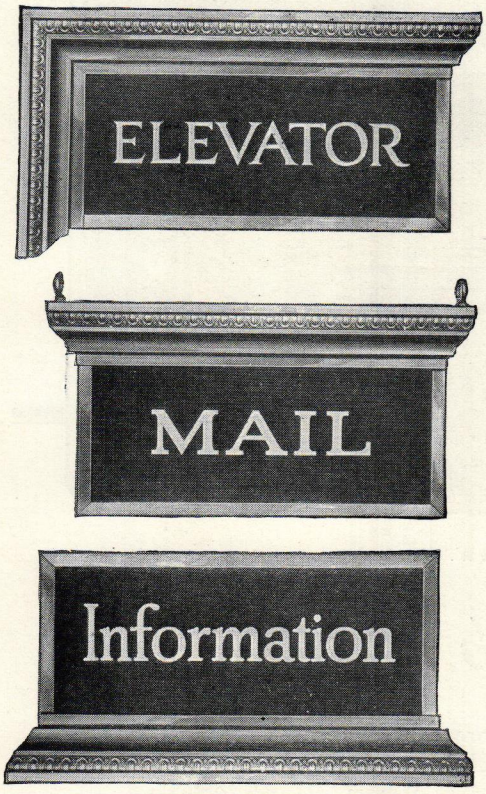
Perfectly diffused by the MONAX Glass, the light cast no sharp shadows, and, although ample in volume, it was entirely free from harsh glare.

These MONAX GLOBES will need little attention, for they do not collect and hold the dust. They are, moreover, easily cleaned. MONAX Glass absorbs scarcely any light, and is therefore economical of wattage.

Many architects are finding it convenient to use the services of the Illuminating Engineering Department of the Macbeth-Evans Glass Company. Help in the designing and installing of lighting systems is given without cost. Macbeth-Evans Glass Company, Dept. J, Charleroi, Pa.

MONAX GLOBES
for Better Lighting

Electric Signs of Character--- for Interiors

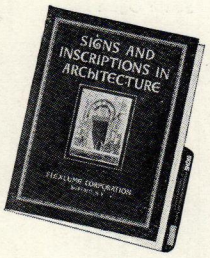


For theatres, libraries and banks—
For hotels, hospitals and public buildings—
For business offices and department stores—

Silvertone letters, etched into flawless plate glass, glowing with electric light hidden in bronze frames—such are the FLEXRAY DIRECTIONAL SIGNS, harmonizing unfailingly with architectural backgrounds.

Our Department of Design will gladly cooperate with your staff for beauty and utility in interior signs

FLEXLUME CORPORATION
1423 Military Road Buffalo, N. Y.
Flexlume Offices in Principal Cities



If not already supplied, your office will find this authoritative book of real value in designing correct architectural lettering for both interior and exterior purposes. Standard file size. Have your secretary write for copy.

A FLEXLUME ELECTRIC PRODUCT

"RED METAL" (Solid Bronze)
"GIANT METAL" (Phosphor Bronze)
AND STEEL (Cold Rolled)

SASH CHAINS

For Two Generations
Leading Architects
Have Specified

SASH CHAINS

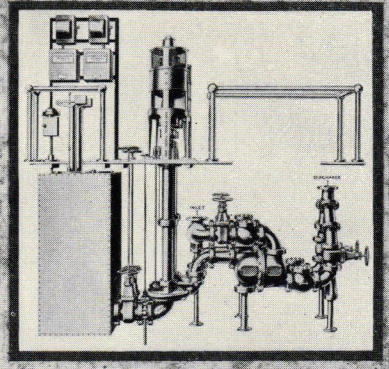
Manufactured by

THE SMITH & EGGE MFG. CO.
Bridgeport, Conn.

ORIGINATORS OF SASH CHAIN

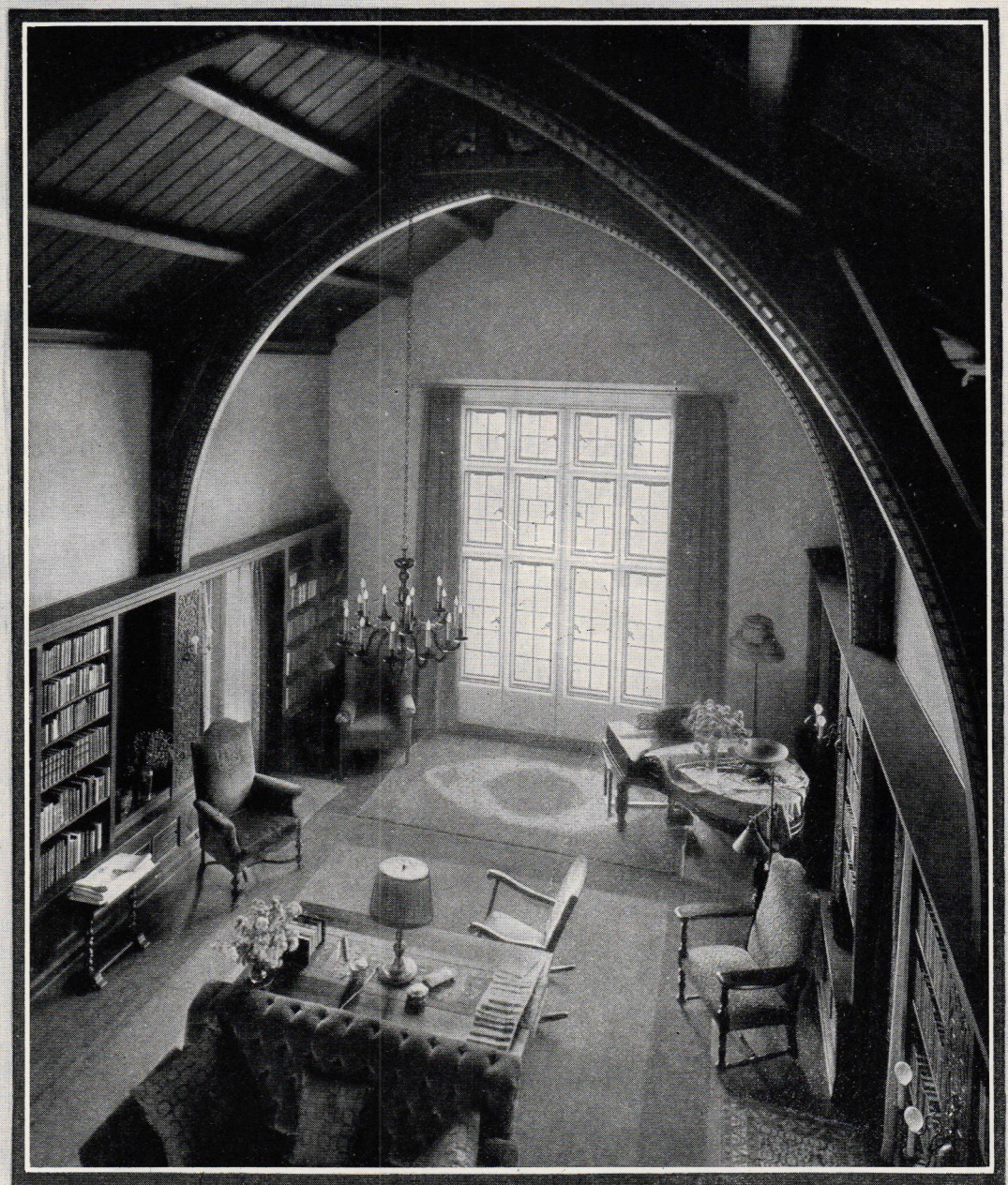
See Page B1630 Sweet's Catalog and Page No. 202
American Architect Specification Manual

Rags-Sticks-Papers *Cannot Clog a "Flush-Kleen" Sewage Ejector*



Sewage Never Touches Impeller
Strainers Are Cleaned Automatically
Pumps Operate Alternately
Any Capacity—Any Head

CHICAGO PUMP COMPANY
SEWAGE-CONDENSATION-CIRCULATING
BILGE-FIRE-HOUSE-VACUUM
2316 WOLFRAM ST. · · · CHICAGO, ILL.



An interesting arrangement of standardized casements in a two-story library.
Residence of Mr. C. G. Lathrop, Pasadena, California. Bennett and Haskell, architects.

GUARANTEED WIND AND WEATHER PROOF

NO MATTER what the climatic conditions may be, Crittall Standardized Steel Casement Windows are *guaranteed* wind and weather proof without weather-stripping, in either inward or outward opening types. Their heavy steel section, exactly the same as that used for Crittall Custom-built Casements, enables an accuracy of fitting seldom found in any standard product.

Naturally, Crittall Casements cost slightly more than lighter or less carefully finished types of standardized casements because in greater beauty, in lasting strength, in lower fuel bills and in freedom from annoyance and maintenance cost they give you more. But considering these features, their additional cost per opening is so low as to make them available for even the most modest house which is built for a permanent home.

CRITTALL CASEMENT WINDOW COMPANY
10946 Hearn Avenue Detroit, Mich.

CRITTALL CASEMENTS

Available in steel in a wide variety of Standardized sizes and types. Also Custom Built in either steel or bronze to the architect's sizes, designs and specifications

SHERWIN-WILLIAMS PAINTS VARNISHES

Honolulu Decorating Co.
301 CASTLE & COOKE BLDG
HONOLULU

February 11 1927

Mr. A.J. Campbell, Mgr
The Paint Department
Theo. H. Davies & Co. Ltd
Honolulu, T.H

Dear Sir:

Having very recently completed the painting of the New Royal Hawaiian Hotel at Waikiki, upon which Sherwin-Williams products were used exclusively, I wish to take this means of complimenting you upon the high quality of such and every product and also to thank you for the prompt and efficient service in shipment and delivery rendered us during the six months in which this work was under way.

In the application and use of more than 6,000 gallons of your material, we found every gallon to be up to standard in quality, uniformity of color, and perfectly adapted to the purpose for which it was recommended. Not one gallon was returned or rejected as defective in any way.

Not once were we inconvenienced or the work retarded on account of slow shipment or delivery, and owing to the fact that 75% of these goods had to be procured from the mainland, it was your very wonderful cooperation and service that permitted us to complete this contract before our time limit had expired.

You may be assured that such quality and service as you have rendered us in the past will guarantee you our paint business in the future.

Yours very truly,
Honolulu Decorating Company
Bruce P. McBride Manager

The first shipment of Sherwin-Williams protective coatings on this job included the following items:

S-W Flat-Tone White
S-W Flat-Tone Green
S-W Semi-Lustre Canary Yellow
S-W Zilo
S-W Old Dutch Enamel White
S-W Flat-Tone Mixing SIZE
S-W Flat-Rite
S-W Pure White Shellac
S-W First Quality Rose Lake

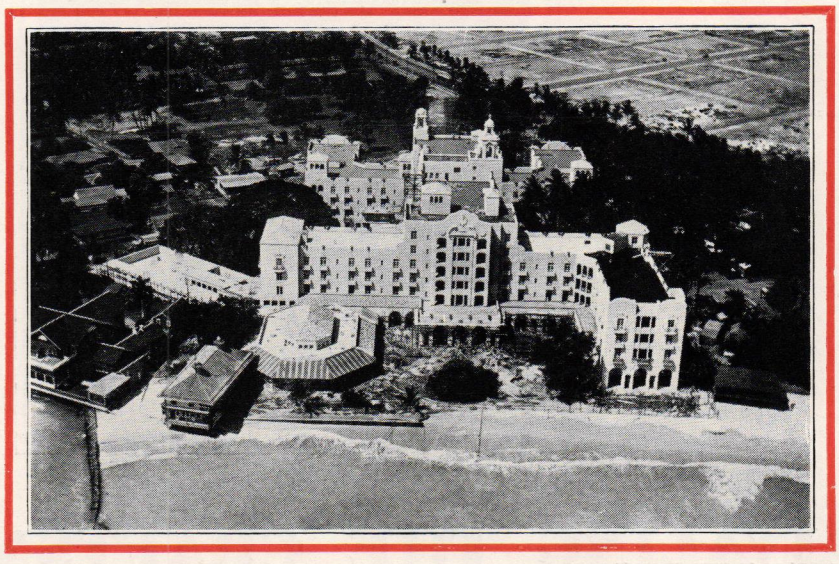
Trade-mark registered

LARGEST IN

WILLIAMS
LACQUERS · ENAMELS

New Royal Hawaiian Hotel, Honolulu, Hawaii

Architects: Warren & Wetmore, New York. General Contractor: Ralph Woolley, Honolulu. Paint Contractor: Honolulu Decorating Co., Honolulu.



The new Royal Hawaiian Hotel, Waikiki Beach, Honolulu

Sherwin-Williams protective coatings used throughout

TRUE, it might have been possible to interpret the spirit and individuality of this modern hostelry and the "color" of these islands with another brand of paint products.

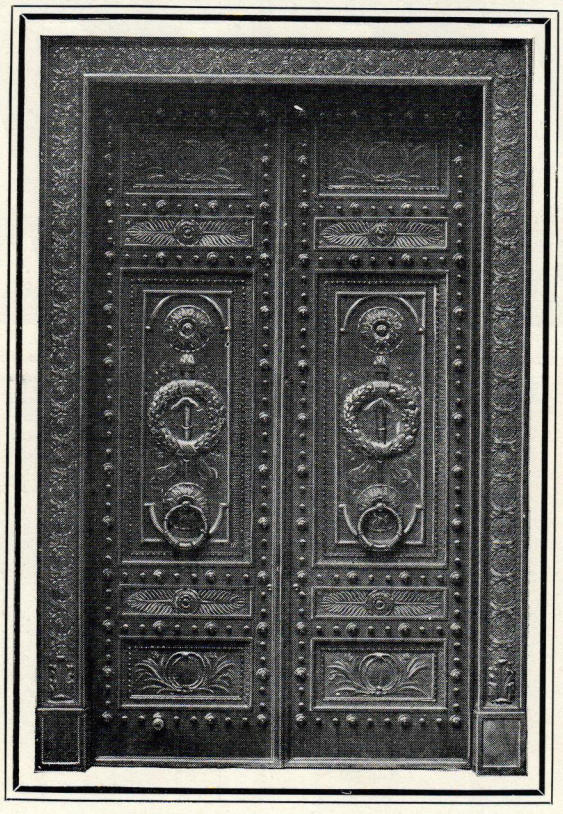
But operating a hotel is a *business*. Costs have their usual relation to profits. Sherwin-Williams paint products were decided upon because experience shows that they endure and stay bright under the strenuous service conditions imposed on all paints in hotels.

Rigid laboratory control of every raw material and every process assures this endurance. Dozens of huge hotels and other enterprises, all "100 per cent S-W," prove the value of vigilant manufacturing control. Sherwin-Williams protective coatings will serve you well!

THE SHERWIN-WILLIAMS CO.
Cleveland, Ohio

THE WORLD

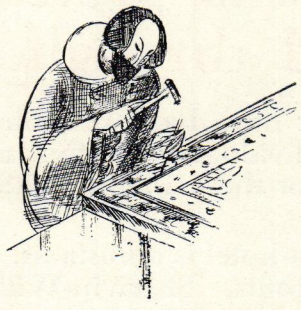
THE NEW RENAISSANCE IN METAL WORKING



These great bronze doors, of which Ghiberti himself might well have been proud, close the impressive entrance to the First National Bank of Kansas City. They were executed by Art Metal for Wight & Wight, Architects, who planned the building. The same motif has been carried out in the interior, which is entirely equipped with Art Metal.

RIVALING THE CRAFTSMANSHIP OF GHIBERTI

How Art Metal, in a few months, can rival a masterpiece that required a quarter-century



IN 1403, Lorenzo Ghiberti was commissioned to make the doors for the famous Baptistery in Florence. Twenty-one years later, the doors were put in place.

Those doors were veritable poems in bronze. Into their making, the great Florentine metal worker had put the best of his skill and artistry. And they stand today, a monument to his craftsmanship.*

Methods have changed in 500 years. Modern processes of manufacture now make it possible for Art Metal to produce fine bronze doors in a month or two. And these doors will rival those of Ghiberti, for into their making has gone the same love of fine work that inspired the Renaissance master.

Every piece of Art Metal work is made with the same skill and care. In bronze work, especially, it is a company tradition to cast, polish and hand-chase each piece as if for a museum exhibit.

This high artistry and attention to detail—coupled with unusual production facilities—is particularly valuable to architects. It means that they are assured of exactly the effect they wish to obtain from the metal work they specify; that they are assured of uniform high quality; and that they are assured of prompt delivery.

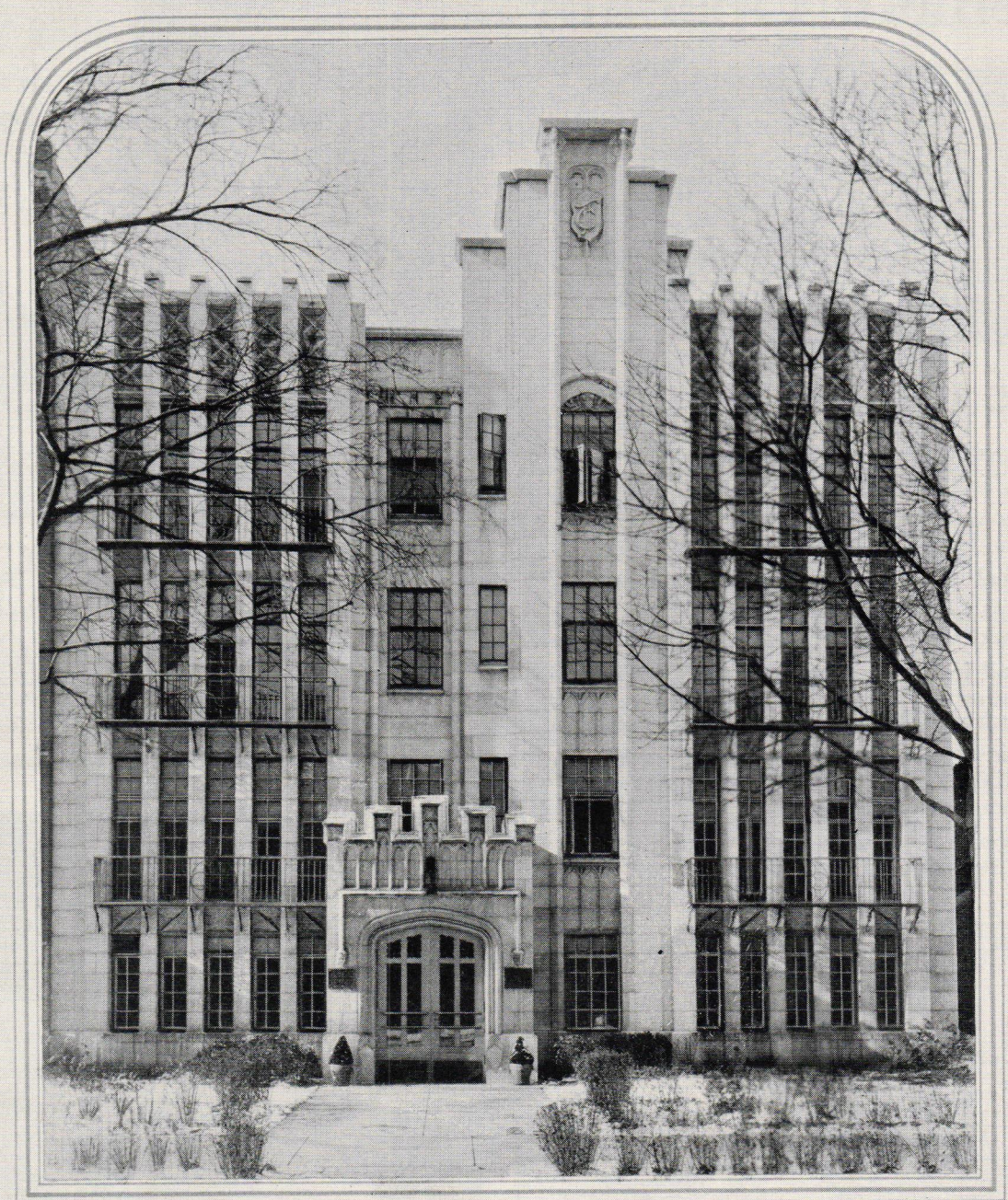
The Art Metal line covers every possible need in interior architectural metal equipment. Our experience and facilities are at your command.

*The great main doors are Ghiberti's work. A less ornate pair at the South Entrance were made nearly a century earlier by Andrea Pisano. But they are embellished by a Ghiberti frieze, erected in 1456

Art Metal

JAMESTOWN ~ NEW YORK

BRONZE AND STEEL INTERIOR EQUIPMENT FOR BANKS, LIBRARIES AND PUBLIC BUILDINGS···HOLLOW METAL DOORS AND TRIM



CARLTON TERRACE, CHICAGO, ILL. ARCHITECTS: HYLAND & CORSE

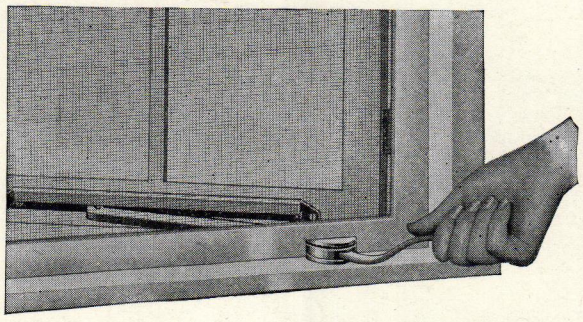
In the beautiful Carlton Terrace, Chicago, the windows are an important factor in the architectural design. ✓ ✓ ✓ Here, as in many of the country's finest apartments, Fenestra Casements have proved to be an adaptable medium in the hands of the architect. Their delicate lines and attractive panes are in full harmony with the structural details of the building.

And these Fenestra advantages of design and construction are invariably augmented by real window conveniences and comforts for the occupants of the building. ✓ ✓ ✓ The latest Fenestra catalog provides the architect with all information required for accurate detailing, together with illustrations of many attractive installations. Send for a copy.

Fenestra CASEMENTS

DETROIT STEEL PRODUCTS COMPANY, C-2303 EAST GRAND BOULEVARD, DETROIT, MICHIGAN
FACTORIES: DETROIT, MICHIGAN, OAKLAND, CALIFORNIA, AND TORONTO, ONTARIO, CANADA

Win-Dor *Series 7* Casement Operator



The most adaptable all-round operator

Fits all sizes and types of steel or wood casements on new or remodeled construction.

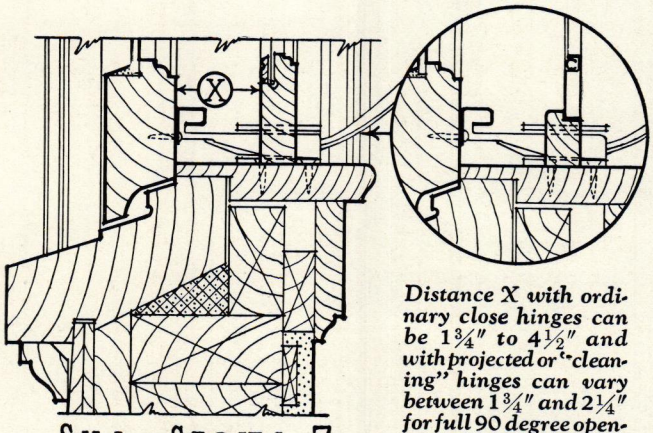
Is exceptionally easy to install on all stool details.

Comes in finishes and materials suitable for the finest residences or the most inexpensive cottages and lodges.

Made of steel in rust-proofed black (paintable) or in dull solid brass, and sanded antique solid brass. Special finishes, to match other hardware, can be furnished.

For complete information on the entire Win-Dor line of specialized and improved casement window hardware see Sweet's pp. 1852-1855.

Detailed drawings and sample specifications in convenient A. I. A. File form will gladly be sent on request.

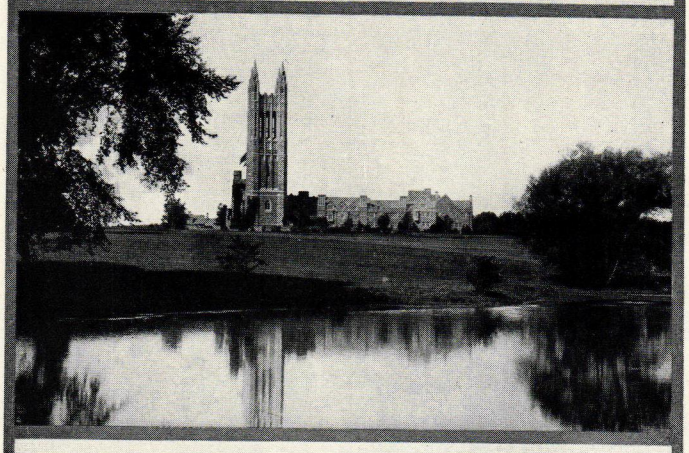


SILL - SERIES 7
FIGURE A

Distance X with ordinary close hinges can be 1¾" to 4½" and with projected or "cleaning" hinges can vary between 1¾" and 2¼" for full 90 degree opening. All standard handles can be attached permanently.

Win-Dor
CASEMENT HARDWARE
The Casement Hardware Co.
402P North Wood Street
Chicago
CASEMENT HARDWARE HEADQUARTERS

PRINCETON
UNIVERSITY
CRAM, GOODHUE & FERGUSON · ARCHITECTS.

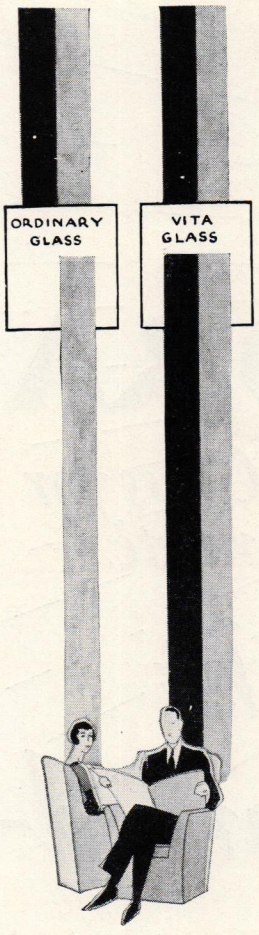


HOPE'S
METAL WINDOWS
HENRY HOPE & SONS
103 PARK AVENUE · NEW YORK

AUSTRAL WINDOWS

VENTILATION WITHOUT DRAFT

AUSTRAL WINDOW CO.
101 PARK AVE., NEW YORK CITY



Vita Glass

A new window glass that transmits the ultra-violet health rays of the sun

THE scientific and medical worlds have accepted Vita glass as a discovery of considerable importance to health. Ordinary window and plate glass do not transmit the vital ultra-violet rays of the sun—rays that promote health, help to prevent rickets in children, kill germs and increase mental and physical energy. Vita glass does transmit these rays. Therefore it is now possible to bring outdoor health indoors.

Vita glass, in addition to admitting the health rays that are kept out by ordinary glass, admits the warmth of the sun to a greater extent. It also admits a slightly higher percentage of the visible light rays than ordinary glass. Through it colors show with their natural brilliance and clarity.

Vita glass is a genuine glass, manufactured in two forms—clear and cathedral. Both glasses are supplied cut to specifications, ready for installation, each light bearing the trade-marked label. Because of the importance of Vita glass to health, its installation naturally increases re-sale values and makes houses, apartments and offices easier to rent.

The value of Vita glass is attested by eminent authorities. Let us give you details. The coupon is for your convenience.

VITAGLASS CORPORATION,
50 East 42nd Street, New York City

Please send me full information regarding Vita glass.

Name_____

Street_____

City_____ State_____

AURORA

A Mississippi Glass for doors, partitions, etc.

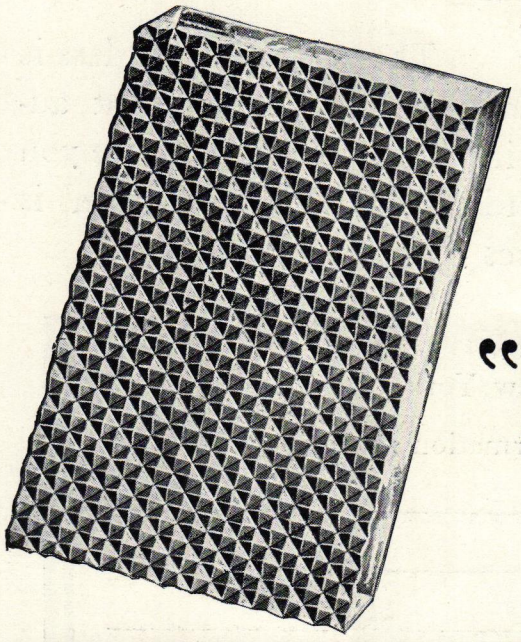
Sends the light where it's wanted—

AURORA is scientifically designed to get the most working light out of daylight. The prisms comprising the design are cut at an angle to get the highest transmission and to deflect the light *where it is wanted*. One half of the light passing through Aurora Glass is sent to the ceiling—the highest reflecting surface. The other half goes to the working plane. Aurora reduces shadows to a minimum and all the light is utilized to advantage.

(*Can be obtained with flat surface Polished.*)

"AURORA"—

Sizes up to 48" wide and 130" long for 1/8 of an inch thick and 60" wide and 130" long for 3/16 and 1/4 of an inch thick.



Specify

"MISSISSIPPI"

Send for catalogue and samples.

MISSISSIPPI GLASS COMPANY

220 FIFTH AVENUE, NEW YORK

Chicago *St. Louis*

in office-buildings LUPTON WINDOWS prove their INVESTMENT VALUE

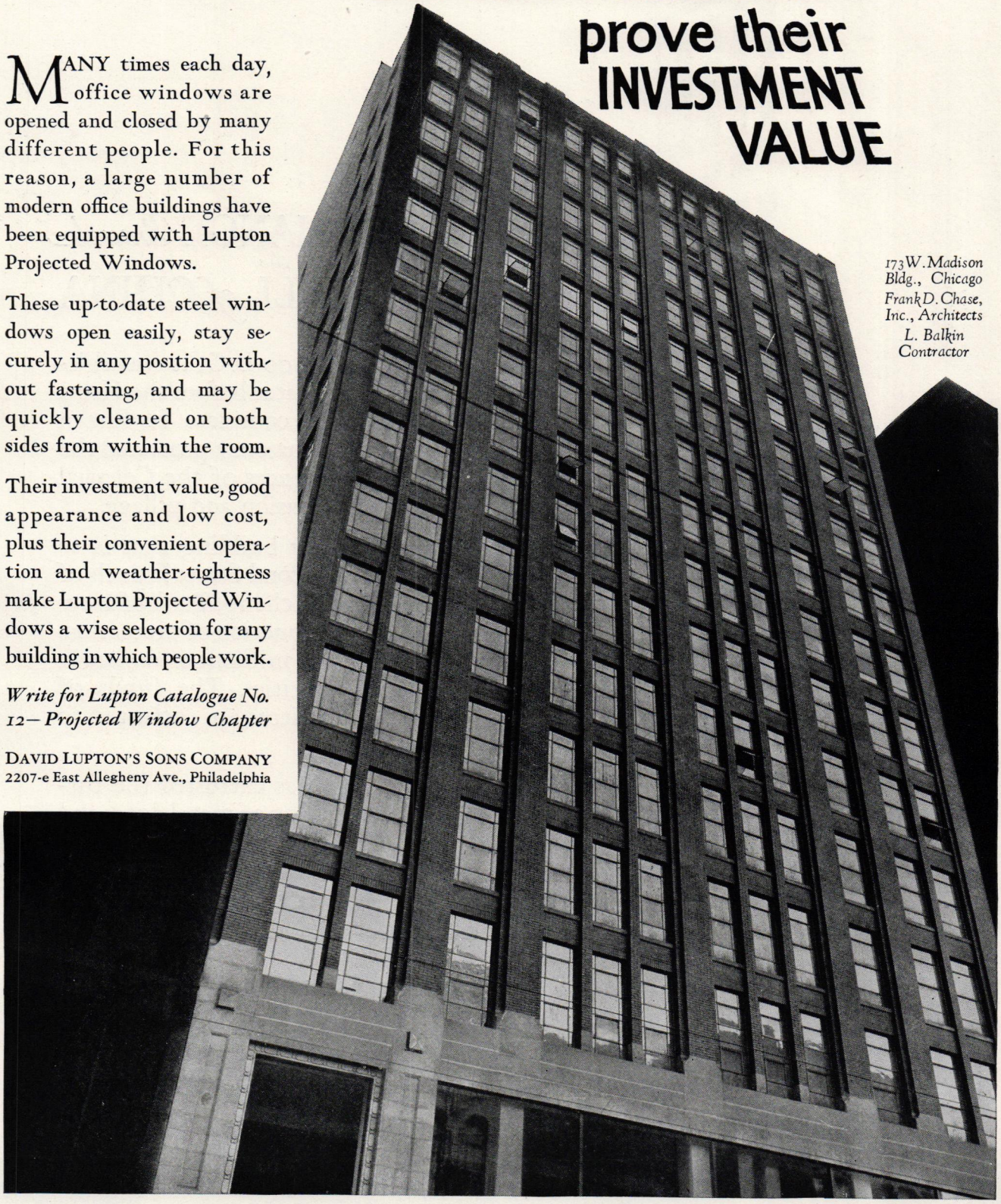
MANY times each day, office windows are opened and closed by many different people. For this reason, a large number of modern office buildings have been equipped with Lupton Projected Windows.

These up-to-date steel windows open easily, stay securely in any position without fastening, and may be quickly cleaned on both sides from within the room.

Their investment value, good appearance and low cost, plus their convenient operation and weather-tightness make Lupton Projected Windows a wise selection for any building in which people work.

Write for Lupton Catalogue No. 12—Projected Window Chapter

DAVID LUPTON'S SONS COMPANY
2207-e East Allegheny Ave., Philadelphia



173 W. Madison Bldg., Chicago
Frank D. Chase, Inc., Architects
L. Balkin Contractor

LUPTON
STEEL WINDOWS *for* EVERY BUILDING

MONUMENTS OF THE AGES

The new CORN EXCHANGE *Branch* *and the* GREAT WALL *of* CHINA

BEGUN before 200 B. C., it was thirteen centuries later before the Great Wall of China was complete. Its fifteen hundred miles of masonry protected the rich northern provinces of the Celestial Empire against invasion and pillage.

The notable new building that is to house the Forty-Second Street Branch of the famous Corn Exchange Bank of New York has a similar function of protection. Behind its walls lie millions of dollars in currency and securities. The funds of thousands of depositors are entrusted to its keeping.

To Dahlstrom was entrusted the furnishing and installing of metal doors and trim. For, wherever beauty and lasting dependability are of prime importance, the name "Dahlstrom" has come to mean sterling quality.

Metal Doors and Trim by Dahlstrom

Architects
CROSS & CROSS
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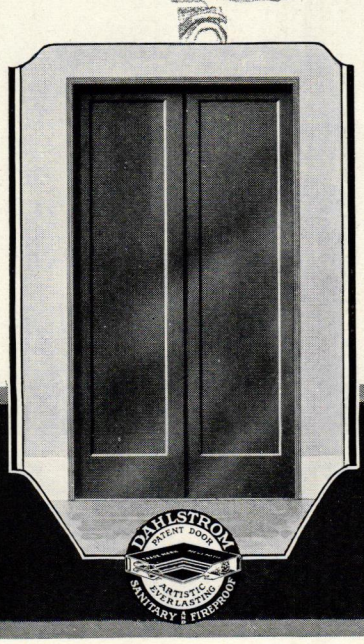

DAHLSTROM METALLIC DOOR CO.
INCORPORATED 1904
JAMESTOWN, NEW YORK

NEW YORK, 475 FIFTH AVE. CHICAGO, 19 SO. LA SALLE ST.
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DAHLSTROM

There is but one Master Drawing Pencil and that is

DIXON'S ELDORADO

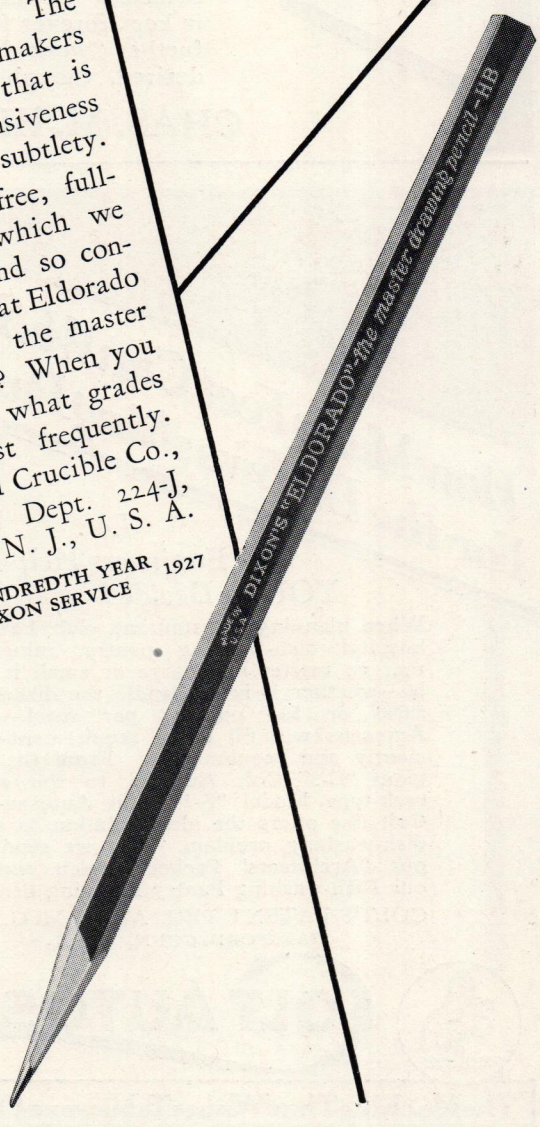
"the master drawing pencil"

DRAWING with Dixon's Eldorado will open your eyes to the superiority of this Master Drawing Pencil over any other pencil *regardless of where it is made.*

For Dixon's Eldorado is made to meet the specific needs of engineers, architects and draftsmen. The standards set by its makers result in a pencil that is unequaled in responsiveness . . . strength . . . subtlety.

Will you try, free, full-length samples which we will send you and so convince yourself that Eldorado is the name of the master drawing pencil? When you write, specify what grades you use most frequently. Joseph Dixon Crucible Co., Pencil Sales Dept. 224-J, Jersey City, N. J., U. S. A.

1827 THE HUNDREDTH YEAR 1927 OF DIXON SERVICE



HIGGINS'

Drawing Inks
Drawing Board & Library Paste

THE easy working quality, characteristic of Higgins' Drawing Board & Library Paste for many years, is now reestablished due to the fact that we are again able to obtain the essential raw materials.

It is easy and pleasant to spread Higgins' Drawing Board & Library Paste with the fingers, and in addition to the usual containers, it is now put up in convenient 5 oz. and 8 oz. waterwell jars with brushes. In this manner the paste is kept forever fresh, and it may be further "worked up" with water, if desired, though this is not necessary. All of the original adhesive tenacity is retained.

Higgins' American Drawing Inks are also manufactured in accordance with the original formula — the formula which created the first liquid India Ink, and established, in 1880, today's standard drawing ink. Blacks, White and 11 brilliant colors.

At Your Regular Supply Dealers

CHAS. M. HIGGINS & CO., 271 Ninth St., Brooklyn, N.Y.

"How Many Feet Can We Spare For the Dishwashing Pantry?"

Let Colt Engineers Help YOU to Decide!

When planning a restaurant, club, hotel or hospital dish-washing pantry, remember that no matter how large or small it may be—whether it is to handle the dishes for 5,000 or 500 persons per meal — Colt Autosans will fill every requirement—efficiently and economically! From the new giant "C-3" Colt Autosan to the small, rack-type Model "S-1" Colt Autosan—the Colt line offers the ideal solution to every dish-washing problem. May we send you our "Architects' Packet" which explains our Dish-washing Pantry Planning Service?

COLT'S PATENT FIRE ARMS MFG. CO.
HARTFORD, CONN., U. S. A.

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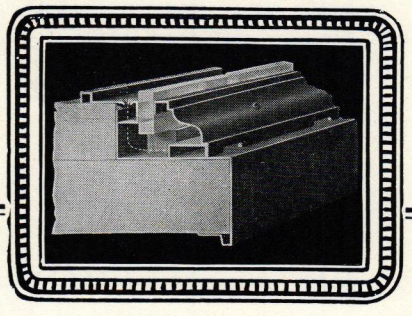
"The Machine That Washes Tableware *CLEAN!*"

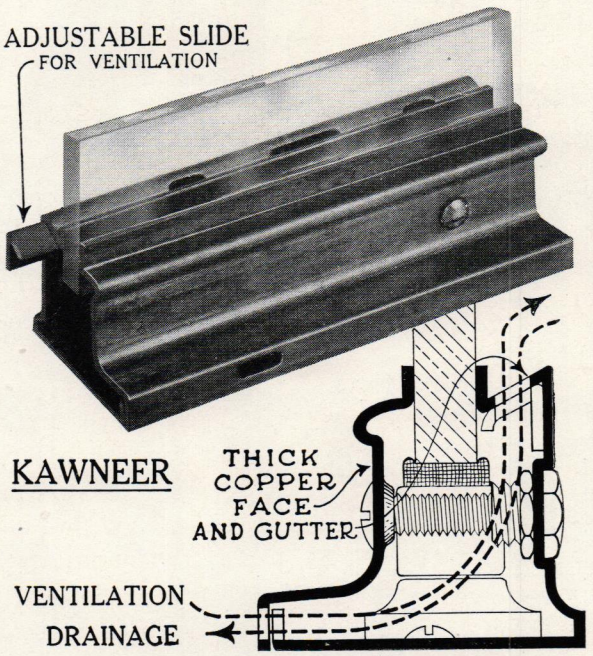


Advanced Store Front Construction

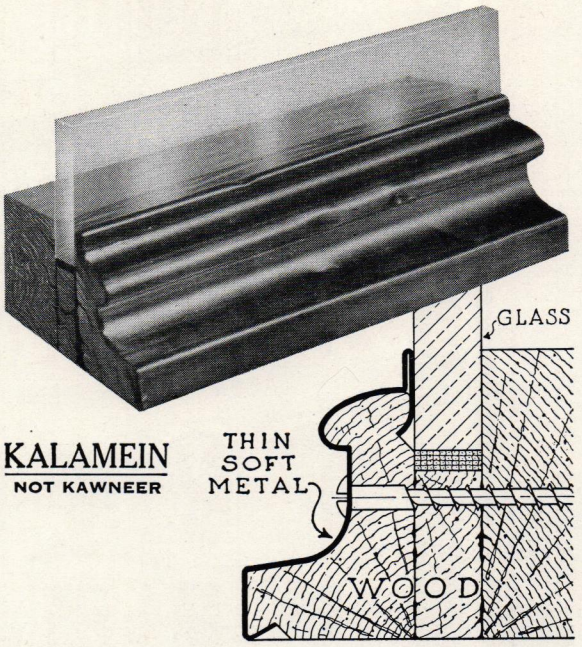
The Architect finds in Brasco, a comprehensive system of sash and bar units adaptable to any set of window conditions, space, location or architectural requirements. Glass safety — strength — simplicity—permanent beauty—ventilation and drainage are built into all Brasco construction as a matter of course. Send for catalog and details.

BRASCO MANUFACTURING CO.,
5031 Wabash Ave., Chicago

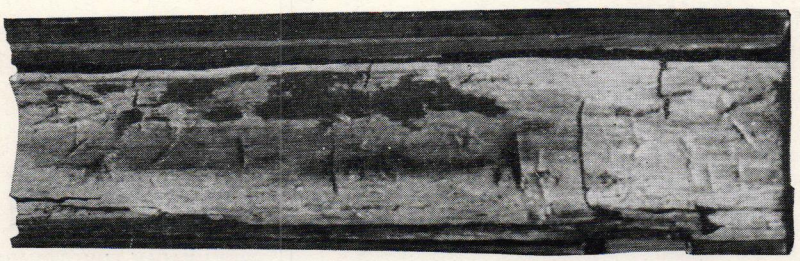
Brasco
COPPER STORE FRONTS



PHOTOGRAPH and diagram of a Kawneer hollow metal sash. This sash provides drainage, ventilation and plate glass protection. Age and rough usage will not affect its strength and beauty. The heavy copper mouldings from which Kawneer sash and bars are built require no wood reinforcement.



KALAMEIN CONSTRUCTION consists merely of wood strips covered with thin copper. The wood, being perishable, is subject to decay, thus exposing the glass to unnecessary breakage. The thin, soft copper covering is easily dented and defaced. This construction does not give the resiliency found in Kawneer.



Back view of Kalamein showing rotted condition of wood filler after only a few years of service.

THE PRINCIPLES EMBODIED IN KAWNEER STORE FRONT CONSTRUCTION MAKE IT SAFE AND DURABLE FOR ANY TYPE OF STORE FRONT

SEE OUR CATALOGUE IN SWEET'S

THE
Kawneer
COMPANY
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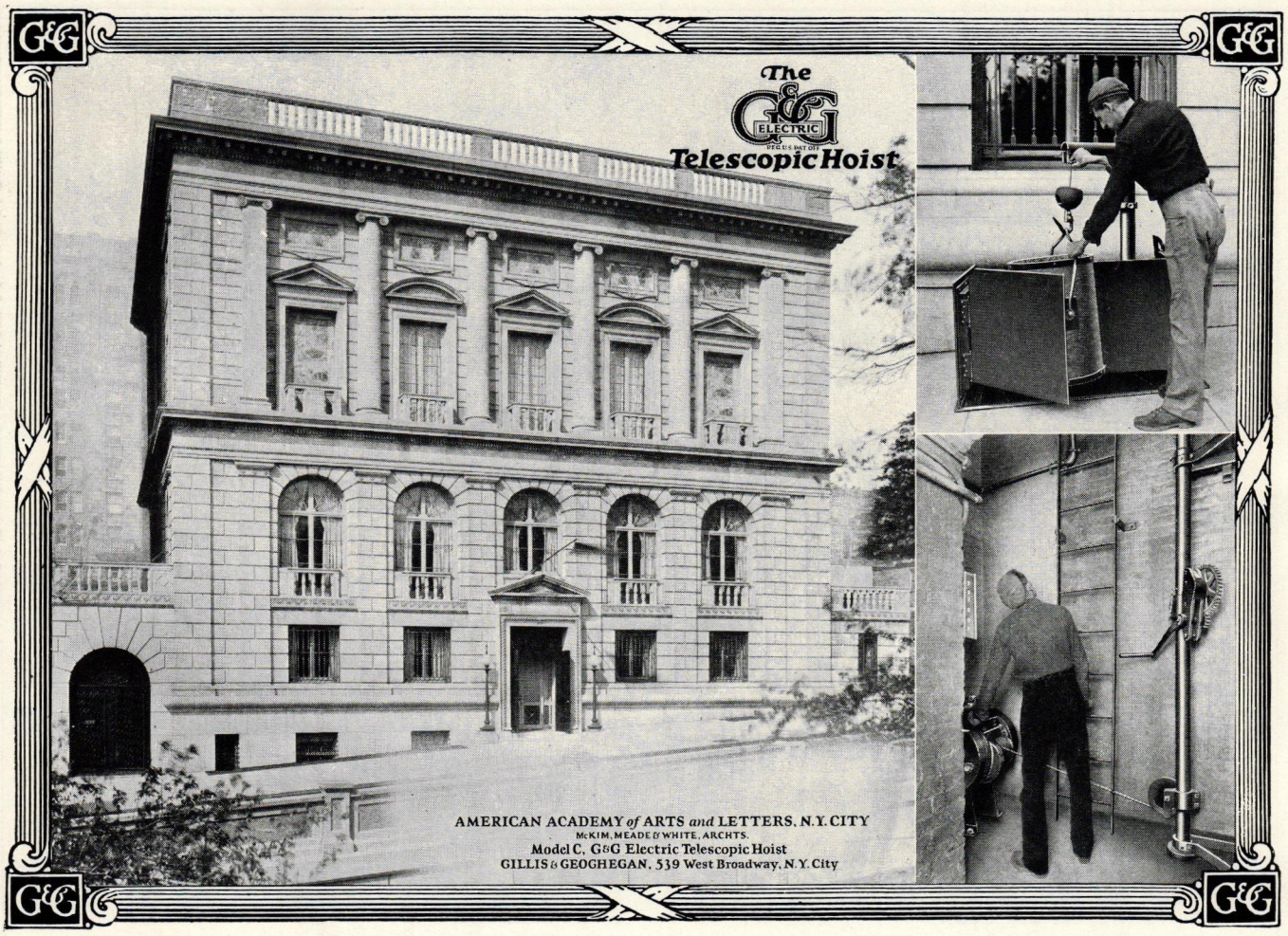
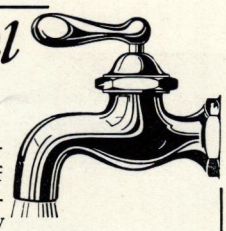
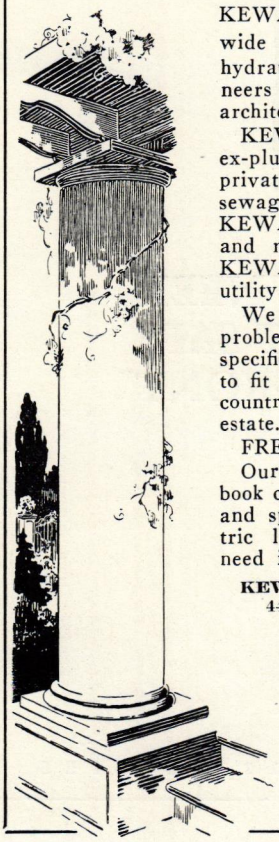
BRANCH OFFICES AND SALES AGENCIES IN 128 CITIES



Engineering Counsel for Architects





KEWANEE'S nation-wide organization of hydraulic-electric engineers will counsel any architect without charge.

KEWANEE men are not salesmen nor ex-plumbers, but trained experts in private water supply, electric light and sewage disposal. Back of them is the KEWANEE quarter century of technical and manufacturing experience and the KEWANEE line of over 200 private utility systems.

We appreciate the architect's needs and problems. We are glad to help draft specifications for proper private utilities to fit the exact needs of each job—from country cottage to million dollar club or estate.

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Our complete architect's specification book contains a mass of engineering data and specifications on water supply, electric light and sewage disposal. You need it. Sent free. Write for it.

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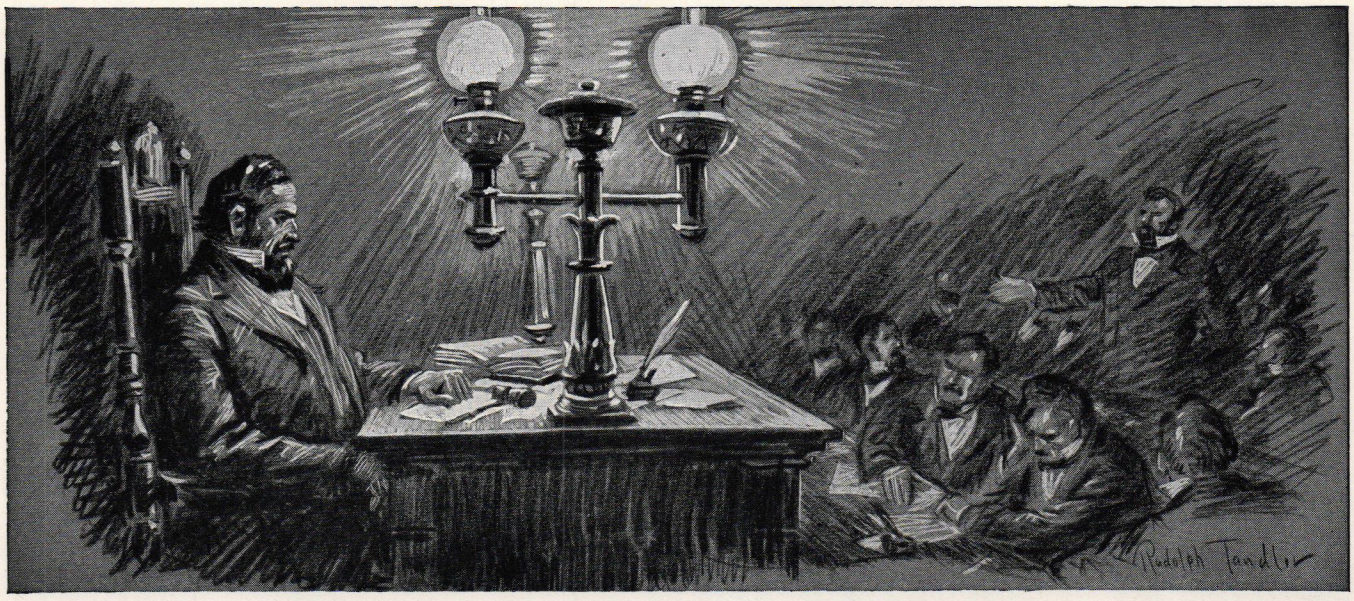
WATER LIGHT SEWAGE DISPOSAL

OTIS
FOR NEARLY THREE QUARTERS OF A CENTURY
THE WORLD'S WORD FOR ELEVATOR SAFETY

OTIS ELEVATOR COMPANY
OFFICES IN ALL PRINCIPAL CITIES OF THE WORLD



More than the light of justice plays on the lawmakers of today

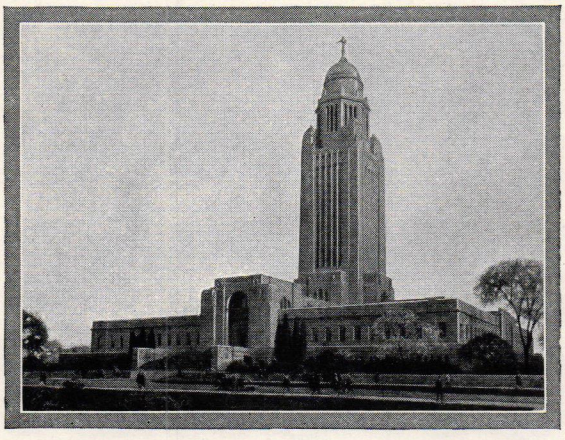
When the speaker dropped his gavel gently lest he disturb the kerosene lamp, shady deals may have been possible.

But today the shining light of publicity and the Mazda lamp make even a fillibuster the subject of national conversation.

State capitol architecture has changed. It includes today an adequate wiring system of quality wires. "Dolphin" brand Atlantic wire, for instance, was used throughout the new Nebraska State Capitol. In an ever increasing volume, "Dolphin," "Triton," or "Neptune" brand Atlantic Wires are being written in the specifications of our leading architects.

All three brands have stood for known quality, high dielectric strength, and exceptional longevity for over a quarter century. They are built for the future.

Samples and detailed specifications will be sent on request. Atlantic Insulated Wire & Cable Co., Rome, N.Y.



Another Atlantic installation, the Nebraska State Capitol, Lincoln, Neb. Goodhue Associates, Architects; Meyer Strong & Jones, New York City, Electrical Engineers; Schricker Electric Co., Lincoln, Neb., Electrical Contractors.

Neptune—30% Hevea Rubber Compound
Triton—Intermediate 25% Rubber Compound
Dolphin—National Electric Code Standard Compound

ATLANTIC
INSULATED WIRES AND CABLES

"The Insulation is cured before Vulcanization"

Sears-Roebuck Atlanta Building
Architects: Geo.C.Nimmons&Co. Chicago
Contractors: B.W.ConstructionCo. Chicago

Sears-Roebuck Builds at Atlanta— in Record Breaking Time—with Reinforced Concrete Construction and Institute Reinforcing Steel

THIS reinforced concrete building is 10 stories high—440 feet long and 140 feet wide—with a four story tower 40 by 30 feet. By using Institute Reinforcing Steel, construction delays were eliminated and an erection speed record set.

Not one day was lost awaiting deliveries of Institute Reinforcing Steel.

Altogether, a total of 35,000 cubic yards of concrete was poured into the caissons, frame and floors.

During four, 5½ day weeks, six stories of concrete work were completely finished. In this time, 12,199 cubic yards of concrete were poured.

As Institute Reinforcing Steel was used throughout—all bars were securely bundled for quick and easy two-man handling. They were plainly tagged, for quick accurate placing. All steel was cut, bent, and completely fabricated before delivery. Only with careful fabrication and accurate deliveries of reinforcing steel could such erection speed be accomplished.

REINFORCED CONCRETE

THE CONCRETE REINFORCING STEEL INSTITUTE :: TRIBUNE TOWER, CHICAGO

American System of Reinforcing
Badt-Falk & Company
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Dudley Bar Company
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W. J. Holliday & Co.
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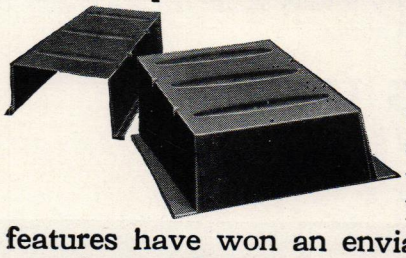
140,000 sq. ft. Meyer Steelforms *and* 400 Tons Ceco Reinforcing Bars *in this Texas Job*

The Hamilton Building at Wichita Falls, Texas under construction. Bryan and Sharp, Architects. R. O. Jameson, Engineer. J. S. Harrison, Jr., Builder. C. L. Shaw, Concrete and Masonry contractors. At right shows building as completed.

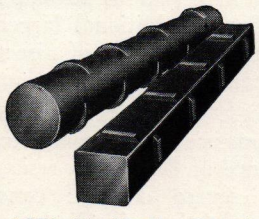
Showing simplicity of open wood centering used beneath Meyer Steelform Construction. The heavy 16 gauge sheet steel, the reinforcing ribs in the top surface, the special angle features all serve to permit walking and trucking over forms without slowing down work on job.

AS in Wichita Falls, so in Detroit, St. Louis, Chicago, Omaha, Houston and hundreds of other cities, Meyer Steelforms and Ceco Products have proved their efficiency and economy. Our conveniently located sales offices and warehouses at the 12 principal cities listed below make this quick fabrication and delivery to the job possible.

The unique and exclusive features of Meyer Steelforms cause a considerable saving in concrete, steel, formwork, time and labor. These features have won an enviable position of prominence. A prominence which is particularly noticeable in the conversations (and specifications) of prominent architects and contractors throughout the entire Middle West.



Ceco Reinforcing Bars and Fire-proofing Materials are kept in stock and ready for immediate fabrication and shipment from any one of our warehouses listed below.



Ceco Reinforcing Bars are of the most efficient type and are tested and inspected by the Robert W. Hunt & Co.

Other Ceco products: Bar Chairs and Spacers, Woven and Welded Wire Mesh, Metal Lath, Corner and Base Bead, Column Spirals, Road Strips, etc., can be obtained immediately on order.

Our engineering department is technically trained and ready to assist you in the reinforced concrete portion of building work.

Send for a copy of our *Handbook of Fireproof Construction.* It explains in detail the features of Meyer Steelforms and Ceco Products. Address our Omaha office, Dept. 272.

CONCRETE ENGINEERING COMPANY

Offices and Warehouses:

Omaha Chicago Detroit Kansas City Dallas Milwaukee Minneapolis Houston St. Louis Des Moines Los Angeles San Francisco

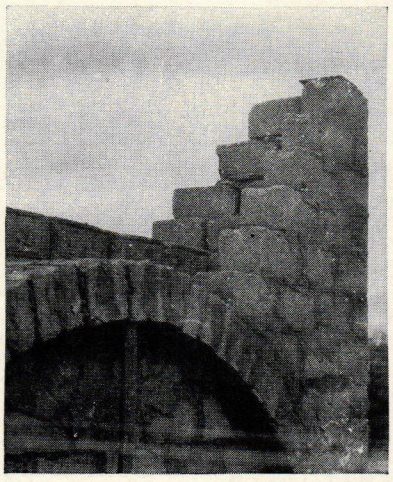
Audubon High School, Audubon, N. J. Architects, Arnold H. Moses & Walter C. Mayo, Camden, N. J. General Contractor, George H. Evans Co., Philadelphia.

Permanent Protection Plus Economy

BETWEEN what is expensive without proportionate advantage and what is inexpensive without permanent value there is a happy point where the scales of judgment strike a balance of proved economy with enduring satisfaction.

The construction economy of Cinder Concrete Building Units is the direct product of their cellular character, which makes added possible lightness in weight, an additional largeness in size and the advantages of direct plastering and nailing of grounds and interior trim.

These economies are balanced with permanence in the completed building. Absence of decay and resistance to the most severe climatic conditions are characteristics of Cinder Block and Cinder Tile. To this should be added the advantages of heat insulation and sound absorption.



Detailed information regarding the characteristics of the material will be sent immediately upon request.

Permanent protection plus economy are factors of particular importance in the construction of schools. Health, comfort and safety are insured by walls of Cinder Concrete Building Units—and obtained at a very low first cost.

The Audubon High School, illustrated here, is an example of the large number of school buildings erected with this material throughout the country. The Cinder Block and Cinder Tile were supplied by one of the eighty plants operating under the Straub and Bo patents in the United States and Canada.

CINDER CONCRETE BUILDING UNITS

Are Manufactured under Straub and Bo Patents by More Than 80 Plants in the United States and Canada

ADDRESS ALL INQUIRIES TO DEPARTMENT F

NATIONAL BUILDING UNITS CORP.

1600 ARCH STREET-PHILADELPHIA

Closets That Can Next Quarter Century *selves, never forget*

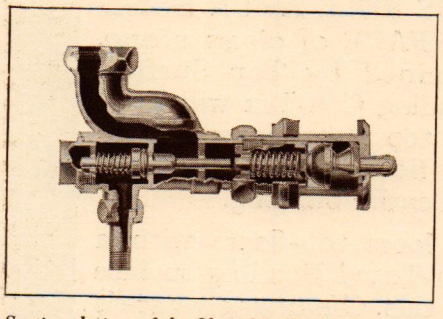
The Clow-Madden Valve is far simpler and more efficient than any closet valve on the market today. With but two moving parts in the whole assembly, nothing depends upon intricate, easily worn valves, and floats. As a result, the Clow-Madden Valve does not waste a drop of water.

Lower Installation Costs

Installation costs are considerably reduced. A ⅜-inch pipe can feed the Clow-Madden. This entails a correspondingly smaller main line pipe, and further savings in piping costs.

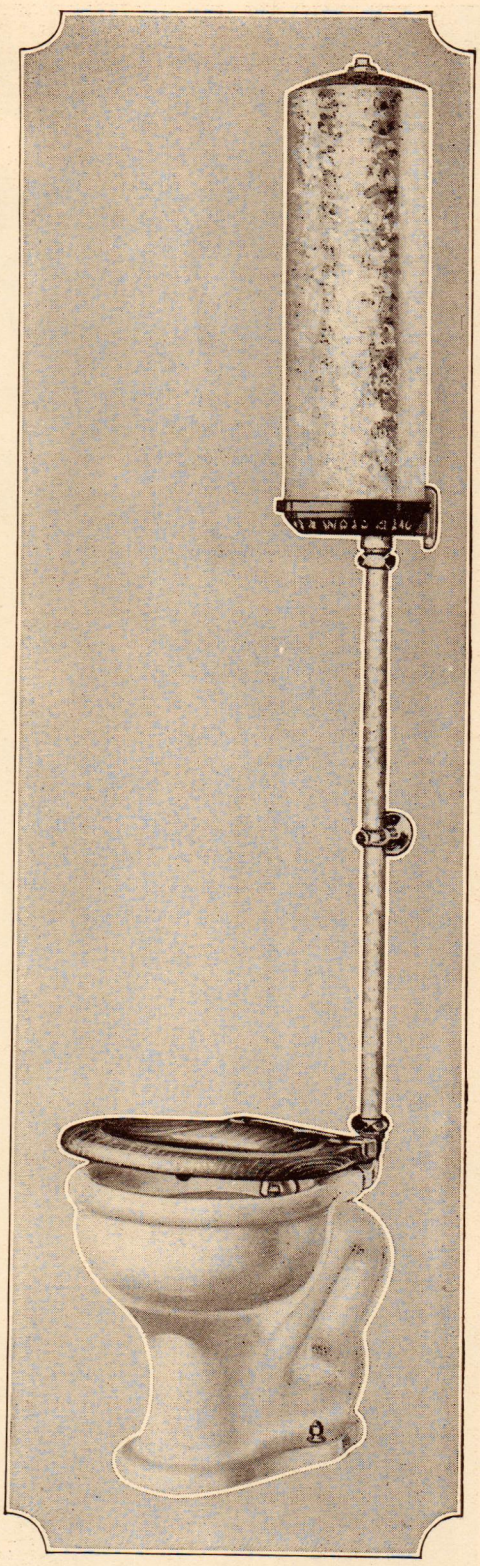
Longer Life—Lower Costs

Twenty, thirty and more years of active service in many schools—with but a minimum of upkeep and repair cost—illustrate how completely these closets—*that cannot forget*—can be forgotten.



Sectional view of the Clow-Madden Valve, showing the simplicity of the entire assembly.

Our "Clow School Plumbing Catalogue" is being printed. Write for your copy.



The Clow Automatic Closet—one of the forty-eight models shown in our new catalogue

JAMES B. CLOW & SONS, 201-299 N. Talman Ave., Chicago

CLOW

AUTOMATIC CLOSET

Forty-Eight Styles, Heights And Types To Meet Your Requirements

THIS FULL AREA BOND SURFACE of *clean stone,* obtained by Top Surface Bonding Con-Tex will bond the top floors integrally to the floor slabs throughout this entire building.

No loose top-floors with a Con-Texed Bonding surface like this. *Clean aggregate* is the secret of good concrete. *Clean stone surfaces* are the secret of true bond.

Write for information

CONCRETE SURFACE CORPORATION

342 Madison Avenue, New York City

The illustration shows a floor slab ready for topping on the Duniway School at Portland, Ore. George Jones, Architect; Roy Powers, General Contractor; Guy K. Young, Sales Engineer.

Selected List of Manufacturers' Publications

FOR THE SERVICE OF ARCHITECTS, ENGINEERS, DECORATORS, AND CONTRACTORS

The publications listed in these columns are the most important of those issued by leading manufacturers identified with the building industry. They may be had without charge, unless otherwise noted, by applying on your business stationery to *The Architectural Forum*, 383 Madison Ave., New York, or the manufacturer direct, in which case kindly mention this publication.

ACOUSTICS

The Celotex Co., Chicago.
Acousti-Celotex. 16 pp., 8½ x 11 in. Illustrated brochure on a valuable material for facing walls and ceilings.
Specifications and Details for application and decoration of Acousti-Celotex, 11 pp., 8½ x 11 in.

Johns-Manville Corp., Madison Ave. & 41st St., New York, N. Y.
Architectural Acoustics. Booklet. 6 x 9 in. 24 pp. Illustrated. Treatise on the correction of architectural acoustics in Churches, schools, hospitals, office buildings and other places.

U. S. Gypsum Co., 205 W. Monroe St., Chicago, Ill.
A Scientific Solution of an Old Architectural Problem. Folder 6 pp., 8½ x 11 in. Describes Sabinite Acoustical Plaster.

ASH HOISTS—ELECTRIC AND HAND POWER

Gillis & Geoghegan, 544 West Broadway, New York, N. Y.
General Catalog. 8½ x 11 in. 20 pp. Fully illustrated. Contains specifications in two forms (with manufacturers' name and without). Detail ¼ in. scale for each telescopic model and special material-handling section.

BASEMENT WINDOWS

General Fireproofing Building Products, Youngstown, Ohio.
Architectural Details. Booklet, 62 pp., 8½ x 11 ins. Details on steel windows.

Truscon Steel Co., Youngstown, Ohio
Truscon Copper-Steel Basement Windows. Booklet, 8 pp., 8½ x 11 in. Illustrated with installation details. Specifications and construction details.

BATHROOM FITTINGS

A. P. W. Paper Co., Albany, N. Y.
Onliwon for Fine Buildings. Folder, 8 pp. 3¼ x 6 in. Illustrated. Deals with toilet paper fittings of metal and porcelain.
Architects' File Card. 8½ x 11 in. Illustrated. Filing card on toilet paper and paper towel cabinets.
A Towel Built for Its Job. Booklet, 8 pp. 4¼ x 9⅝ in. Illustrated. Paper Towel System and Cabinets.
Cabinets and Fixtures. Booklet, 31 pp. 5¾ x 4¾ in. Illustrated. Catalog and price list of fixtures and cabinets.

Morton Mfg. Co., 5163 West Lake Street, Chicago.
Bathroom Cabinets for Homes, Apartments, etc. General Catalog, 20 pp., 8 x 10¾ ins. Illustrated. Specifications, installation details, etc.
Booklet, 12 pp., 3¼ x 6¼ ins. Illustrated. Deals with four models of bathroom cabinets.

BRICK

Acme Brick Company, Ft. Worth, Texas.
Series No. 1
Architectural designs rendered in Acme Brick. Booklet 11 x 8½ in. Illustrated. A series of 48 photogravures showing architectural designs rendered in Acme brick. Illustrations show the various types of buildings erected in the Southwest in recent years. Sent free to architects applying on their office stationery.

American Face Brick Association, 1751 Peoples Life Bldg., Chicago, Ill.
Architectural Details in Brickwork. Series One, Two and Three. Each series consists of an indexed folder case to fit standard vertical letter file, containing between 30 and 40 half-tones in brown ink on fine quality paper. These collections are inspiring aids to all designers. Sent free to architects who apply on their office stationery; to others, 50 cents for each series. Size 8½ x 11 in.
Brickwork in Italy. 298 pages size 7½ x 10½ in., an attractive and useful volume on the history and use of brick in Italy from ancient to modern times, profusely illustrated with 69 line drawings, 300 half-tones, and 20 colored plates with a map of modern and XII century Italy. Bound in linen will be sent postpaid upon receipt of $6.00. Half Morocco, $7.00.
English Precedent for Modern Brickwork. A book of plates and measured drawings of Tudor and Gothic brickwork with a few recent variations of modern architects in the spirit of the old work. Price $2.00. 100 pp. Illustrated. 8½ x 11 in.
Industrial Buildings and Housing. Bound volume, 112 pp. 8½ x 11 in. Profusely illustrated. Deals with the planning of factories and employes' housing in detail. Suggestions are given for interior arrangements, including restaurants and rest rooms. Price $2.

BUILDING, STEEL PRODUCTS FOR

Truscon Steel Company, Youngstown, Ohio.
Truscon Data Book. Catalog. 3½ x 6 in. 128 pp. Illustrated. Contains complete information with illustrations on Truscon reinforcing steel, steel windows, metal lath, standard buildings, concrete inserts, steel joists, pressed steel stamping and chemical products.

CEMENT

Carney Company, The, Mankato, Minn.
What Twelve Men Said About Carney. Booklet, 8½ x 11 ins., Illustrated. Opinions of well known architects and builders of Carney Cement used for mortar.

Cement Gun Company, Inc., Allentown, Pa.
Gunite Bulletins. Sheets 6 x 9 in. Illustrated. Bulletins on adaptability of "Gunite," a sand and cement product, to construction work.

Kosmos Portland Cement Company, Louisville, Ky.
Kosmortar for Enduring Masonry. Folder 6 pp., 3½ x 6½ in. Data on strength and working qualities of Kosmortar.

CEMENT—Continued

Kosmortar, the Mortar for Cold Weather. Folder, 4 pp., 3⅜ x 6½ in. Tells why Kosmortar should be used in cold weather.

Louisville Cement Co., 315 Guthrie St., Louisville, Ky.
BRIXMENT for Perfect Mortar. Self-filing handbook 8½ x 11 inches. 16 pp. Illustrated. Contains complete technical description of BRIXMENT for brick, tile and stone masonry, specifications, data and tests.

Pennsylvania-Dixie Cement Corp'n., 131 East 46th St., New York.
Celluloid Computing Scale for Concrete and Lumber, 4⅝ x 2½ ins. Useful for securing accurate computations of aggregates and cement; also for measuring lumber of different sizes.

CONCRETE BUILDING MATERIALS

Celite Products Co., 1320 South Hope St., Los Angeles.
Better Concrete; Engineering Service Bulletin X-325. Booklet, 16 pp., 8½ x 11 ins. Illustrated. On use of Celite to secure workability in concrete, to prevent segregation and to secure water-tightness.
Economic Value of Admixtures. Booklet, 32 pp., 6⅛ x 9⅛ ins. Reprint of papers by J. C. Pearson and Frank A. Hitchcock before 1924 American Concrete Institute.

Concrete Surface Corporation, 342 Madison Ave., New York.
Binding Surfaces on Concrete. Booklet, 12 pp., 8 x 11 in., illustrated. Deals with an important detail of building.

National Building Units Corporation, 1600 Arch Street, Philadelphia.
Durability and Utility of Straub Cinder Building Blocks. Brochure, 14 pp., 8 x 11 ins. Report on this material by Pittsburgh Testing Laboratories.
Sound Absorption of Cinder Concrete Building Units. Booklet, 8 pp., 8 x 11 ins. Illustrated. Results of tests of absorption and transmission of sound through Straub building blocks.

Kosmos Portland Cement Company, Louisville, Ky.
High Early Strength Concrete, Using Standard Kosmos Portland Cement. Folder, 1 p., 8½ x 11 in. Complete data on securing high strength concrete in short time.

CONCRETE COLORINGS

A. C. Horn Company, Long Island City, N. Y.
Keramic Catalog. Booklet. 8½ x 11 in. 26 pp. A magnificent brochure, illustrated in color, describing a valuable line of specialties for use with concrete floors—colorings, hardeners, waterproofing, etc.

CONSTRUCTION, FIREPROOF

National Fire Proofing Co., 250 Federal St., Pittsburgh, Pa.
Standard Fire Proofing Bulletin 171. 8½ x 11 in. 32 pp. Illustrated. A treatise on fireproof floor construction.

Northwestern Expanded Metal Co., 1234 Old Colony Building, Chicago, Ill.
Northwestern Expanded Metal Products. Booklet. 8½ x 10¾ in. 16 pp. Fully illustrated, and describes different products of this company, such as Kno-burn metal lath, 20th Century Corrugated. Plaster-Sava and Longspan lath channels, etc.

DAMPPROOFING

Philip Carey Co., Lockland, Cincinnati, Ohio.
Architects' Specifications for Carey Built-Up Roofing. Booklet. 8 x 10¾ in. 24 pp. Illustrated. Complete data to aid in specifying the different types of built-up roofing to suit the kind of roof construction to be covered.
Carey Built-Up Roofing for Modern School Buildings. Booklet. 8 x 10¾ in. 32 pp. Illustrated. A study of school buildings of a number of different kinds and the roofing materials adapted for each.

The General Fireproofing Building Products, Youngstown, Ohio.
Waterproofing Handbook. Booklet. 8½ x 11 in. 72 pp. Illustrated. Thoroughly covers subject of waterproofing concrete, wood and steel preservatives, dustproofing and hardening concrete floors, and accelerating the setting of concrete. Free distribution.

A. C. Horn Company, Long Island City, N. Y.
Waterproofing. 9½ x 11½ in. Folder. Contains folders giving data on excellent waterproofing and dampproofing materials.

Sonneborn Sons, Inc., L., 116 Fifth Ave., New York.
Specification Sheet, 8½ x 11 in. Descriptions and specifications of compounds for dampproofing interior and exterior surfaces.

Toch Brothers, 110 East 42nd Street, New York City.
Specifications for Dampproofing, Waterproofing, Enameling and Technical Paint. Complete and authoritative directions for use of an important line of materials.

The Vortex Mfg. Co., Cleveland, Ohio.
Par-Lock Specification "Forms A and B" for dampproofing and plaster key over concrete and masonry surfaces.
Par-Lock Specification "Form J" for dampproofing tile wall surfaces that are to be plastered.
Par-Lock Dampproofing. Specification Forms C, F, I and J. Sheets 8½ x 11 ins. Data on gun-applied asphalt dampproofing for floors and walls.

DOORS AND TRIM, METAL

The American Brass Company, Waterbury, Conn.
Anaconda Architectural Bronze Extruded Shapes. Brochure, 180 pp., 8½ x 11 in., illustrating and describing more than 2,000 standard bronze shapes of cornices, jamb casings, mouldings, etc.

SELECTED LIST OF MANUFACTURERS' PUBLICATIONS—*Continued from page 147*

DOORS AND TRIM, METAL (Continued)

The Compound & Pyrono Door Company, St. Joseph, Mich.
Pyrono Handbook for Architects and Contractors. 8½ x 11 in. 16 pp. Contains full information regarding Pyrono Fireproof Veneered Doors and Trim, with complete details and specifications.
Pyrono details in sheet form for tracing.

Richards-Wilcox Mfg. Co., Aurora, Ill.
Fire Doors and Hardware, Booklet. 8½ x 11 in. 64 pp. Illustrated. Describes entire line of tin-clad and corrugated fire doors, complete with automatic closers, track hangers and all the latest equipment—all approved and labeled by Underwriters' Laboratories.

DUMBWAITERS

Sedgwick Machine Works, 151 West 15th St., New York.
Catalog and Service Sheets. Standard specifications, plans and prices for various types, etc. 4¼ x 8¼ in. 60 pp. Illustrated.
Catalog and pamphlets, 8½ x 11 in. Illustrated. Valuable data on dumb waiters.

ELECTRICAL EQUIPMENT

Frank Adam Electric Company, St. Louis, Mo.
Catalog No. 35—1925. Panelboards—Steel Cabinets. 7¾ x 10½ in. 64 pp. Illustrates and describes sectionally built panelboards, an important line of steel cabinets, and the fittings which go with them.

Atlantic Insulated Wire & Cable Co., Rome, N. Y.
Catalog of Insulated Electrical Wires & Cables. Pp., 7½ x 10⅝ ins. Illustrated. Data on construction and insulation; also much valuable miscellaneous information.

General Electric Co., Schenectady, N. Y.
"Electrical Specification Data for Architects. Brochure, 36 pp., 8 x 10½ ins., illustrated. Data regarding G. E. wiring materials and their use.
"The House of a Hundred Comforts." Booklet, 40 pp., 8 x 10½ ins. Illustrated. Dwells on importance of adequate wiring.

Hart & Hegeman Mfg. Co., The, 342 Capitol Ave., Hartford, Conn.
The Line of Least Resistance. Catalog R. 10½ x 7⅞ in. 152 pp. Illustrated. Complete display of switches, sockets, accessories and wiring devices with brief description.
A new H & H Switch. Leaflet. 3½ x 6 in. 4 pp. Illustrated. Illustrates a new H & H composition base push switch of De Luxe quality.
Tumbler Switches. Booklet. 3½ x 6 in. 6 pp. Illustrated. Shows complete line of H & H Tumbler Switches.
H & H Locking Switch. Folder, 4 pp. 3½ x 6 in. Deals with an important lighting accessory.
H. & H. Electrical Wiring Devices, Catalog S. 8½ x 10 in., 123 pp. Lists and illustrates details of equipment.

Kohler Co., Kohler, Wis.
Press-the-Button Service from Your Own Electric Plant. Booklet, 36 pp., 6 x 8½ ins. Illustrated. Describes a 110-volt automatic electric plant for providing electricity for isolated places.

Pick & Company, Albert, 208 West Randolph St., Chicago, Ill.
School Cafeterias. Booklet. 9 x 6 in. Illustrated. The design and equipment of school cafeterias with photographs of installation and plans for standardized outfits.

Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.
Electric Power for Buildings. Brochure, 14 pp., 8½ x 11 ins. Illustrated. A publication important to architects and engineers.
Variable-Voltage Central Systems as applied to Electric Elevators. Booklet, 13 pp., 8½ x 11 ins. Illustrated. Deals with an important detail of elevator mechanism.
Modern Electrical Equipment for Buildings. Booklet, 8½ x 11 ins. Illustrated. Lists many useful appliances.
Electrical Equipment for Heating and Ventilating Systems. Booklet, 24 pp., 8½ x 11 ins. Illustrated. This is "Motor Application Circular 7379."
Westinghouse Panelboards and Cabinets (Catalog 42-A). Booklet, 32 pp., 8½ x 11 ins. Illustrated. Important data on these details of equipment.
Beauty; Power; Silence; Westinghouse Fans (Dealer Catalog 45). Brochure, 16 pp., 8½ x 11 ins. Illustrated. Valuable information on fans and their uses.
Electric Range Book for Architects (A. I. A. Standard Classification 31 G-4). Booklet, 24 pp., 8½ x 11 ins. Illustrated. Cooking apparatus for buildings of various types.
Westinghouse Commercial Cooking Equipment (Catalog 280). Booklet, 32 pp., 8½ x 11 ins. Illustrated. Equipment for cooking on a large scale.
Electric Appliances (Catalog 44-A). 32 pp., 8½ x 11 ins. Deals with accessories for home use.

ELEVATORS

Otis Elevator Company, 260 Eleventh Ave., New York, N. Y.
Otis Push Button Controlled Elevators. Descriptive leaflets. 8½ x 11 in. Illustrated. Full details of machines, motors and controllers for these types.
Otis Geared and Gearless Traction Elevators of All Types. Descriptive leaflets. 8½ x 11 in. Illustrated. Full details of machines, motors and controllers for these types.
Escalators. Booklet. 8½ x 11 in. 22 pp. Illustrated. Describes use of escalators in subways, department stores, theaters and industrial buildings. Also includes elevators and dock elevators.

Richards-Wilcox Mfg. Co., Aurora, Ill.
Elevators. Booklet. 8½ x 11 in. 24 pp. Illustrated. Describes complete line of "Ideal" elevator door hardware and checking devices, also automatic safety devices.

Sedgwick Machine Works, 151 West 15th St., New York, N. Y.
Catalog and descriptive pamphlets, 4¼ x 8¼ in. 70 pp. Illustrated. Descriptive pamphlets on hand power freight elevators, sidewalk elevators, automobile elevators, etc.
Catalog and pamphlets. 8½ x 11 in. Illustrated. Important data on different types of elevators.

ENAMELING

Toch Brothers, 110 East 42nd Street, New York City.
Specifications for Dampproofing, Waterproofing, Enameling and Technical Painting. Complete and authoritative directions for use of an important line of materials.

FIREPROOFING—See also Construction, Fireproof

Concrete Engineering Co., Omaha, Nebr.
"Handbook of Fireproof Construction." Booklet, 53 pp., 8½ x 11 in. Valuable work on methods of fireproofing.

The General Fireproofing Building Products, Youngstown, Ohio.
Fireproofing Handbook, 8½ x 11 in. 64 pp. Illustrated. Gives methods of construction, specifications, data on Herringbone metal lath, steel tile, Trussit solid partitions, steel lumber, self-centering formless concrete construction.

FLOOR HARDENERS (CHEMICAL)

Sonneborn Sons, Inc., L., 116 Fifth Ave., New York, N. Y.
Lapidolith, the liquid chemical hardener. Complete sets of specifications for every building type in which concrete floors are used, with descriptions and results of tests.

FLOORS—STRUCTURAL

Truscon Steel Co., Youngstown, Ohio
Truscon Locktyle. Booklet, 8½ x 11 in., 8 pp. Illustrations of material and showing methods of application.
Truscon Floretyle Construction. Booklet, 8½ x 11 in., 16 pp. Illustrations of actual jobs under construction. Lists of properties and information on proper construction. Proper method of handling and tables of safe loads.

FLOORING

Armstrong Cork & Insulation Co., Pittsburgh, Pa.
Armstrong's Cork Tile Floors. Booklet, 7¾ x 10½ in. 30 pp. An illustrated work on cork flooring.

Armstrong Cork Co. (Linoleum Division), Lancaster, Pa.
Armstrong's Linoleum Floors. Catalog. 8½ x 11 in. 40 pp. Color plates. A technical treatise on linoleum, including table of gauges and weights and specifications for installing linoleum floors.
Armstrong's Linoleum Pattern Book, 1927. Catalog. 3½ x 6 in. 272 pp. Color Plates. Reproduction in color of all patterns of linoleum and cork carpet in the Armstrong line.
Quality Sample Book. 3½ x 5¾ in. Showing all gauges and thicknesses in the Armstrong line of linoleums.
Linoleum Layer's Handbook. 5 x 7 in. 32 pp. Instructions for linoleum layers and others interested in learning most satisfactory methods of laying and taking care of linoleum.
Enduring Floors of Good Taste. Booklet. 6 x 9 in. 48 pp. Illustrated in color. Explains use of linoleum for offices, stores, etc., with reproductions in color of suitable patterns, also specifications and instructions for laying.

Barber Asphalt Co., Philadelphia.
Specifications for Applying Genasco Asphalt Mastic. Booklet. 8 x 10½ in. Directions for using Asphalt Mastic for flooring.

Blabon Company, Geo. W., Nicetown, Philadelphia, Pa.
Planning the Color Schemes for Your Home. Brochure illustrated in color; 36 pp., 7½ x 10½ in. Gives excellent suggestions for use of color in flooring for houses and apartments.
Handy Quality Sample Folder of Linoleums. Gives actual samples of "Battleship Linoleum," cork carpet, "Feltex," etc.
Blabon's Linoleum. Booklet illustrated in color; 128 pp., 3½ x 8½ in. Gives patterns of a large number of linoleums.
Blabon's Plain Linoleum and Cork Carpet. Gives quality samples, 3 x 6 in. of various types of floor coverings.

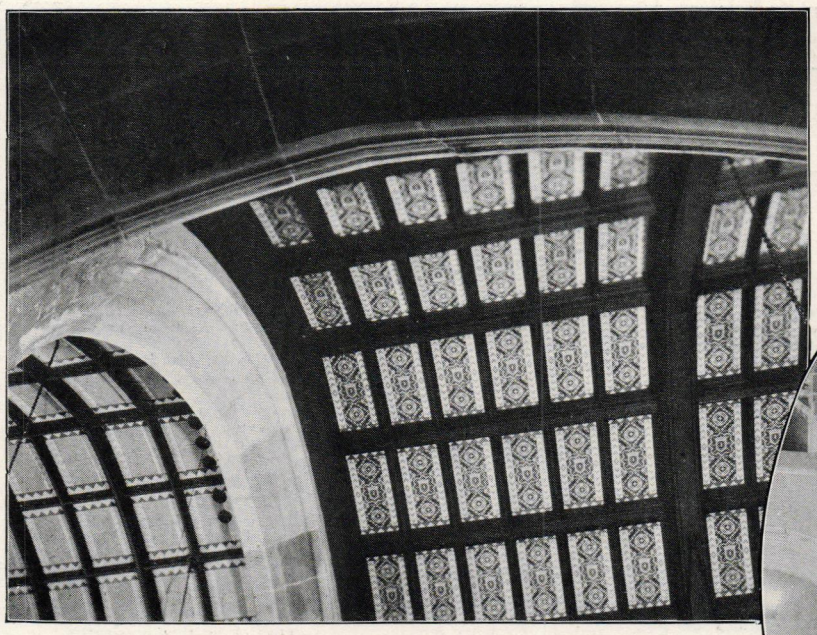
Bonded Floors Company, Inc., 1421 Chestnut St., Philadelphia, Pa.
A series of booklets, with full color inserts showing standard colors and designs. Each booklet describes a resilient floor material as follows:
Battleship Linoleum. Explains the advantages and uses of this durable, economical material.
Marble-ized (Cork Composition) Tile. Complete information on cork-composition marble-ized tile and the many artistic effects obtainable with it.
Treadlite (Cork Composition) Tile. Shows a variety of colors and patterns of this adaptable cork composition flooring.
Natural Cork Tile. Description and color plates of this super-quiet, resilient floor.
Practical working specifications for installing battleship linoleum, cork composition tile and cork tile.

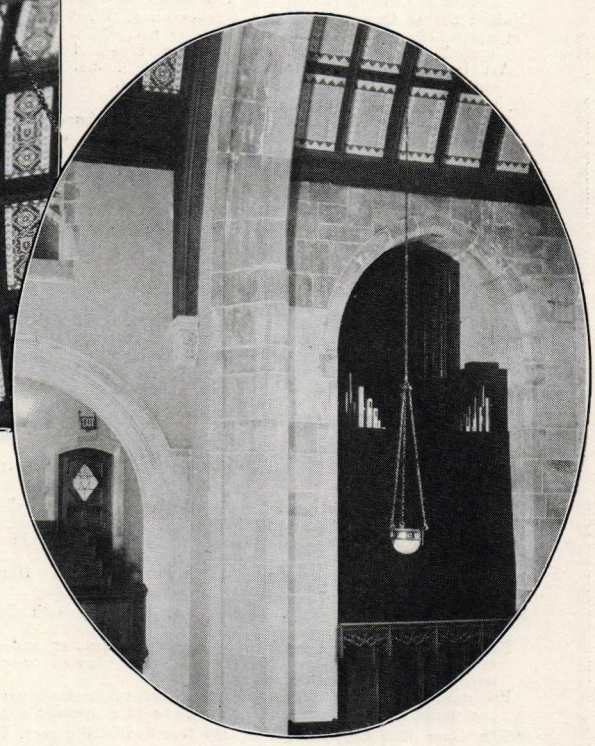
Carter Bloxonend Flooring Co., Keith & Perry Bldg., Kansas City, Mo.
Bloxonend Flooring. Booklet 3¼ x 6¼ in. 20 pp. Illustrated. Describes uses and adaptability of Bloxonend Flooring to concrete, wood or steel construction, and advantages over loose wood blocks.
File Folder, 9⅜ x 8⅝ in. For use in connection with A. I. A. system of filing. Contains detailed information on Bloxonend Flooring in condensed, loose-leaf form for specification writer and drafting room. Literature embodied in folder includes standard Specification Sheet covering the use of Bloxonend in general industrial service and Supplementary Specification Sheet No. 1, which gives detailed description and explanation of an approved method for installing Bloxonend in gymnasiums, armories, drill rooms and similar locations where maximum resiliency is required.

Albert Grauer & Co., 1408 Seventeenth Street, Detroit, Mich.
Grauer-Watkins Red Asphalt Flooring. Folder, 4 pp., 8½ x 11 in. Data on a valuable form of flooring.

Norton Company, Worcester, Mass.
Filing Folder. 8½ x 11¾ in. 27 pp. Illustrated with drawings. Specification data for architects.

Ritter Lumber Co., W. M., Columbus, Ohio.
Ritter Oak Flooring, brochure 5 x 7 in. 31 pp. Illustrated. Excellent data on floors of different kinds and of various woods.





Acousti-Celotex satisfied the requirements of the architects, Lowe & Bollenbacher, Chicago, for a permanent sound-absorbing material which would harmonize with their conception of beauty in the auditorium of the Bryn Mawr Community Church, Chicago. Installation of pre-decorated Acousti-Celotex by Ralph Renwick, Acousti-Celotex Contractor.

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Acousti-Celotex absorbs reverberations, echoes and unpleasant noise... easily applied to any surface... pleasing in appearance.

IN churches, auditoriums, offices, schools, hospitals and many other public buildings, good acoustics and absence of noise are essential.

To meet this requirement, leading architects are specifying Acousti-Celotex for walls and ceilings. For Acousti-Celotex absorbs nerve-wracking noise; kills reverberations and echoes. Better acoustics and clearer hearing in auditoriums . . . better working conditions in offices, are the result.

But Acousti-Celotex can do much more than quiet sound. The attractive appearance of Acousti-Celotex provides a pleasing interior finish in its natural state, or it may be painted or decorated in many ways. The illustrations above show two of the many beautiful effects easily obtained when this sound-absorbing material is used.

Made in convenient tile form, Acousti-Celotex is applied directly to the surface of any wall or ceiling, flat or curved. There are several different types of Acousti-Celotex, to meet all installation conditions. Acousti-Celotex is a complete sound-absorbing and decorative unit in itself. The rigid tiles become an integral part of the wall or ceiling, as permanent as the building itself.

The acoustics of old buildings, as well as new, can be improved with Acousti-Celotex. Fundamental changes in design are seldom necessary. Correct installation of Acousti-Celotex is possible on any kind of surface.

Our Acoustical Department will analyze any acoustical problem, and recommend treatment, free of charge. We have prepared a beautifully illustrated book in full color, showing interesting installations of Acousti-Celotex, and giving some idea of the harmonious decorative effects obtainable with this sound-absorbing material. May we send you a copy?

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ACOUSTI-CELOTEX
FOR SOUND ABSORPTION

SELECTED LIST OF MANUFACTURERS' PUBLICATIONS—*Continued from page 148*

FLOORING—Continued

Beauty Begins in the Forest.
Large illustrated folder on modern flooring.

U. S. Gypsum Co., Chicago.
Pyrobar Floor Tile. Folder. 8½ x 11 in. Illustrated. Data on building floors of hollow tile, and tables on floor loading.

United States Quarry Tile Co., Parkersburg, W. Va.
Quarry Tiles for Floors. Booklet, 119 pp., 8½ x 11 ins. Illustrated. General catalog. Details of patterns and trim for floors.
Art Portfolio of Floor Designs. 9¼ x 12¼ ins. Illustrated in colors. Patterns of quarry tiles for floors.

U. S. Rubber Co., 1790 Broadway, New York.
Period Adaptations for Modern Floors. Brochure. 8 x 11 in. 60 pp. Richly illustrated. A valuable work on the use of rubber tile for flooring in interiors of different historic styles.

Zenitherm Co., Inc., 390 Frelinghuysen Avenue, Newark, N. J.
Zenitherm Floors. Booklet, 14 pp., 8½ x 11 ins. Illustrated. Floors for interior and semi-interior use.
Contractors Handbook. Brochure, 10 pp., 4½ x 6 ins. Complete data for using Zenitherm.

FOLDING PARTITIONS

Irving Hamlin, Evanston, Ill.
The Evanston Sound-Proof Door. Brochure. 8½ x 11 in. 8 pp. Full data on Hamlinized Folding Partitions and Evanston Sound-Proof Doors.

FURNITURE

American Seating Co., 14 E. Jackson Blvd., Chicago, Ill.
Ars Ecclesiastica Booklet. 6 x 9 in. 48 pp. Illustrations of church fitments in carved wood.
Theater Chairs. Booklet. 6 x 9 in. 48 pp. Illustrations of theater chairs.

Concealed Bed Corporation, 58 East Washington St., Chicago.
Eight-Room Convenience at Six-Room Price. Booklet, 16 pp. 3¼ x 5 in. Illustrated. Data on concealed beds for home owners.
Save Floor Space. Brochure, 36 pp. 4 x 8¾ in. Illustrated. Describes Holmes beds, giving measurement data.

Kensington Mfg. Company, Showrooms, 41 West 45th St., New York.
Illustrated booklet indicative of the scope, character and decorative quality of Kensington Furniture, with plan of co-operation with architects, sent on request.
Photographs and full description of hand-made furniture in all the period styles, furnished in response to a specific inquiry.

White Door Bed Company, The, 130 North Wells Street, Chicago, Ill.
Booklet. 8½ x 11 in. 20 pp. Illustrated. Describes and illustrates the use of "White" Door Bed and other space-saving devices.

GARDEN ACCESSORIES

Davey Tree Expert Company, The, 907 Elm St., Kent, Ohio.
When Your Trees Need The Tree Surgeon. Booklet. 16 pp. 8 x 9¼ in. Illustrated. Lists and explains a number of serious tree troubles of common occurrence; contrasts the scientific methods used by properly trained and conscientious men to remedy these troubles with the work of unscrupulous or untrained men.

GARAGES

Ramp Buildings Corporation, 21 East 40th Street, New York.
Building Garages for Profitable Operation. Booklet. 8½ x 11 in. 16 pp. Illustrated. Discusses the need for modern mid-city parking garages, and describes the d'Humy Motoramp system of design, on the basis of its superior space economy and features of operating convenience. Gives cost analyses of garages of different sizes, and calculates probable earnings.
Garage Design Data. Series of informal bulletins issued in loose-leaf form, with monthly supplements.

GLASS CONSTRUCTION

Mississippi Wire Glass, 220 Fifth Avenue, New York.
Mississippi Wire Glass. Catalog. 3⅞ x 8½ in. 32 pp. Illustrated. Covers the complete line.

GRILLES

Wickwire Spencer Steel Co., Inc., 41 East 42nd St., New York.
Clinton Grilles. Booklet. 9 x 11 in. 12 pp. A brochure on metal grilles, particularly for use over heating radiators.

HARDWARE

P. & F. Corbin, New Britain, Conn.
Early English and Colonial Hardware. Brochure, 8½ x 11 in. An important illustrated work on this type of hardware.
Locks and Builders' Hardware. Bound Volume, 486 pp., 8½ x 11 ins. An exhaustive, splendidly prepared volume.

Cutler Mail Chute Company, Rochester, N. Y.
Cutler Mail Chute Model F. Booklet. 4 x 9¼ in. 8 pp. Illustrated.

Richards-Wilcox Mfg. Co., Aurora, Ill.
Distinctive Garage Door Hardware. Booklet. 8½ x 11 in. 65 pp. Illustrated. Complete information accompanied by data and illustrations on different kinds of garage door hardware.

Sargent & Company, New Haven, Conn.
Details to Which Standard Hardware Can Be Applied. Booklet. 6 pp. 9 x 12 in. Illustrated. Treats with diagrams, portions of doors and windows to which hardware can be applied.
Sargent Locks and Hardware. Bound volume, 534 pp., 9 x 12 in., illustrated. Complete catalog of Sargent line of hardware.

HEATING EQUIPMENT

American Blower Co., 6004 Russell Street, Detroit.
Heating and Ventilating Utilities. A binder containing a large number of valuable publications, each 8½ x 11 in., on these important subjects.

American Radiator Company, The, 40 West 40th St., N. Y. C.
Ideal Type "A" Heat Machine. Catalog 7¾ x 10½ in. 32 pp. Illustrated in 4 colors. A brochure of high-efficiency heating apparatus for residences and commercial buildings.
Ideal Water Tube Boilers. Catalog 7¾ x 10⅝. 32 pp. Illustrated in 4 colors. Data on a complete line of Heating Boilers of the Water Tube type.
Ideal Smokeless Boilers. Catalog 7¾ x 10½ in. 32 pp. Illustrated in 4 colors. Fully explains a boiler free from the objection of causing smoke.
Ideal Boilers for Oil Burning. Catalog 5½ x 8½ in. 36 pp. Illustrated in 4 colors. Describing a line of Heating Boilers especially adapted to use with Oil Burners.
Corto—The Radiator Classic. Brochure 5½ x 8½ in. 16 pp. Illustrated. A brochure on a space-saving radiator of beauty and high efficiency.
Ideal Arcola Radiator Warmth. Brochure 6¼ x 9¼. Illustrated. Describes a central all-on-one-floor heating plant with radiators for small residences, stores, and offices.

James B. Clow & Sons, 534 S. Franklin St., Chicago.
Clow Gasteam Vented Heating System. Brochure, 24 pp., 8½ x 11 ins. Illustrated. Deals with a valuable form of heating equipment for using gas.

C. A. Dunham Company, 450 East Ohio Street, Chicago, Ill.
Dunham Radiator Trap. Bulletin 101. 8 x 11 in. 12 pp. Illustrated. Explains working of this detail of heating apparatus.
Dunham Packless Radiator Valves. Bulletin 104. 8 x 11 in. 8 pp. Illustrated. A valuable brochure on valves.
Dunham Return Heating System. Bulletin 109. 8 x 11 in. Illustrated. Covers the use of heating apparatus of this kind.
Dunham Vacuum Heating System. Bulletin 110. 8 x 11 in. 12 pp. Illustrated.

Excelso Specialty Works, 119 Clinton St., Buffalo, N. Y.
Excelso Water Heater. Booklet. 12 pp. 3 x 6 in. Illustrated. Describing the new Excelso method of generating domestic hot water in connection with heating boilers. (Firepot Coil eliminated.)

The Fulton Sylphon Company, Knoxville, Tenn.
Sylphon Temperature Regulators. Illustrated brochures, 8½ x 11 ins., dealing with general architectural and industrial applications; also specifically with applications of special instruments.
Sylphon Heating Specialties. Catalog No. 200, 192 pp., 3½ x 6¾ ins. Important data on heating.

Illinois Engineering Co., Racine Ave., at 21st St., Chicago, Ill.
Vapor Heat Bulletin 21. 8½ x 11 in. 32 pp. Illustrated. Contains new and original data on Vapor Heating. Rules for computing radiation, pipe sizes, radiator tappings. Steam table showing temperature of steam and vapor at various pressures, also description of Illinois Vapor Specialties.

International Heater Company, Utica, N. Y.
International Economy Blue Front Warm Air Furnace. Brochure, 23 pp., 7½ x 10⅝ in. A valuable publication dealing with an important type of heating.
International Carton Self Cleaning Warm Air Furnaces. Booklet, 31 pp., 7½ x 10⅝ in. Illustrated. Complete data on warm air heating.
International Economy Boilers. Booklet, 36 pp., 7½ x 19⅝ ins. Deals with the vital matter of boilers.
International Economy Smokeless Boilers. Brochure, 40 pp., 7½ x 10⅝ ins. Illustrated. Discusses an important type of smokeless boiler.
International Hot Water Supply Boilers. Booklet, 8 pp., 7½ x 10⅝ ins. Data regarding boilers for supplying hot water.

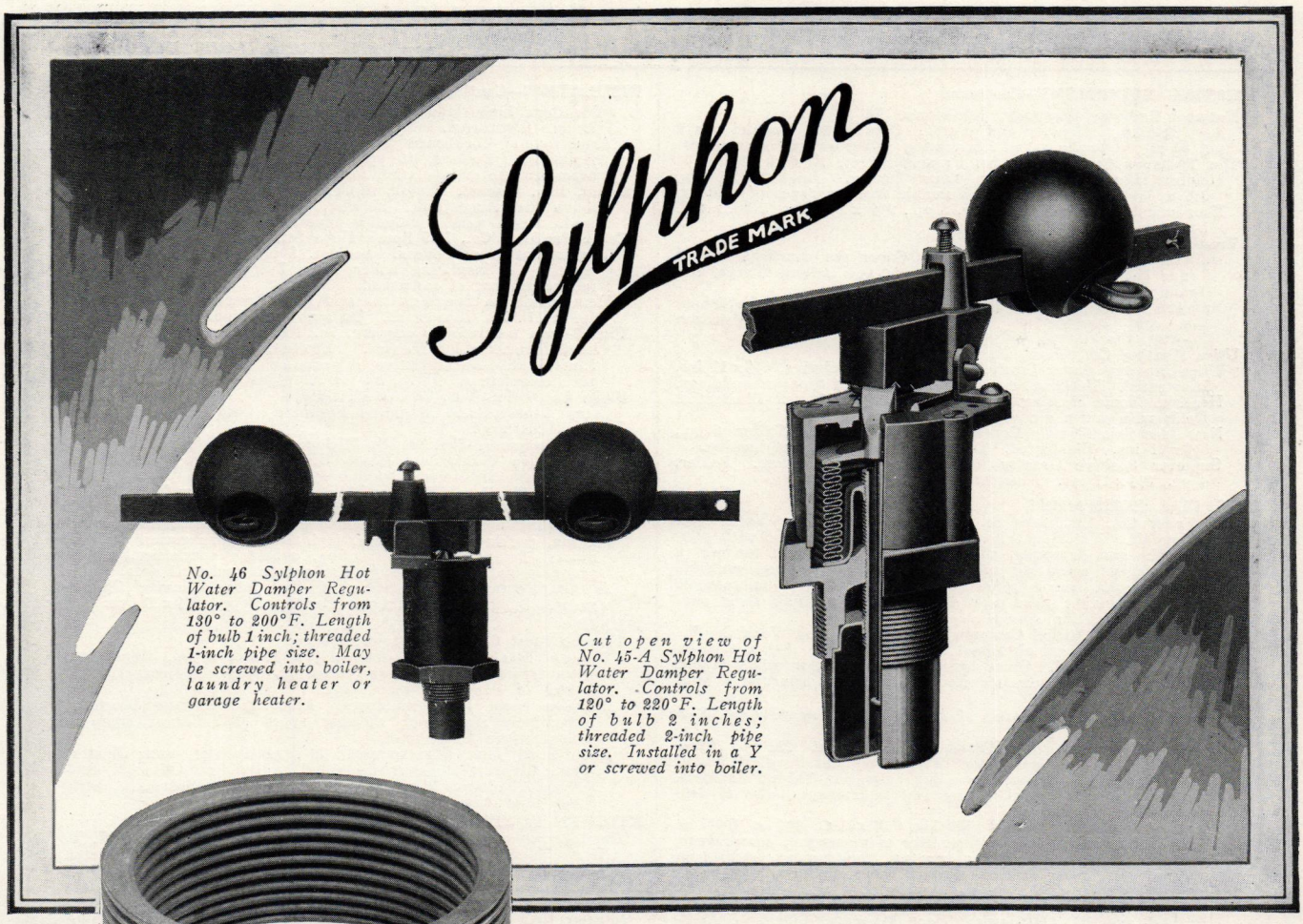
S. T. Johnson Co., Oakland, Calif.
Bulletin No. 4A. Brochure, 8 pp., 8½ x 11 in. Illustrated. Data on different kinds of oil-burning apparatus.
Bulletin No. 31. Brochure, 8 pp., 8½ x 11 in. Illustrated. Deals with Johnson Rotary Burner With Full Automatic Control.

Kewanee Boiler Co., Kewanee, Ill.
Kewanee on the Job. Catalog. 8½ x 11 in. 80 pp. Illustrated. Showing installations of Kewanee boilers, water heaters, radiators, etc.
Catalog No. 78, 6 x 9 in. Illustrated. Describes Kewanee Firebox Boilers with specifications and setting plans.
Catalog No. 79. 6 x 9 in. Illustrated. Describes Kewanee power boilers and smokeless tubular boilers with specifications.

May Oil Burner Corp., Baltimore.
Adventures in Comfort. Booklet, 24 pp., 6 x 9 ins. Illustrated. Non-technical data on oil as fuel.
Taking the Quest out of the Question. Brochure, 16 pp., 6 x 9 ins. Illustrated. For home owners interested in oil as fuel.

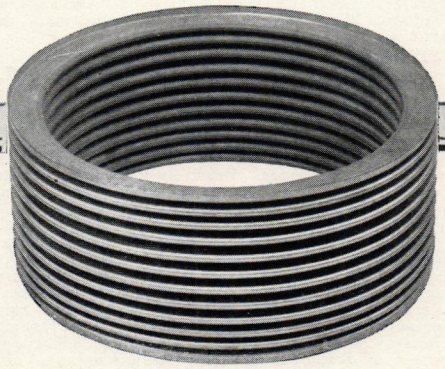
Milwaukee Valve Co., Milwaukee.
MILVACO Vacuum & Vapor Heating System. Nine 4-p. bulletins, 8½ x 11 ins. Illustrated. Important data on heating.
MILVACO Vacuum & Vapor Heating Specialties. Nine 4-p. bulletins, 8½ x 11 ins. Illustrated. Deal with a valuable line of specialties used in heating.

Nash Engineering Company, South Norwalk, Conn.
No. 37. Devoted to Jennings Hytor Return Line Vacuum Heating Pumps, electrically driven, and supplied in standard sizes up to 300,000 square feet equivalent direct radiation.
No. 16. Dealing with Jennings Hytor Air Line Heating Pumps.
No. 17. Describing Jennings Hytor Condensation Pumps, sizes up to 70,000 square feet equivalent direct radiation.
No. 25. Illustrating Jennings Return Line Vacuum Heating Pumps. Size M, for equivalent direct radiation up to 5,000 square feet.



No. 46 Sylphon Hot Water Damper Regulator. Controls from 130° to 200°F. Length of bulb 1 inch; threaded 1-inch pipe size. May be screwed into boiler, laundry heater or garage heater.

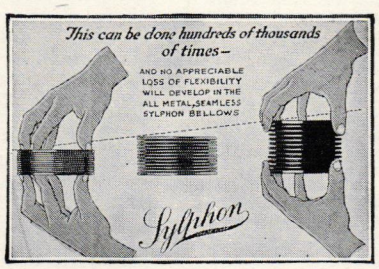
Cut open view of No. 45-A Sylphon Hot Water Damper Regulator. Controls from 120° to 220°F. Length of bulb 2 inches; threaded 2-inch pipe size. Installed in a Y or screwed into boiler.



The well known Sylphon Bellows is the diaphragm of every genuine Sylphon Damper Regulator. It is drawn and formed from a single sheet of metal, without seam or joint throughout its entire length, and is the most flexible, sensitive and durable expansion unit known to engineering science.

Hot Water Damper Regulators

EVERY hot water house heating boiler should be equipped with automatic damper regulation, just as steam boilers are—to save coal and help produce uniform heating. But there is a great difference in the reliability, responsiveness and durability of damper regulators. The diaphragm is the heart and life of any damper regulator; and if it is made of rubber, solder or other perishable materials you know it will not long function satisfactorily. You can be sure of the utmost in quick response to slight changes in temperature, smooth, dependable action, and long life regulation, if you specify either of the above Sylphon Damper Regulators on your hot water heating jobs.



Insist upon the genuine —refuse imitations. Ask for Bulletin FDR-5.

The Fulton Sylphon Company

Originators and Patentees of the Sylphon Bellows

Knoxville, Tennessee, U.S.A.

Sales Offices in: New York, Chicago, Detroit, Boston, Philadelphia and all the principal cities in U. S. European Representatives: Crosby Valve & Engineering Co., Ltd., 41-42 Foley Street, London, W. 1, England. Canadian Representatives: Darling Bros., Ltd., 120 Prince Street, Montreal, Canada

SELECTED LIST OF MANUFACTURERS' PUBLICATIONS—*Continued from page 150*

HEATING EQUIPMENT—Continued

National Radiator Company, Johnstown, Pa.
Aero Radiators; Beauty and Worth. Catalog 34. Booklet 6 x 9 in., 20 pp., describing and illustrating radiators and accessories.

The Thatcher Company, 39 St. Francis Street, Newark, N. J.
Helpful Hints on Choosing Your Heater. Booklet, 20 pp., 3½ x 6¼ ins. Illustrated. Valuable data on types of heating.
Economical Warmth. Brochure, 8 pp., 3½ x 6¼ ins. Illustrated. Deals with economical heating.

Trane Co., The, La Crosse, Wis.
Bulletin 14. 16 pp. 8½ x 10⅝ in. Cover the complete line of Trane Heating Specialties, including Trane Bellows Traps, and Trane Bellows Packless Valves.
Bulletin 20. 24 pp. 8½ x 10⅝ in. Explains in detail the operation and construction of Trane Condensation. Vacuum, Booster, Circulating, and similar pumps.

Utica Heating Co., Utica, N. Y.
Utica-Imperial Super Smokeless Boilers. Brochures, 8½ x 11 ins. Illustrated. Give data on boilers for different types of buildings.
Heathful Home Heating. Booklet, 7pp., 8½ x 11 ins. Illustrated. Deals with warm air heating.
New Idea Scientifically Correct Pipeless Furnace. Folder, 6 pp., 8½ x 11 ins. Illustrated. Data on valuable type of heating.
Superior Positive Gravity Return Warm Air System. Folder, 4 pp., 8½ x 11 ins. Illustrated.

HOSPITAL EQUIPMENT

The Frink Co., Inc., 24th St. and Tenth Ave., New York City.
Catalog 426. 7 x 10 in., 16 pp. A booklet illustrated with photographs and drawings, showing the types of light for use in hospitals, as operating table reflectors, linolite and multilite concentrators, ward reflectors, bed lights and microscopic reflectors, giving sizes and dimensions, explaining their particular fitness for special uses.

The International Nickel Company, 67 Wall St., New York, N. Y.
Hospital Applications of Monel Metal. Booklet. 8½ x 11½ in. 16 pp. Illustrated. Gives types of equipment in which Monel Metal is used, reasons for its adoption, with sources of such equipment.

The Kny-Scheerer Corporation of America, 119 Seventh Ave., New York.
Hospital Equipment, 16th Edition. 7¼ x 10½ in. 232 pp. Illustrated. Complete description of Hospital and Surgical Furniture, Hospital Appliances including Operating Tables, Cabinets, Sterilizers for Water, Dressing and Instruments, also Hydrotherapeutic Apparatus.
Surgical Sundries. Second Edition. Booklet. 7⅜ x 10½ in. 48 pp. Illustrated. A complete line of glassware, enamelware, rubber goods, restraint apparatus, instrument sterilizers, sputum cups, wheel chairs and sick room comforts.
Electro Medical. 25th Edition. Booklet. 7¼ x 10½ in. 160 pp. Illustrated. A complete line of Albee Bone Sets. Apparatus for AC and DC Cystocopes, Heat Magnets, Vibrators, Compressors, Electric Light Baths, High Frequency Apparatus and X-Ray Apparatus and Accessories.

Wilmot Castle Company, Rochester, N. Y.
Sterilizer Equipment for Hospitals. Book, 76 pp. 8½ x 11 in. Illustrated. Gives important and complete data on sterilization of utensils and water, information on dressings, etc.
Sterilizer Specifications. Brochure, 12 pp. 8½ x 11 in. Practical specifications for use of architects and contractors.
Architects' Data Sheets. Booklet, 16 pp. 8½ x 11 in. Illustrated. Information on piping, venting, valving and wiring for hospital sterilizer installations.
Hospital Sterilizing Technique. Five booklets, 8 to 16 pp. 6 x 9 in. Illustrated. Deals specifically with sterilizing instruments, dressings, utensils, water, and rubber gloves.

HOTEL EQUIPMENT

Pick & Company, Albert, 208 West Randolph Street, Chicago, Ill.
Some Thoughts on Furnishing a Hotel. Booklet, 7½ x 9 ins. Data on complete outfitting of hotels.

INCINERATORS

Kerner Incinerator Company, 715 E. Water St., Milwaukee, Wis.
Incinerators (Chimney-fed) Catalog No. 15 (Architect and Builders' Edition). Size 8½ x 11 in., 16 pp. Illustrated. Describes principle and design of Kernerator Chimney-fed Incinerators for residences, apartments, hospitals, schools, apartment hotels, clubs and other buildings. Shows all standard models and gives general information and working data.
Sanitary Elimination of Household Waste, booklet, 4 x 9 in., 16 pp., Illustrated. Gives complete information on the Kernerator for residences.
Garbage and Waste Disposal for Apartment Buildings, folder, 8½ x 11 in., 8 pp. Illustrated. Describes principle and design of Kernerator-Chimney-fed Incinerator for apartments and gives list of buildings where it has been installed.
Sanitary Disposal of Waste in Hospitals, booklet. 4 x 9 in., 12 pp. Illustrated. Shows how this necessary part of hospital service is taken care of with the Kernerator. Gives list of hospitals where installed.

INSULATING LUMBER

Mason Fibre Co., 111 West Washington St., Chicago, Ill.
Booklet, 12 pp., 8½ x 11 in. Illustrated. Gives complete specifications for use of insulating lumber and details of construction involving its use.

INSULATION

Armstrong Cork & Insulation Co., Pittsburgh, Pa.
The Insulation of Roofs with Armstrong's Corkboard. Booklet. Illustrated. 7½ x 10½ in. 32 pp. Discusses means of insulating roofs of manufacturing or commercial structures.
Insulation of Roofs to Prevent Condensation. Illustrated booklet. 7½ x 10½ in. 36 pp. Gives full data on valuable line of roof insulation.
Filing Folder for Pipe Covering Data. Made in accordance with A. I. A. rules.

INSULATION—Continued

"The Cork Lined House Makes a Comfortable Home." 5 x 7 in. 32 pp. Illustrated.
Armstrong's Corkboard Insulation for Walls and Roofs of Buildings. Booklet, 66 pp., 9½ x 11¾ ins. Illustrates and describes use of insulation for structural purposes.

Cabot, Inc., Samuel, Boston, Mass.
Cabot's Insulating Quilt. Booklet, 7½ x 10½ ins., 24 pp., Illustrated. Deals with a valuable type of insulation.

Celite Products Co., 1320 South Hope St., Los Angeles.
The Insulation of Boilers. Booklet. 8 pp., 8½ x 11 ins. Illustrated. On insulating boiler walls, breechings, and stacks to reduce amount of radiation.
Heat Insulation Specifications and Blue Prints. Booklet, 20 pp., 8½ x 11 ins. Illustrated. On approved types of insulation.

Flax-li-num Insulating Company, St. Paul, Minn.
"Heat Insulation for Houses." Booklet, 64 pp., 9¾ x 11¼ ins. Illustrated. Authoritative information on thermal insulation with complete specifications for all types of buildings.

Philip Carey Co., The, Cincinnati, Ohio.
Carey Asbestos and Magnesia Products. Catalog. 6 x 9 in. 72 pp. Illustrated.

Celotex Company, The, 645 N. Michigan Ave., Chicago, Ill.
The Hidden Comfort of Costly Homes. Booklet 8½ x 11 in. Celotex Specifications. Booklet 8½ x 11 in.

Johns-Manville Corp., Madison Ave. & 41st St., New York, N. Y.
Johns-Manville Service to Industry. Catalog. 8½ x 11 ins. 300 pp. Illustrated. Contains valuable data on all forms of insulation, packings, steam traps, high temperature cements, brake blocks, linings, flooring, roofing, asbestos specialties, waterproofing and dampproofing, also general technical data.
A Representation Installation of the Johns-Manville Underground System of Insulation. Booklet 20 pp., 8½ x 11 ins.

JOISTS

Truscon Steel Co., Youngstown, Ohio
Truscon Steel Joists. Booklet, 8½ x 11 in., 16 pp. Illustrated with typical buildings and showing details of construction. Tables of sizes and safe loads.
Truscon Steel Joist Buildings. Illustrated 32-page brochure, attractively illustrated, showing types of buildings equipped with Truscon Steel Joist.
Strip Steel Joist Construction. 14-page booklet, with illustrations. Reprint of paper presented to Building Officials' Conference, Madison, Wis., 1925, by J. J. Calvin, Secretary, Strip Steel Joist Association.

KITCHEN EQUIPMENT

The International Nickel Company, 67 Wall St., New York, N. Y.
Hotels, Restaurants and Cafeteria Applications of Monel Metal. Booklet. 8½ x 11 in. 32 pp. Illustrated. Gives types of equipment in which Monel Metal is used, with service data and sources of equipment.

Mueller Co., Decatur, Ill.
Catalog G, 8 x 11 in., 316 pages. Profusely illustrated. Contains full data on plumbing, water and gas brass goods, including valves, faucets, traps, regulators, built-in bath equipment, and automatic systems of hot water control. Complete details are presented with a number of data sheets showing roughing-in-measurements for built-in bath equipment.

Pick & Company, Albert, 208 W. Randolph St., Chicago, Ill.
School Cafeteria. Portfolio. 17 x 11 in. 44 pp. Illustrated. An exhaustive study of the problems of school feeding, with copious illustrations and blue prints. Very valuable to the architect.
School Cafeterias. Booklet. 9 x 6 in. Illustrated. The design and equipment of school cafeterias with photographs of installation and plans for standardized outfits.

LABORATORY EQUIPMENT

Alberene Stone Co., 153 West 23rd Street, New York City
Booklet 8¾ x 11¼ in., 26 pp. Stone for laboratory equipment, shower partitions, stair treads, etc.

Duriron Company, Dayton, Ohio.
Duriron Acid, Alkali and Rust-proof Drain Pipe and Fittings. Booklet, 8½ x 11 ins., 20 pp. Full details regarding a valuable form of piping.

LANTERNS

Todhunter, Arthur, 119 E. 57th St., New York.
Hand Wrought Lanterns. Booklet. 5¼ x 6¼ in. 20 pp. Illustrated in Black and White. With price list. Lanterns appropriate for exterior and interior use, designed from old models and meeting the requirements of modern lighting.

LATH, METAL AND REINFORCING

The General Fireproofing Building Products, Youngstown, Ohio.
Herringbone Metal Lath Handbook. 8½ x 11 in. 32 pp. Illustrated. Standard specifications for Cement Stucco on Herringbone.
Rigid Metal Lath and interior plastering.

Milwaukee Corrugating Co., Milwaukee, Wis.
The Milcor Manual. Booklet 8½ x 11 in. 64 pp. Illustrated. Covers Milcor methods and materials, metal lath, corner beads, steel domes, channels, etc.

Northwestern Expanded Metal Co., 1234 Old Colony Building, Chicago, Ill.
Northwestern Expanded Metal Products. Booklet. 8½ x 10¾ in. 16 pp. Fully illustrated, and describes different products of this company, such as Kno-burn metal lath, 20th Century Corrugated. Plaster-Sava and Longspan lath channels, etc.

Wickwire Spencer Steel Co., Inc., 41 East 42nd St., New York.
Clinton Wire Lath. Brochure. 9 x 11 in. 51 pp. A valuable booklet on metal lathing and the proper method of using it.

Truscon Steel Company, Youngstown, Ohio.
Truscon 1-A Metal Lath. 12-page booklet, 8½ x 11 in., beautifully printed, with illustrations of details of lath and method of application.
Truscon ¾-inch Hy-Rib for Roofs, Floors and Walls. Booklet, 8½ x 11in., illustrating Truscon ¾-in. Hy-Rib as used in industrial buildings, plates of typical construction. Progressive steps of construction. Specification and load tables.

Roof Insulation Should Last the Life of the Roof Deck

"HOW long will roof insulation last and continue to function effectively as a heat insulator?"

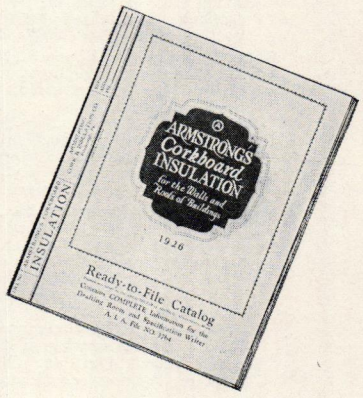
This very pertinent question can be answered positively as to Armstrong's Corkboard: It has already been in use for as long as fifteen years, and shows no deterioration or loss of its original insulating efficiency.

Armstrong's Corkboard is pure cork, nonabsorbent and nondeteriorating. It will not decay or disintegrate, nor does it shrink or swell, or warp, or open up at the joints. Armstrong's Corkboard, properly laid, will stay indefinitely just where it is put without any change in its heat-retarding efficiency or structural properties. When the roof over it is gone, new roofing may be laid over Armstrong's Corkboard without replacing the insulation. Furthermore, Armstrong's Corkboard is slow burning and is not ignited by sparks or embers.

More and more, roof insulation is becoming standard practice. Insulate your roofs permanently with Armstrong's Corkboard.

Armstrong's Corkboard Insulation

for the Roofs of all Kinds of Buildings



Information File for the Architect

Everything the architect, draftsman, engineer or specification writer will want to know about insulation with Armstrong's Corkboard has been compiled for ready reference in this file. Sent free on request. Address Armstrong Cork & Insulation Company, 132 Twenty-fourth Street, Pittsburgh, Pa.

24,000 square feet of Armstrong's Corkboard were used to insulate the roof of the Wyandotte County Court House, Kansas City, Kansas.

SELECTED LIST OF MANUFACTURERS' PUBLICATIONS—*Continued from page 152*

LAUNDRY CHUTES

The Pfaudler Company, 217 Cutler Building, Rochester, N. Y.
Pfaudler Glass-Lined Steel Laundry Chutes. Booklet. 5⅛ x 7⅜ in. 16 pp. Illustrated. A beautifully printed brochure describing in detail with architects' specifications THE PFAUDLER GLASS LINED STEEL LAUNDRY CHUTES. Contains views of installations and list of representative examples.

LAUNDRY MACHINERY

American Laundry Machinery Co., Norwood Station, Cincinnati, Ohio.
Functions of the Hotel and Hospital Laundry. Brochure, 8 pp., 8½ x 11 ins. Valuable data regarding an important subject.

LIGHTING EQUIPMENT

The Frink Co., Inc., 24th St. and 10th Ave., New York City.
Catalog 415. 8½ x 11 in. 46 pp. Photographs and scaled cross-sections. Specialized bank lighting, screen and partition reflectors, double and single desk reflectors and Polaralite Signs.

Guth Company, The Edwin F., 2615 Washington Ave., St. Louis, Mo.
Guth Lighting Equipment (Catalog No. 15). Booklet, 8½ x 11 ins. Fully illustrated, and covering lighting fixtures for buildings of all kinds.
Forge Craft (Catalog No. 16). Booklet, 16 pp., 8½ x 10¾ ins. Brochure dealing specifically with fixtures intended for use in buildings of the so-called "bungalow" type.
Aglite Porcelain Enameled Illuminators. Folder, 4 pp., 8½ x 11 in. on a new and improved type of lighting.

Holophane Glass Company, Inc., 342 Madison Ave., New York City.
Holophane Helps to Make Well Known Quality Products. Brochure. 20 pp., 8½ x 11 in. Deals with lighting industrial buildings, giving illustrations of well lighted interiors.
Modern Retailing Success. Booklet, 16 pp., 8½ x 11 in. Lighting of shops and show windows. Illustrations give many interesting suggestions.
Holophane Catalog; Commercial edition. Brochure, 40 pp., 8½ x 11 in. General catalog of details of lighting equipment.
Modern School Lighting. Booklet 35 pp., 6 x 9 in. Excellent work on lighting school rooms, gymnasiums, etc.

MAIL CHUTES

Cutler Mail Chute Company, Rochester, N. Y.
Cutler Mail Chute Model F. Booklet. 4 x 9¼ in. 8 pp. Illustrated.

MANTELS

The Arutex Company, Inc., 133 East 43rd St., New York.
The Vogue of the Mantel. Brochure, 32 pp., 5 x 7½ ins. Illustrated. Valuable catalog of composition mantels and of fireplace accessories.

Arthur Todhunter, 119 E. 57th St., New York, N. Y.
Georgian Mantels. New Booklet. 24 pp. 5¼ x 6¼ in. A fully illustrated brochure on eighteenth century mantels. Folders give prices of mantels and illustrations and prices of fireplace equipment.

MARBLE

The Georgia Marble Company, Tate, Ga. New York Office, 1328 Broadway.
Why Georgia Marble is Better. Booklet. 3⅜ x 6 in. Gives analysis, physical qualities, comparison of absorption with granite, opinions of authorities, etc.
Convincing Proof. 3⅜ x 6 in. 8 pp. Classified list of buildings and memorials in which Georgia Marble has been used, with names of Architects and Sculptors.

METALS

American Sheet & Tin Plate Co., Frick Building, Pittsburgh, Pa.
Reference Book. Pocket Ed. 2½ x 4½ in. 168 pp. Illustrated. Covers the complete line of Sheet and Tin Mill Products.
Apollo and Apollo-Keystone Galvanized Sheets. Catalog. 8½ x 11 in. 20 pp. Illustrated.
Research on the Corrosion Resistance of Copper Steel. Booklet. 8½ x 11 in. 24 pp. Illustrated. Technical information on results of atmospheric corrosion tests of various sheets under actual weather conditions.

The International Nickel Company, 67 Wall St., New York, N. Y.
The Choice of a Metal. Booklet. 6¼ x 3 in. 166 pp. Illustrated. Monel Metal—its qualities, use and commercial forms, briefly described.

MILL WORK—See also Wood

Curtis Companies Service Bureau, Clinton, Iowa.
Architectural Interior and Exterior Woodwork. Standardized. Book. 9 x 11½ in. 240 pp. Illustrated. This is an Architects' Edition of the complete catalog of Curtis Woodwork, as designed by Trowbridge & Ackerman. Contains many color plates.
Better Built Homes. Vols. XV-XVIII incl. Booklet. 9 x 12 in. 40 pp. Illustrated. Designs for houses of five to eight rooms, respectively, in several authentic types, by Trowbridge & Ackerman, architects for the Curtis Companies.
Curtis Details. Booklet. 19½ x 23½ in. 20 pp. Illustrated. Complete details of all items of Curtis woodwork, for the use of architects.

Hartmann-Sanders Company, 2155 Elston Ave., Chicago, Ill.
Column Catalog. 7½ x 10 in. 48 pp. Illustrated. Contains prices on columns 6 to 36 in. diameter, various designs and illustrations of columns and installations.
The Pergola Catalog. 7½ x 10 in. 64 pp. Illustrated. Contains illustrations of pergola lattices, garden furniture in wood and cement, garden accessories.

Roddis Lumber and Veneer Co., Marshfield, Wis.
Roddis Doors. Brochure, 24 pp., 5¼ x 8½ in. Illustrated price list of doors for various types of buildings.
Roddis Doors, Catalog G. Booklet, 183 pp., 8½ x 11 in. Completely covers the subject of doors for interior use.
Roddis Doors for Hospitals. Brochure, 15 pp., 8½ x 11 in. Illustrated work on hospital doors.
Roddis Doors for Hotels. Brochure, 15 pp., 8½ x 11 in. Illustrated work on doors for hotel and apartment buildings.

MORTAR COLORS

Clinton Metallic Paint Co., Clinton, N. Y.
Clinton Mortar Colors. Folder. 8½ x 11 in. 4 pp. Illustrated in color, gives full information concerning Clinton Mortar Colors with specific instructions for using them.
Color Card. 6½ x 3¼ in. Illustrates in color the ten shades in which Clinton Mortar Colors are manufactured.
Something new in Stucco. Folder. 3½ x 6 ins. An interesting folder on the use of coloring matter for stucco-coated walls.

PAINTS, STAINS, VARNISHES AND WOOD FINISHES

Cabot, Inc., Samuel, Boston, Mass.
Cabot's Creosote Stains. Booklet. 4 x 8½ in. 16 pp. Illustrated.

The Glidden Company, Cleveland, Ohio.
More Daylight. 8 x 10½ in. 20 pp. Portraying by illustrations and text the need and methods of modern mill painting.
Glidden Specification Book. 8 x 10¾ in. 12 pp. Complete architectural specifications for Glidden Paints and Varnishes, including Ripolin. Directions for the proper finishing of wood,

A. C. Horn Company, Long Island City, N. Y.
Keramic Catalog. Booklet. 26 pp., 8½ x 11 in. A magnificent brochure illustrated in color, describing a valuable line of specialties for use with concrete floors—colorings, hardeners, waterproofing, etc.

National Lead Company, 111 Broadway, New York, N. Y.
Handy Book on Painting. Book. 5½ x 3¼ in. 100 pp. Gives directions and formulæ for painting various surfaces of wood, plaster, metals, etc., both interior and exterior.
Red Lead in Paste Form. Booklet. 6¼ x 3½ in. 16 pp. Illustrated. Directions and formulæ for painting metals.
Came Lead. Booklet. 8¾ x 6 in. 12 pp. Illustrated. Describes various styles of lead cames.
Cinch Anchoring Specialties. Booklet. 6 x 3½ in. 20 pp. Illustrated. Describes complete line of expansion bolts.

Pratt & Lambert, Inc., Buffalo, N. Y.
Specification Manual for Paint, Varnishing and Enameling. Booklet, 38 pp., 7½ x 10⅝ ins. Complete specifications for painting, varnishing and enameling interior and exterior wood, plaster, and metal work.

The Ripolin Company, Cleveland, Ohio.
Ripolin Specifications. Book. 8 x 10¾ in. 12 pp. Complete specifications and general instructions for the application of Ripolin, the original Holland enamel paint. Also directions for proper finishing of wood, metal, plaster, concrete, brick and other surfaces.
Why Ripolin Has an International Reputation. 8 x 10¾ in. 24 pp. Designed for the architect's files to illustrate the many varied uses of Ripolin Enamel Paint in all parts of the world. Profusely illustrated.

Ruberoid Co., The (formerly the Standard Paint Co.), 95 Madison Avenue, New York, N. Y.
Preservative Coating. Booklet. 6 x 9 in. 15 pp. Illustrated. Presents in a concise manner the properties and uses of the Ruberoid Company's various paint preparations.

Sherwin-Williams Company, 601 Canal Rd., Cleveland, Ohio.
Painting Concrete and Stucco Surfaces. Bulletin No. 1. 8½ x 11 in. 8 pp. Illustrated. A complete treatise with complete specifications on the subject of Painting of Concrete and Stucco Surfaces. Color chips of paint shown in bulletin.
Enamel Finish for Interior and Exterior Surfaces. Bulletin No. 2, 8½ x 11 in. 12 pp. Illustrated. Thorough discussion, including complete specifications for securing the most satisfactory enamel finish on interior and exterior walls and trim.
Painting and Decorating of Interior Walls. Bulletin No. 3. 8½ x 11 in. 20 pp. Illustrated. An excellent reference book on Flat Wall Finish, including texture effects, which are taking the country by storm. Every architect should have one on file.
Protective Paints for Metal Surfaces. Bulletin No. 4. 8½ x 11 in. 12 pp. Illustrated. A highly technical subject treated in a simple, understandable manner.

Sonneborn Sons, Inc., L., Dept. 4, 116 Fifth Avenue, New York.
Paint Specifications. Booklet 8½ x 10¾ in. 4 pp.

U. S. Gutta Percha Paint Co., Providence, R. I.
Barreled Sunlight. Booklet, 8½ x 11 in. Data on "Barreled Sunlight" with specifications for its use.

Valentine & Co., 456 Fourth Avenue, New York.
How to Use Valspar. Illustrated booklet, 32 pp., 3¾ x 8 ins. Deals with domestic uses for Valspar.
How to Keep Your House Young. Illustrated brochure, 23 pp., 7 x 8½ in. A useful work on the upkeep of residences.

Zapon Co., The, 247 Park Ave., New York City.
Zapon Architectural Specifications. Booklet, 28 pp., 8½ x 11 in. Describes odorless brushing and spraying lacquers and lacquer enamels.

PAPER

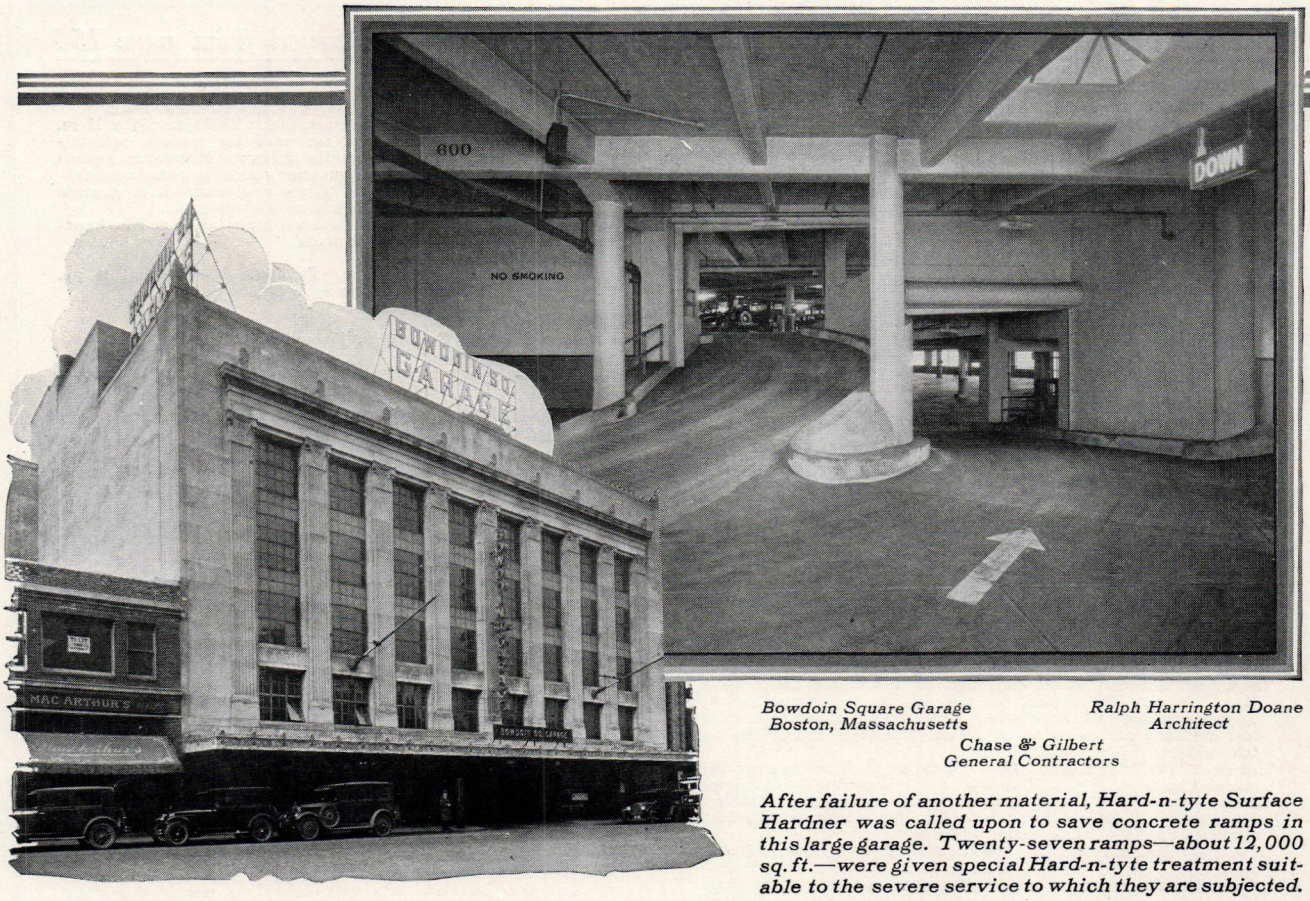
A. P. W. Paper Co., Albany, N. Y.
"Here's a Towel Built for Its Job." Folder, 8 pp., 4 x 9 ins. Deals with "Onliwon" paper towels.

PARTITIONS

Circle A Products Corporations, New Castle, Ind.
Circle A Partitions Sectional and Movable. Brochure. Illustrated. 8½ x 11¼ in. 32 pp. Full data regarding an important line of partitions, along with Erection Instructions for partitions of three different types.

Hauserman Company, E. F., Cleveland, Ohio.
Hollow Steel Standard Partitions. Various folders, 8½ x 11. Illustrated. Give full data on different types of steel partitions, together with details, elevations and specifications.

Improved Office Partition Company, 25 Grand St., Elmhurst, L. I.
Telesco Partition. Catalog. 8¼ x 11 in. 14 pp. Illustrated. Shows typical offices laid out with Telesco partitions, cuts of finished partition units in various woods. Gives specifications and cuts of buildings using Telesco.
Detailed Instructions for erecting Telesco Partitions. Booklet. 24 pp. 8½ x 11 in. Illustrated. Complete instructions, with cuts and drawings, showing how easily Telesco Partition can be erected.



Bowdoin Square Garage
Boston, Massachusetts
Ralph Harrington Doane
Architect
Chase & Gilbert
General Contractors

After failure of another material, Hard-n-tyte Surface Hardner was called upon to save concrete ramps in this large garage. Twenty-seven ramps—about 12,000 sq. ft.—were given special Hard-n-tyte treatment suitable to the severe service to which they are subjected.

Utilize the Durable Method

IN large garages, where tire chains cause rapid erosion of the concrete and continual traffic does its part to shorten the life of the wearing surface, it is vitally important that some reliable means of protecting and preserving these floors be employed in advance.

Dust is a grief to any mechanism and should be avoided so far as possible in places where vehicles are housed.

Hard-n-tyte Surface treatment makes concrete surfaces hard and minimizes dusting, thus giving them the ability to withstand heavy duty—and as a consequence long life.

HARD-N-TYTE
Decorative Coatings

HARD-N-TYTE
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HARD-N-TYTE
Liquid Wall Primer

KONAX
Integral Waterproofing

GENERAL CHEMICAL COMPANY
40 Rector Street New York, N. Y.

Hard-n-tyte
REG. U. S. PAT. OFF.
— Surface Hardener —

Hard-n-tyte Products
REG. U. S. PAT. OFF.

SELECTED LIST OF MANUFACTURERS' PUBLICATIONS—*Continued from page 154*

PARTITIONS—Continued

Richards-Wilcox Mfg. Co., Aurora, Ill.
Partitions. Booklet. 7 x 10 in. 32 pp. Illustrated. Describes complete line of track and hangers for all styles of sliding, parallel, accordion and flush door partitions.

U. S. Gypsum Co., Chicago.
Pyrobar Partition and Furring Tile. Booklet. 8½ x 11 in. 24 pp. Illustrated. Describes use and advantages of hollow tile for inner partitions.

PIPE

American Brass Company, Waterbury, Conn.
Bulletin B-1. Brass Pipe for Water Service. 8½ x 11 in. 28 pp. Illustrated. Gives schedule of weights and sizes (I.P.S.) of seamless brass and copper pipe, shows typical installations of brass pipe, and gives general discussion of the corrosive effect of water on iron, steel and brass pipe.

American Rolling Mill Company, Middletown, Ohio.
How ARMCO Dredging Products Cut Costs. Booklet, 16 pp., 6 x 9 in. Data on dredge pipe.

Cement Lined Pipe Company, Lynn, Mass.
Cement Lined Pipe for Corrosive Waters. Booklet, 20 pp., 6 x 9 in. Illustrated. Data on cement lining to prevent corrosion in pipe.

Clow & Sons, James B., 534 S. Franklin St., Chicago, Ill.
Catalog "A". 4 x 6½ in. 700 pp. Illustrated. Shows a full line of steam, gas and water works supplies.

Cohoes Rolling Mill Company, Cohoes, N. Y.
Cohoes Pipe Handbook. Booklet, 40 pp., 5 x 7½ in. Data on wrought iron pipe.

Duriron Company, Inc., Dayton, Ohio.
Duriron Acid, Alkali, Rust-proof Drain Pipe and Fillings. Booklet, 20 pp., 8½ x 11 in., illustrated. Important data on a valuable line of pipe.

National Tube Co., Frick Building, Pittsburgh, Pa.
"National" Bulletin No. 2. Corrosion of Hot Water Pipe, (8½ x 11 in. 24 pp.) Illustrated. In this bulletin is summed up the most important research dealing with hot water systems. The text matter consists of seven investigations by authorities on this subject.
"National" Bulletin No. 3. The Protection of Pipe Against Internal Corrosion (8½ x 11 in. 20 pp.) Illustrated. Discusses various causes of corrosion, and details are given of the deactivating and deaerating systems for eliminating or retarding corrosion in hot water supply lines.
"National" Bulletin No. 25. "National" Pipe in Large Buildings. 8½ x 11 in. 88 pp. This bulletin contains 254 illustrations of prominent buildings of all types, containing "National" Pipe and considerable, engineering data of value to architects, engineers, etc.
Modern Welded Pipe. Book of 88 pp. (8½ x 11 in.), profusely illustrated with halftone and line engravings of the important operations in the manufacture of pipe.

PLUMBING EQUIPMENT

Clow & Sons, James B., 534 S. Franklin Street, Chicago, Ill.
Catalog "M." 9¼ x 12 in. 184 pp. Illustrated. Shows complete line of plumbing fixtures for Schools, Railroads and Industrial Plants.

Crane Company, 836 S. Michigan Avenue, Chicago, Ill.
Plumbing Suggestions for Home Builders. Catalog. 3 x 6 in. 80 pp. Illustrated.
Plumbing Suggestions for Industrial Plants. Catalog. 4 x 6½ in. 43 pp. Illustrated.
Planning the Small Bathroom. Booklet. 5 x 8 in. Discusses planning bathrooms of small dimensions.

Duriron Company, Dayton, Ohio.
Duriron Acid, Alkali and Rust-proof Drain Pipe and Fittings. Booklet, 8½ x 11 ins., 20 pp. Full details regarding a valuable form of piping.

Eljer Company, Fort City, Pa.
Complete Catalog. 3¾ x 6¾ in. 104 pp. Illustrated. Describes fully the complete Eljer line of standardized vitreous china plumbing fixtures, with diagrams, weights and measurements.
Standardized Sixteen Circular. 3¾ x 6¾ in. 18 pp. Illustrated.

Kohler Co., Kohler, Wis.
Catalog F. 7½ x 10⅝ in. 216 pp. Illustrates and describes the complete line of Kohler trade-marked plumbing ware.
Roughing-In Measurement Binder. 5 x 8 in., containing loose leaf sheets on all staple fixtures.
The Kohler Electric Sink. Booklet, 24 pp., 6 x 8½ ins. Illustrates and describes one-piece kitchen sinks with electrically operated washing compartments.

Maddock's Sons Company, Thomas, Trenton, N. J.
Catalog K. 10⅞ x 7⅞ in. 242 pp. Illustrated. Complete data on vitreous china plumbing fixtures with brief history of Sanitary Pottery.

Speakman Company, Wilmington, Del.
Speakman Showers and Fixtures. Catalog. 4½ x 7½ in. 250 pp. Illustrated. Catalog of Modern Showers and Brass Plumbing Fixtures, with drawings showing layouts, measurements, etc.
Toned Up in Ten Minutes. Booklet. 7½ x 10½ in. 16 pp. Illustrated. Modern Showers and Washups for Industrial Plants, showing the sanitary method of washing in running water.

PUMPS

Chicago Pump Company, 2300 Wolfram Street, Chicago, Ill.
The Correct Pump to Use. Portfolio containing handy data. Individual bulletins. 8½ x 11 in., on bilge, sewage, condensation, circulating, house, boiler feed and fire pumps.

Kewanee Private Utilities Co., 442 Franklin St., Kewanee, Ill.
Bulletin E. 7¾ x 10¼ in. 32 pp. Illustrated. Catalog. Complete descriptions, with all necessary data, on Standard Service Pumps, Indian Brand Pneumatic Tanks, and Complete Water Systems, as installed by Kewanee Private Utilities Co.

RAMPS

Ramp Buildings Corporation, 21 East 40th Street, New York.
Building Garages for Profitable Operation. Booklet. 8½ x 11 in. 16 pp. Illustrated. Discusses the need for modern mid-city parking garages, and describes the d'Humy Motoramp system of design, on the basis of its superior space economy and features of operating convenience. Gives cost analyses of garages of different sizes, and calculates probable earnings.
Garage Design Data. Series of informal bulletins issued in loose-leaf form, with monthly supplements.

The Trane Co., LaCrosse, Wis.
Trane Small Centrifugal Pumps. Booklet. 3¾ x 8 in., 16 pp. Complete data on an important type of pump.

REFRIGERATION

The Fulton Sylphon Company, Knoxville, Tenn.
Temperature Control of Refrigeration Systems. Booklet, 8 pp., 8½ x 11 ins. Illustrated. Deals with cold storage, chilling of water, etc.

REINFORCED CONCRETE—See also Construction, Concrete

The General Fireproofing Building Products, Youngstown, Ohio.
Self-Sentering Handbook. 8½ x 11 in. 36 pp. Illustrated. Methods and specifications on reinforced concrete floors, roofs and floors with a combined form and reinforced material.

Truscon Steel Company, Youngstown, Ohio.
Shearing Stresses in Reinforced Concrete Beams. Booklet. 8½ x 11 in. 12 pp.

North Western Expanded Metal Company, Chicago, Ill.
Designing Data. Book. 6 x 9 in. 96 pp. Illustrated. Covers the use of Econo Expanded Metal for various types of reinforced concrete construction.

ROOFING

American Sheet & Tin Plate Co., Frick Bldg., Pittsburgh, Pa.
Better Buildings. Catalog. 8½ x 11 in. 32 pp. Describes Corrugated and Formed Sheet Steel Roofing and Siding Products, black, painted and galvanized, with directions for application of various patterns of Sheet Steel Roofing in various types of construction.
Copper—Its Effect Upon Steel for Roofing Tin. Catalog. 8½ x 11 in. 28 pp. Illustrated. Describes the merits of high-grade roofing tin plates and the advantages of the copper-steel alloy.
The Testimony of a Decade. Booklet. 8½ x 11 in. 16 pp., with Graphic Chart and illustrations showing losses to various Iron and Steel Sheets for roofing, from atmosphere corrosion.

Barber Asphalt Co., Philadelphia, Pa.
Specifications, Genasco Standard Trinidad Lake Asphalt Built-up Roofing. Booklet. 8 x 10½ in. Gives specifications for use of several valuable roofing and waterproofing materials.

The Barrett Company, 40 Rector Street, New York City
Architects' and Engineers' Built-up Roofing Reference Series; Volume IV Roof Drainage System. Brochure. 63 pp. 8½ x 11¼ ins. Gives complete data and specifications for many details of roofing.

Philip Carey Co., Lockland, Cincinnati, Ohio.
Architects Specifications for Carey Built-up Roofing. Booklet. 8 x 10¾ in. 24 pp. Illustrated. Complete data to aid in specifying the different types of built-up roofing to suit the kind of roof construction to be covered.
Carey Built-up Roofing for Modern School Buildings. Booklet. 8 x 10¾ in. 32 pp. Illustrated. A study of school buildings of a number of different kinds and the roofing materials adapted for each.

Federal Cement Tile Co., 608 So. Dearborn St., Chicago, Ill.
The Indestructible Roof. Booklet. 10 x 13 in. 32 pp. Illustrated. Illustrates and describes the installation of permanent concrete interlocking tile, tile with glass insets, flat tile and channel tile, on all types of industrial plants and other buildings with flat and pitched surfaces.
Standards. Booklet. 8½ x 11 in. 40 pp. Illustrated with full-page drawings. Gives full details of all forms of roof construction of steel structure, ridge and gutter construction, purlin arrangement, spacing, etc., for standard roofs.
The Ideal Retaining Wall. Leaflet, 4 pp., 8½ x 11 in., illustrated. Valuable data on use of Federal Cribbing Units for constructing retaining walls.
The Roof for Permanence. Booklet, 12 pp., 8½ x 11 in., illustrated. Deals with Federal Cement Tile for flat and pitched roofs for large buildings.

Heinz Roofing Tile Co., 1750 Champa St. Denver.
Plymouth-Shingle Tile with Sprocket Hips. Leaflet, 8½ x 11 ins. Illustrated. Shows use of English shingle tile with special hips.
Italian Promenade Floor Tile. Folder, 2 pp., 8½ x 11 in. Illustrated. Floor tiling adapted from that of Davanzati Palace
Mission Tile. Leaflet, 8½ x 11 ins. Illustrated. Tile such as are used in Italy and southern California.
Georgian Tile. Leaflet, 8½ x 11 ins. Illustrated. Tiling as used in old English and French farmhouses.

Ludowici-Celadon Company, 104 So. Michigan Ave., Chicago, Ill.
"Ancient" Tapered Mission Tiles. Leaflet. 8½ x 11 in. 4 pp. Illustrated. For architects who desire something out of the ordinary, this leaflet has been prepared. Describes briefly the "Ancient" Tapered Mission Tiles, hand-made, with full corners and designed to be applied with irregular exposures.

Milwaukee Corrugating Co., Milwaukee, Wis.
The Milcor Architectural Sheet Metal Guide. Booklet. 8½ x 11 in. 64 pp. Illustrated. Gives valuable technical sheet metal data.

Ruberoid Co., The (formerly the Standard Paint Co.), 95 Madison Avenue, New York, N. Y.
Instructions for Laying Built-up Roofs. Booklet. 8½ x 11 in. Illustrated.
Ruberoid Facts Worth Knowing. Booklet, 20 pp., 6 x 9 ins. Illustrated. Useful data on roofing.
Ruberoid Asbestos Slates. Folder. Illustrated. Information and specifications for using asbestos slates.

GEO. C. Nimmons & Company were so well pleased with the bond on the Sears-Roebuck Building, Kansas City, that, when the matter of mortar cement for the Atlanta Sears-Roebuck Building came up, it was just a case of arranging to have Carney Cement on the job at the time the masons started work.

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Cement Makers Since 1883

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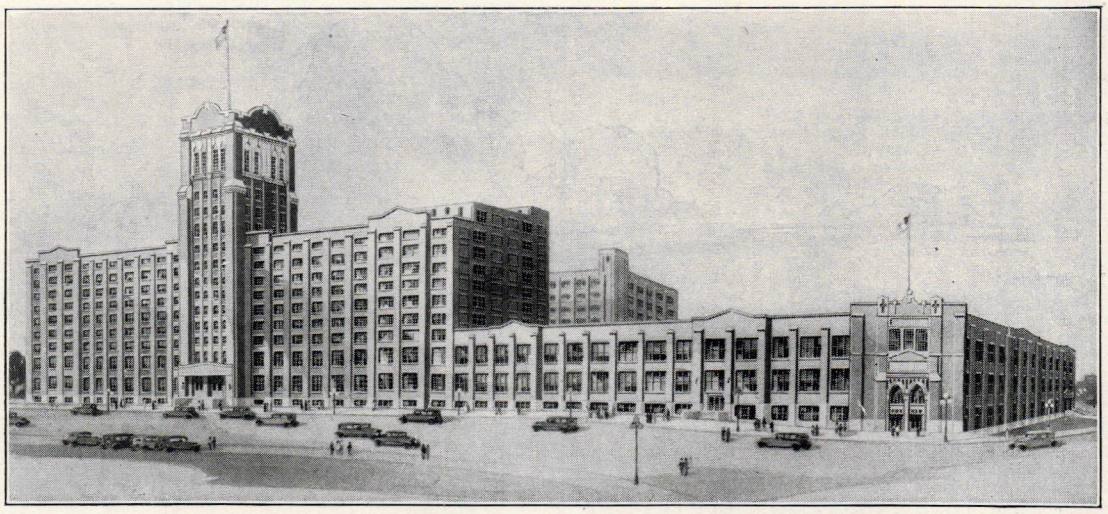


SEARS-ROEBUCK & COMPANY BUILDING
Kansas City, Missouri

Architects—Geo. C. Nimmons & Co.
Contractor—B-W Construction Co.

Carney Cement was used for all the brick and tile mortar in this project.

REPRODUCED FROM THE ORIGINAL RENDERING THROUGH THE COURTESY OF GEO. C. NIMMONS & CO.

Specifications:
1 part Carney Cement to 3 or 4 parts sand depending upon quality of sand.

CARNEY CEMENT
for Brick and Tile Mortar

SELECTED LIST OF MANUFACTURERS' PUBLICATIONS—*Continued from page 156*

ROOFING—Continued

U. S. Gypsum Co., Chicago.
Pyrobar Roof Construction. Booklet. 8 x 11 in. 48 pp. Illustrated. Gives valuable data on the use of tile in roof construction.
Sheetrock Pyrofill Roof Construction. Folder. 8½ x 11 in. Illustrated. Covers use of roof surfacing which is poured in place.

SASH CHAIN

Smith & Egge Mfg. Co., The, Bridgeport, Conn.
Chain Catalog. 6 x 8½ in. 24 pp. Illustrated. Covers complete line of chains.

SEWAGE DISPOSAL

Chicago Pump Co., 2336 Wolfram St., Chicago, Ill.
Flush-Kleen Dry Basin Sewage Ejector. Booklet, 16 pp., 8½ x 11 in. Illustrations and data on an important detail of equipment.

SCREENS

American Brass Co., The, Waterbury, Conn.
Facts for Architects About Screening. Illustrated folder, 9½ x 11¾ in., giving actual samples of metal screen cloth and data on fly screens and screen doors.

Athey Company, 6015 West 65th St., Chicago, Ill.
The Athey Perennial Window Shade. An accordion pleated window shade, made from translucent Herringbone woven Coutil cloth, which raises from the bottom and lowers from the top. It eliminates awnings, affords ventilation, can be dry-cleaned and will wear indefinitely.

The Higgin Manufacturing Co., Newport, Ky.
Your Home Screened the Higgin Way. Booklet. 8½ x 11½ in. 13 pp. Illustrated in colors. Complete description of Higgin Screens, designed to meet every need.

SEWAGE DISPOSAL

Kewanee Private Utilities, 442 Franklin St., Kewanee, Ill.
Specification Sheets. 7¾ x 10¼ in. 40 pp. Illustrated. Detailed drawings and specifications covering water supply and sewage disposal systems.

SHELVING-STEEL

David Lupton's Sons Company, Philadelphia, Pa.
Lupton Steel Shelving. Catalog D. Illustrated brochure, 40 pp., 8⅝ x 11 in. Deals with steel cabinets, shelving, racks, doors, partitions, etc.

SKYLIGHTS

Albert Grauer & Co., 1408 Seventeenth Street, Detroit, Mich.
Grauer Wire Glass Skylights. Folder, 4 pp., 8½ x 11 in. Illustrated. Data on an important line of wire glass lights.
The Effectiveness of Sidewalk Lights. Folder, 4 pp., 8½ x 11 in. Illustrated. Sidewalk or vault lights.
Let in the Light—The Light That's Free. Folder, 4 pp., 8½ x 11 in. Illustrated. Data on securing good lighting.

SOUND DEADENER

Cabot, Inc., Samuel, Boston, Mass.
Cabot's Deadening Quilt. Brochure 7½ x 10½ ins., 28 pp., Illustrated. Gives complete data regarding a well-known protection against sound.

STEEL PRODUCTS FOR BUILDING

The General Fireproofing Building Products, Youngstown, Ohio.
Herringbone Metal Lath Handbook. 8½ x 11 in. 32 pp. Illustrated. Standard specifications for Cement Stucco on Herringbone.
Rigid Metal Lath and interior plastering.

Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.
The Arc Welding of Structural Steel. Brochure, 32 pp., 8½ x 11 ins. Illustrated. Deals with an important structural process.

STONE, BUILDING

Indiana Limestone Company, Bedford, Ind.
Volume 3, Series A-3. Standard Specifications for Cut Indiana Limestone work, 8½ x 11 in. 56 pp. Containing specifications and supplementary data relating to the best methods of specifying and using this stone for all building purposes.
Vol. 1. Series B. Indiana Limestone Library. 6 x 9 in. 36 pp. Illustrated. Giving general information regarding Indiana Limestone, its physical characteristics, etc.
Vol. 4. Series B. Booklet. New Edition. 8½ x 11 in. 64 pp. Illustrated. Indiana Limestone as used in Banks.
Volume 5. Series B. Indiana Limestone Library. Portfolio. 11⅜ x 8¾ in. Illustrated. Describes and illustrates the use of stone for small houses with floor plans of each.
Volume 6, Series B—Indiana Limestone School and College Buildings. 8½ x 11 in., 80 pages, illustrated.
Volume 12, Series B—Distinctive Homes of Indiana Limestone. 8½ x 11 in., 48 pages, illustrated.
Old Gothic Random Ashlar. 8½ x 11 in., 16 pages, illustrated.

STORE FRONTS

Brasco Manufacturing Co., 5025-35 South Wabash Avenue, Chicago, Ill.
Portfolio. 8½ x 11 in. 32 pp. Illustrated. Selected examples of Brasco Copper Store Fronts suitable for different businesses and varying conditions of locations.
Catalog 28. 8½ x 10¾ in. 20 pp. Illustrated with plates. Details of Brasco Copper Store front construction. Also showcases, ventilator sashes.
Detail Sheets. Set of five sheets giving details and suggestions for store front designing enclosed in envelope convenient for filing.
Brasco Copper Store Fronts; Series 202, Brasco Standard Construction. Illustrated brochure. 16 pp. 8¼ x 11 ins. Complete data on an important type of building.
Brasco Copper Store Fronts; Series 500, All-copper Construction. Illustrated brochure. 20 pp. 8½ x 11 ins. Deals with store fronts of a high class.

The Kawneer Company, Niles, Mich.
Store Front Suggestions. Booklet, 96 pp., 6 x 8½ ins. Illustrated. Shows different types of Kawneer Solid Copper Store Fronts.

STORE FRONTS—Continued

Catalog K, 1927 Edition. Booklet, 32 pp., 8½ x 11 ins. Illustrated. Details of Kawneer Copper Store Fronts.
Detail Sheets for Use in Tracing. Full-sized details on sheets 17 x 22 ins.

Zouri Drawn Metals Company, Chicago Heights, Ill.
Zouri Safety Key-Set Store Front Construction. Catalog. 8½ x 10½ in. 60 pp. Illustrated. Complete information with detailed sheets and installation instructions convenient for architects' files.
International Store Front Construction. Catalog. 8½ x 10 in. 70 pp. Illustrated. Complete information with detailed sheets and installation instructions convenient for architects' files.

SWIMMING POOL EQUIPMENT & STERILIZATION

R. U. V. Company, Inc., 383 Madison Avenue, New York City.
Water Sterilization by Means of Ultra Violet Rays. Booklet 8½ x 11 in. 16 pp. Full data on a system of purifying water.
Swimming Pool Sterilization. Booklet 8½ x 11 in. 24 pp. Describes a method purifying water in bathing pools.

Wallace & Tiernan Company, Newark, N. J.
The W. & T. Chlorometer, Technical Publication, No. 55. Booklet, 8½ x 11 in. 8 pp. Illustrated. A useful brochure dealing with the value of pure water and the importance of the chlorination process in sterilization.
W. & T. Chloro-Clock. Folder, 8½ x 11 ins. Illustrated. Mechanism for feeding small quantities of sterilizing solutions.
Manual Central Solution Feed Chlorinator, Type M. S. P. Folder, 8½ x 11 ins. Illustrated. Valuable for swimming pool equipment.

TECHNICAL PAINTING

Toch Brothers, 110 East 42nd Street, New York City.
Specifications for Dampproofing, Waterproofing, Enameling and Technical Painting. Complete and authoritative directions for use of an important line of materials.

TERRA COTTA

National Terra Cotta Society, 19 West 44th St., New York, N. Y.
Standard Specifications for the Manufacture, Furnishing and Setting of Terra Cotta. Brochure 8½ x 11 in. 12 pp. Furnishing and Setting of Terra Cotta, consisting of complete detail Specification, Glossary of Terms Relating to Terra Cotta and Short Form Specification for incorporating in Architects' Specifications.
Color in Architecture. Revised Edition. Permanently bound volume 9⅛ x 12¼ in., containing a treatise upon the basic principles of color in architectural design, illustrating early European and modern American examples. Excellent illustrations in color.
Present Day Schools. 8½ x 11 in. 32 pp. Illustrating 42 examples of school architecture with article upon school building design by James O. Betelle, A. I. A.
Better Banks. 8½ x 11 in. 32 pp. Illustrating many banking buildings in terra cotta with an article on its use in bank design by Alfred C. Bossom, Architect.

TILE, HOLLOW

National Fire Proofing Co., 250 Federal St., Pittsburgh, Pa.
Standard Wall Construction Bulletin 174. 8½ x 11 in. 32 pp. Illustrated. A treatise on the subject of hollow tile wall construction.
Natco on the Farm. 8½ x 11 in. 38 pp. Illustrated. A treatise on the subject of fire safe and permanent farm building construction.
Natco Homes and Garages. Booklet. 7 x 10 in. 32 pp. Illustrated. Showing the use of Natco Hollow Tile for private residences.

TILES

United States Quarry Tile Co., Parkersburg, W. Va.
Quarry Tiles for Floors. Booklet, 119 pp., 8½ x 11 ins. Illustrated. General catalog. Details of patterns and trim for floors.
Art Portfolio of Floor Designs. 9¼ x 12¼ ins. Illustrated in colors. Patterns of quarry tiles for floors.

VALVES

Crane Co., 836 S. Michigan Ave., Chicago, Ill.
No. 51. General Catalog. Illustrated. Describes the complete line of the Crane Co.

Illinois Engineering Co., Racine Ave., at 21st St., Chicago, Ill.
Catalog. 8½ x 11 in. 88 pp. Illustrated.

Jenkins Bros., 80 White Street, New York.
The Valve Behind a Good Heating System. Booklet 4½ x 7¼ in. 16 pp. Color plates. Description of Jenkins Radiator Valves for steam and hot water, and brass valves used as boiler connections.
Jenkins Valves for Plumbing Service. Booklet. 4½ x 7¼ in. 16 pp. Illustrated. Description of Jenkins Brass Globe, Angle Check and Gate Valves commonly used in home plumbing, and Iron Body Valves used for larger plumbing installations.

VENETIAN BLINDS

Burlington Venetian Blind Co., Burlington, Vt.
Venetian Blinds. Booklet, 7 in. x 10 in., 24 pages. Illustrated. Describes the "Burlington" Venetian blinds, method of operation, advantages of installation to obtain perfect control of light in the room.

VENTILATION

American Blower Co., Detroit, Mich.
American H. S. Fans. Brochure, 28 pp., 8½ x 11 in. Data on an important line of blowers.

Duriron Company, Dayton, Ohio.
Acid-proof Exhaust Fans. Folder, 8 x 10½ ins., 8 pp. Data regarding fans for ventilation of laboratory fume hoods.
Specification Form for Acid-proof Exhaust Fans. Folder, 8 x 10½ ins.

Globe Ventilator Company, 205 River Street, Troy, N. Y.
Globe Ventilators Catalog. 6 x 9 in. 32 pp. Illustrated profusely. Catalog gives complete data on "Globe" ventilators as to sizes, dimensions, gauges of material and table of capacities. It illustrates many different types of buildings on which "Globe" ventilators are in successful service, showing their adaptability to meet varying requirements.

"Important to avoid standing water"

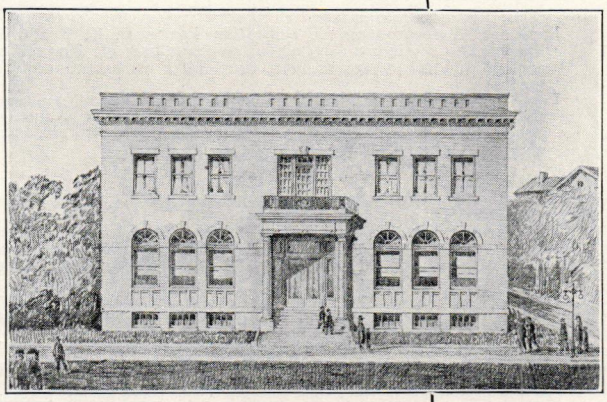
says W. Ward Williams

W. WARD WILLIAMS, *member of the A. I. A., Pittsburgh Chapter, and prominent among Pittsburgh architects. Mr. Williams has designed many of the churches, schools and club houses throughout Western Pennsylvania.*

"OUR experience," says Mr. W. Ward Williams, prominent Pittsburgh architect, "has indicated the importance of making sure that no standing water can remain on the roof. This we take care of by using a pitch of one-half inch to the foot.

"We favor the smooth-surface, built-up type," he continued. "A roof of that kind is conveniently put in place and requires but a relatively small amount of attention.

"Then, too, should any leaks develop, it is a very simple matter to locate them immediately and make the necessary repairs. The smooth-surface, built-up roof is almost invariably a satisfactory, permanent one."



Fireproof, brick and terra cotta club building, 40 x 100 feet in size, designed by Mr. Williams for construction at Ambridge, Pa.

Carey Built-up Roofs cover many of the Western Pennsylvania schools, churches and club houses designed by Mr. Williams. Similarly, in every section of the country, you'll find Carey roofs providing lasting protection against all kinds of weather. That's because they are made only of the finest materials—refined and carefully blended asphalts, and tough, specially-prepared felts. Carey Built-up Roofs are easily put in place and easily kept in good condition —the satisfaction they give is permanent! Further information on request.

NOTE TO ARCHITECTS: *Send for our Architects' Specification Book.*

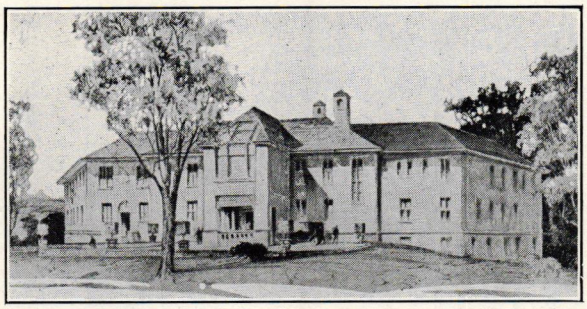
THE PHILIP CAREY COMPANY

Lockland, Cincinnati, Ohio

Carey

BUILT-UP ROOFS

"A ROOF FOR *EVERY* BUILDING"



TUXEDO MEMORIAL HOSPITAL, BYRON BANCROFT SMITH, *Architect*

Sedgwick Hospital Elevator and Dumb Waiter Installed.

HOSPITAL ELEVATORS

SEDGWICK Hand Power Hospital Elevators are suitable for service in many hospitals, sanatoriums, clinics, and similar institutions.

Careful adjustment of counterweight to balance car and average load limits the use of these elevators to the following six conditions:

1st—Raising the car with the average load.
2nd—Lowering the car with the average load.
3rd—Raising the car with less than the average load.
4th—Lowering the car with less than the average load.
5th—Raising the car with more than the average load.
6th—Lowering the car with more than the average load.

Under the first two conditions the operator need exert only enough effort to overcome inertia and friction, which in the Sedgwick outfits are practically negligible.

Under conditions 3 and 6 the operator merely releases the brake and permits the car to move by gravity, maintaining control by means of the brake.

Under conditions 4 and 5 the operator exerts sufficient power (proportionate to gearing, which is about 15 to 1) to lift the difference between the weight of the car and load and the counterweight.

In only two conditions out of six under which the elevator is used is power required to be exerted by the operator, and with Sedgwick outfits this makes no unreasonable demand upon the operator.

THE SEDGWICK ARCHITECTS SERVICE DEPARTMENT is maintained to assist you in the proper selection and writing of specifications for Hand Power Dumb Waiter and Elevator equipment for all purposes.

Write for New Catalog.

SEDGWICK MACHINE WORKS
151 West 15th Street New York

Manufacturers of "The Invalid Elevator" Freight Elevators, Fuel Lifts, Trunk Lifts, Ash Hoists, Gravity Drops, etc.

SELECTED LIST OF MANUFACTURERS' PUBLICATIONS—*Continued from page 158*

VENTILATION—Continued

Van Zile Ventilating Corporation, 155 East 42nd Street, New York, N. Y.
The Ventadoor Booklet. 6½ x 3½ in. 16 pp. Illustrated. Describes and illustrates the use of the Ventadoor for Hotels, Clubs, Offices, etc.

WALLS, INTERIOR

Zenitherm Co., Inc., 390 Frelinghuysen Avenue, Newark, N. J.
Zenitherm Walls. Booklet, 23 pp., 8½ x 11 ins. Illustrated. Deals with fine treatment for interior walls.
Folder of Architectural and Decorative Ornaments Achieved with Zenitherm. Stock baseboards, mouldings, etc.

WATERPROOFING

Carey Company, The Philip, Lockland, Cincinnati, Ohio.
Waterproofing Specification Book. 8½ x 11 in. 52 pp.

The General Fireproofing Building Products, Youngstown, Ohio.
Waterproofing Handbook. Booklet. 8½ x 11 in. 72 pp. Illustrated. Thoroughly covers subject of waterproofing concrete, wood and steel preservatives, dustproofing and hardening concrete floors, and accelerating the setting of concrete. Free distribution.

A. C. Horn Company, Long Island City, N. Y.
Waterproofing. Folder. 9½ x 11½ in. Contains folders giving data on excellent waterproofing and dampproofing materials.

Master Builders Company, Cleveland, Ohio.
Waterproofing and Dampproofing and Allied Products. Sheets in loose index file, 9 x 12 in. Valuable data on different types of materials for protection against dampness.

Ruberoid Co., The, 95 Madison Ave., New York.
Impervite. Circular. 8½ x 11 in. 4 pp. Illustrated. An integral water-proofing compound for concrete, stucco, cement, mortar, etc.

Sommers & Co., Ltd., 342 Madison Ave., New York City.
"Permantile Liquid Waterproofing" for making concrete and cement mortar permanently impervious to water. Also circulars on floor treatments and cement colors. Complete data and specifications. Sent upon request to architects using business stationery. Circular size, 8½ x 11 in.

Sonneborn Sons, Inc., L., 116 Fifth Ave., New York, N. Y.
Pamphlet. 3¾ x 8¾ in. 8 pp. Explanation of waterproofing principles. Specifications for waterproofing walls, floors, swimming pools and treatment of concrete, stucco and mortar.

Toch Brothers, 110 East 42nd Street, New York City.
Specifications for Dampproofing, Waterproofing, Enameling and Technical Painting. Complete and authoritative directions for use of an important line of materials.

The Vortex Mfg. Co., 1978 West 77th St., Cleveland, Ohio.
Par-Lock Specification "Form D" for waterproofing surfaces to be finished with Portland cement or tile.
Par-Lock Specification "Forms E and G" membrane waterproofing of basements, tunnels, swimming pools, tanks to resist hydrostatic pressure.
Par-Lock Waterproofing. Specification Forms D, E, F and G. Sheets 8½ x 11 ins. Data on combinations of gun-applied asphalt and cotton or felt membrane, built up to suit requirements.
Par-Lock Method of Bonding Plaster to Structural Surfaces. Folder, 6 pp., 8½ x 11 ins. Official Bulletin of Approved Products,—Investigating Committees of Architects and Engineers.

WEATHER STRIPS

Chamberlin Metal Weather Strip Company, 1644 Lafayette Boulevard, Detroit, Mich.
Chamberlin Metal Weather Strip Details, 1925 edition. Catalog 8½ x 11 in. 48 pp. Complete specifications and full-sized details. With or without 9 x 11¾ in. folder conforming to A. I. A. filing system. May also be used in loose leaf form.
Excluding Cold and Dust with Chamberlin for 32 years. Booklet 5⅛ x 7⅜ in. 16 pp. Illustrated. Completely and interestingly illustrates application of Chamberlin equipment.
Chamberlin Details for Wood Sash and Doors. 50 pp., 8½ x 11 ins. Data and diagrams relating to weather-tight doors and windows.
Details and Specifications for Calking with Chamberlin Plaster-Calk. Folder, 4 pp., 8½ x 11 ins.
How Rain, Dust and Cold Are Kept Out. Folder, 10 pp., 5¼ x 7¼ ins. Weatherstripping for Residences.

The Higgin Manufacturing Co., Newport, Ky.
Higgin All-Metal Weather Strips. Booklet. 6 x 9 in. 21 pp. Illustrated in colors. Describes various types of Higgin Weather Strips for sealing windows and doors against cold and dust.

WINDOWS

The Kawneer Company, Niles, Mich.
Kawneer Solid Nickel Silver Windows. In casement and weight-hung types and in drop-down transom type. Portfolio, 12 pp., 9 x 11½ ins. Illustrated, and with demonstrator.

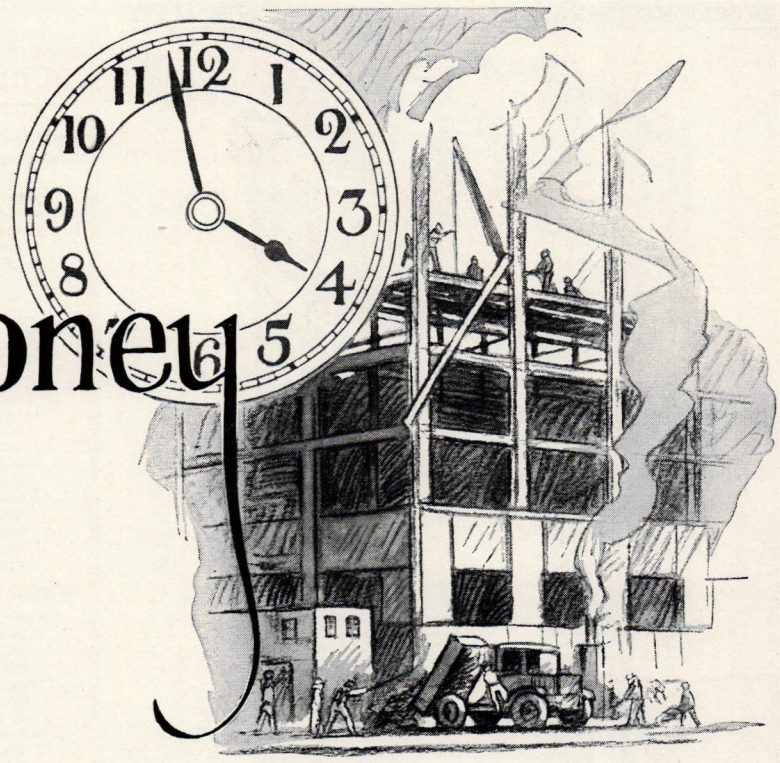
David Lupton's Sons Company, Philadelphia, Pa.
Lupton Pivoted Sash, Catalog 12-A. Booklet 48 pp. 8⅝ x 11 in. Illustrates and describes windows suitable for manufacturing buildings.

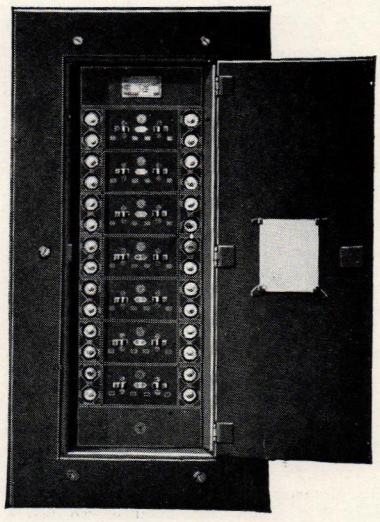
WINDOWS, CASEMENT

Richards-Wilcox Mfg. Co., Aurora, Ill.
Casement Window Hardware. Booklet. 24 pp. 8½ x 11 in. Illustrated. Shows typical installations, detail drawings, construction details, blue-prints if desired. Describes AIR-way Multifold Window Hardware.

Crittall Casement Window Co., 10951 Hearn Ave., Detroit, Mich.
Catalog No. 22. 9 x 12 in. 76 pp. Illustrated. Photographs of actual work accompanied by scale details for casements and composite steel windows for banks, office buildings, hospitals and residences.

Time is money





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WESTINGHOUSE panelboards are specially designed to save installation time. Unit section construction, the indicating trim clamp, the adjustable corner iron and other special Westinghouse features assure a speedy installation without the sacrifice of neatness and permanency. The fact that panelboard installations come toward the completion of the building, and usually near the end of the time limit, makes the saving of installation time particularly desirable.

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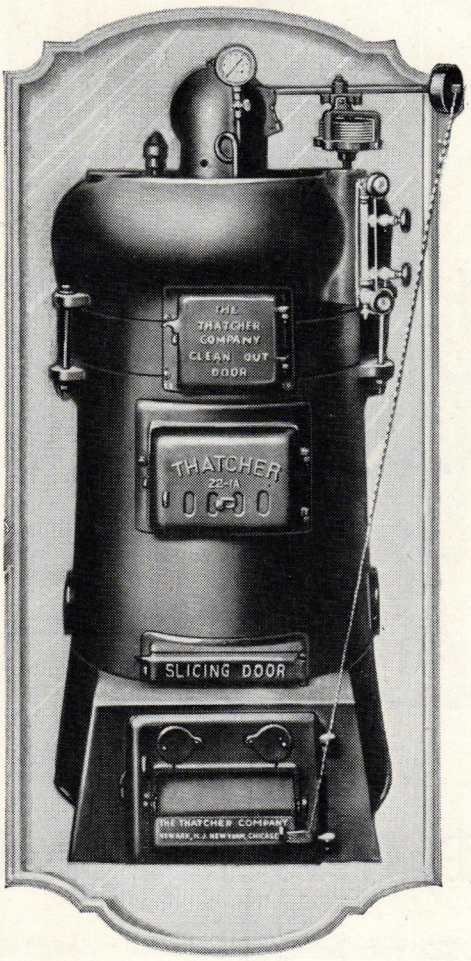

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THATCHER
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SELECTED LIST OF MANUFACTURERS' PUBLICATIONS—*Continued from page 160*

WINDOWS, CASEMENT—Continued

General Fireproofing Building Products, Youngstown, Ohio.
G F Steel Standard Casement Windows, Booklet, 16 pp., 8½ x 11 ins. Data and architectural details of casements.

Hope & Sons, Henry, 103 Park Ave., New York, N. Y.
Catalog. 12¼ x 18½ in. 30 pp. Illustrated. Full size details of outward and inward opening casements.

The Kawneer Company, Niles, Mich.
Kawneer Solid Nickel Silver Windows. In casement and weight-hung types and in drop-down transom type. Portfolio, 12 pp., 9 x 11½ ins. Illustrated, and with demonstrator.

David Lupton's Sons Company, Philadelphia, Pa.
Lupton Casement of Copper-Steel. Catalog C-122. Booklet 16 pp. 8⅝ x 11 in. Illustrated brochure on casements, particularly for residences.

Truscon Steel Co., Youngstown, Ohio
Truscon Steel Casements. Booklet, 8½ x 11 in., 24 pp. Handsomely printed with illustrations of houses equipped with Truscon Casement Windows. Illustrations of various units and combinations. Specifications, types and sizes and details of construction.
Architectural Details. Booklet, 8½ x 11 in, 16 pp. Tables of specifications and typical details of different types of construction.
List of Parts for Assembly. Booklet, 8½ x 11 in., 16 pp. Full lists of parts for different units.

WINDOWS, STEEL AND BRONZE

David Lupton's Sons Company, Philadelphia, Pa.
A Rain-shed and Ventilator of Glass and Steel. Pamphlet, 4 pp. 8⅝ x 11 in. Deals with Pond Continuous Sash, Sawtooth Roofs, etc.
How Windows Can Make Better Homes. Booklet. 3⅞ x 7 in. 12 pp. An attractive and helpful illustrated publication on use of steel casements for domestic buildings.

Truscon Steel Company, Youngstown, Ohio.
Truscon Mechanical Operators for Steel Windows. Brochure, 8½ x 11 in., 65 pp. Complete description of various kinds of installations with drawings of details.
Drafting Room Standards. Book, 8½ x 11 in., 120 pages of mechanical drawings showing drafting room standards, specifications and construction details of Truscon Steel Windows, Steel Lintels, Steel Doors and Mechanical Operators.
Daylighting and Ventilating Power Houses. 32-pp. booklet, 8½ x 11 in., illustrating the economical application of Truscon Windows in modern power house design.
Truscon Solid Steel Double-Hung Windows. 24-pp. booklet, 8½ x 11 in., containing illustrations of buildings using this type of window. Designs and drawings of mechanical details.
Truscon Donovan Awning Type Steel Windows. 12-pp. booklet, 8½ x 11 in., illustrating typical installation and giving construction details.

WOOD—See also Millwork

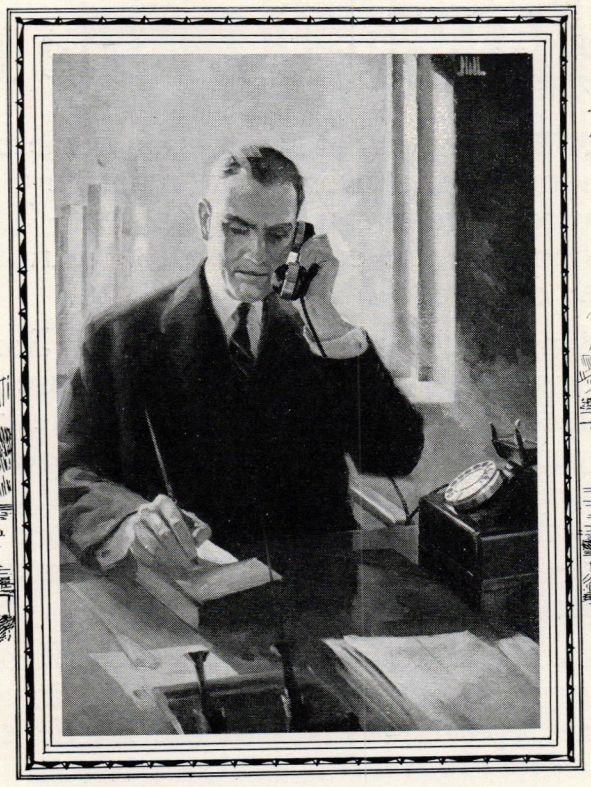
American Walnut Mfrs. Association, 618 So. Michigan Blvd., Chicago, Ill.
American Walnut. Booklet. 7 x 9 in. 45 pp. Illustrated. A very useful and interesting little book on the use of Walnut in Fine Furniture with illustrations of pieces by the most notable furniture makers from the time of the Renaissance down to the present.
"American Walnut for Interior Woodwork and Paneling." 7 x 9 in. pages, illustrated. Discusses interior woodwork, giving costs, specifications of a specimen room, the different figures in Walnut wood, Walnut floors, finishes, comparative tests of physical properties and the advantages of American Walnut for woodwork.

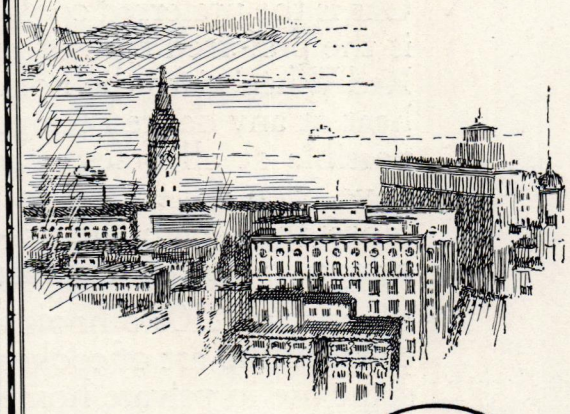
California White and Sugar Pine Mfrs. Assn., San Francisco, Calif.
Information Sheet No. 1, California White Pine; Information Sheet No. 2, California Sugar Pine. Illustrated booklets 8 x 10½ in. First of a series of Information Sheets on these woods and their uses for construction and finish.
Introducing "Cal" Pine, Guardian of the Grades. Booklet, 50 pp., 7¾ x 10¾ ins. Illustrated. Valuable data on siding, battens, flooring, mouldings, etc.
A series of information sheets on California White Pine, Sugar Pine, California White Fir, Douglas Fir and Incense Cedar. Technical data as to supply, production, quantities, uses, grades and sizes of all lumber products of the mills in the Association. Furnished with standard size filing folder for easy reference. Information sheets are 8 x 10½ in. text matter is arranged in uniform style.

Curtis Companies Service Bureau, Clinton, Iowa.
Better Built Homes. Vols. XV-XVIII, incl. Booklet. 9 x 12 in. 40 pp. Illustrated. Designs for houses of five to eight rooms, respectively, in several authentic types, by Trowbridge & Ackerman, architects, for the Curtis Companies.

Long-Bell Lumber Co., Kansas City, Mo.
The Perfect Floor. Booklet 5¼ x 7¾ in. 16 pp. Illustrated. Valuable for the data given on the use of wood for floors.
Saving Home Construction Costs. Booklet 4⅛ x 7½ in. 24 pp. Discusses economy and value in domestic building.
Experiences in Home Building. Booklet 6 x 9 in. 16 pp. Records the testimony of a number of builders and contractors as to the value of certain materials.
The Post Everlasting. Booklet 8 x 11 in. 32 pp. Illustrated. Describes the production of posts and their use in various ways.

West Coast Lumber Trade Extension Bureau, Seattle, Wash.
"Durable Douglas Fir; America's Permanent Lumber Supply." Booklet, 32 pp., 7 x 11 ins. Illustrated. Complete data on this valuable wood.
"Douglas Fir Wall Hanger." Metal-bound hanger, 31 x 32 ins. An attractive advertisement for Douglas fir.
"Where to Use Douglas Fir in Your Farm." Brochure, 32 pp., 6 x 9 ins. Data on use of this wood for farm buildings.





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PRIVATE AUTOMATIC EXCHANGE

in San Francisco

IS IT any wonder that business of all kinds in the Golden Gate City so readily accepts Strowger P-A-X as the logical answer to every problem of interior telephony?

Because it is a city where business is predominantly cosmopolite, where conditions and requirements vary widely, its industrial and commerical enterprises cover a more diversified field, perhaps, than do those of other metropolitan centers of America.

And, because of its great flexibility, its complete adaptability to the needs of all forms of human endeavor, it follows naturally that Strowger P-A-X should be the accepted system of interior telephony where the demands are so varied.

That Strowger P-A-X is the accepted—and appreciated—system here, as in other leading cities, both in the United States and abroad, is attested by its almost universal adoption.

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Wherever you see the P-A-X dial, you may know that the service is as quick and accurate as the most modern telephone engineering can make it. It is symbolic of everything that is up-to-date and efficient in interior communication.

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Engineers, Designers and Manufacturers of the Automatic Telephone In Use the World Over.

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The Most Used Room in the Home

DOMESTIC SCIENCE EXPERTS agree that the kitchen is the most used room in the home. And everybody agrees that the cook stove is the most used piece of kitchen equipment. Then why not give the kitchen and the cook stove the planning-consideration which they deserve?

Gas is the preferred cooking-fuel. And a Red Wheel Gas Range is the preferred type of gas cooking appliance: *first*, because the Red Wheel gives the home-maker automatic control of the oven heat at any desired temperature—making perfect baking-results possible at all times; *second*, because Red Wheel Gas Ranges have been advertised in the leading national publications for more than eight years—the largest cook stove advertising campaign run by any manufacturer.

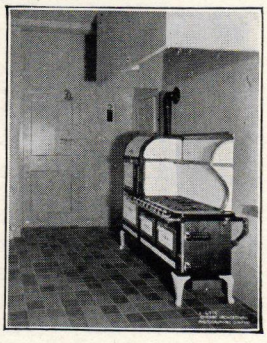
More than 2100 schools and colleges use Red Wheel Gas Ranges to teach the art of cookery. Hundreds of thousands are in constant use in private homes, apartments and in the kitchens of public buildings.

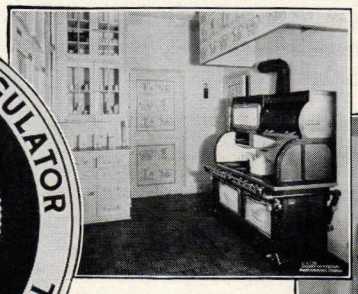
Red Wheel Gas Ranges will enhance the beauty of your kitchens. Your buildings will sell more quickly, tenants will remain longer.

Only these six makes of Gas Ranges are privileged to use the Lorain Red Wheel: **Direct Action, New Process, Quick Meal, Reliable, Clark Jewel** and **Dangler.** For specific data concerning sizes and styles for every type of kitchen, see Sweet's Catalog, 21st Edition, Pages C2977—C2986 or send for our Handbook on Gas Ranges for Architects and Builders.

Apartment Building at 209 Lake Shore Drive, Chicago. Forty-six kitchens are furnished with Lorain-equipped Reliable Ranges.

Views showing three of the forty-six Lorain-equipped Gas Ranges installed in the Chicago Apartment Building illustrated at the left.





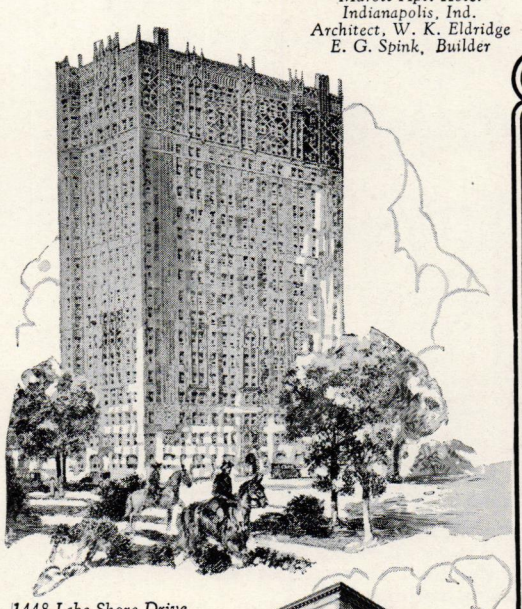
Unless the Gas Range has a RED WHEEL it is NOT a LORAIN

AMERICAN STOVE COMPANY
Largest Makers of Gas Ranges in the World
444 Chouteau Ave. :: St. Louis, Mo.

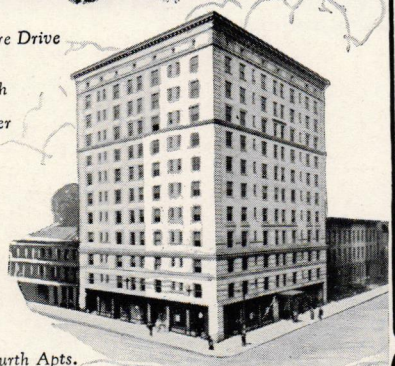
LORAIN

Kenrick Sq. Apts.
St. Louis, Mo.
Architect, Norman B. Howard

Marott Apt. Hotel
Indianapolis, Ind.
Architect, W. K. Eldridge
E. G. Spink, Builder

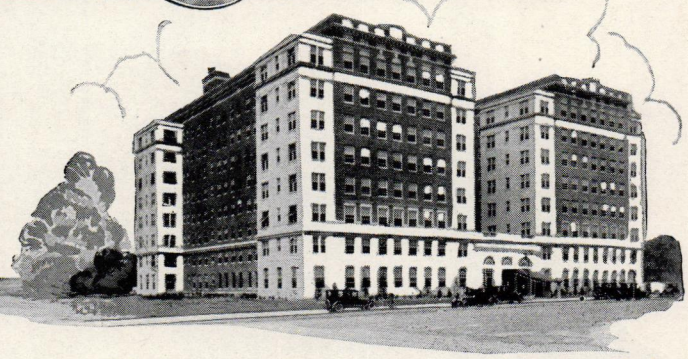


1448 Lake Shore Drive
Chicago, Ill.
Architects
Childs & Smith
Builders
Baird & Warner



Broadway at Fourth Apts.
Cincinnati, O.
Owner, Dale G. Ebersole
Harry Hake, Architect
Charles Kuch
Associate Arch.

Moreland Courts
Cleveland, O.
Architect, Alfred W. Harris



Whittier Apt. Hotel
Detroit, Mich.
Architect, Chas. N. Agree

Money Saved—
the Garbage Can was Banished!

WHEREVER installed, the Kernerator attracts tenants and saves money. The savings come in lowered tenant turnover, lowered janitor costs, lessened fire hazard, eliminated cost of garbage cans and their replacement, neater premises and reduced cartage expenses.

For, *at no cost,* the Kernerator handles *all* waste—not alone garbage, but sweepings, tin-cans, papers, magazines, wilted flowers, even old razor blades.

Dropped into handy hopper doors on floors above, the refuse falls to the brick combustion chamber in the basement. Lighted with a match (no fuel required), everything is burned completely except tin cans and similar non-combustibles which are flame-sterilized for removal with the ashes.

See Sweet's 21st edition, pages C3054-C3055. Or 'phone your local Kernerator representative. Offices in 67 cities.

KERNER INCINERATOR CO., 715 E. Water St., Milwaukee

KERNERATOR
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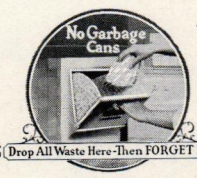
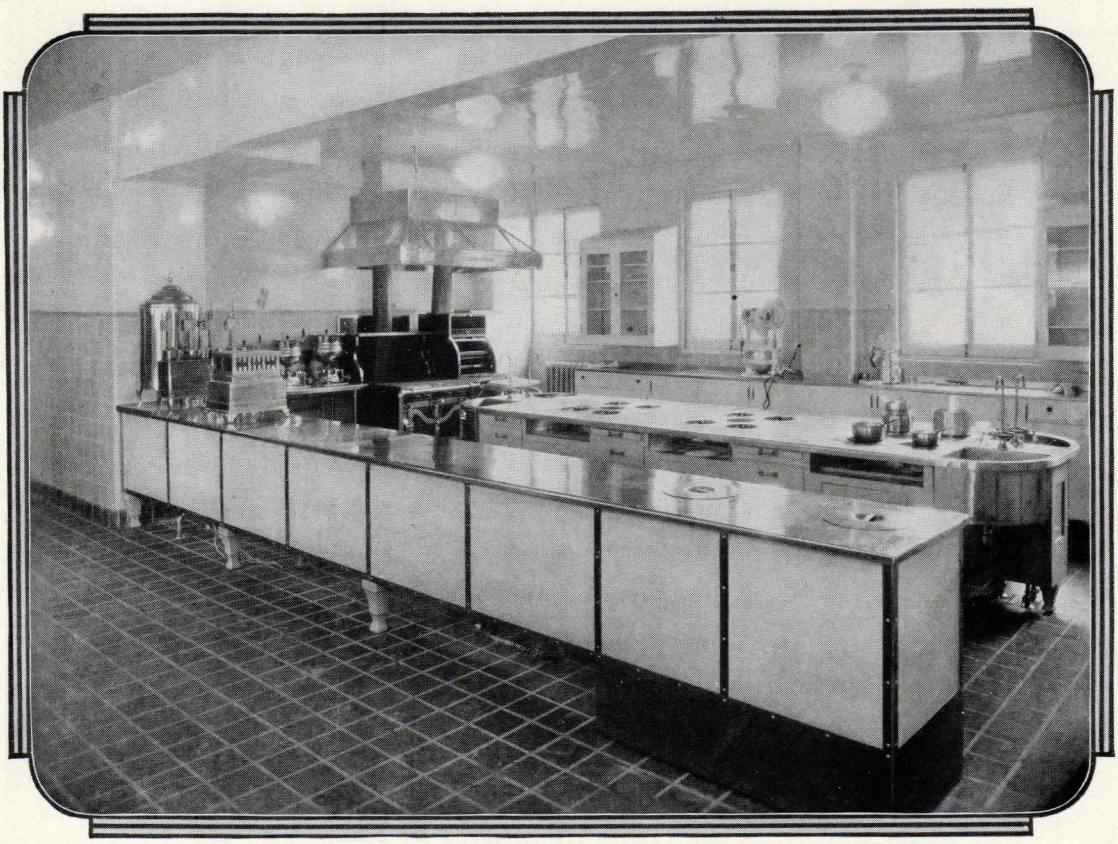
THE CHIMNEY-FED INCINERATOR

Garbage and Waste Disposal *without Leaving the Kitchen*



[*Did you get your copies of the Kernerator catalog arranged in A. I. A. Folder for convenient filing?*]

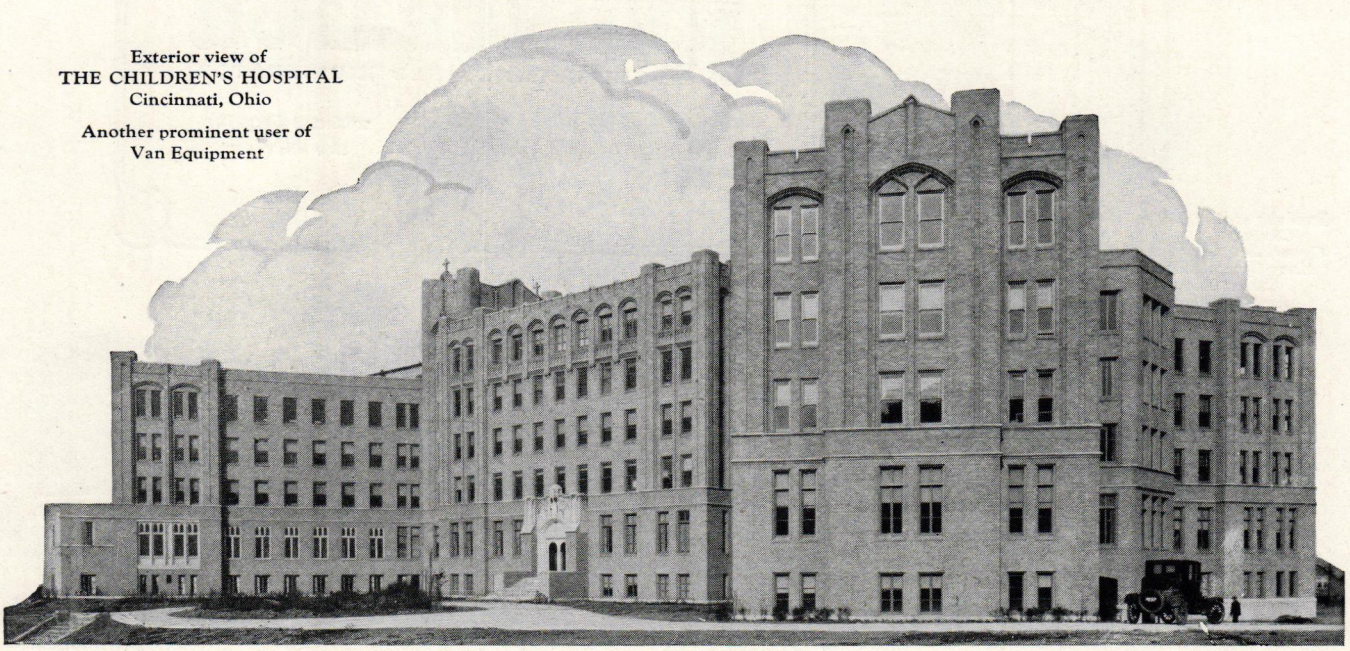
Every VAN User



This Kitchen of the Children's Hospital, Cincinnati, bears out the statement that "where the best is desired, Van Equipment is chosen." The Hospital is proud of this marvelous kitchen. So are we—because it so admirably represents the high character of Van Equipment in use in many of the country's leading institutions

Exterior view of
THE CHILDREN'S HOSPITAL
Cincinnati, Ohio

Another prominent user of
Van Equipment



Thinks *His* Kitchen the Finest in the World!

ASK any user of Van Kitchen Equipment and he will tell you that *his* is the finest kitchen in the world. And every user is right! Because his kitchen is the finest for his individual needs.

Every requirement of space, service and economy is worked out by Van Engineers. Then Van Equipment "of that enduring quality" is provided. The result is a kitchen that perfectly meets all present and future needs —economical the day it is installed and every day after that.

If you are contemplating a new kitchen or replacements in your present one, you really owe it to yourself to investigate Van Equipment. Any user can tell you why. A brief experience with it yourself is all you need to show you its many advantages —in cost, construction and extraordinary long life.

NEW ORLEANS
CLEVELAND
ATLANTA

The John Van Range Co.
EQUIPMENT FOR THE PREPARATION AND SERVING OF FOOD
Cincinnati

LOUISVILLE
DETROIT
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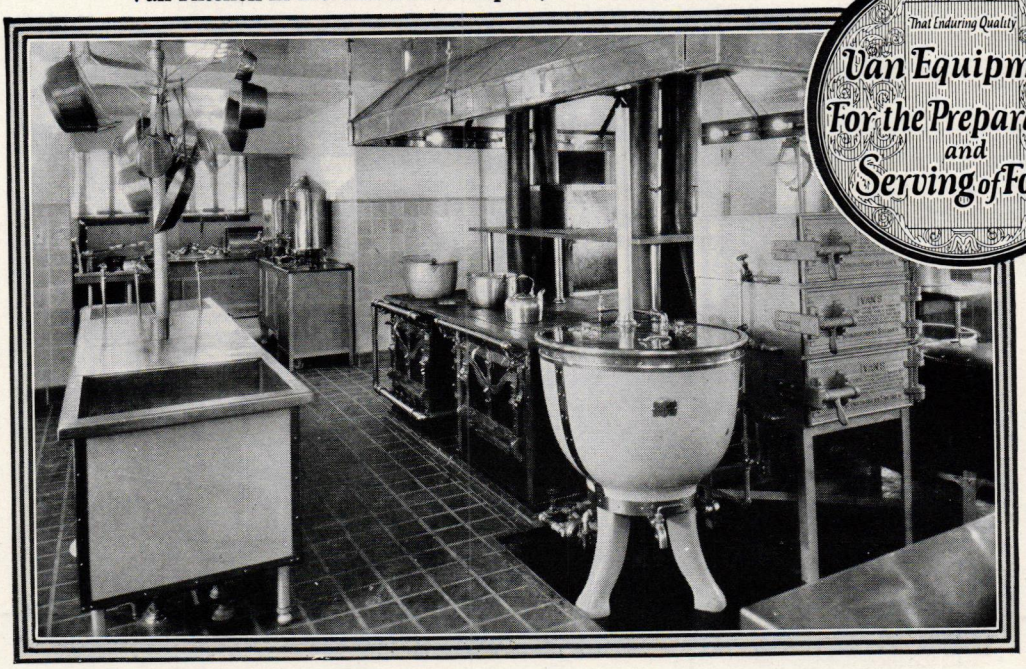
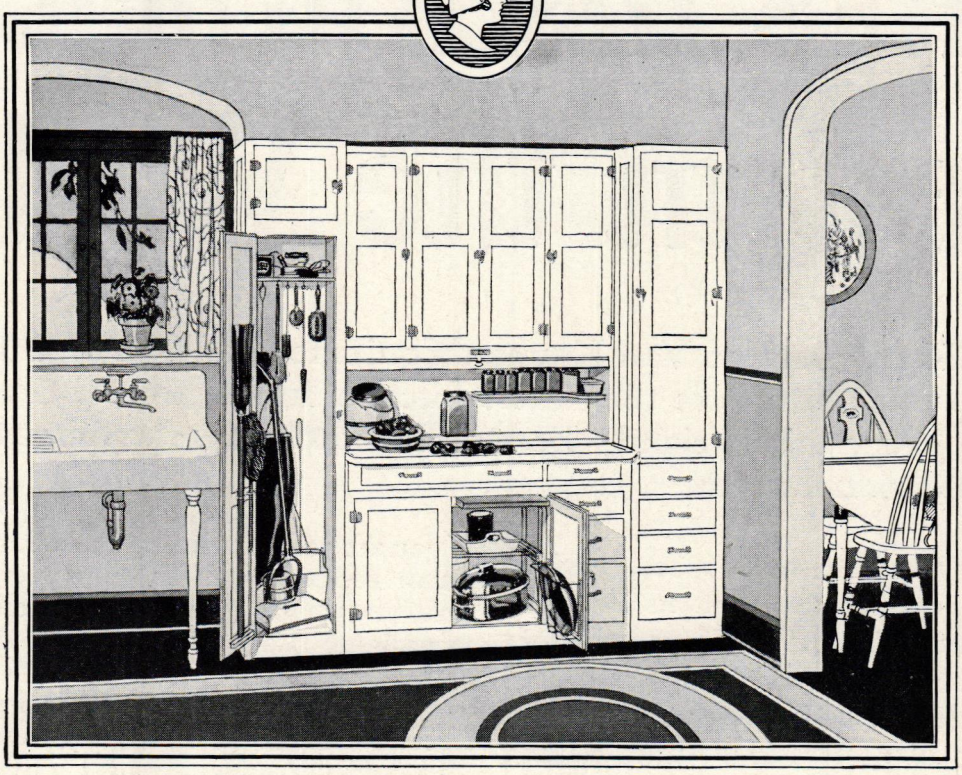
Every requirement for the preparation of specialized foods is met by this Van Kitchen in the Children's Hospital, Cincinnati, Ohio





Units to Fit *Any* Space—

Combinations for Every Purpose

THERE is a Napanee unit or combination of units for any size space—for any arrangement of doors and windows. No other line offers a greater variety of practical unit styles and sizes than the Napanee.

And from the broad, flexible Napanee line you can make a combination to meet every purpose—from simple storage to centralization of all kitchen and pantry equipment—from refrigerating—to cooking.

In the combination pictured above, convenience is emphasized. Cutlery, utensils, flour, condiments, food staples are centralized in workable fashion in the 48½ inch cabinet, with the cleaner, broom, iron, brushes and cleansers in the 16½ inch broom closet. Dishes are kept in the 16½ inch dish cupboard which also has four roomy linen drawers. The overall width of the combination is 81½ inches; height, 85½ inches; depth of base, 21 inches; depth of porcelain top, 25¾ inches; depth of cabinent top, 12 inches; depth of side units, 21 inches.

• • • •

The Napanee line is the finest money can buy. Built like fine furniture with *all hardwood construction* plus a host of hidden details which characterize Napanee as a distinctly superior product.

A Napanee equipped kitchen enhances the value of any home or apartment far beyond the cost of the installation—making for readier rentals and quick sales.

COPPES BROS. & ZOOK, Nappanee, Ind.

NAPANEE

DUTCH KITCHENET

Built Like Fine Furniture

OUR GOLDEN ANNIVERSARY YEAR

COPPES BROS. & ZOOK, Nappanee, Ind. AF6

Please send me your catalog illustrating different styles and sizes of cabinets, cupboards, side units, refrigerators, stoves, etc. (Please check square.) I am a ☐ Builder ☐ Architect ☐ Owner

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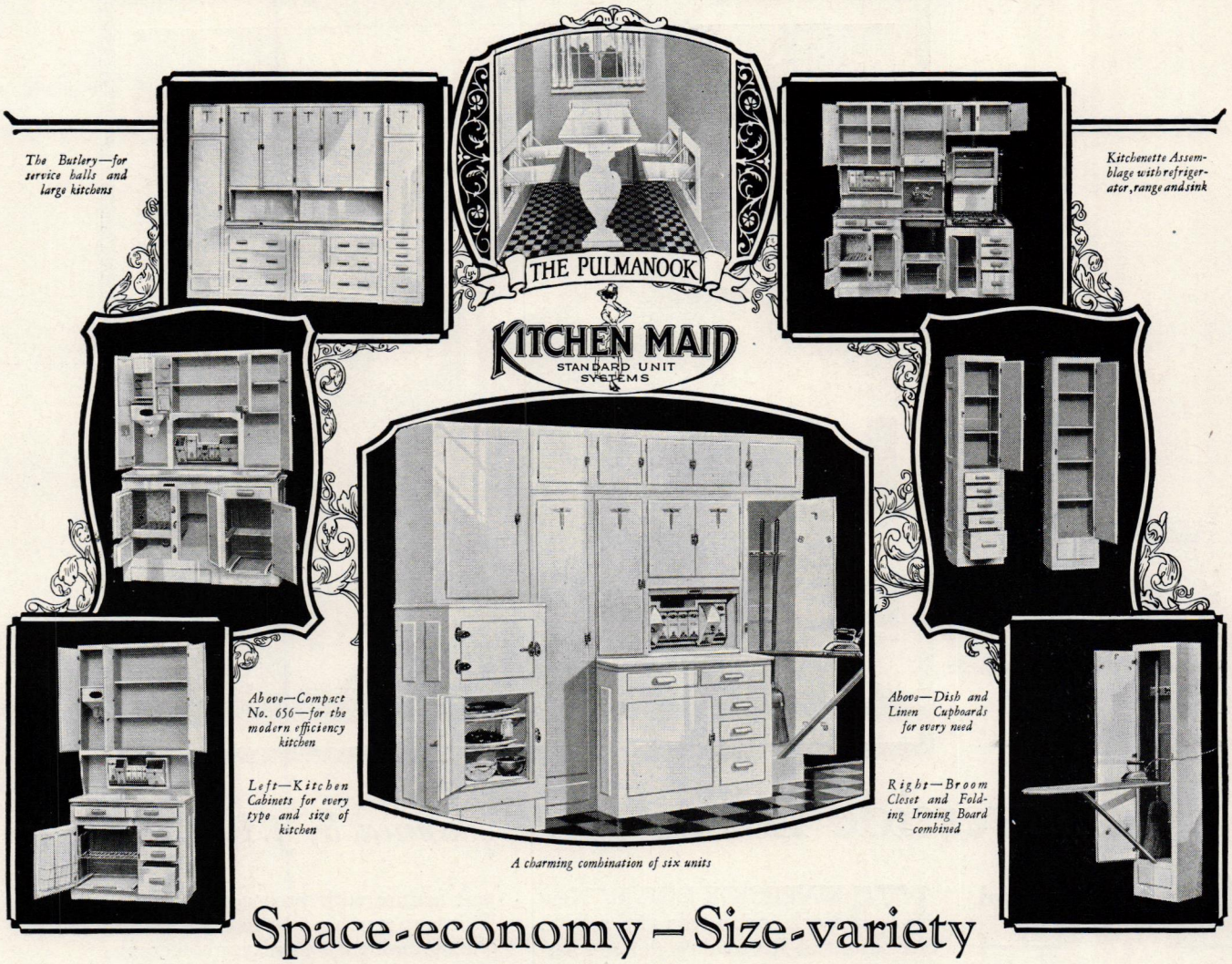
Address _____ *City* _____ *State* _____

KITCHEN MAID

STANDARD UNIT SYSTEMS



The Butlery—for service halls and large kitchens

Kitchenette Assemblage with refrigerator, range and sink

Above—Compact No. 656—for the modern efficiency kitchen

Left—Kitchen Cabinets for every type and size of kitchen

Above—Dish and Linen Cupboards for every need

Right—Broom Closet and Folding Ironing Board combined

A charming combination of six units

Space-economy – Size-variety Flexibility!

Especially to the architect, the soundness of the Kitchen Maid Unit Idea is apparent. It embraces a complete system of organized, harmonized, space-saving units for every type and size of kitchen.

There is everything from linen cupboards to disappearing breakfast nooks, from kitchen cabinets to folding ironing boards, from dish and broom closets to refrigerators. Each unit is complete in itself—can be used singly or in combination. There are almost endless ways in which the units can be grouped.

Only with Kitchen Maid Units can the housewife enjoy the sanitary features of rounded inside corners and smooth doors. Only these units offer the substantial construction, efficient and handsome design developed by Kitchen Maid specialists.

Yet Kitchen Maid Units cost no more installed than old-fashioned cupboards. Write for complete catalogue, dimensional drawings and prices.

WASMUTH-ENDICOTT COMPANY, 1806 Snowden St., Andrews, Ind.

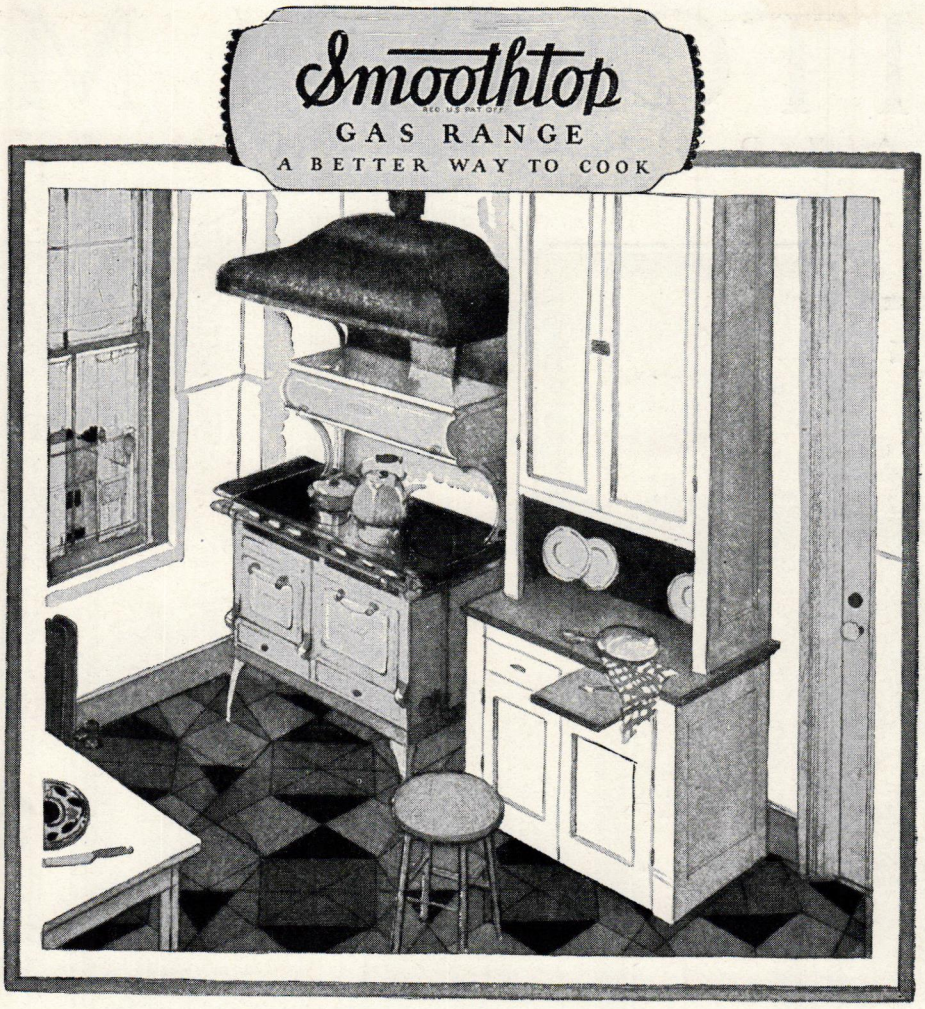
"Let the Kitchen Maid Be Your Kitchen Aid"

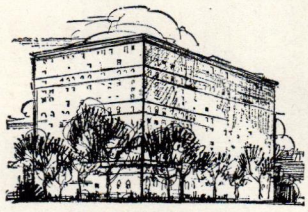
KITCHEN MAID
STANDARD UNIT SYSTEMS

Representatives in all Principal Cities

If in Canada, address Branch office Waterloo, Ontario

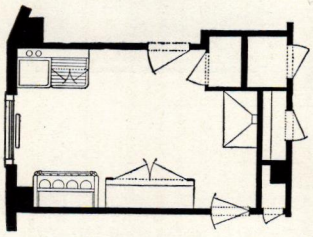
Kitchen Maid Equipment Used in All Model Homes Built by Home Owners Service Institute





175 Riverside Drive
New York City

"175 Riverside Drive"... *as planned by J. E. R. Carpenter*



The kitchen plan

"175 RIVERSIDE DRIVE," New York, occupies the whole block-front of Riverside's choicest section. It is one of the Drive's most imposing structures—and as noteworthy residentially, as architecturally.

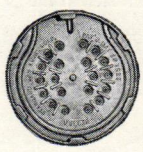
Every room is an outside room. The back windows look down upon beautiful Italian sunken gardens. Charming duplexes of eight rooms and other apartments of six, nine and eleven, are appointed with every modern convenience. As to the kitchens, J. E. R. Carpenter's letter speaks for itself: "I beg to advise that we have specified 140 Smoothtop gas ranges for the building at No. 175 Riverside Drive, as requested by Mr. Anthony Campagna, owner and builder."

The Smoothtop counts as an important feature with prospective tenants. This is so much a fact, that the renting office prominently displays photographs of the various Smoothtop models. It is considered one of the selling points.

The country-wide preference of leading apartment house designers for Smoothtop is easily explained by these features, inherent in the Smoothtop only: It has straight, console lines. It avoids all projecting angles. Side ovens are not there to shut off the light. It saves space. Kitchen planning is considerably easier when the Smoothtop is the specified gas range.

Our Building Service Department has collected data which is of practical help in all problems of kitchen planning. Please feel free to make any inquiry. Standard Gas Equipment Corporation, 18 East 41st Street, New York.

There is only one Smoothtop and it is fully protected by patents.



The reason why Smoothtop "works so well" is the aeration plate attached to each burner.

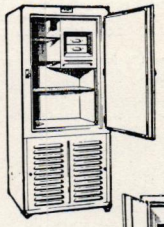
STANDARD GAS EQUIPMENT CORPORATION

Frigidaire
eliminates the need of providing for outside ice supply

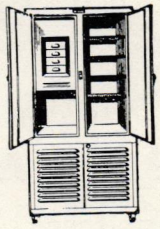
WHEN Frigidaire electric refrigeration is included in the plans for homes or buildings requiring refrigeration, the necessity of providing for outside ice supply is eliminated. Building plans are simplified, making possible the saving of time, labor and material in construction—and actually increasing floor area.

Frigidaire lends itself to almost any specification as to type of installation, food capacity and space. Various sizes and styles of metal cabinet Frigidaires complete with mechanism—models for compressor-in-basement—mechanical units for installation in the standard makes of ice-boxes—all assure economical, dependable refrigeration at low cost of operation. Self-contained models can be either built-in or installed as a separate unit, permitting a convenience of arrangement otherwise impossible.

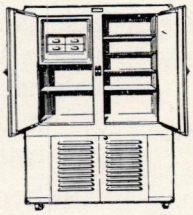
Every home and apartment—large or small—should be planned to include Frigidaire. There are metal cabinet models for practically any household requirement.



Model M-5-2, food space—5 cu. ft.



Model M-9, food space—9 cu. ft.



Model M-12, food space—12 cu. ft.

Helpful information will be gladly sent to any architect upon request. Simply mail the coupon.

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Subsidiary of General Motors Corporation
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Please send me "Information for Architects A.I.A. file 32D" and the Frigidaire Catalog.

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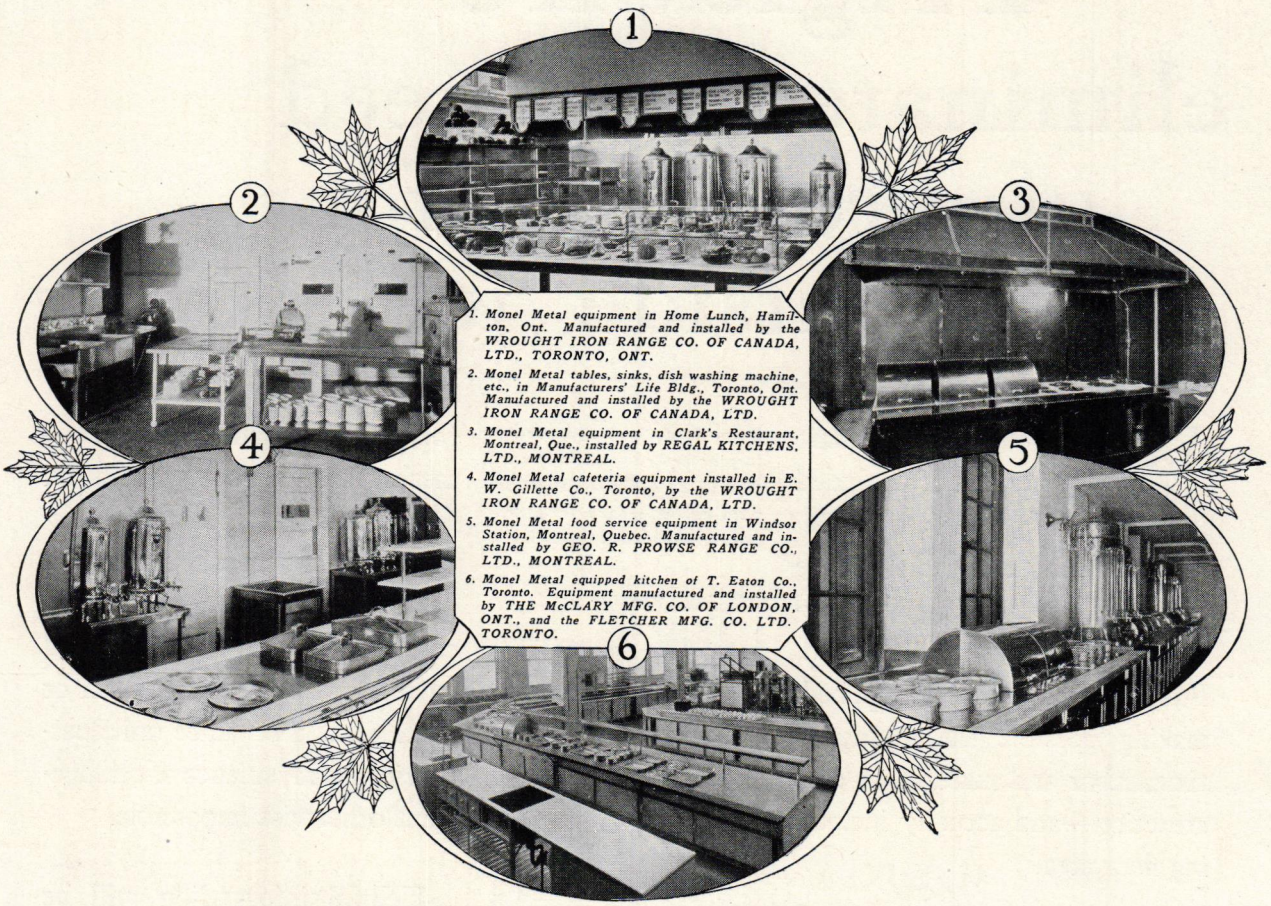
COOKS' TOURS

THROUGH MONEL METAL FOOD SERVICE DEPARTMENTS



1. *Monel Metal equipment in Home Lunch, Hamilton, Ont. Manufactured and installed by the WROUGHT IRON RANGE CO. OF CANADA, LTD., TORONTO, ONT.*
2. *Monel Metal tables, sinks, dish washing machine, etc., in Manufacturers' Life Bldg., Toronto, Ont. Manufactured and installed by the WROUGHT IRON RANGE CO. OF CANADA, LTD.*
3. *Monel Metal equipment in Clark's Restaurant, Montreal, Que., installed by REGAL KITCHENS, LTD., MONTREAL.*
4. *Monel Metal cafeteria equipment installed in E. W. Gillette Co., Toronto, by the WROUGHT IRON RANGE CO. OF CANADA, LTD.*
5. *Monel Metal food service equipment in Windsor Station, Montreal, Quebec. Manufactured and installed by GEO. R. PROWSE RANGE CO., LTD., MONTREAL.*
6. *Monel Metal equipped kitchen of T. Eaton Co., Toronto. Equipment manufactured and installed by THE McCLARY MFG. CO. OF LONDON, ONT., and the FLETCHER MFG. CO. LTD. TORONTO.*

Nº 6 CANADA

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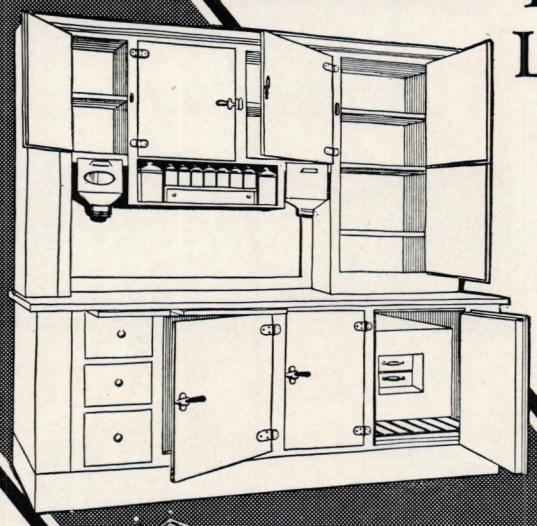
THE INTERNATIONAL NICKEL COMPANY (INC.), 67 WALL STREET, NEW YORK CITY

"WHITE" *Kitchen Cabinet*



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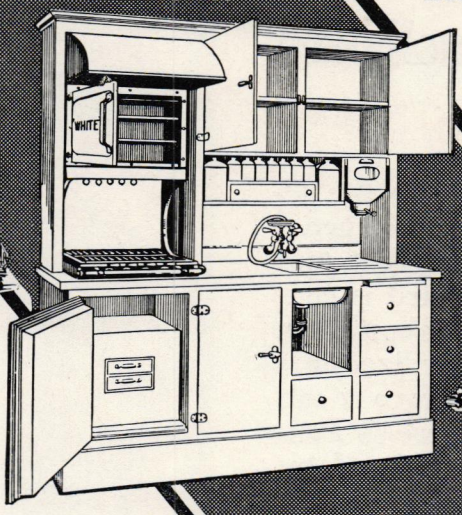

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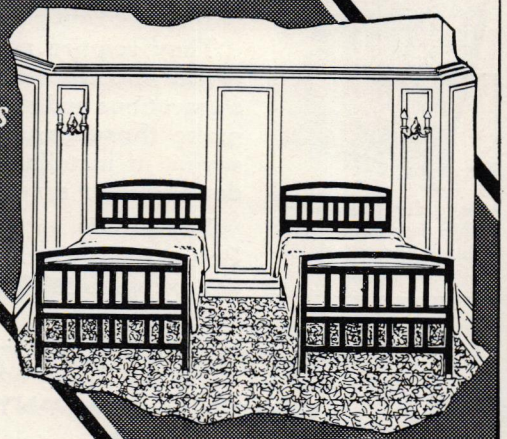

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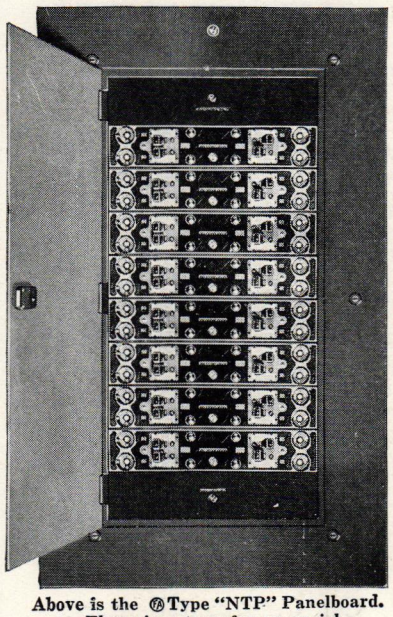

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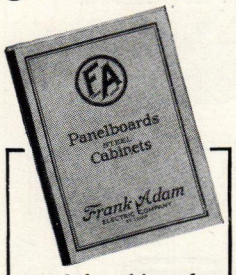

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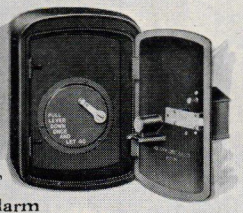
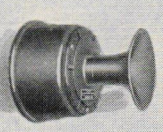


"M D" Fire Alarm Station



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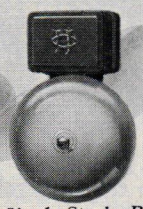

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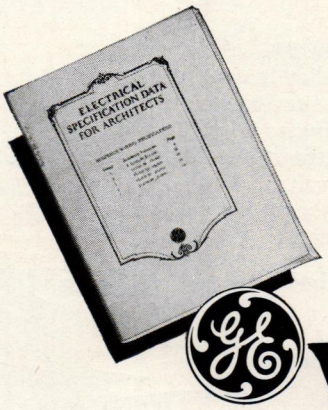

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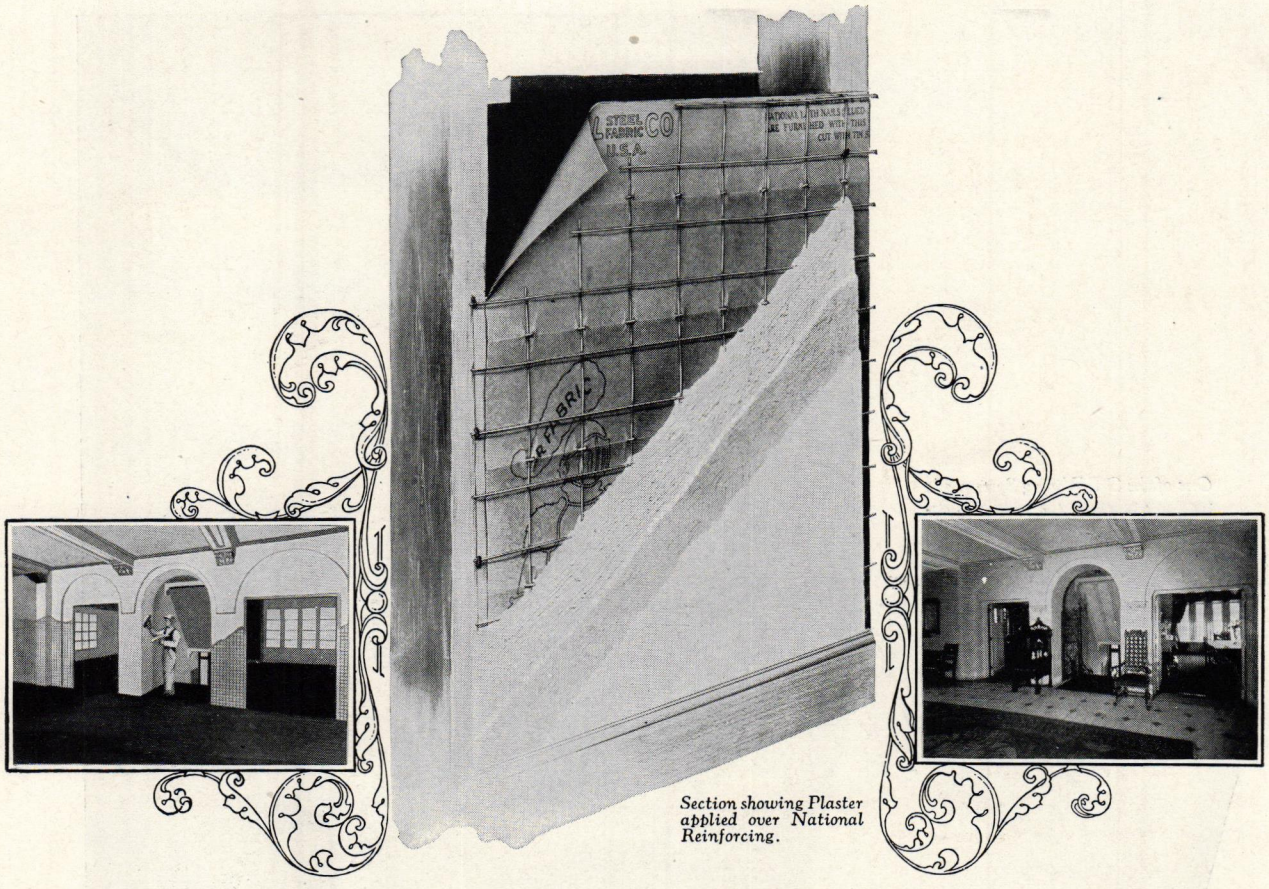

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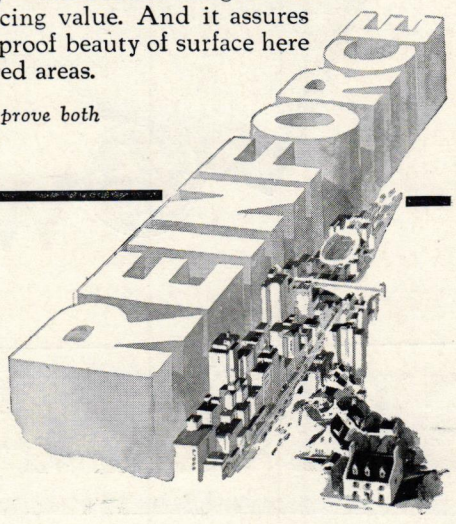

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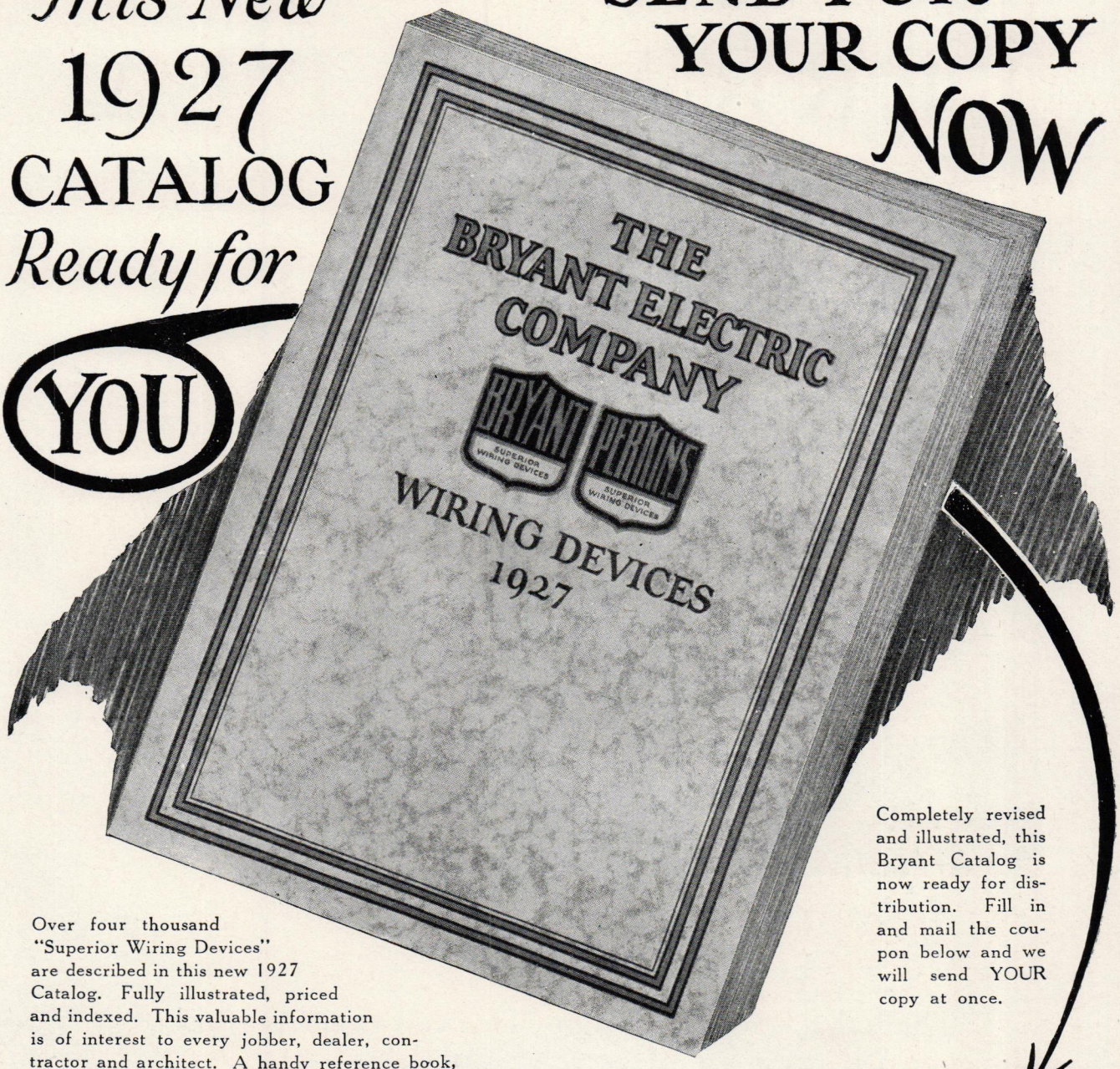

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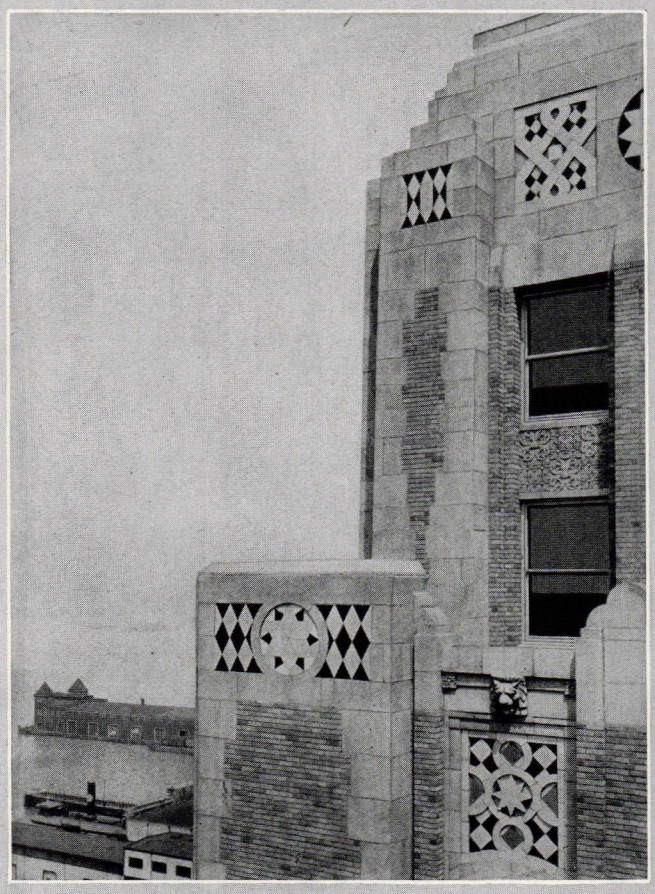

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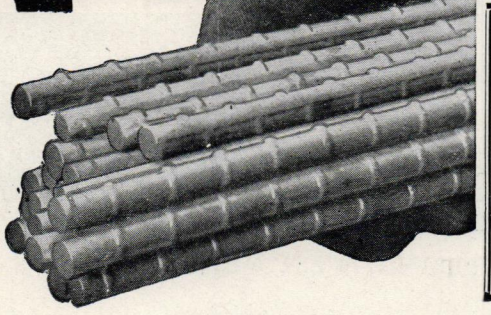

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Wheeling Standard Pipe was selected for the plumbing system in the magnificent Dexter Horton Building, Seattle, Washington.

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"From Mine to Market"

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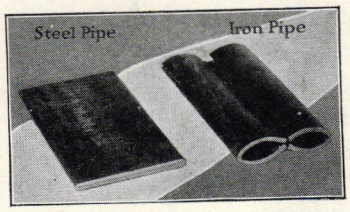

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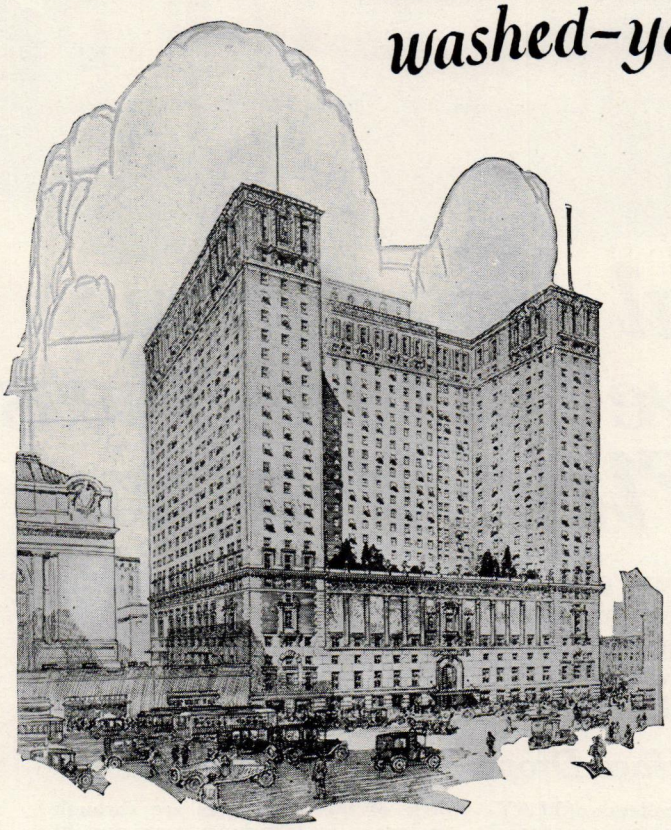
"Used seven years—and repeatedly washed—yet they look like new." Hotel Commodore



"Tontine is both serviceable and good-looking," says an executive of the Hotel Commodore, New York. "It is even better after the first washing. For the past seven years we have used Tontine Shades in all bedrooms, and have them washed frequently, simply by a process of hand scrubbing on a flat board, and then hanging them up to dry. Moisture does not hurt them, a fact which makes them particularly serviceable for hotel windows."

ARCHITECTS find Tontine unusually serviceable for large installations such as hotels, schools, hospitals, institutions and business buildings. It reduces shade upkeep costs to practically nil.

Tontine is impregnated with imperishable pyroxylin. It cannot flake, crack or fray. It is waterproof. Rain cannot harm it.

And Tontine is the ONLY shade material that can be washed successfully. Long after other shades have been discarded, shades of Tontine are merely taken down, scrubbed with soap and water, and put up again for another season's service.

Send for color swatches.

E. I. DU PONT DE NEMOURS & CO., Inc.
Newburgh, N. Y.
Canadian Distributor:
CANADIAN FABRIKOID Limited
New Toronto, Ontario, Canada

DU PONT
TONTINE
THE WASHABLE WINDOW SHADE

"I seldom need more than half the Radiators-"

"For your information, I had FLAX-LI-NUM installed in the home I built last season, and the results are far beyond my expectations.

"Had I fully realized the value of your insulation, I could have saved at least 25% on my heating system, as I have had my furnace checked all winter. I seldom need more than half of the radiators".

H. D. HAIGHT
Rochester, N. Y.
Feb. 8, 1927

Actual Installations Prove the Correctness of Flax-li-num

NOTE the text of Mr. Haight's letter, as given in the brackets. His experience is one of thousands of similar instances. Such definite results, in homes actually built, and insulated with FLAX-LI-NUM, prove the correctness of this material and its method of installation.

Six Surface Drops — Two Air Spaces

Not only has the excellence of FLAX-LI-NUM as an insulating material been proved for more than 17 years, but, in addition, the FLAX-LI-NUM method of installation takes full advantage of surface resistances and divided air spaces.

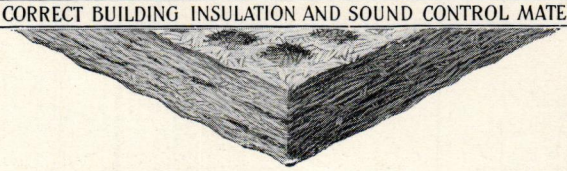
Six surface resistances instead of four and two air spaces instead of one are created by installing ½ inch FLAX-LI-NUM between the studs, half-way between inner and outer walls. The FLAX-LI-NUM specification for one inch thickness in roof or top floor ceiling is based on the fact that over 60% of the heat losses are through the roof. In laboratory tests and in thousands of homes actually built, the correctness of FLAX-LI-NUM has been proved time and time again.

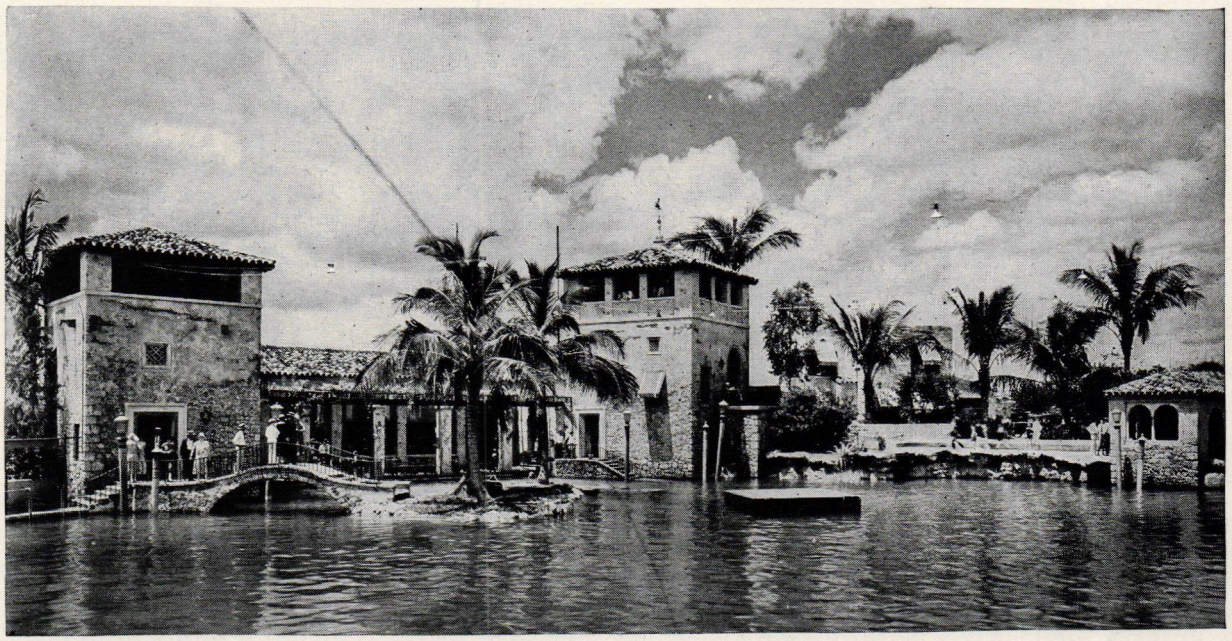
The FLAX-LI-NUM chart for proportioning radiation is based on actual heat losses from the building. The FLAX-LI-NUM manual gives the coefficients for all common types of insulated and uninsulated walls. The manual and the chart enable heating engineers to determine, quickly and accurately, the heating requirements for all types of structures. Copies sent on request.

FLAX-LI-NUM INSULATING CO., *St. Paul, Minn.*

Flax-li-num

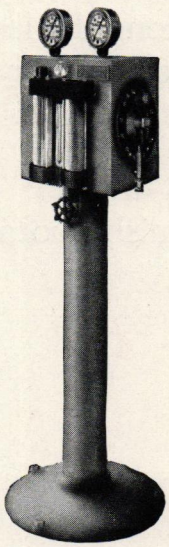
THE CORRECT BUILDING INSULATION AND SOUND CONTROL MATERIAL





Venetian Swimming Pool, Coral Gables, Fla.

Swimming Pool Chlorination Is The Most Satisfactory Method Of Disinfection



W & T Chlorinator Type MSP, Particularly Applicable for Swimming Pool Sterilization

"FROM all available information the addition of chlorine . . . . . by the use of proper apparatus, is today the most satisfactory method of pool disinfection"—so states the report of the Joint Committee of State Sanitary Engineers and American Public Health Association after five years careful study.—And the report goes on to tell why—because of the residual sterilizing action of chlorine.

Higher endorsement could not be had.

We will be glad to send a copy of this report on request.

Liquid chlorine and W & T apparatus sterilizes over five billion gallons of drinking water every day.

"SWIM IN DRINKING WATER"

"The only safe water is a sterilized water"

WALLACE & TIERNAN

COMPANY, INCORPORATED

Manufacturers of Chlorine Control Apparatus

NEWARK - NEW JERSEY

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WALLACE & TIERNAN, LTD., TORONTO, CANADA WALLACE & TIERNAN, LTD., LONDON, ENGLAND

S.P. 5

CRODON*

The Chrome Plate

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

The Chrome Plate *of* Recognized Quality

BEAUTIFUL in appearance, permanent in its beauty—economical in use, Crodon has definitely established its value in the plumbing industries.

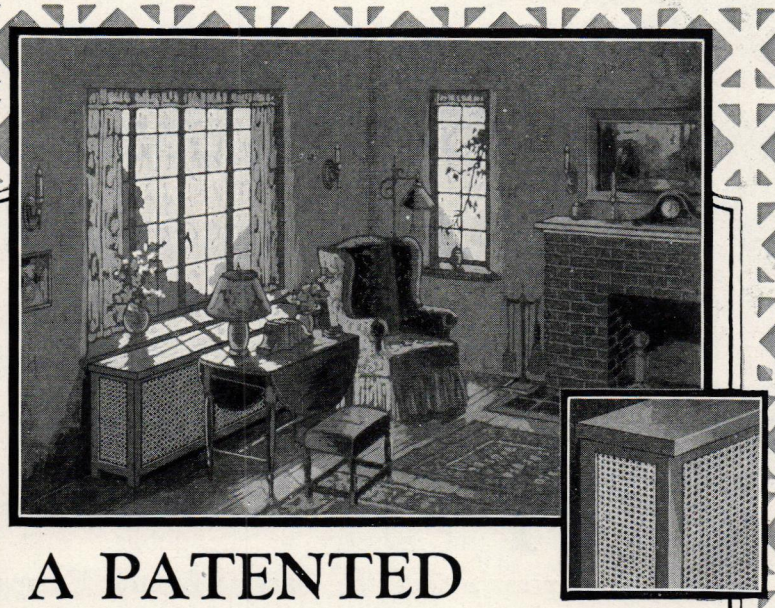
THE PECK BROTHERS & CO., New Haven, Conn., the SPEAKMAN COMPANY, Wilmington, Del., the GRAND HAVEN BRASS FOUNDRY, Grand Haven, Michigan are among the leading manufacturers of the United States who are licensed by the Chromium Corporation to apply Crodon to their products in their own plants.

The following companies are also in position to furnish quotations on their products plated with CRODON.

J. L. Mott Co., Trenton, N. J.
Imperial Brass Co., Chicago, Ill.
Sloan Valve Co., Chicago, Ill.
Beaton & Cadwell Mfg. Co., New Britain, Conn.
Brunswick-Balke-Collender Co., Chicago, Ill.
Never Split Seat Co., Evansville, Ind.
C. F. Church Mfg. Co., Holyoke, Mass.
J. A. Hoegger, Inc., Jersey City, N. J.

CHROMIUM CORPORATION *of* AMERICA

120 Broadway, New York City



A PATENTED *Perforated* SHEET METAL CANE

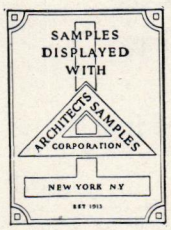
HERE is news for architects. For the *first* time a perforated sheet metal cane grille for radiator enclosures can be obtained that is handsome, dustless and durable, with a maximum of free air opening.

Few new products have been greeted with such instant enthusiasm as Wiscane. At last all the objections to material for radiator enclosures have been overcome. Wiscane has four important features that are found in Wiscane alone:

1. *Being made of a strong, rigid, perforated sheet metal, there is no flexing of wires to destroy the paint or enamel.*
2. *It is absolutely rigid at every point.*
3. *It provides a maximum of free air opening, without sacrificing strength.*
4. *It has a perfectly flat surface and does not gather dust. There are no crevices in which dirt may collect.*

With Wiscane, the Wickwire Spencer Steel Company has been the first to answer satisfactorily the demand which existed for a metal radiator enclosure containing these valuable qualities, and patent rights will be fully protected. It will be supplied only through the leading manufacturers of high-grade radiator enclosures.

Further information and prices will gladly be sent upon request. A coupon is attached for your convenience.



WICKWIRE SPENCER STEEL COMPANY

General Offices:
41 East Forty-second Street, New York

Western Sales Office:
208 South La Salle Street, Chicago

Worcester Buffalo Cleveland Detroit
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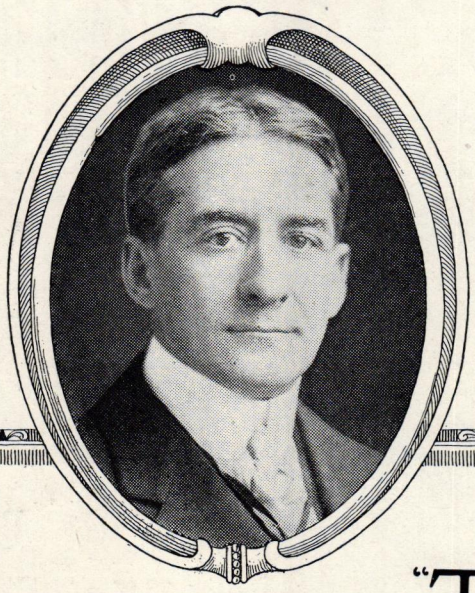
WISCANE
PATENT APPLIED FOR
A PERFORATED METAL

Wickwire Spencer Steel Co.,
Dept. 5-AF, 41 East 42nd St., New York City.

Please send me additional information regarding Wiscane.

Name.....

Address.....



GERARD SWOPE

BUSINESS PAPERS
—*spokesmen for industry*

"THE interpretation of the ethics and ideals of business and industry to the public," said Gerard Swope, president of the General Electric Company, at the last Associated Business Papers Convention, "can have no better mouthpiece, can have no better spokesman, than the technical and business press."

This publication you hold in your hand is a business paper. The publisher and his editors and advertising men are a part of the industry which they serve intimately, acquainted with the technical, professional, or trade practices and methods of that industry, or business or vocation.

The editors pick out of the many phases of the flow of trade, news and policy trend in methods or machinery which will best serve the reader's needs. The advertising pages are a huge many-leaved coupon on the editorial section. And above all, the paper as a whole seeks to express the higher purposes and objectives of the small and large business men it serves.

For as Mr. Swope further said in his fine analysis of industry responsibility in this same address:

"It isn't necessary to be big to be successful, but it is absolutely essential to be successful to be big. You can't grow without that."

The A. B. P. is a non-profit organization whose members have pledged themselves to a working code of practice in which the interests of the men of American industry, trade and professions are placed first--a code demanding unbiased editorial pages, classified and verified paid subscribers, and honest advertising of dependable products.

This publication is a member of
THE ASSOCIATED BUSINESS PAPERS, INC.

"We are more than pleased with the Bakelite Switch Plates"

IN the new Hotel President, Kansas City, Mo., Bakelite Molded Plates are used for both wall switches and outlets. The resident manager quoted above also writes that they "give a much better appearance than metal plates and have proven satisfactory in every respect."

Lasting beauty of color and finish are but two of the advantages of Bakelite Plates. Another is that they provide a shock-proof "dead-front" for the live electrical parts of a switch or outlet. They are not only the handsomest plates, but also the safest.

Bakelite Switch and Outlet Plates are made by the leading wiring device manufacturers to fit any standard switch or outlet. The usual color is a dark rich brown but black and a variety of other attractive colors are available. Write to us for a list of manufacturers from whom you can obtain samples and prices.

BAKELITE CORPORATION

247 Park Ave., New York, N. Y. Chicago Office, 635 W. 22nd St.

BAKELITE CORPORATION OF CANADA, LTD., 163 Dufferin St., Toronto, Ont.

BAKELITE

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THE MATERIAL OF A THOUSAND USES

"The registered Trade Mark and Symbol shown above may be used only on products made from materials manufactured by Bakelite Corporation. Under the capital "B" is the numerical sign for infinity, or unlimited quantity It symbolizes the infinite number of present and future uses of Bakelite Corporation's products."

STANDARD CONVEYORS Find a Place

With Joseph Burnett Company—Makers of Extracts

When you look at the illustration below to the right you wonder where the hole in the wall leads to. The technically minded man will find the explanation on the left.

The operator or sorter is placing bottles of a certain size in wooden containers. They move on the gravity conveyor to the exit in the wall —a continuous motion straight lift elevator with an automatic loader picks up the waiting trays of bottles and carries them up to another floor where they are filled, labeled, packed and returned either to storage or shipping.

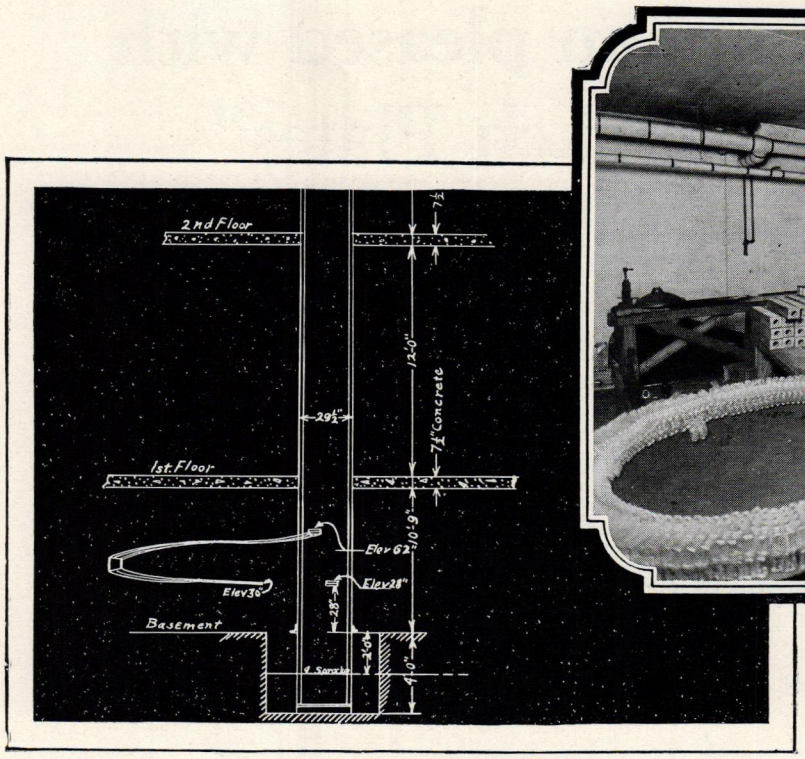
The connecting link between manufacturing operations in any plant is its conveyor system.

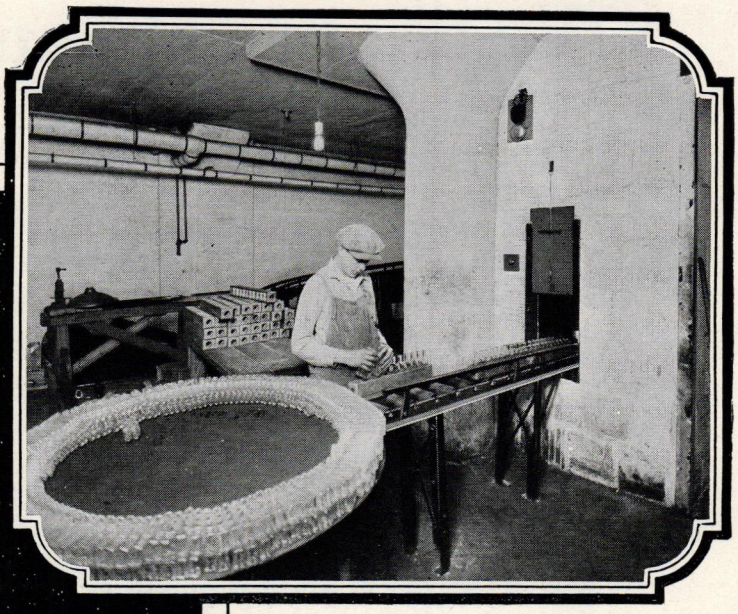
The connecting link between floors and individual units of this conveying system is the straight lift elevator.

Consider for a second the advantage of maintaining a steady flow of bottles such as Jos. Burnett obtains, compared to any method where the flow is interrupted by manual handling.

Handling can be either the hidden cost or the hidden profit in manufacturing.

How many industries make handling a profitable operation is shown in the analysis of this job.

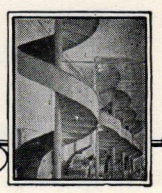


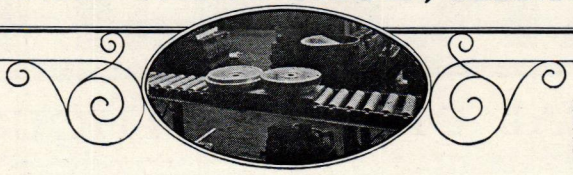


"We will be glad to send an analysis of the job illustrated above to any architect who is interested in learning how conveying equipment is helpful to his clients. Just ask for an analysis of the Joseph Burnett job."

STANDARD

CONVEYOR COMPANY,
NORTH SAINT PAUL, MINN.





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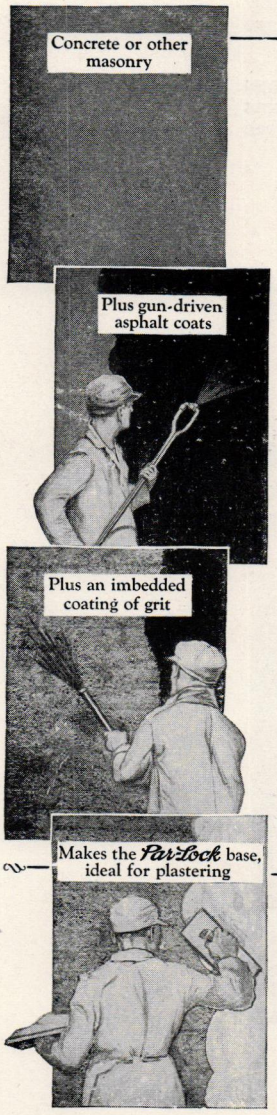
Cable Address: Gravity

THE TELEPHONE BUILDING
CLEVELAND, OHIO

Architects, Hubbell & Benes.

General Contractors, The Lundoff-Bicknell Company.

Par-Lock applied by the Par-Lock Appliers of Cleveland to all concrete surfaces to be plastered.



Par-Lock Every Concrete Surface Before Plastering

EXCESSIVE, irregular suction is replaced by definite minor suction and the dependable Par-Lock Key. The plaster sets more slowly and its crystalline character is preserved. Every pore in the surface is sealed against filtration and against chemical interaction of plaster and concrete. The full insulating value of the wall is developed and condensation prevented. The elastic quality of the asphalt coat cushions the plaster against expansion stresses and plaster "fatigue" due to vibration.

The nearest Par-Lock Applier will answer every question about Par-Lock and suggest the proper specification for your own fine building. Or write to

THE VORTEX MANUFACTURING CO., 1984 West 77th St., CLEVELAND, OHIO

Par-Lock
PLASTER KEY

Write *Par-Lock Appliers of*—(name nearest city) with address as below

ALBANY, 425 Orange Street.
BALTIMORE, 613 West Cross Street.
BOSTON, 45 Commercial Wharf.
BUFFALO, 958 Ellicott Square Bldg.
CHICAGO, 122 S. Michigan Ave.
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COLUMBUS, 1005 E. Livingston.
DETROIT, 2511 First National Bldg.
MINNEAPOLIS, 200 Builders Exchange.
NEWARK, N. J. 24 Commerce Street
NEW YORK CITY, 50 Church Street.
PHILADELPHIA, 1700 Walnut Street.
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PAR-LOCK CORK INSTALLATIONS United Cork Companies Lyndhurst, N. J.

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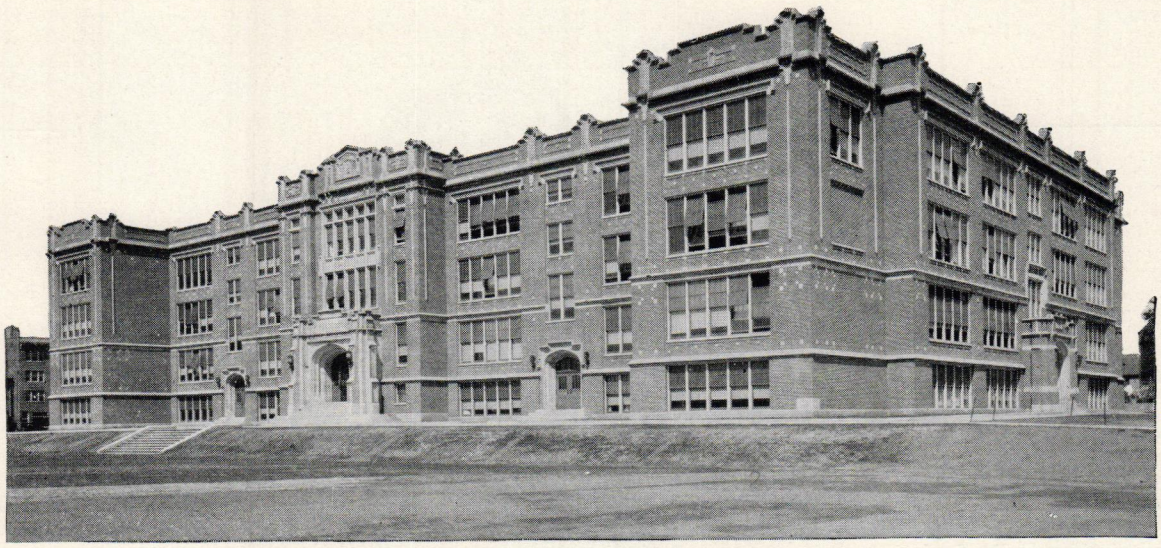


The new high school building, Paterson, N. J., equipped with Jennings Pumps

Good heating calls for a good pump

Particularly in a large building. Where there are many rooms. And each one must be correctly heated. And the heating closely controlled, so that the comfort and health of the occupants are properly safe-guarded.

A good vacuum heating pump is essential. Not only to remove the condensation and air from the return line. But also to promote the steam circulation—to provide unrestricted steam flow to each radiator surface,—to allow the necessary flexibility so that the heating system can be quickly started up in the morning, even in zero weather.

Exacting requirements! Calling for the Jennings Vacuum Heating Pump. And for the kind of service Jennings Pumps are giving in every one of the many hundred buildings in which they are now being used.

If you are unfamiliar with Jennings Heating Pumps, write for Bulletins which give complete information. Free on request.

THE NASH ENGINEERING COMPANY

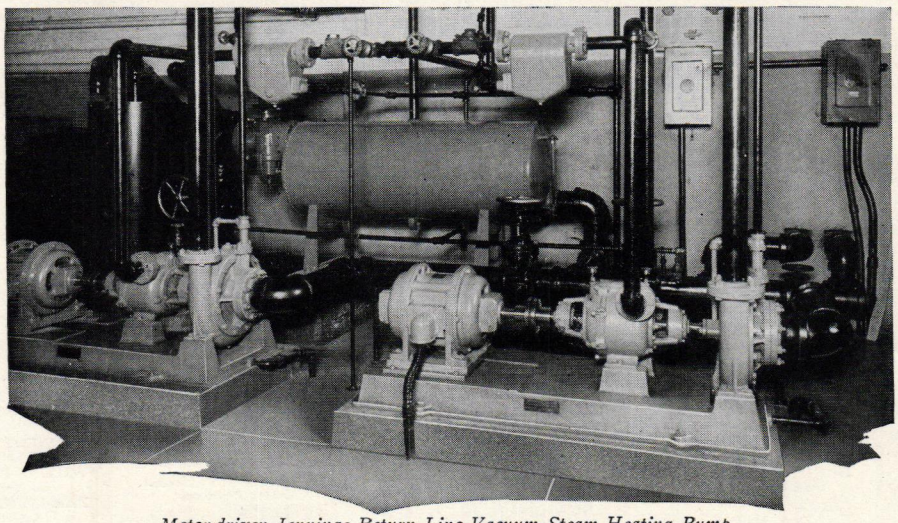
So. Norwalk Connecticut

Atlanta, Birmingham, Boston, Buffalo, Chattanooga, Chicago, Cleveland, Dallas, Denver, Detroit, Indianapolis, Kansas City, Los Angeles, Louisville, Memphis, Miami, Minneapolis, New Orleans, New York, Omaha, Philadelphia, Pittsburgh, Portland, Richmond, St. Louis, Salt Lake City, San Francisco, Seattle, Washington, D. C.

OFFICES IN CANADA: Montreal, Toronto and Vancouver.

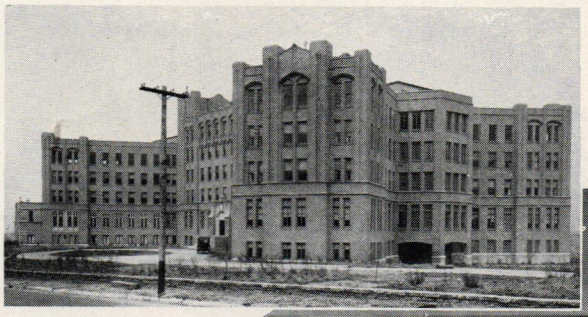
Jennings Pumps

RETURN LINE AND AIR LINE VACUUM PUMPS CONDENSATION AND CIRCULATING PUMPS

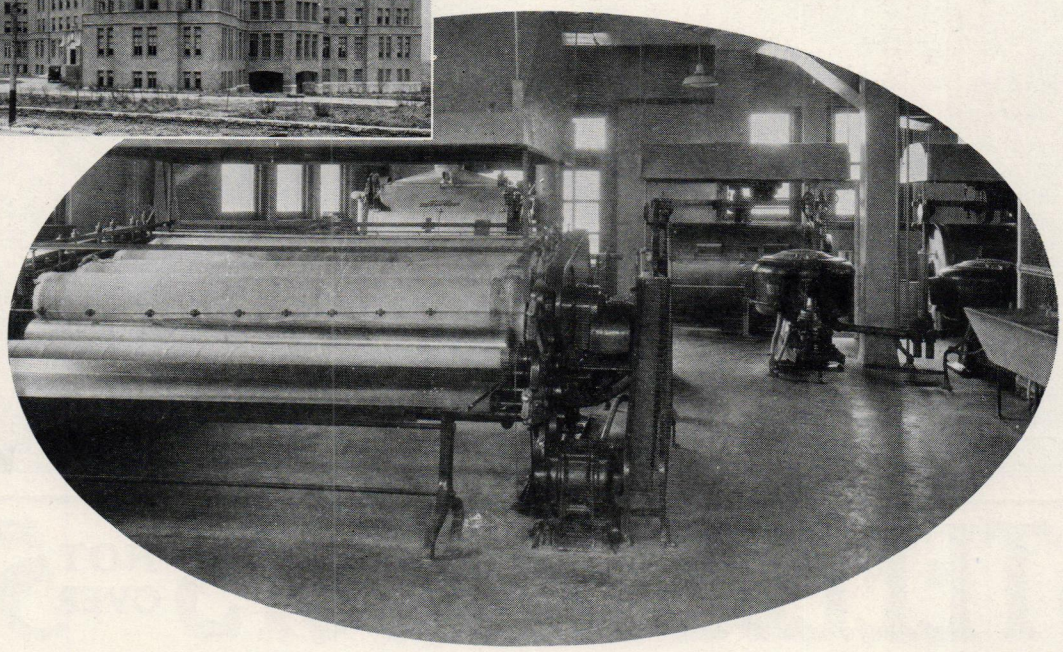


Motor-driven Jennings Return Line Vacuum Steam Heating Pump, installed in the Paterson High School, Paterson, New Jersey.

No. 33 of a series of advertisements featuring prominent laundry installations



Imposing structure of the Children's Hospital, Cincinnati, O.



In this modern "American" laundry every bit of linen in service at the Children's Hospital is washed and ironed and returned to service promptly. Have us tell you about the economy in dollars and floor space.

The engineer who planned *this* laundry will be glad to confer with you

AT the Children's Hospital, Cincinnati, every bit of the institution's weekly wash is done right there in the hospital building.

The officials find that by having the laundry under their own direct supervision, soiled linens are washed, ironed, and returned to service so promptly that only a small reserve stock need be kept on hand.

* * *

At your disposal are the services of a trained corps of "American" engineers who have designed scores of laundries like the one shown here. They'll welcome an opportunity to confer with you about laundry equipment and practices. Just ask one of these men to call.

Floor space at a premium?

Steam pressure not available?

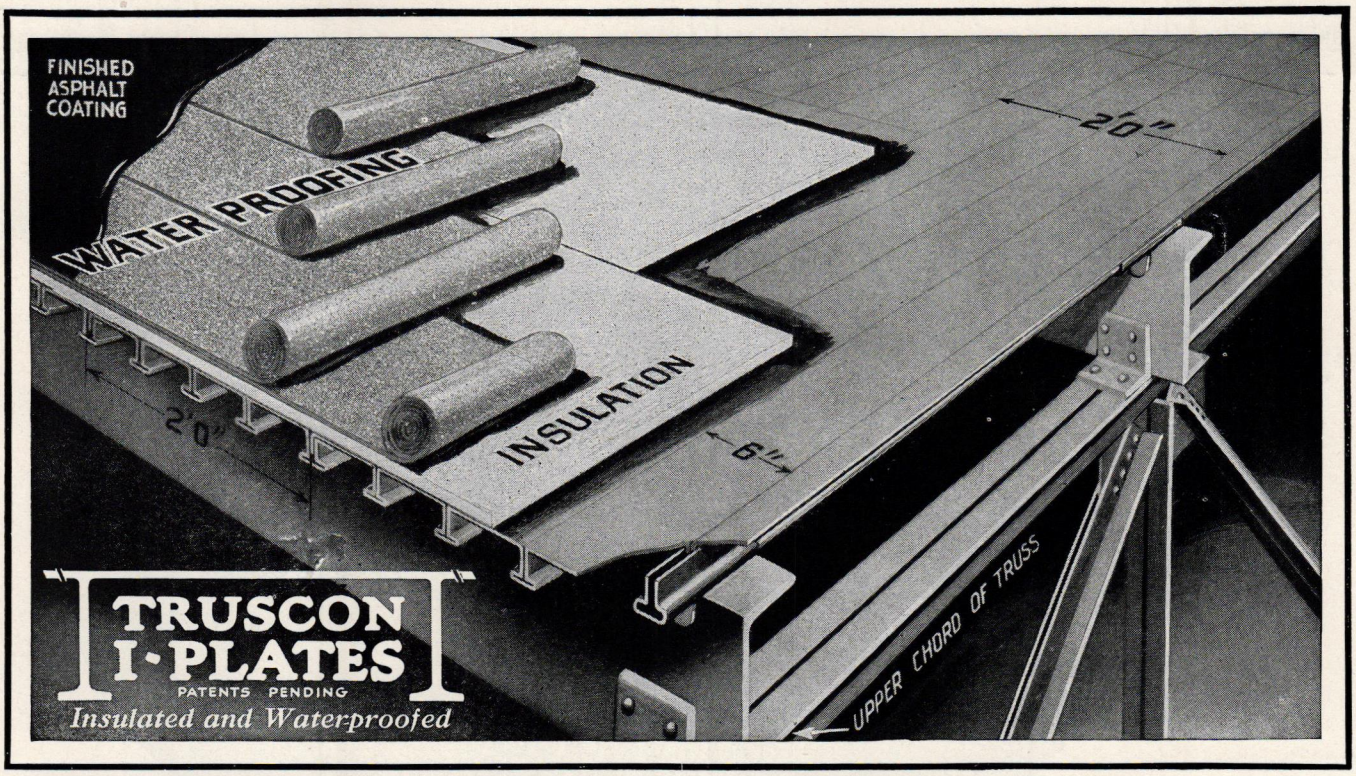
In the installation and operation of the smaller institution laundry, high pressure steam is not an absolute necessity. Nor is an excessive amount of floor space required. Have an "American" representative tell you about our complete line of electric and gas heated equipment. Or, write us direct for full particulars.

The American Laundry Machinery Company

***Norwood Station,* Cincinnati, Ohio**

THE CANADIAN LAUNDRY MACHINERY CO., LTD.
47-93 Sterling Road, Toronto 3, Ont., Canada

Agents: BRITISH-AMERICAN LAUNDRY MACHINERY CO., LTD.
Underhill St., Camden Town, London, N.W.1, England

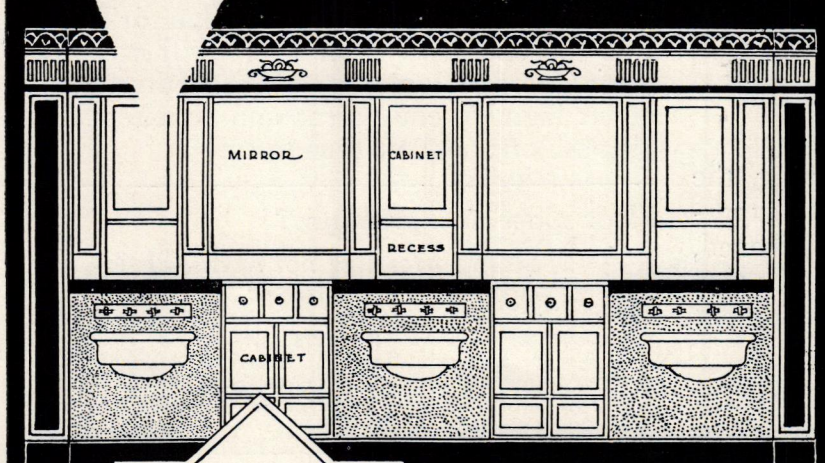


STEELDECK ROOFS NOT OVER 5 lbs PER SQ. FOOT

Illustrated literature on request.

TRUSCON STEEL COMPANY, · YOUNGSTOWN, OHIO

VITROLITE



PETER

Recent Installations of Vitrolite Walls for Barber Shops

Prudential Building, New York City. Cass Gilbert, Architect.
New State Bank of Chicago Building, Chicago. Graham, Probst, Anderson & White, Architects.
Children's Barber Shop, Marshall Field & Co., Retail, Chicago.
Fort Shelby Hotel, Detroit. Albert Kahn, Architect.
Maccabees Building, Detroit. Albert Kahn, Architect.
Barlum Hotel, Detroit. Bonnah & Chaffee, Architects.
Tulsa Building, Tulsa. Rush, Endicott & Rush, Architects.
Hotel Mayo, Tulsa. George Winkler, Architect.
John Gartner Shop, Paul Brown Building, St. Louis.

Leading Architects Everywhere Are Specifying Vitrolite for Fine Barber Shop Installations Because It Is the Superlative Sanitary Material and Permits a Wide Variety of Decorative Effects

THE VITROLITE COMPANY

Suite **604, 133 W. Washington St., Chicago** ***Factory:*** **Parkersburg, W. Va.**

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Atlanta	Dallas	New York	St. Louis	Melbourne
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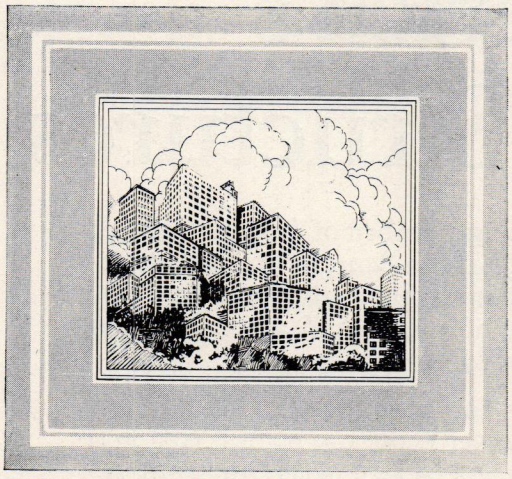
Buffalo	Los Angeles	Portland	Copenhagen	San Juan
Cincinnati	Miami	Providence	Havana	Shanghai
Cleveland	Minneapolis	San Francisco	Johannesburg	Vancouver, B. C.
	New Orleans	Seattle	London	

"BETTER THAN MARBLE"



THERE is a new "Business Triumvirate" today, composed of the merchant, the architect and the store planner. New and keener competition, increased rents and salaries have created a need for this specialist—the store planner.

The merchant knows his trade, the architect has his plan—the store planner acts as an advisory aid to both merchant and architect. It is an ideal arrangement.

Our Store Planners serve architects in a co-operative capacity. Their services are without obligation. We invite inquiries from all those interested.

GRAND RAPIDS STORE EQUIPMENT CORPORATION
GRAND RAPIDS, MICHIGAN
Succeeding
THE GRAND RAPIDS SHOW CASE COMPANY WELCH-WILMARTH CORPORATION
Branch offices and representatives in most principal cities
Factories: GRAND RAPIDS; PORTLAND, ORE.; BALTIMORE; NEW YORK CITY

In America's Giant Structures

ACCO
TRADE MARK
A PRODUCT OF THE AMERICAN CHAIN COMPANY, Inc.
in business for *your* safety

The steadily increasing number of installations of AMERICAN Sash Chain in America's giant structures gives point to the statement that the windows of notable buildings of every kind are thus being suspended satisfactorily—*permanently*.

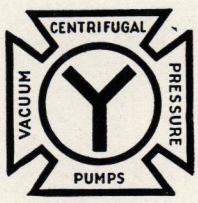
Some of the reasons for specifying AMERICAN Sash Chain are—greater economy in first cost and installation, perfect operation, freedom from repairs, and endurance that outlasts the building. Ask for samples—sizes, prices, and complete facts about manufacture included.

AMERICAN CHAIN COMPANY, Inc.
BRIDGEPORT, CONN.
In Canada: Dominion Chain Company, *Limited*, Niagara Falls, Ontario
District Sales Offices:
Boston, Chicago, New York, Philadelphia, Pittsburgh, San Francisco

Stevens Hotel, Chicago, Ill. Fully equipped with AMERICAN Sash Chain. Holabird & Roche, Architects. George A. Fuller Company, Builders.

Paramount Theatre and Office Building, New York City. Fully equipped with AMERICAN Sash Chain. C. W. & G. L. Rapp, Architects. Thompson-Starrett Company, Builders.

AMERICAN SASH CHAIN



The Pumps of Yesterday and Today

YESTERDAY'S vacuum pumps will not necessarily answer today's heating needs. The demands on a vacuum pump today differ from those of five years ago, two years ago or even last year. Today's heating demands a pump of:—high vacuum producing capacity;—long service with freedom from costly repairs and shutdowns;—economical operation with efficiency under *all* conditions met with in the modern vacuum heating system;—ample capacity for keeping radiators and returns free from air and water;—simplicity in design and operation so that it may be successfully maintained at maximum efficiency by ordinary attendants. Young Pumps meet these requirements and are designed not only for service on the heating systems of yesterday but for the high vacuum heating systems of today. Young Pumps are factory tested after being assembled as a complete unit. They are ready to run as soon as connected with feed wiring. Supplied in standard units of seven capacities.

Table of Capacities

Size	Square Feet of Radiation
V0-A	5,000
V1-A	8,000
V2-A	16,000
V3-A	26,000
V4-A	40,000
V5-A	65,000
V6-A	100,000

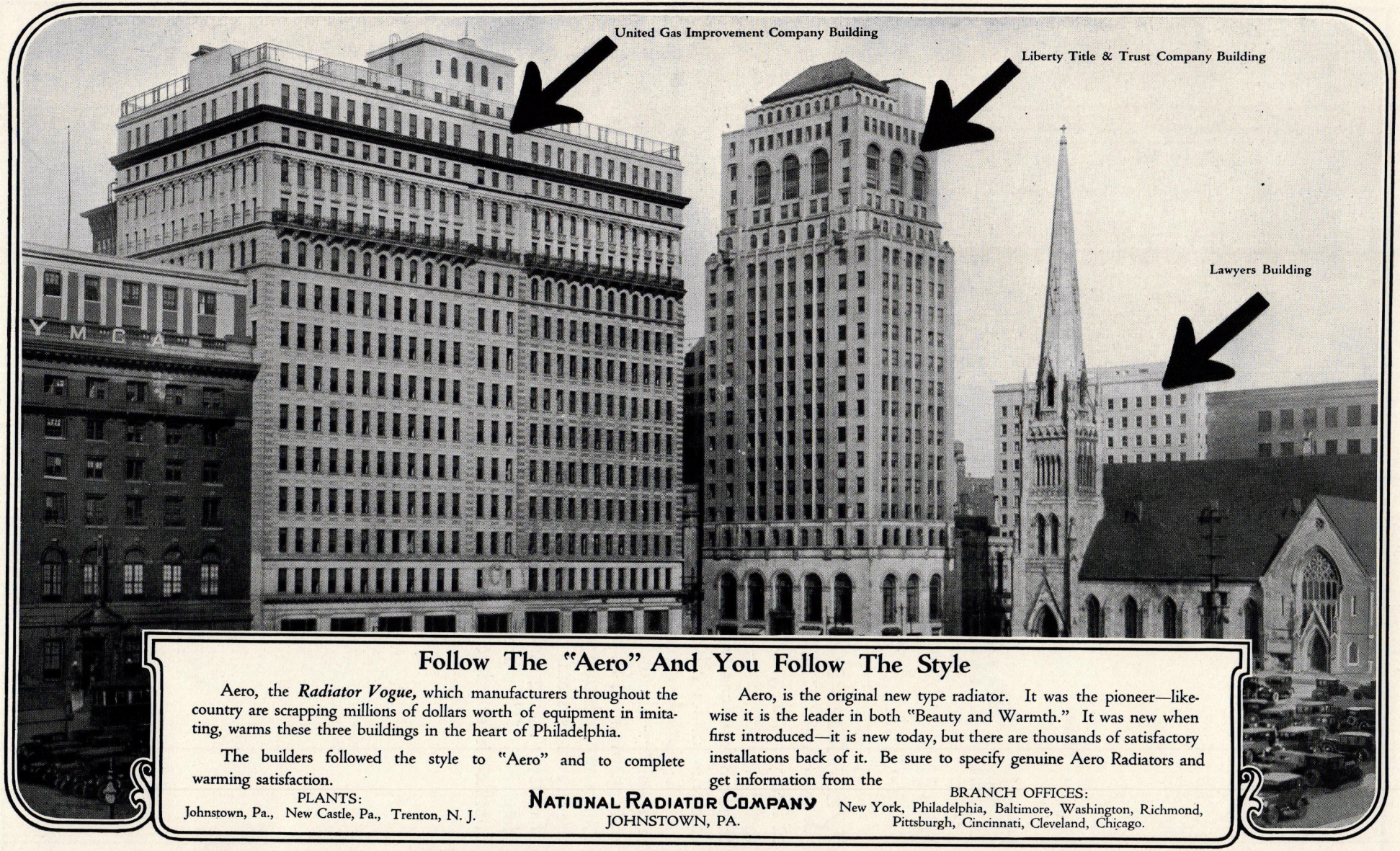
YOUNG PUMP COMPANY

DUNHAM BUILDING

450 East Ohio Street Chicago, Illinois

FACTORY: Michigan City, Indiana

In Canada: C. A. Dunham Co., Ltd., 1523-41 Davenport Road, Toronto



Follow The "Aero" And You Follow The Style

Aero, the ***Radiator Vogue,*** which manufacturers throughout the country are scrapping millions of dollars worth of equipment in imitating, warms these three buildings in the heart of Philadelphia.

The builders followed the style to "Aero" and to complete warming satisfaction.

Aero, is the original new type radiator. It was the pioneer—likewise it is the leader in both "Beauty and Warmth." It was new when first introduced—it is new today, but there are thousands of satisfactory installations back of it. Be sure to specify genuine Aero Radiators and get information from the

PLANTS:
Johnstown, Pa., New Castle, Pa., Trenton, N. J.

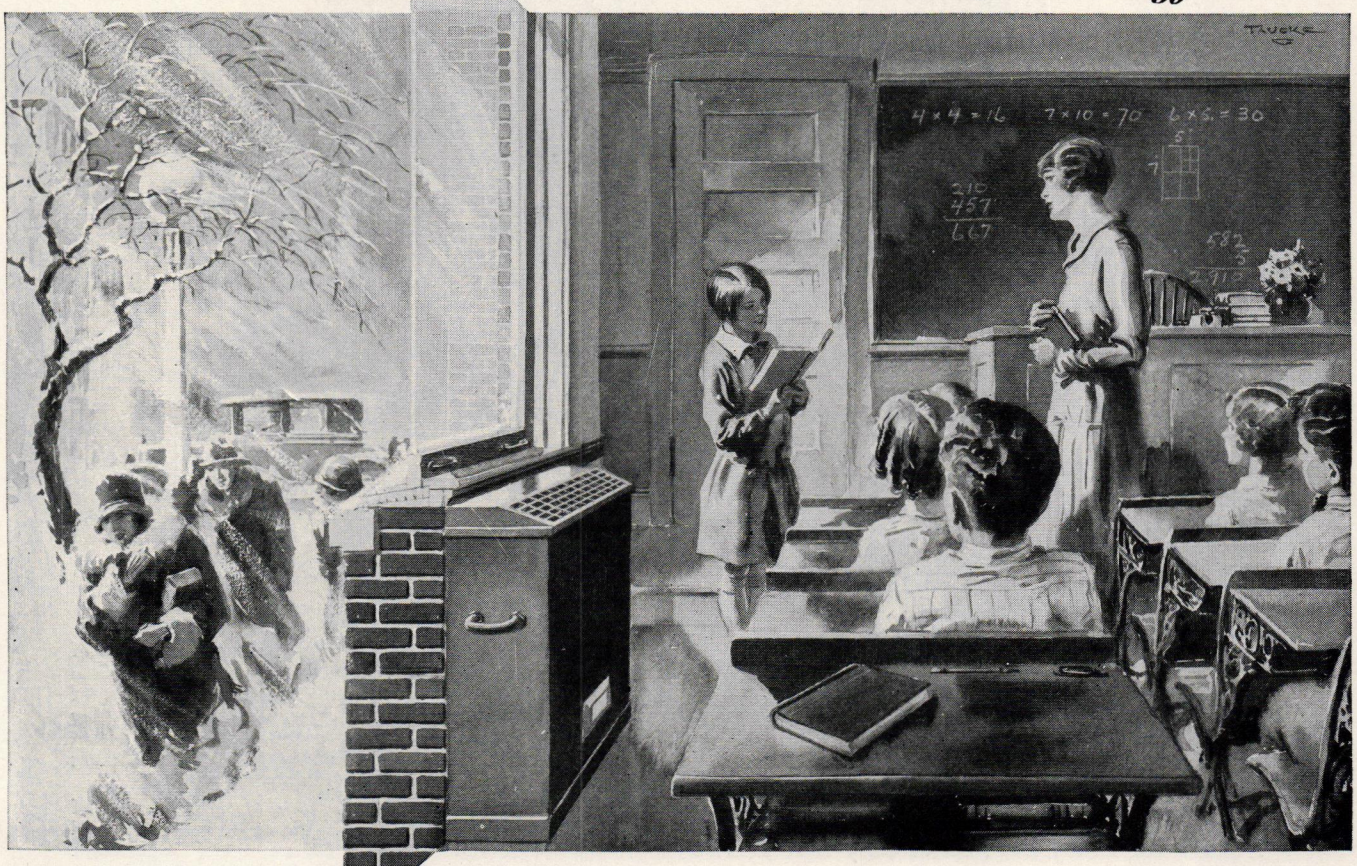
NATIONAL RADIATOR COMPANY
JOHNSTOWN, PA.

BRANCH OFFICES:
New York, Philadelphia, Baltimore, Washington, Richmond, Pittsburgh, Cincinnati, Cleveland, Chicago.

BEAUTY *and* WARMTH *with*

AERO RADIATORS

UNIVENT and Glass—*make the difference*

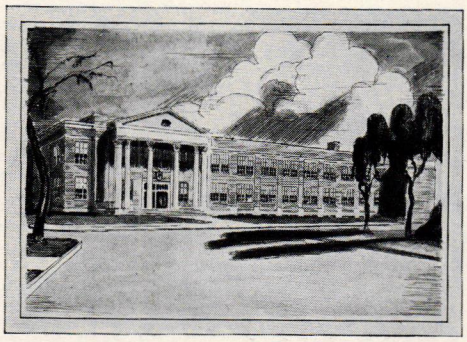


GLASS—to let in light, and to keep out snow and storm.

Univent—to bring into the classroom fresh outdoor air, robbed of its chill and warmed to June-like temperature.

For just as glass guards against the elements, the Univent protects precious lives with a constant supply of invigorating outdoor air, diffused to every nook and corner of the room, with agreeable air motion, but without draft. A dust-free, damp-free, healthy atmosphere that makes minds alert and bodies safe from sickness.

Better health records—better report cards—better attendance—all because science has invented a way to bring the stimulating outdoor air INDOORS. Much more simple than opening windows—no dangerous drafts—and results so obviously beneficial that a Univent in every classroom is no more than justice due teacher and pupils.



*Sewickley High School, *equipped with . . .*

UNIVENT (TRADE MARK)

VENTILATION

School authorities, architects, and heating engineers endorse the Univent as the simplest, easiest controlled, most effective and economical ventilating system known. As a result of thorough investigation, schools everywhere, both new and old, are installing the Univent.

Write for our free book, "Univent Ventilation." It tells why good ventilation is necessary and shows how the Univent gives perfect ventilation regardless of extremes of weather.

* * *

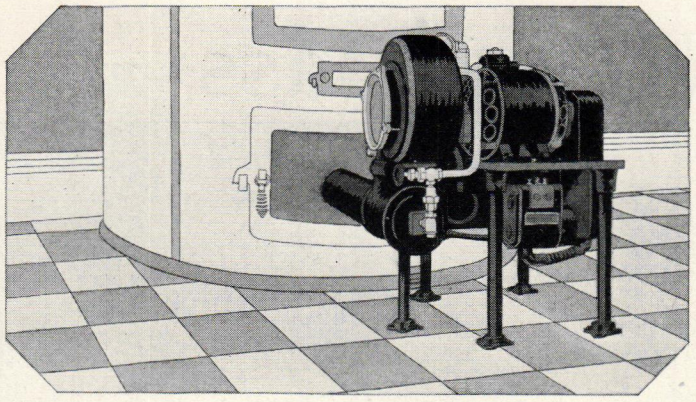
**Sewickley High School, Sewickley, Pa.*
Press C. Dowler, Architect, Pittsburgh, Pa.
Bartley O'Neill Company, Piping and Heating Contractor

Manufactured only by THE HERMAN NELSON CORPORATION, *Moline, Ill.*

Builders of Successful Heating and Ventilating Equipment for 20 Years

Sales and Service

BELFAST, ME.	SYRACUSE	PITTSBURGH	CLEVELAND	CHICAGO	ST. LOUIS	DENVER	SEATTLE
BOSTON	BUFFALO	CHARLOTTE, N. C.	COLUMBUS	DES MOINES	SAN FRANCISCO	SALT LAKE CITY	VANCOUVER
NEW HAVEN	PHILADELPHIA	GRAND RAPIDS	TOLEDO	MILWAUKEE	EMPORIA	SPOKANE	TORONTO
NEW YORK CITY	SCRANTON	DETROIT	INDIANAPOLIS	MINNEAPOLIS	KANSAS CITY	PORTLAND	



"We leave it to your judgment"

USUALLY, the man who is building a home has the good sense to trust his architect implicitly with the choice of heating equipment. He takes it for granted—and naturally—that the heating method specified by the architect will meet most completely and permanently the needs of his home. . . .

A growing number of leading American architects recommend the Quiet May Oil Burner for every home that they build. The Quiet May satisfies their every requirement of what a heating system ought to be—quiet, clean, healthful, completely dependable and automatic.

The Quiet May merits your unqualified recommendation. Thousands of Quiet May Oil Burners are installed in homes throughout America, in which they are giving entire satisfaction. Let us send you specification sheets, with complete data concerning the Quiet May. A postal will bring you, without charge, our valuable instructive booklet. Get this booklet for your files!

MAY OIL BURNER CORPORATION

Factory and Executive Offices, Baltimore, Md. Branch Offices, 331 Madison Ave., New York; Terminal Sales Bldg., Seattle, and 35 East Wacker Drive, Chicago. Also makers of the May Commercial Oil Burner

Consider these definite advantages of the Quiet May—the perfected *oil burner*

Quiet: The Quiet May admits a measured quantity of air through a large opening, at low speed—and as a result, its combustion is really noiseless. Because of this improved principle of operation, the Quiet May removes the greatest single objection to oil heat. With the Quiet May, no sound can intrude into the living quarters to disturb the occupants of a home.

Safety: Listed as standard by the National Board of Fire Underwriters, New York Board of Standards and Appeals, Commonwealth of Massachusetts Department of Public Safety. The Quiet May is equipped with both temperature and combustion switches of proved dependability. Every part is rigidly tested for accuracy and reliability as a safety unit.

Adaptability: The Quiet May is approved to burn all grades of home-heating fuel oils from 25 degrees Baume upward. It is adaptable to large as well as small homes. It meets the requirements of every type of heating system, whether steam, vapor, hot air or hot water, through its flexibility and simplicity of adjustment to different furnace, flue and chimney conditions.

Simplicity: So simply designed is the Quiet May that it has only two moving parts. It is of the sturdiest possible construction. Every May burner must pass twenty-three exhaustive tests before it leaves the factory.

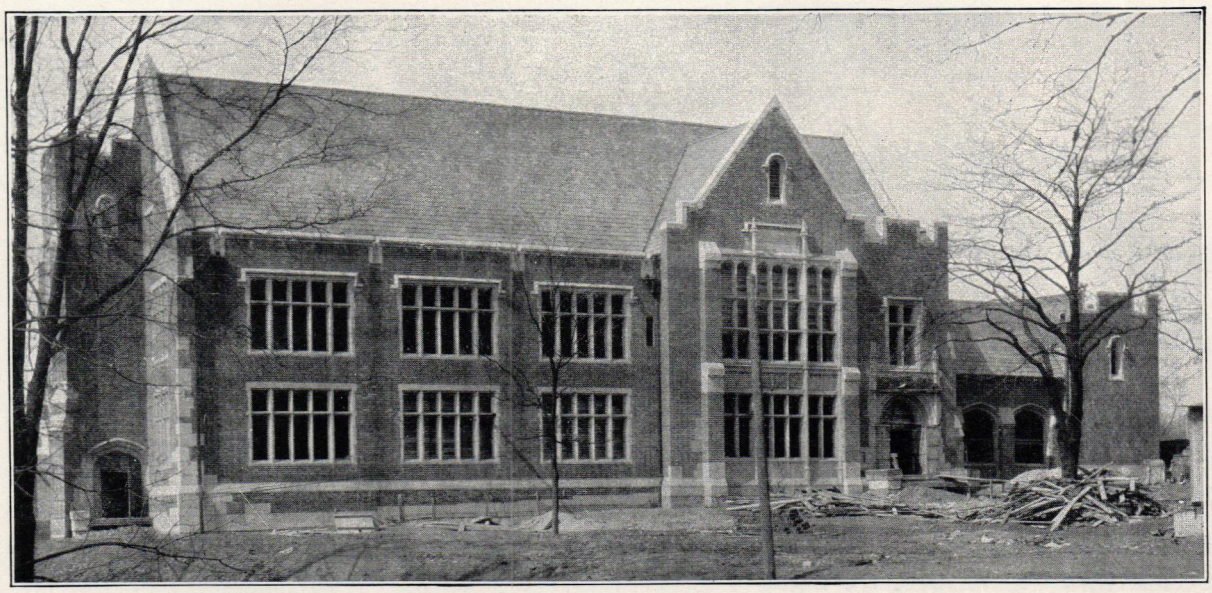
Integrity: A firm of unquestioned reputation, with immense resources, stands back of the Quiet May. Every claim made for the Quiet May can be relied on.

Cost and Terms: Depending on the locality, size of tank and soil conditions, the Quiet May costs a nominal sum when measured in family health, freedom from trouble and increase in property valuation. The Quiet May is sold on convenient time payments. It is installed only by experienced and reliable dealers.

QUIET MAY

AUTOMATIC OIL BURNER

WIFCO at Wittenberg—fully accredited



Chemistry Building, Wittenberg College, Springfield, Ohio
Robert C. Gotwald and Herbert Paumer, Architects
James I. Barnes, Inc., Contractors

WIFCO has entered Wittenberg College! James I. Barnes and Company, the contractors, are delighted with this super mortar. But then every one who investigates this remarkable material is impressed. It proves itself on every occasion. Limitless possibilities have been opened by the perfection of WIFCO Super Mortar. And why *Super?*

There are so many points of superiority about WIFCO. Colored at the mill. Mixed in standard unvarying proportions. Made stronger than any mortar known (highest in compressive strength and tensile strength). When you break a panel of brick and WIFCO you find it a solid unit—so *firm* and *rigid* is the bond. Age tightens this bond progressively.

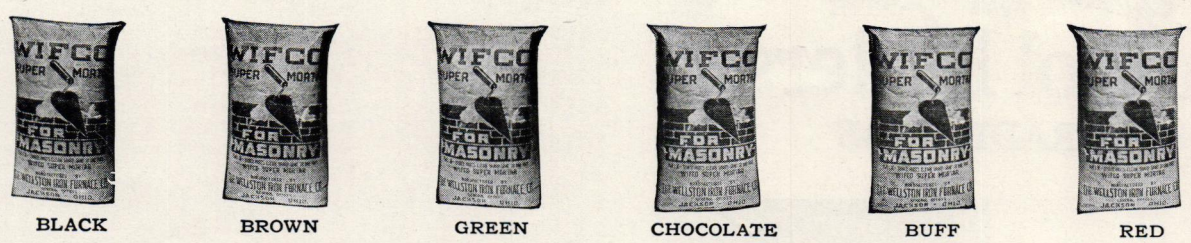
Colored WIFCO gives you harmonies of color that improve the appearance of almost every job. For any piece of masonry, some color is likely to be more suitable than natural mortar, and WIFCO permits the use of color without the hazards and expense of having it mixed in on the job. You specify the color you want and the mill sees that you get it.

And the colors of WIFCO will not stain masonry, nor will they fade. They are as permanent as the wall that embodies them. They are reliable in the sense that mill responsibility, and only mill responsibility can imply.

Moisture absorption has been "licked" by WIFCO Super Mortar. You can build as thin a brick wall as the building code permits and *know* that prolonged rains will never penetrate the WIFCO used.

The Wittenberg building is just one of the many, many jobs on which WIFCO has been used. Its reception has been very gratifying. WIFCO is established. For a better mortar—specify WIFCO Super Mortar. Deliveries between Pittsburgh and St. Louis are now possible. Color samples will gladly be mailed on request.

THE WELLSTON IRON FURNACE CO.
Jackson, Ohio



BLACK BROWN GREEN CHOCOLATE BUFF RED

Super-WIFCO-Mortar

U. S. radiators heat 40-story *Pure Oil Bldg.*

Magnificent in spirit and conception, frankly inspired by the Certosa monastery of Pavia, Italy, sponsors of the Pure Oil Building chose all its equipment as carefully as they planned its vast and harmonious detail.

Those who know Chicago say that this great temple of commerce, first to rise from Wacker Drive, is prophetic of what the near future holds for its riverside district.

May it not be said that the selection of United States radiators for this great structure is also prophetic, forecasting the choice and installation of United States radiators in companion buildings soon to rise?

UNITED STATES RADIATOR CORPORATION - DETROIT, MICHIGAN

6 FACTORIES AND 32 ASSEMBLING PLANTS SERVE THE COUNTRY

For 37 years, builders of dependable heating equipment

Guaranteed Heating WITH

Capitol Boilers

AND RADIATORS

Architect, Frederick P. Dinkelberg, Chicago; Heating Contractor, The Ensign Engineering Co., Chicago

Mr. duPont has bought his 50th Oil-O-Matic

Chairman of the Board of the great General Motors organization uses oil exclusively for heat on his estate

TWO OF THE TENANT HOMES

On the duPont estate are large and small homes occupied by employes. Heating plants are of various types, yet all enjoy the same comforts. Oil-O-Matic can be connected to your present heating plant, whether it be steam, hot water or warm air.

JUST the bare statement that Pierre S. du Pont has 50 Oil-O-Matic Oil Burners on his estate answers nine-tenths of the questions on oil heat now in your mind.

And when you read how he came to select Oil-O-Matic—where they are used—the length of time he has had them—and their record of performance—you will realize that your whole problem of heating is answered for you.

Engineer Makes Actual Tests

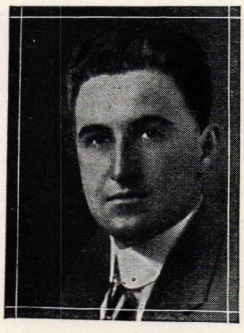
From his staff of engineers, Mr. Brewer was appointed to determine which oil burner was best fitted to provide economical, uniform, dependable heat. On the basis of engineering excellence, his choice narrowed down to two. But after making actual tests in homes on Longwood Farms, the duPont estate, Mr. Brewer enthusiastically recommended Oil-O-Matic. He also bought two for his parents' home and father's green house.

This settles the question of comparative merit.

For Any Size Home

Longwood Farms covers 1200 acres of beautifully rolling countryside, near Kennett Square, Pa. The employes and their families dwell on this estate in average size homes. It is into these that Mr. du Pont has placed 50 Oil-O-Matics.

This is your assurance that no home is too small to enjoy all the wonderful benefits of Oil-O-Matic Heat.



R. P. BREWER

Engineer of maintenance, read an Oil-O-Matic advertisement in the Christian Science Monitor that prompted him to investigate the merits of Oil-O-Matic

Dependable Uniform Heat

The first three Oil-O-Matics were installed on the estate in the spring of 1925. So perfectly did they function that during that summer 39 more were purchased. These 42 have more than confirmed the engineer's judgment. Eight more have been added as new homes were completed.

In view of this there should be no question as to its dependability. Particularly since Oil-O-Matic has been giving similar satisfaction for 8 years, and more home owners are buying Oil-O-Matic than any other two oil burners combined!

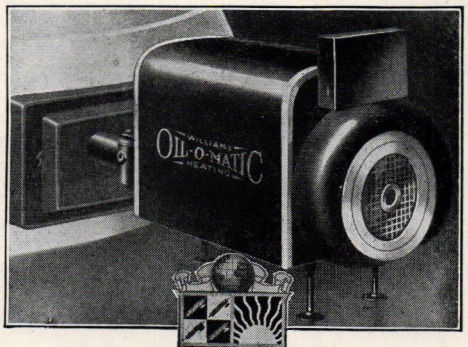
Lowest Operating Cost

The individual tenants bear the cost of heating their own homes, and their satisfaction is the best measure of Oil-O-matic Heat. You will find their homes spotlessly clean and easy to keep so. They enjoy the comfort of perfectly uniform, automatic heat at a cost equal to the bare cost of coal.

Oil-O-Matic's low operating cost is primarily due to its ability to use heavy oils, lower in price and richer in heat units than the light oils to which most oil burners are restricted. Yet Oil-O-Matic burns light or heavy oil with equal facility.

Architects Specify Oil-O-Matic

In scores of cities leading architects have found that Oil-O-Matic meets their needs perfectly. One in St. Louis has just specified his 50th. For all the facts that will assist you, send today for "Specifying Oil Heat," our special book for architects. Your local oilomatician is well versed in oil heating and will gladly cooperate with you.



Williams Oil-O-Matic Heating Corp. Bloomington, Illinois

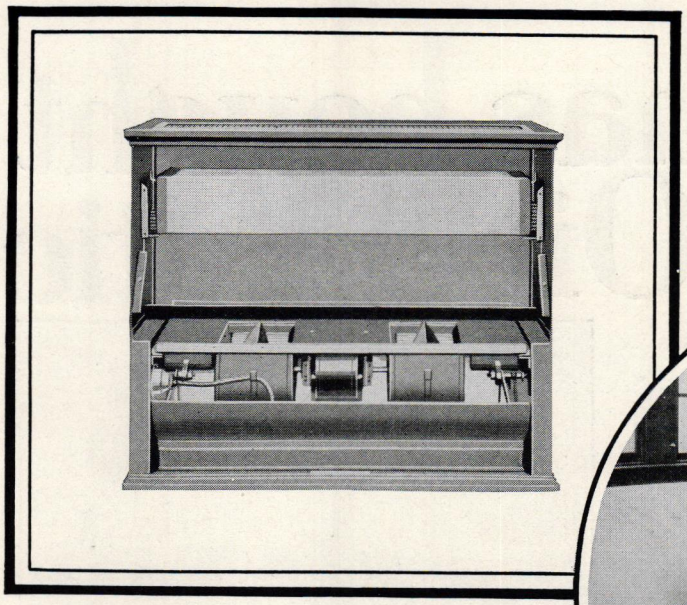
Please send me without obligation a copy of "Specifying Oil Heat." (AF67)

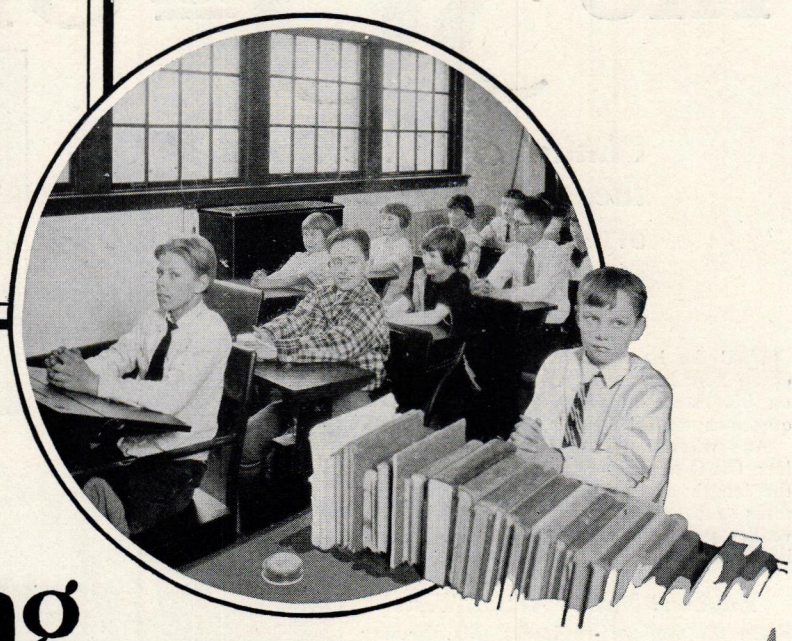
Name .....

Street Address .....

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

WILLIAMS OIL-O-MATIC HEATING





Heating *and* Ventilating *Combined!*

Universal Heating and Ventilating Units, sold and serviced through the American Blower Company's nation wide organization, offer unique advantages of design and construction and effective control of temperature—quiet operation—reliability—simplicity—economy.

Proved by 15 years of Satisfactory operation in Schools and other Public Buildings. Write for Technical Data and Catalog (638)

AMERICAN BLOWER COMPANY, DETROIT
BRANCH OFFICES IN ALL PRINCIPAL CITIES
CANADIAN SIROCCO COMPANY, LIMITED, WINDSOR, ONT.

American Blower

"Sirocco" VENTILATING, HEATING, AIR CONDITIONING, DRYING, MECHANICAL DRAFT

MANUFACTURERS OF ALL TYPES OF AIR HANDLING EQUIPMENT SINCE 1881

Again these Boilers *Repeat*

1

2

THEIR utmost satisfaction in the fuel economy, long firing periods and thorough heating efficiency of the two Utica-Imperial Super-Smokeless Boilers, installed in (1) their Boston Sales Building, led Peck & Hills Furniture Company to install another in (2) their warehouse at Boston.

Again it was the actual performance of these boilers that brought about the decision to install them in (3) their new warehouse at Chicago.

Let us tell you how this remarkable heating efficiency is brought about by a secondary fire, extra long fire travel and almost complete elimination of smoke and soot.

UTICA HEATER COMPANY
Pioneers in Smokeless Combustion
UTICA, N.Y.
Sales Offices in Principal Cities of U. S. and Canada

3

June 10, 1926

Utica Heater Co.,
365 E. Illinois St.,
Chicago, Ill.

Gentlemen:

We are about to begin the construction of a new Warehouse Building. Your boilers have been installed in our Sales Building and Warehouse at Boston, and they have been so satisfactory that I am very much interested in your equipment . . . .

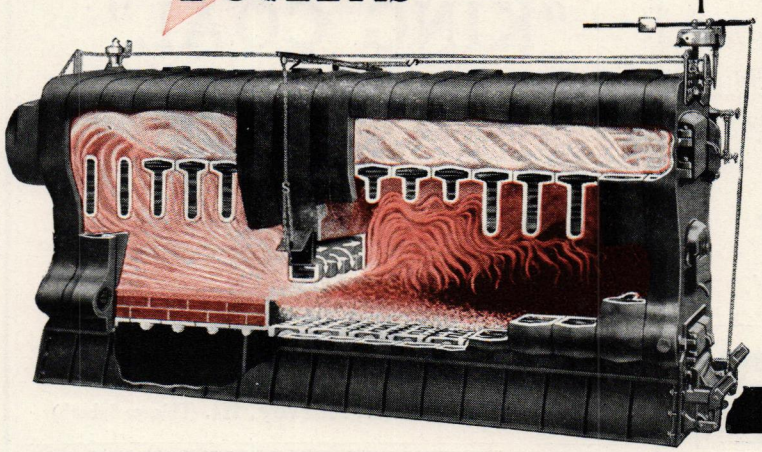
Yours very truly,

PECK & HILLS FURNITURE CO.

E. M. Vogleson

E. M. VOGLESON, Vice President

UTICA-IMPERIAL
SUPER-SMOKELESS
· BOILERS ·



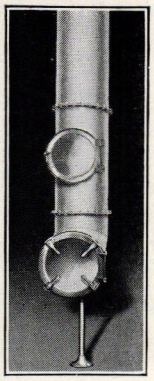
SAID THE CONTRACTOR TO THE ARCHITECT---

"I WANT to congratulate you on that last laundry chute you specified. Shipment was made on time, parts were all properly boxed and tagged, erection was handled in record time because the chute exactly met your specifications, and I was particularly impressed with the low price. The fact of the matter is, I had no idea that a standardized laundry chute could be had so cheaply."

To which the architect replied (*commenting inwardly upon his ability to please the most meticulous of contractors, but at the same time not wanting to take too much glory to himself*):

"Yes, I would have specified this chute* on the last half dozen jobs if I had known about it."

*There is no secret about the identity of the above mentioned chute. It is made by Pfaudler, manufacturer of laundry chutes for over fifteen years.



As a result of a new method of fabrication and without sacrifice to its established quality, we are able to offer the glass-lined laundry chute at greatly reduced prices. Consequently the most sanitary and durable construction yet devised, is well within the scope of even a modest financial building outlay.

Both the glass-lined and aluminum laundry chutes are fully described in a new brochure. Write for your copy today!

THE PFAUDLER COMPANY

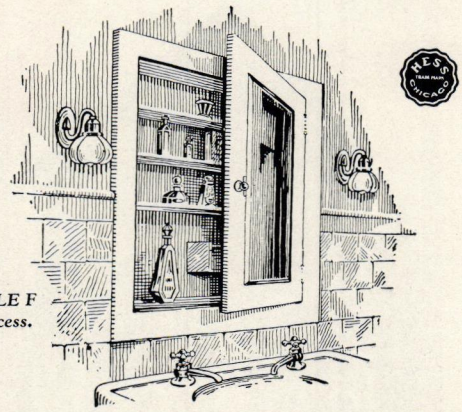
Laundry Chute Division, ROCHESTER, N. Y.

LAUNDRY CHUTES

PFAUDLER

HESS CABINETS and MIRRORS

Snow-White Steel



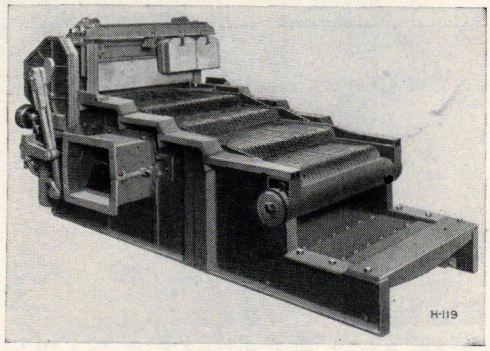
STYLE F
to recess.

HESS Cabinets and Mirrors are suitable for the finest bathrooms, at prices to fit the ordinary income.

Sold by local dealers everywhere. If you cannot find them at home, write for particulars.

Write for catalogue; or See Sweet's Index.

HESS WARMING & VENTILATING CO.
Makers of Hess *Welded Steel* Furnace.
1216 S. Western Avenue, Chicago



Rear view of King Coal Stoker showing movable stepped grates

"KING COAL" STOKER

for SMOKELESS COMBUSTION

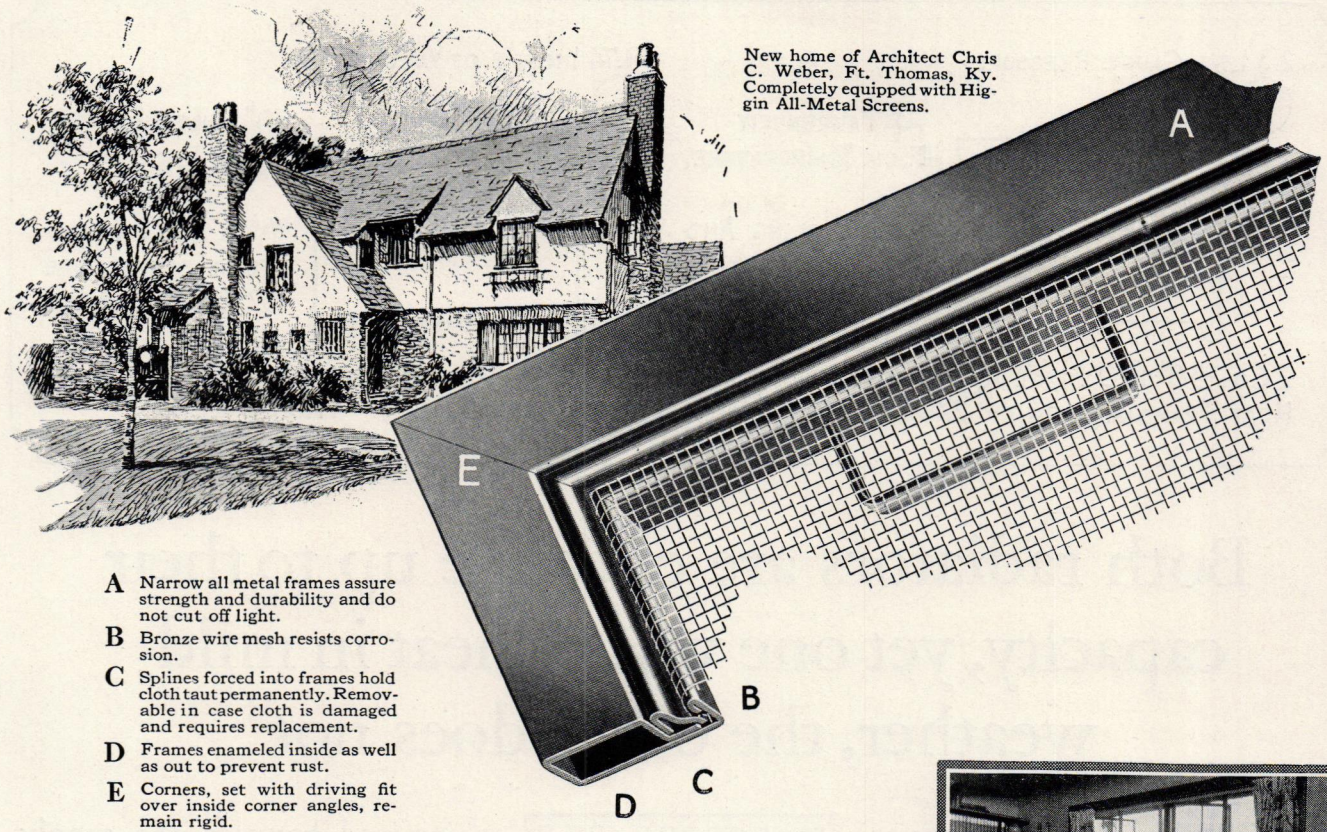
The ideal unit for heating boilers, 40 to 250 h. p. Fully automatic.

Send for Catalog 100.

JOSEPH HARRINGTON COMPANY

(Subsidiary of Whiting Corporation)

15667 Lathrop Ave., Harvey, Ill. (Chicago Suburb)



New home of Architect Chris C. Weber, Ft. Thomas, Ky. Completely equipped with Higgin All-Metal Screens.

A Narrow all metal frames assure strength and durability and do not cut off light.

B Bronze wire mesh resists corrosion.

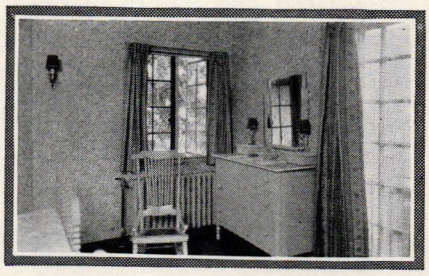
C Splines forced into frames hold cloth taut permanently. Removable in case cloth is damaged and requires replacement.

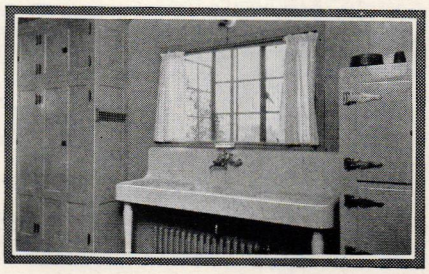
D Frames enameled inside as well as out to prevent rust.

E Corners, set with driving fit over inside corner angles, remain rigid.

In this fine home . . .

Every window is equipped with HIGGIN All-Metal Screens



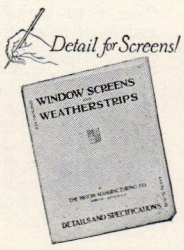


THEY were chosen because their narrow, unobtrusive frames do not reduce the light and air nor detract from the view — because their beauty enhances the charm of the interior decorations — and because they will last many years, thereby saving money.

Every kind of window opening and doorway — in new and old homes — can be perfectly fitted with Higgin Screens to match the window or door construction in finish and general design.

Use the Higgin expert near you. His specialized knowledge and experience are yours for the asking. Look for "Higgin" in your telephone or city directory.

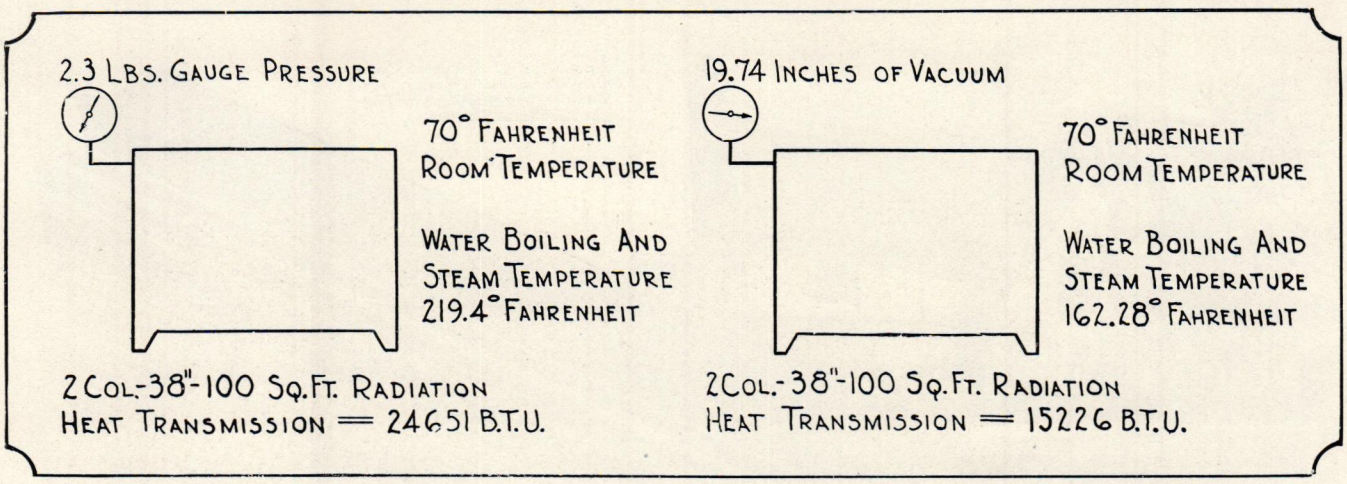
THE HIGGIN MANUFACTURING COMPANY
General Offices: 514 Washington St., Newport, Ky.
Kansas City, Mo. Toronto, Can.
Screen Makers since 1893



HIGGIN
ALL METAL
Screens *and* Weatherstrips
Screens that last longest cost least — Higgin Screens last

Higgin Screen and Weatherstrip Drafting Room details sent on request.

A. I. A. No. 19e15 (Screens)



Both radiators are effective up to their capacity, yet one wastes heat in mild weather, the other does not

WHEN a room becomes too warm the windows are usually thrown open, and dollars fly out as surely as though they were propelled by a powerful fan. The Dunham Differential Vacuum Heating System saves this costly waste. Fuel savings have run as high as 40%!

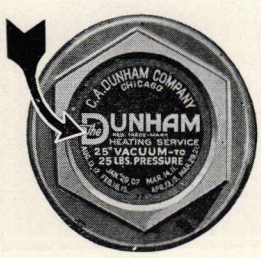
The DUNHAM Difr-enshal-Vacm Heating System. A FIXED DIFFERENTIAL IN PRESSURE — A VARIABLE DEGREE OF VACUUM

This remarkable new heating system cuts heating costs by keeping the heat emission of the radiators equal to the heat loss from the building. This is done by regulating the amount of pressure or the degree of vacuum at which the steam circulates in the supply piping and radiators to conform to the weather conditions, and by controlling the vacuum in the return piping so that a substantially constant difference in pressure is maintained between the supply and return piping. The two illustrations show graphically a 2 column 38 inch radiator with 100 sq. ft of radiation, operating under pressure and vacuum at a room temperature of 70 degrees. When the steam pressure is 2.3 lbs. gauge, the boiling point is 219.4 degrees and the heat transmission is 24,651 B.T.U. UNDER 19.74 INCHES OF VACUUM THE BOILING POINT (and radiator temperature) DROPS TO 162.28 degrees and the heat transmission IS LOWERED TO 15,226 B.T.U.

The Dunham Differential Vacuum Heating System automatically adjusts the radiator's transmission of heat to the temperature requirements.

Look for the Name DUNHAM

This nameplate identifies a genuine DUNHAM Radiator Trap



This is an Exclusive DUNHAM *Development*

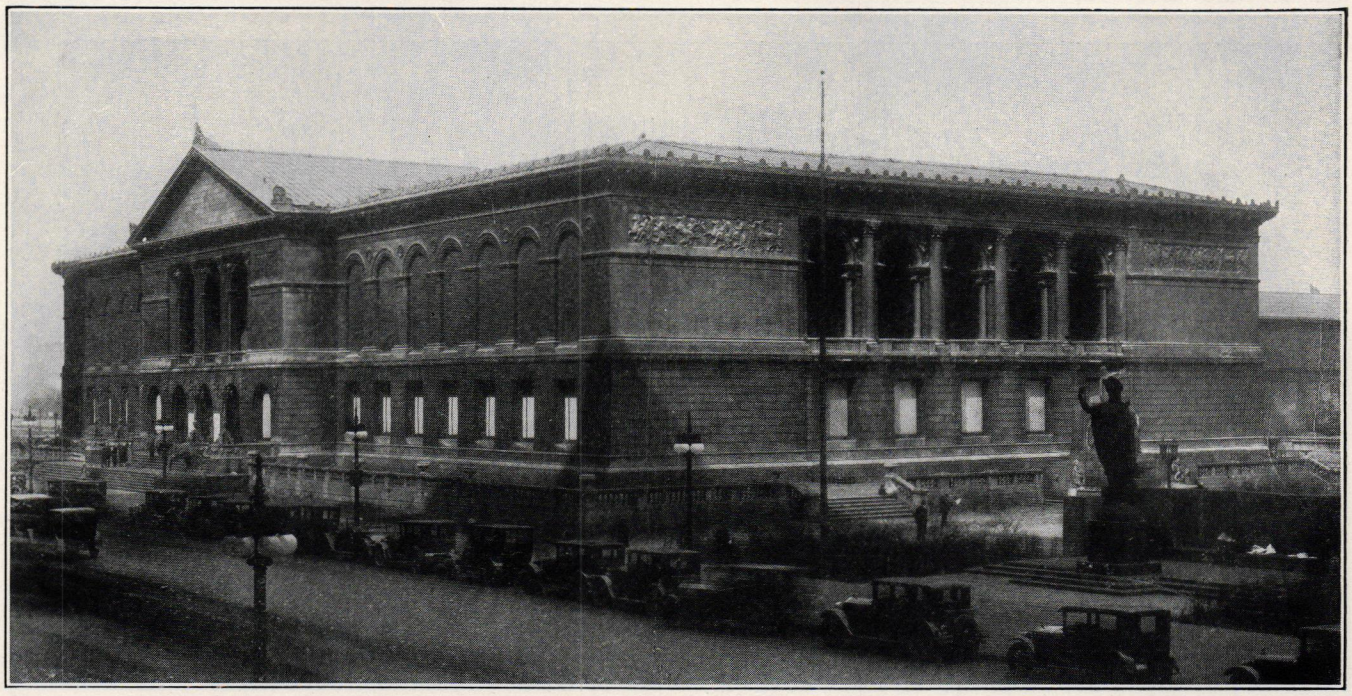
The Dunham Differential Vacuum Heating System is fully covered by patents and pending applications for patents in the United States, Canada and foreign countries. Any infringements will be vigorously prosecuted.

C. A. DUNHAM CO.

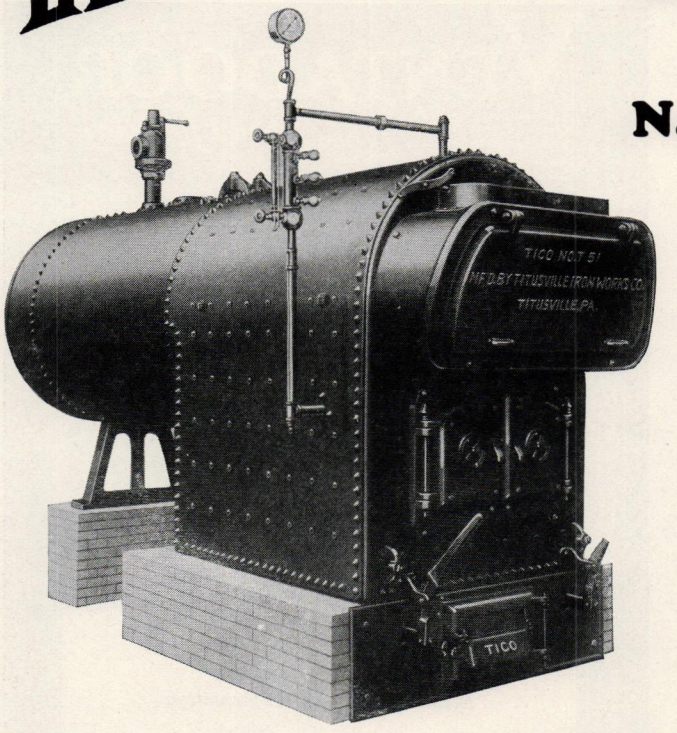
DUNHAM BUILDING

450 East Ohio Street ~ ~ ~ Chicago

Over sixty branch and local sales offices in the United States and Canada bring DUNHAM Heating Service as close to you as your telephone. Consult your telephone directory for the address of our office in your city.



TITUSVILLE Boilers



Serve Many Of The Nation's Finest Buildings!

The Chicago Art Institute, an architectural masterpiece of granite and marble, is another one of Chicago's most prominent buildings heated with TICO Boilers.

There's no ugly smoke stack to spoil the architectural symmetry of this beautiful building nor is there any dense smoke to cloud the surrounding atmosphere—all due to the TICO grate design, which causes thorough combustion avoiding smoke.

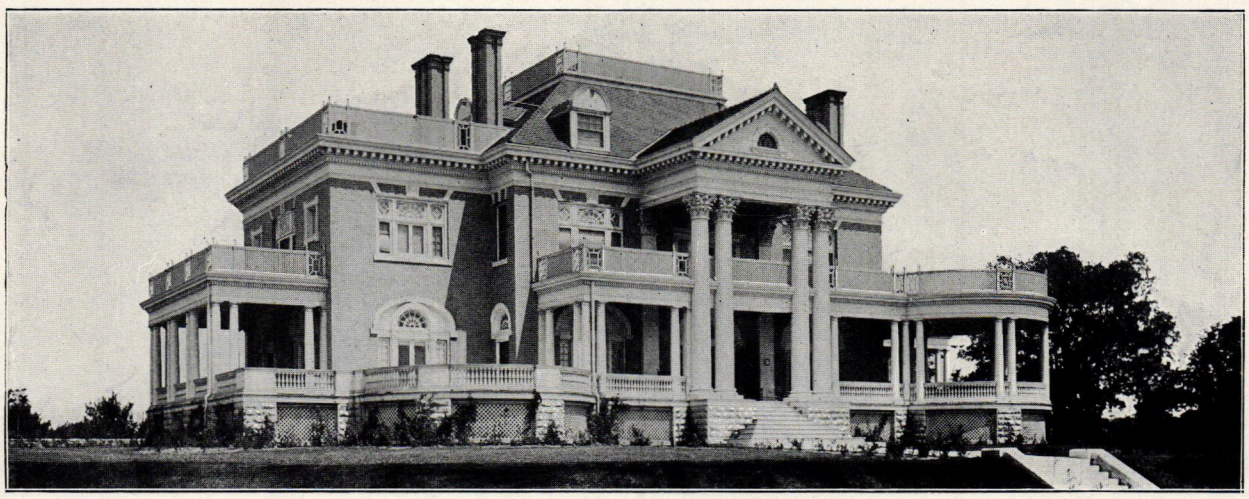
Scientifically balanced draft conditions combined with a long flue travel, make TICO boilers not only smokeless, but also remarkably economical —two excellent reasons why TICO boilers are preferred in many of the nation's finest buildings.

It will pay you as it has others to specify TICO boilers

THE TITUSVILLE IRON WORKS COMPANY
TITUSVILLE PENNA.

SALES OFFICES

New York 152 W. 42nd St. | Detroit, Mich. 204 Owen Bldg. | Washington, D. C. Woodward Bldg. | Pittsburgh, Pa. Farmers Bank Bldg. | Chicago, Ill. 1124 Harris Trust Bldg. | Buffalo, N. Y. Marine Trust Bldg. | Los Angeles, Calif. 940 Maple Ave. | St. Louis, Mo. 401-2 Bank of Commerce Bldg.



RESIDENCE OF THE HON. JOHN J. CRUIKSHANK, HANNIBAL, MO.

"GLOBE" Ventilators Keep Upstairs Rooms Cool

Nearly thirty years ago several "GLOBE" Ventilators of different sizes were included in the original building contract for this residence. These "GLOBES" keep the upper rooms cool by inducing a circulation of air between the roof and the ceilings of the rooms below. The five bath-rooms are ventilated by "GLOBES."

GLOBE VENTILATOR COMPANY

TROY, NEW YORK DEPARTMENT F

The
Herman Nelson Unit Heater

With the Wedge Core
INDESTRUCTIBLE
TRADE MARK
RADIATOR

Leak Proof — Rust Proof — Indestructible

All the advantages of flexible unit heating, plus the exclusive Wedge Core Radiator that *never requires service.*

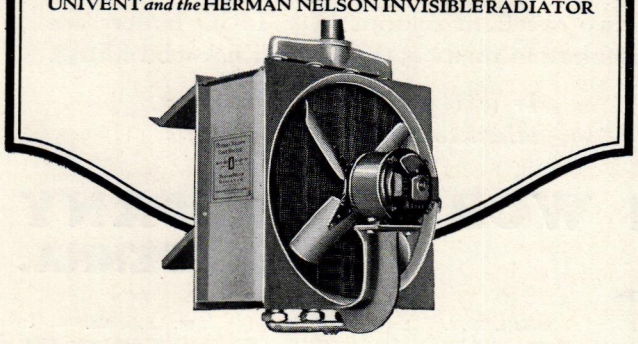
Lower installation cost — smaller pipe lines — no reducing valves necessary. Operating steam pressure from atmosphere to 125 lbs. Cannot be damaged by contraction or expansion strain — freezing cannot harm it.

So light is the Herman Nelson Unit Heater that it is often suspended from pipe lines. Flexible — can be moved from place to place—each unit operated separately if desired. Provides a long range uniform heat distribution, highly desirable in buildings of large cubic capacity. The correct heating unit for

Factories · Mills · Railroad Shops · Roundhouses Warehouses · Garages · Gymnasiums · Auditoriums

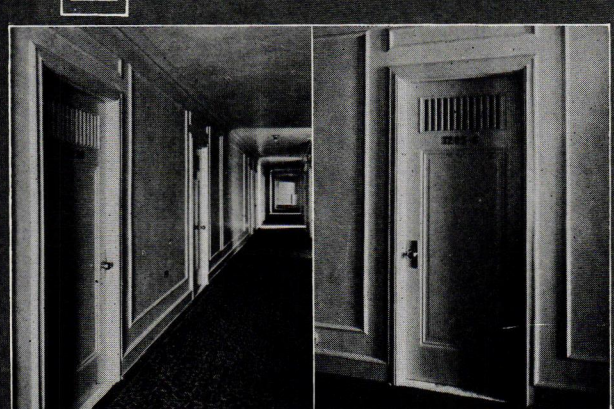
write for complete information

THE HERMAN NELSON CORPORATION
MOLINE *Makers of the* ILLINOIS
UNIVENT *and the* HERMAN NELSON INVISIBLE RADIATOR



VENTADOOR

A ventilating panel for doors

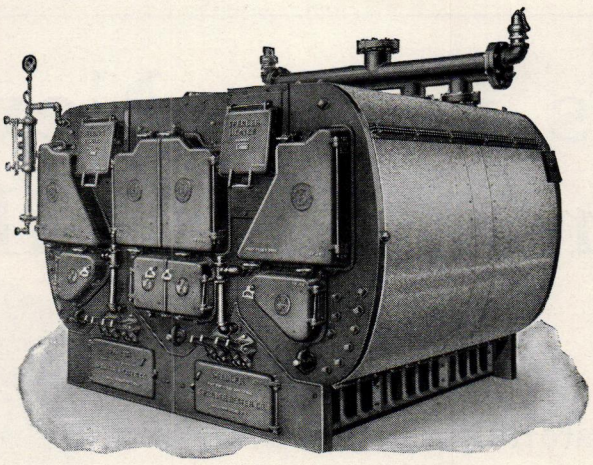


Ventilation with Privacy
Beauty with Economy
Please Write for Information

VAN ZILE VENTILATING CORPORATION

155 EAST 42nd ST.
NEW YORK CITY

One of a number of Important Spencer Heater Features that save money, labor, time and servicing.



100 Series Spencer Steel Tubular Boiler with insulation and cover in place.

Number 6

Covering comes with SPENCER STEEL TUBULAR BOILERS *at no extra cost*

INSULATION of standard quality is furnished *cut to size in blanket form* with every Spencer tubular boiler of the 50 and 100 Series.

This covering material is protected by an outer casing of metal, making the application simple, rapid and much less expensive than it would be if put on in the customary way.

Because no trowelling of plastic covering is necessary on a Spencer Heater of this type, it may be fired as soon as set up. The covering material, being dry, will not crack or check even when applied to a warm boiler shell.

It is only necessary to clean up possible marks and stains of construction — no delays while waiting for material to dry, no labor cost for trowelling, no expense for a cover.

All this in addition to the big saving in operation from burning inexpensive No. 1 Buckwheat and from requiring no night fireman on large buildings.

Spencer
steam . vapor or hot water
Heaters
burn No. 1 Buckwheat coal

SPENCER HEATER COMPANY *General Offices:* WILLIAMSPORT, PA.

New York City Boston Philadelphia Baltimore Buffalo Rochester Hartford Albany Syracuse Scranton

Division of Lycoming Manufacturing Company

STEAM CAPACITIES: Cast Iron Sectional *from 600 feet to 3,200 feet.* Steel Tubular *from 2,000 feet to 16,000 feet*

This is the New Delmonico Building

AN outstanding achievement, even on Fifth Avenue where you expect to see the best. The equipment throughout is of materials of proven merit.

Cohoes Genuine Wrought Iron Pipe was used to insure that this building will be free from pipe troubles.

For over 72 years Cohoes has used the dependable hand puddling process which insures freedom from corrosion and rust

DELMONICO BUILDING
N.E. cor. 44th St. and Fifth Ave.
New York City
H. Craig Severance, Architect
H. Hall Marshall, Engineer
James McCullagh,
Plumbing Contractor

Every Architect should have a copy of our new HAND BOOK of pipe facts. It's free

COHOES ROLLING MILL CO., Inc.

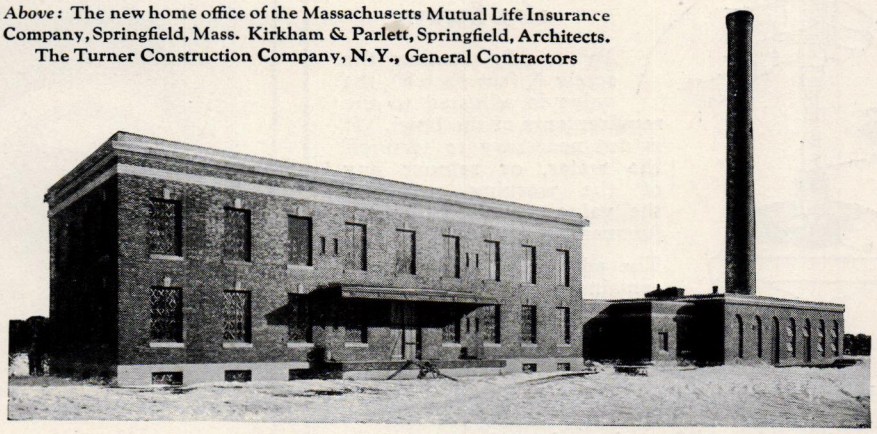
COHOES, N. Y.

Branch Offices:

Philadelphia Fort Wayne Minneapolis New York Boston Norfolk
Los Angeles Cleveland Kansas City Fort Worth

Above: The new home office of the Massachusetts Mutual Life Insurance Company, Springfield, Mass. Kirkham & Parlett, Springfield, Architects. The Turner Construction Company, N. Y., General Contractors

At the Side: Power and storehouses for the building shown above. The power plant contains 4 250-hp. boilers for winter use, and 1 100-hp. boiler for summer use. In all the buildings pictured there are 8½ miles of wrought iron pipe and 28 tons of brass pipe; 21 ventilating fans, 6 air washers and 485 plumbing fixtures.



Walworth made friends on this job

THE Massachusetts Mutual Life Insurance Company will soon complete its new home office on State Street, Springfield, Mass. This magnificent building of brick and Indiana limestone, which will cost upwards of four million dollars, was begun in June, 1925.

Wycoff & Lloyd Co. of Springfield are the contractors for the heating, plumbing, ventilating and vacuum cleaning equipment; R. D. Kimball Co., of Boston are the heating and ventilating engineers.

Walworth furnished the cast-iron flanged and screwed fittings, and the famous Walworth Red Brass fittings were used throughout. These fittings have made friends for Walworth. The engineer in charge of installation reported that he never had experienced so little trouble from defective or imperfect fittings.

Walworth valves, fittings and tools for steam, water, gas, oil and air will be found suitable for any size of construction, large or small. Our Walworth Sigma Steel bulletins, and other informative literature bearing on your special problems, are yours for the asking.

WALWORTH

Walworth Company, General Sales Offices: 51 East 42nd St., New York

Plants at Boston, Mass.; Kewanee, Ill.; Greensburg, Pa.; and Attalla, Ala.

. . . Distributors in Principal Cities of the World . . .

Walworth Ltd., 10 Cathcart St., Montreal, P. Q.

Walworth International Co., New York, Foreign Representative

The Exact Length of Flush for Every Make of Closet

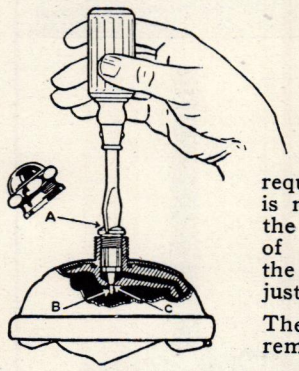
is assured with the

Watrous

FLUSH VALVE

THE Watrous flush valve is the only design that makes proper provision for adapting the quantity of water consumed to the needs of *any bowl with which it is used.*

The result is maximum flushing efficiency and economy in water consumption.



A Simple Turn of a Screw

By merely turning the screw A (see sketch), the valve is adjusted to the requirements of the bowl. It is not necessary to turn off the water, or remove any of the working parts of the valve to make this adjustment.

The adjustment, once made, remains permanent.

Clogging Prevented

Every time the valve is flushed, the plunger (B) is raised off its seat (C), leaving an opening through which grains of sand, etc., can be washed out of the port. No type of flush valve, without this or a similar safeguard, is immune from obstruction.

No Regulation Required

The feature just described—control of the quantity of water supplied to the bowl—should not be confused with regulation for varying degrees of pressure. *The Watrous valve requires no regulation,* from highest pressure down to approximately 5 lbs.

Write for full details

PLUMBING DIVISION

Watrous Flush Valves—Duojet Closets—Self-Closing Basin Cocks—Combination Lavatory Fixtures—Pop-Up Wastes—Liquid Soap Fixtures—etc.

Sold by leading plumbing jobbers throughout the U. S.

THE IMPERIAL BRASS MFG. CO.

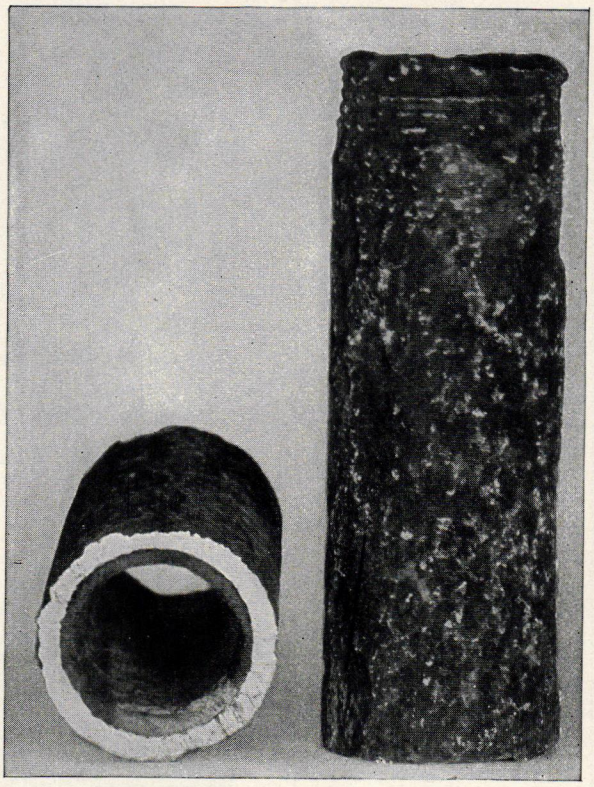
1238 West Harrison Street Chicago

BRANCH SALES OFFICES

H. D. Tuck, 404 Marquette Bldg., Detroit, Mich.
W. E. Blair, Jr., care Coronado Hotel, St. Louis, Mo.
Thos. J. O'Brien, 1812 Exchange Bldg., Memphis, Tenn.
T. A. S. Hall, 318 S. 5th St., Louisville, Ky.
Dillard Eng. Co., Construction Industries Bldg., Dallas, Tex.
R. J. Shank, 920 Grand Ave., Des Moines, Ia.
Continental Sales Co., 924 Metropolitan Life Bldg., Minneapolis, Minn.
Rex W. Williams, 402 Scott Bldg., Salt Lake City, Utah
Wm. P. Horn Co., 237 Rialto Bldg., San Francisco, Cal.
L. C. Coombs, 1815 Rodney Drive, Los Angeles, Cal.
Wm. P. Horn Co., L. C. Smith Bldg., Seattle, Wash.

51 Years of Use

Shows No Deterioration



Pipe in use underground in Lynn, Mass., from 1874 to 1925. Removed when building was torn down. Exterior badly corroded, interior clean and of original diameter.

Typical of what may be expected of

CEMENT LINED PIPE

Costs one-half as much as brass.

Used by ninty-four cities and towns with corrosive waters for service lines under permanent streets.

CEMENT LINING now furnished by Cast Iron Pipe manufacturers in pipe to be used for corrosive waters.

Standard Fittings only are used. Furnished with a special shaped lead lining for making perfect contact with cement lining in pipe.

CEMENT LINED PIPE in buildings for cold water lines is economical and permanent. It serves equally well for hot water and most acids.

CEMENT LINED PIPE CO.

LYNN, MASS.

Another Monument to Creative Genius

Massive in size—beautiful in architecture and substantial in materials—this great building joins the company of some of America's finest structures. Can one imagine anything but the highest of quality in the mechanical equipment for such a building as this?

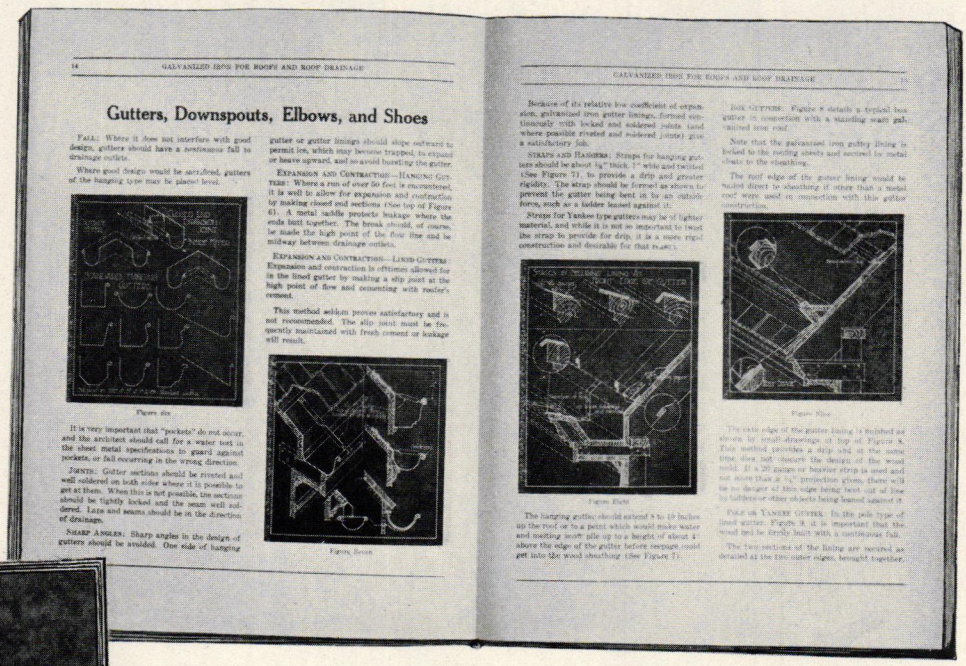
Architects and engineers who have a reputation for thoroughness have eliminated much of uncertainty in passing on the specifications for materials here. And when it came to the tubular equipment—the arteries of this housing, the backbone of its mechanical future—"NATIONAL" Pipe was specified for the major pipe tonnage, a tribute to its ability to serve with satisfaction for years and years to come. "NATIONAL" is the only pipe made by the Scale Free Process.

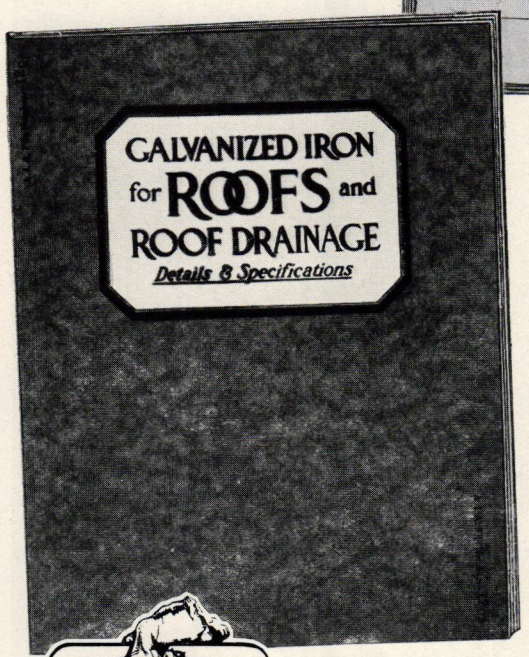
NATIONAL TUBE COMPANY, PITTSBURGH, PA.

NATIONAL

Your card or letterhead brings you this essential book

Plans
Specifications
Suggestions
Standard Practices
Nomenclature
Working Data
Reference Data
Styles
Pure Iron Development
Pure Iron Uses
Pure Iron Service





Please address your letter to Department F-1 when asking for "Galvanized Iron for Roofs and Roof Drainage." This will assure prompt delivery of your copy.

"GALVANIZED IRON for Roofs and Roof Drainage" was prepared especially for the busy architect. It concerns specific roofing and drainage problems where sheet metal is involved.

Many months were spent in assembling the wealth of information contained in this practical book. Then, to further assure its adaptability to your needs it was edited by two well-known firms of architects.

Because "Galvanized Iron for Roofs and Roof Drainage" may be used either for handy reference or for detailed study, you will welcome it as a valuable source of information.

Your letter or business card brings your copy —without obligation.

THE AMERICAN ROLLING MILL CO.
Middletown, Ohio

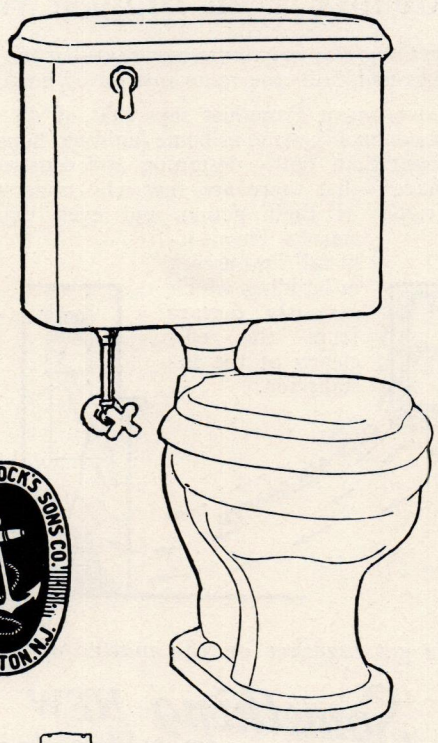
Export: The ARMCO International Corp.
Cable Address: — ARMCO, Middletown

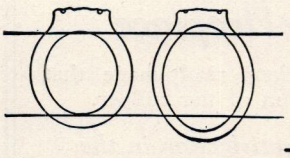
ARMCO
Ingot Iron

This triangle is assurance that products bearing it are made with the skill, intelligence and fidelity associated with the name "ARMCO" and hence can be depended upon to possess in the highest degree the merit claimed for them

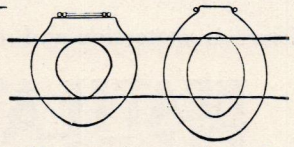
ARMCO TRADE MARK INGOT IRON
The Purest Iron Made

Comfort... where comfort counts for health





This diagram shows the comparative size and shape of the ordinary toilet bowl and a Durock toilet bowl.



Here is shown the ordinary toilet seat in comparison with a Durock toilet seat. Note openings.

NATURE responds to an easy, comfortable position on the toilet by performing her eliminative functions freely and fully.

Durock Elongated-Bowl-and-Seat Toilets induce regular, normal action just as surely as a comfortable bed brings sleep.

Any tendency toward constipation is fostered by the cramped, constrained attitude imposed by ordinary toilets with short, round bowls and seats. On the other hand, the elongated bowl and seat, with the freedom and relaxation it permits, helps to correct any such disposition.

These bowls and seats are from 3 to 4 inches longer than those in old-fashioned, conventional toilets —and the water-surface within the bowl is correspondingly increased in area. (See illustrations.) More sanitary, as well as more healthfully comfortable.

Durock Toilets with this valuable new feature are made in several styles, with a range of prices to meet various requirements. All have Durock tanks as well as bowls, and white celluloid-surfaced seats with covers.

Slight extra cost for much extra value

Durock Toilets with elongated bowls and seats, and their much greater healthfulness, comfort and sanitation, actually cost but very little more than the ordinary type and quality of toilet.

THOMAS MADDOCK'S SONS COMPANY
Oldest Sanitary Potters in America
Trenton, New Jersey

MADDOCK

DUROCK Bathroom Equipment

THOMAS MADDOCK'S SONS CO., Trenton, N.J. Date_____

Please send me, without charge, ☐ *copies of your booklet, "The Two Vitally Important Fixtures in the Bathroom".*

Name_____

Street Address_____ City_____ State_____

Eric E. Hall, *Architect*
H. A. Durr & Co., *Mechanical Engineers*
Great Lakes Construction Co., *General Contractors*
Kinzie Engineering Co., *Heating Contractors*

Milvaco Packless Radiator Valve

MILVACO Packless Radiator Valves were chosen by the builders of the above pictured Cook County Hospital buildings because they knew thru experience that these time tested valves would be functioning 20 years from now with the same efficiency that they function today.

Heating Specialties:
Milvaco Traps, Dole Milvaco Packless Valves —all types. Air Vents, Air Eliminators, Drip Traps, Blast Traps, Direct Return Traps.

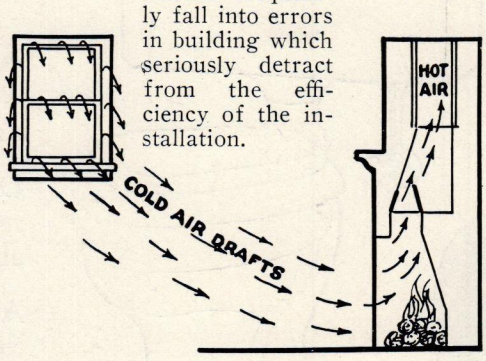
Standard Valves:
Packed Type Radiator Valves,
Gate Valves, Globe Valves,
Angle Valves, Check Valves.

MILWAUKEE VALVE CO.
MILWAUKEE, WIS.

FIREPLACES
Probably Your Biggest Worry

Everything else functions smoothly—but the fireplace smokes and chills the room instead of heating it.

A Government Pamphlet says that of all the mistakes commonly made in home building, none is more frequent than faulty designing and construction of fireplaces—that there are few who understand the principles of their action and even experienced masons frequently fall into errors in building which seriously detract from the efficiency of the installation.



Old Way

Drawing made from Government illustration.

Let's get together on the matter of fireplaces.

Something NEW in a Fireplace

Here are fireplace specifications ready-made that cannot be changed at the whim of the builder.

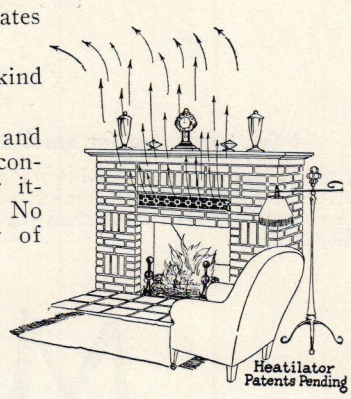
There is protection and satisfaction in the

HEATILATOR FIREPLACE

It heats and ventilates the whole room.

Smokeless in any kind of wind or weather.

Saves time, material and labor in fireplace construction. Pays for itself in heat saved. No cold drafts. Plenty of pure heated air.

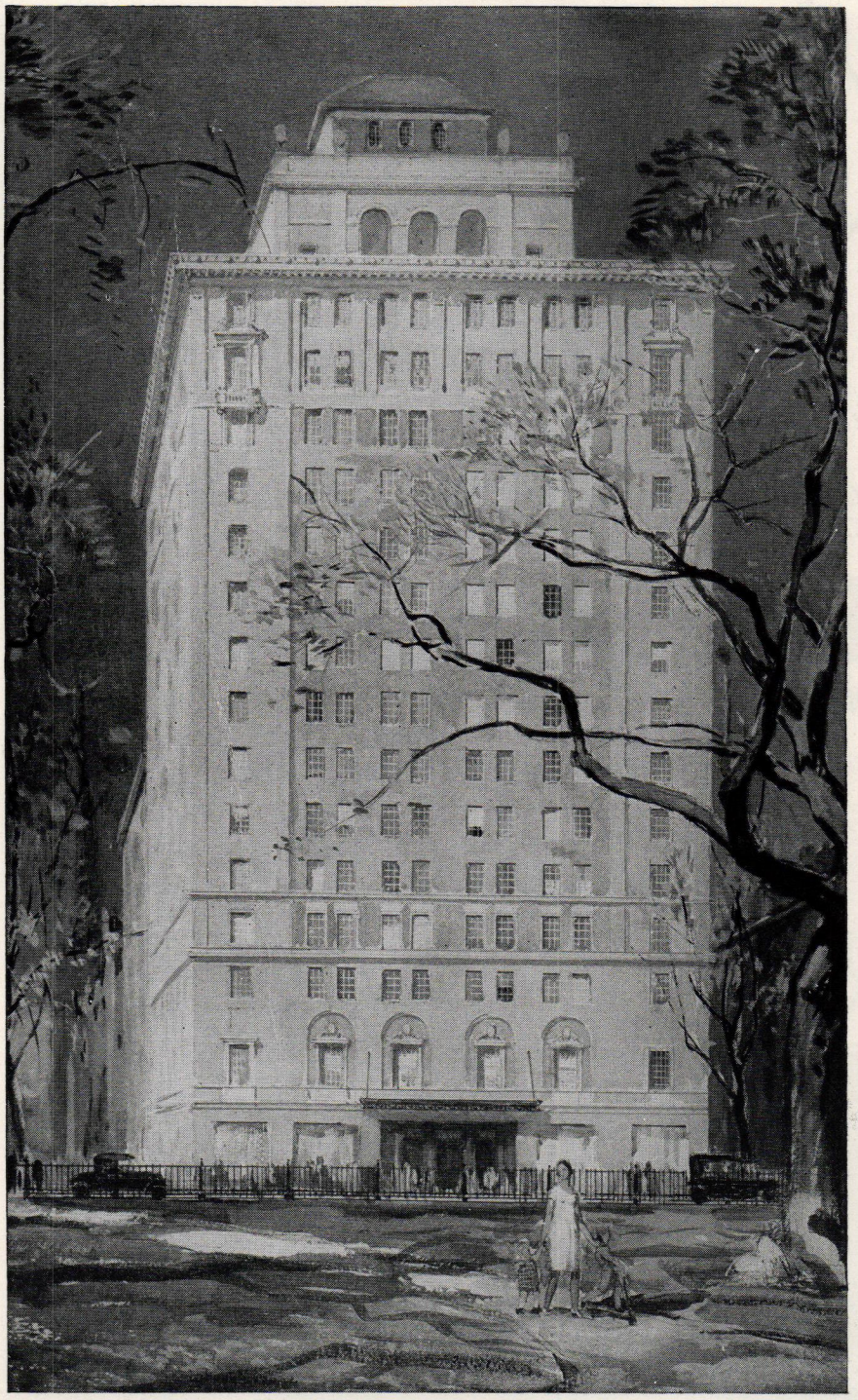


Fresh air from outside enters the chimney from the back. It passes around the three sides and top of the fire, takes up the heat that would have been lost up the chimney and enters the room through the grille over the fireplace opening.

Write today for free folder, "Fireplace Perfection."

Heatilator Co.
571 Glen Ave., Colvin Sta. P. O.
Syracuse, N. Y.

In Boston's new Ritz-Carlton



Ritz-Carlton Hotel, Boston, Mass.
Strickland, Blodget and Law, Architects, Boston
Walworth, English and Flett Co., Heating
Mass. Sprinkler Plumbing and Heating Co., Plumbing
P. J. Sullivan, Fire Lines

Ritz-Carlton is a world-famous name. It is a name which stands for strict adherence to quality standards. In building the new Ritz-Carlton Hotel, in Boston, only such equipment was selected as could be relied on to contribute to faultless service.

In this hotel Jenkins Valves are used throughout, a significant fact. The Boston Ritz-Carlton joins the long list of hotels using *genuine Jenkins Valves, marked with the Jenkins "Diamond."*

It pays architects to insist that a valve specification be given exact wording to prevent substitution. Instruct your specification writers to make reference to the identifying Jenkins "Diamond" mark, and to use the figure numbers in the Jenkins catalog.

Remember, too, that a Jenkins order can be filled promptly in any locality because Jenkins distribution is nation-wide.

Always marked with the "Diamond"

Jenkins Valves

SINCE 1864

JENKINS BROS.

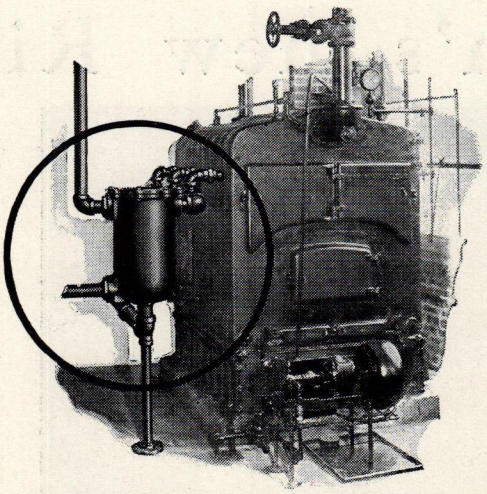
80 White Street.....New York, N. Y.
524 Atlantic Avenue.....Boston, Mass.
133 No. Seventh Street...Philadelphia, Pa.
646 Washington Boulevard...Chicago, Ill.

JENKINS BROS., LIMITED
Montreal, Canada London, England

FACTORIES:
Bridgeport, Conn. Elizabeth, N. J.
Montreal, Canada

DOMESTIC
HOT WATER for PRACTICALLY NOTHING

WITH Excelso Indirect Water Heater connected to outside of steam or vapor boiler, one fire does double duty. It heats the home or building and heats the domestic hot water supply, too.

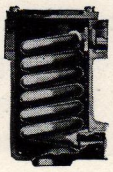


A typical Excelso installation. Send for views of other installations and valuable file material.

WHEN HEATED THE EXCELSO WAY

Easily connected to old or new boiler, using present pipes and fittings. Wide range of sizes and capacities. For the bungalow or the skyscraper; *for one family or one hundred families.*

Excelso Products Corporation
69 Clyde Avenue Buffalo, N. Y.



Single coil heaters from 30 to 120 gal. capacity. Double coil heaters from 160 to 400 gallons. Triple coil heaters, 600 gal. and 800 gal.

EXCELSO WATER HEATERS

Nationally Distributed by Leading Wholesalers and Boiler and Radiator Manufacturers.

Beaumont High School - St. Louis
"DURIRON INSURED"

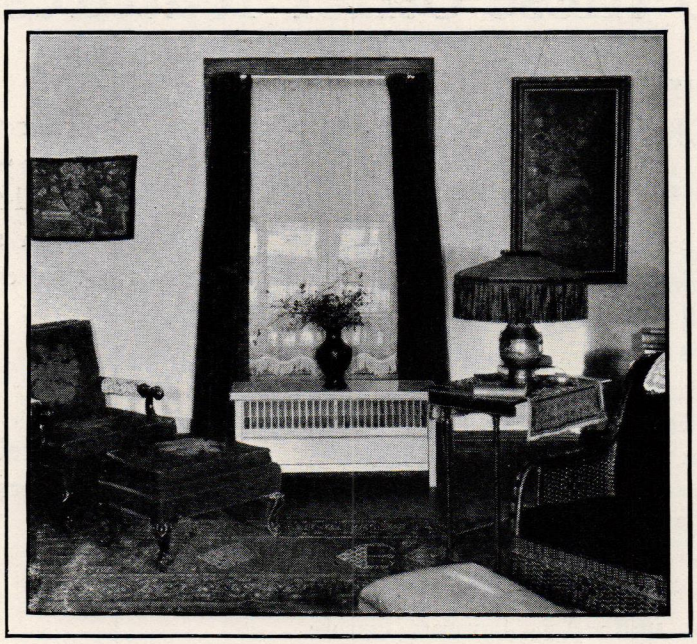
R.M. Milligan, Architect.

Duriron acid-proof drain pipe from the Laboratories of this School insures it forever against damage from leaking acid. Duriron pipe alone gives this insurance.

Duriron is produced only by
The DURIRON COMPANY DAYTON · OHIO

Double-Capacity Trane Heat Cabinets

Provide Twice the Capacity with the Same Wall Space



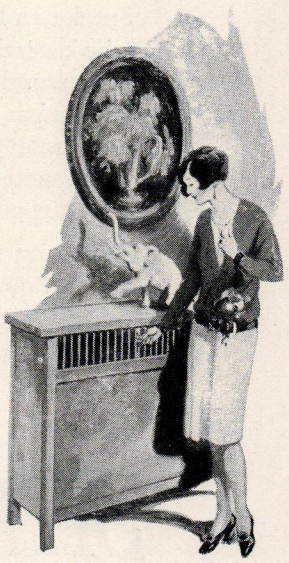
WITH the announcement of the Double-Capacity model, Trane Heat Cabinets entered a still broader field of usefulness. All the advantages of this revolutionary heating unit thus were made available for restricted wall spaces. Luxurious warmth without radiators—from heating units finished like fine furniture! Readily installed under low windows—making window seats unnecessary.

Trane units have completely abolished old restrictions in room arrangement and decoration. No longer need you be satisfied with compromises such as radiator shields or screens, hidden or recessed radiators. One basic development — the Trane copper heating element — has wiped the slate clean and started a new chapter in heating history.

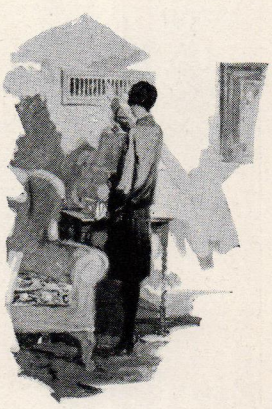
Trane equipment is truly "Successor to the Radiator." Employs an entirely different principle, giving quick heat and instant control. Thousands of units in use. Every one guaranteed.

Write for new booklet and A. I. A. indexed material for your files.

THE TRANE COMPANY, [*Established* 1885]
220 Cameron Ave., La Crosse, Wisconsin



Knob on the grille gives instantaneous control of heat. Regulates damper within the cabinet.



Trane Concealed Heater — another type of Trane equipment, completely concealed between the walls. Utilizes the same heating principle as the Heat Cabinet. Not an invisible radiator.

TRANE

HEAT CABINETS
CONCEALED HEATERS
HEATING SPECIALTIES AND PUMPS

And now—

in addition to these other features

Speakman Lavatory Fixtures can be had in

SPEAKMAN CHROMIUM PLATE

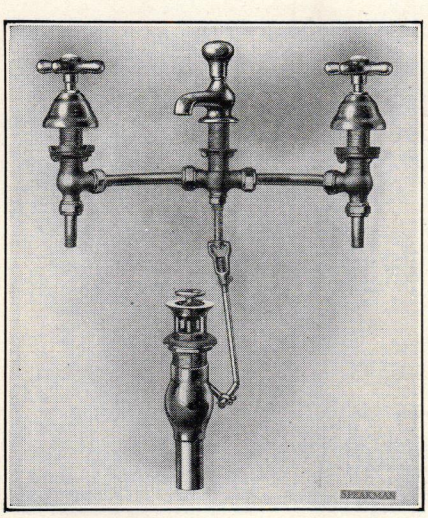
Which never tarnishes
Is always bright
Requires no polishing
Not affected by salt air, salt water or most acids
Is so hard that it will never wear off
Has a silver-platinum lustre

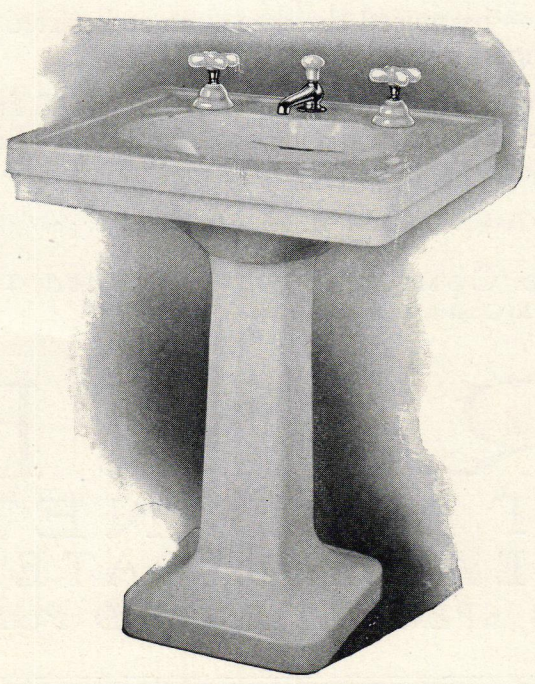
Speakman Chromium Plate makes it possible for anyone who desires metal handles or escutcheons to have them in a wonderful brilliant and lustrous finish which is permanent and retains its rich appearance without effort. Speakman Chromium Plate has all of the advantages of white metal and none of its dis-advantages such as the constant polishing required.

We show the Speakman unit—Acto Lavatory Fixture with all metal trim—Shower and Bath Fixtures can also be had with metal escutcheons and handles, Speakman Chromium or nickel plate.

SPEAKMAN COMPANY
WILMINGTON, DELAWARE

SPEAKMAN SHOWERS and FIXTURES





Speakman Unit-Acto Lavatory Fixture with metal escutcheons and 4 arm metal handles with renewable china index—can be furnished in either nickel or Speakman Chromium Plate. Installed on the lavatory is the H2276 with China escutheons and handles.

Improved raised seats which permit a full flow of water with a fractional turn of the handle.

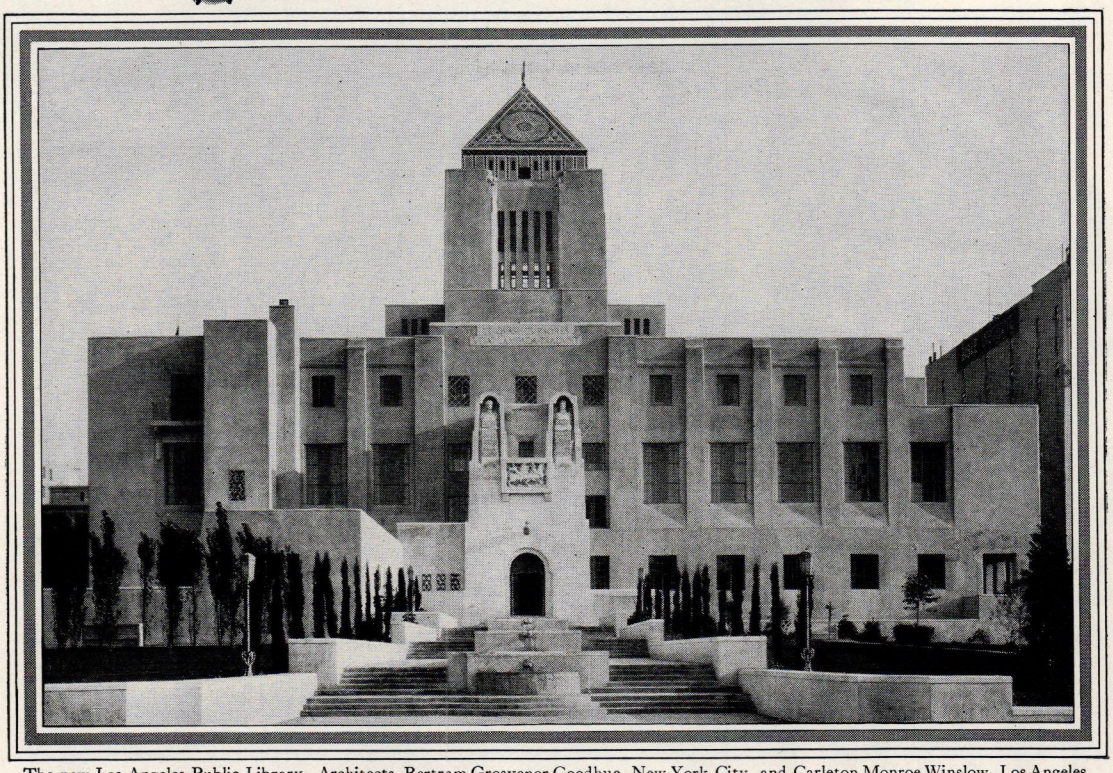
Swivel disc, washers encased.

Renewable seats.

Castings are close grained, being made of electrically melted brass.

All good makes of lavatories can be had trimmed with Speakman lavatory fixtures.

150 Pounds Pressure CRANE VALVES 2500 Pounds Pressure



The new Los Angeles Public Library. Architects, Bertram Grosvenor Goodhue, New York City, and Carleton Monroe Winslow, Los Angeles. General Contractor, Weymouth Crowell. Plumbing and Heating Contractor, J. G. Morgan. Crane plumbing and heating materials used.

"LIKE SWIFT RUNNERS, THEY HAND ON THE TORCH"

"Et quasi cursores vitae lampada tradunt," reads the inscription above the doorway of the new Los Angeles Public Library.

For this temple to democratic knowledge, Architects Bertram Goodhue and Carleton Winslow have taken a basic theme from the Spanish civilization out of which southern California grew and given it a distinctly modern treatment in simple planes and angles. With skillful artistry they have combined tradition and present-day tendencies to create in enduring materials a beauty and a permanence in keeping with the cultural purpose.

To this home of books will come, in years yet unborn, many runners through passing days, taking away each what he desires. To this beauty and permanence, to this democratic end, Crane is glad to have contributed.

CRANE

Address all inquiries to Crane Co., Chicago

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

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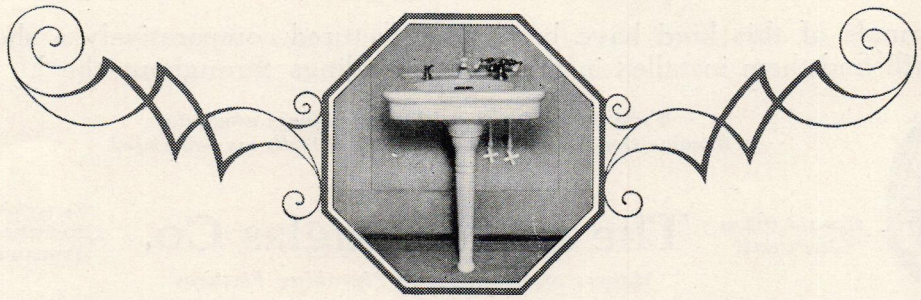
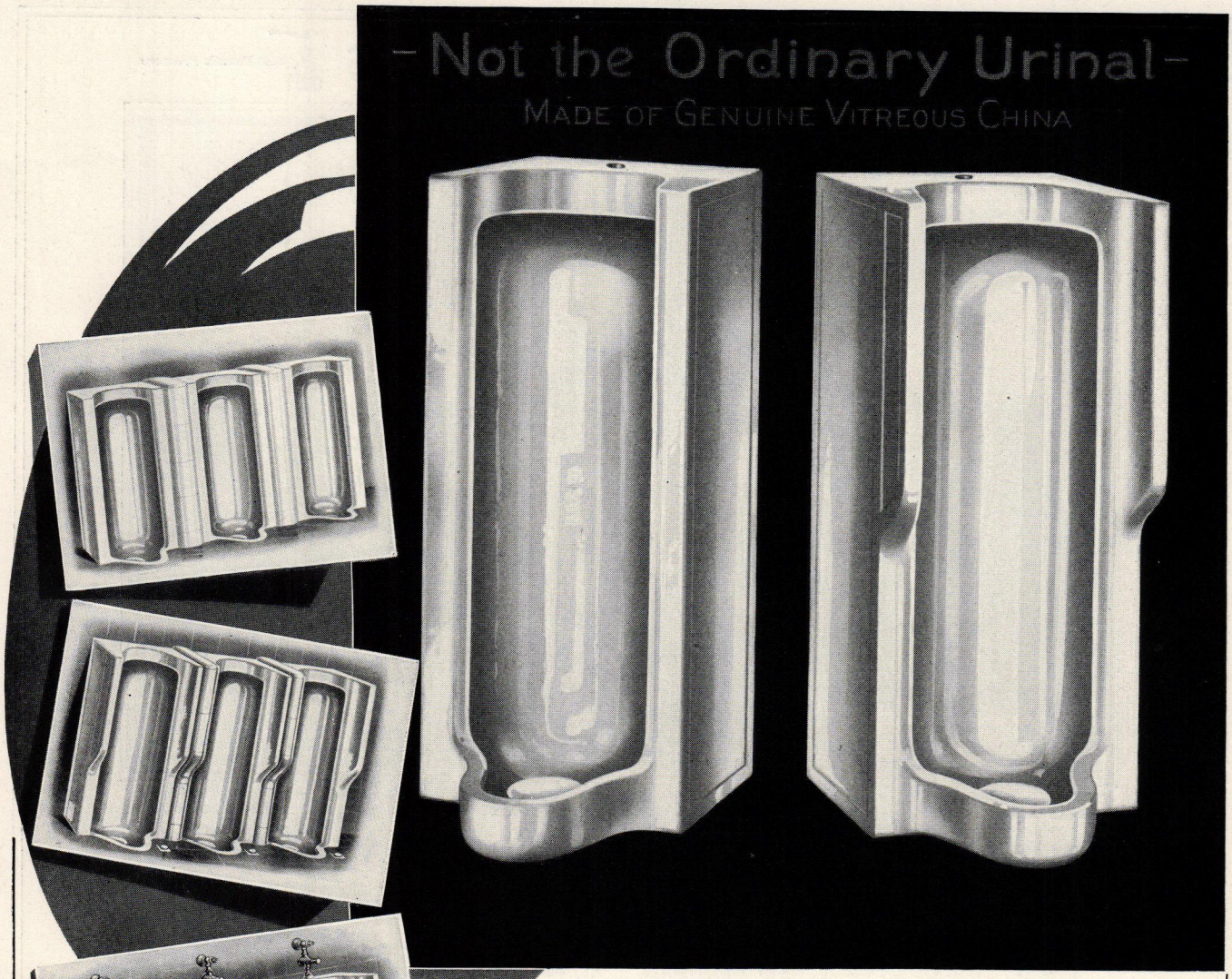
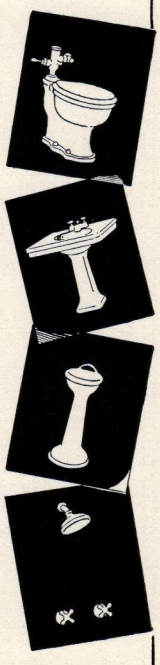


Crane Idalia Lavatory



What's the Difference Between a Genuine Vitreous China Urinal Stall and an Ordinary One?



The same difference that you would understand in considering a water closet or lavatory made of anything but Genuine Vitreous China.

The superiority of vitreous china over other materials being well known—the advantages of specifying Douglas urinal stalls are apparent.—Bear in mind they will not craze or discolor, that they are easily kept clean and absolutely impervious.

Although urinals of this kind have been manufactured comparatively a short time, you will find them installed in the better buildings throughout the U. S.

Write for catalogue and list of buildings where the Genuine Douglas Vitreous China Urinal Stalls are being used.

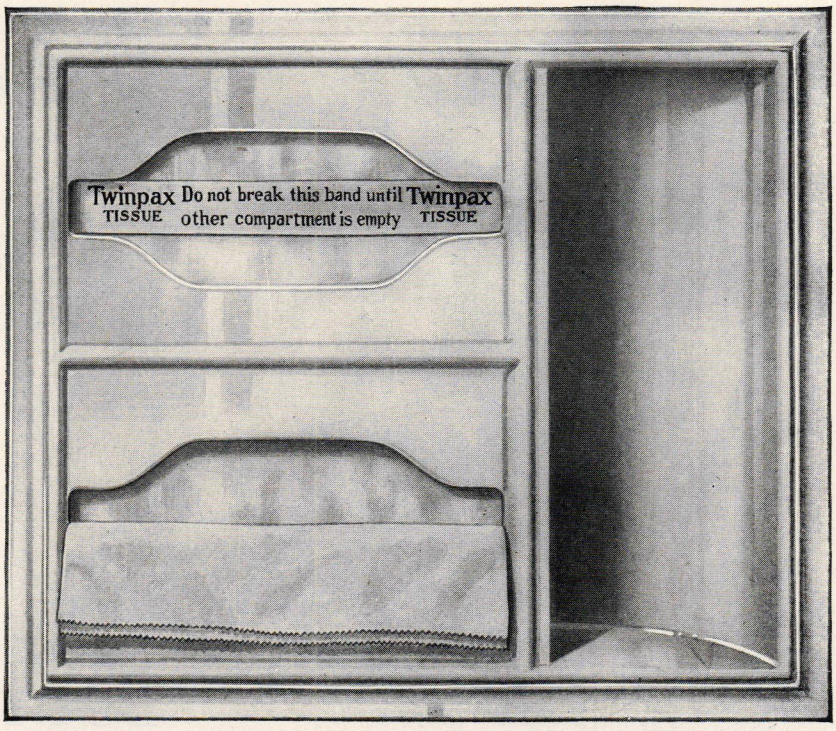
Manufactured By

General Office: Cincinnati

The John Douglas Co.

Makers of High Grade Plumbing Fixtures

Factories: Cincinnati Trenton



A Reserve Package of Toilet Tissue is Always at Hand in this Fixture

THIS new double chamber fixture insures a continuous supply of toilet tissue. Either chamber may be filled when empty.

Illustration shows recessed type, made of high quality white tile. Fixture may also be had in any desired color.

Twinpax fixtures are also made in projecting type to be attached to wall or tiling.

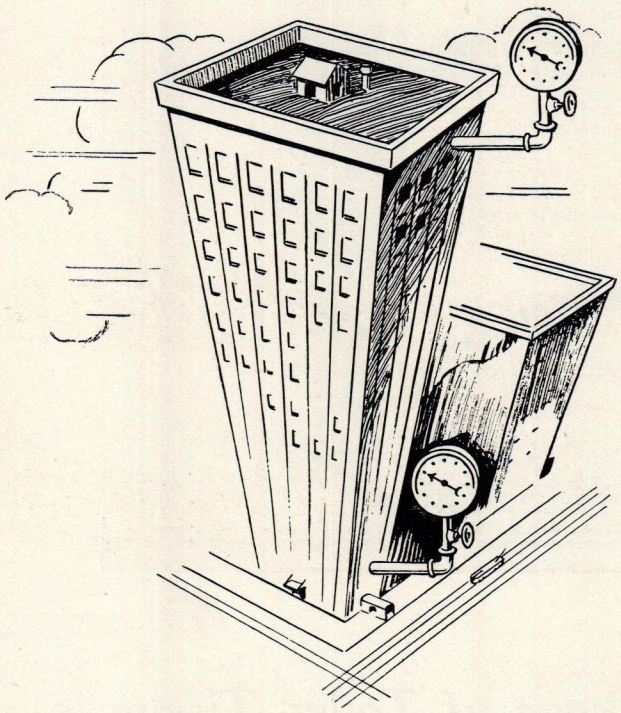
Twinpax fixtures are made especially to dispense Twinpax toilet tissue, recognized for its superior quality. Because of the universal demand Twinpax toilet tissue is easily obtainable.

Architects are invited to send for blue prints and full information regarding Twinpax fixtures.

NATIONAL PAPER PRODUCTS COMPANY
CARTHAGE, N. Y.
Architectural Service Division

Our A. I. A. Filing Catalog will be mailed upon request.

Equal water pressure



At the TOP

At the BOTTOM

The Mueller Regulator does it!

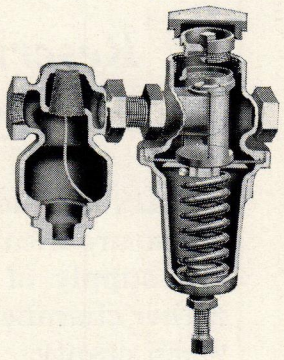
Only the Mueller Pressure Regulator can give this extraordinary comfort and convenience to tenants.

The tenant on first floor enjoys the same satisfactory pressure as the tenant on the top floor without sacrifice of volume because this building is equipped with Mueller Pressure Regulators G-9000.

What does this exceptional feature mean to the owner? It means ready rentals, and satisfied tenants. More than that! The G-9000 means the elimination of excessive water waste, no wear on the plumbing and therefore a saving of the owner's money.

Thousands of these valves are installed in large buildings everywhere and are giving satisfactory service. And because of their sturdy construction will continue to give that kind of service for many years to come.

Write today for further information about this and other Mueller Quality Products.



Pressure Reducing and Regulating Valve G-9000. Cross section view showing extreme simplicity and sturdiness. For cold water—single seat. Reduces 225 lb. to a pressure of from 20 to 75 lbs.

MUELLER CO., (*Established 1857*) Decatur, Illinois

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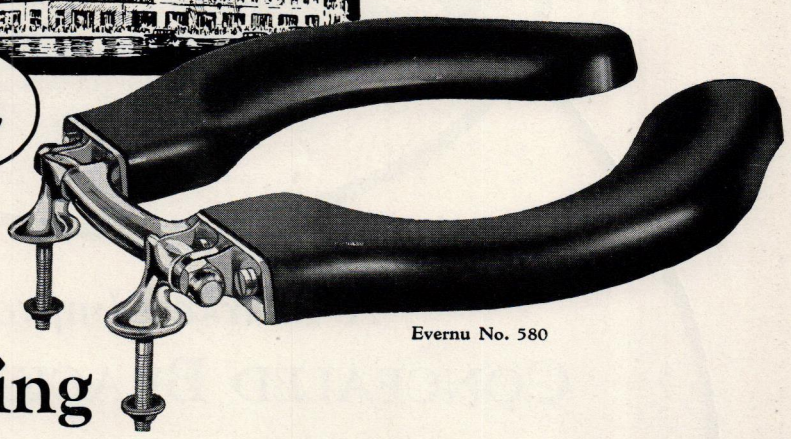
MUELLER

437

The Ambassador Office and Theatre Building, St. Louis
C. W. & Geo. L. Rapp, Architects

Plumbing Contractors: American Plumbing & Heating Co.
Plumbing Jobbers: Standard Sanitary Mfg. Co.

Never-Split
Evernu
Everlasting Hard Rubber
Seats



Evernu No. 580

And This Fine Building also—*Evernu-equipped throughout*

Right at the outset, all cost of toilet seat upkeep, repair and replacement was eliminated in the new Ambassador Office and Theatre Building, St. Louis. EVERNU hard rubber seats were installed.

Why are architects so generally specifying *Evernu* seats for modern buildings, schools, hospitals, hotels, clubs? They have found that where fine appearance is desired, hard usage is expected, and long-term economy is important, *Evernu* is the perfect seat. Costs no more than ordinary seats—lasts as long as the building.

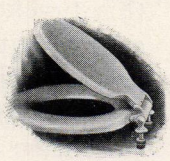
By the patented *Evernu* process, special hard rubber is molded in a seamless, jointless piece. The smooth glossy surface, jet black or mahogany—can't crack, chip or peel. Easily cleansed with dilute alcohol. Hollow center gives lightness and great strength. Models and sizes to fit any bowl. *Unconditionally guaranteed.*

Fittings of equal high quality. "Crodon" plated hinges furnished if desired. Condensed specifications in Sweets, but your files should include our complete new catalogs and specifications. Write for them.

No finer white seat was ever made than the *Never-Split Perma-White.* Covered with an extra heavy sheet by a patented process, it will not chip, crack, peel or discolor.

The *Never-Split Coloro* is of same excellent construction with *tinted* sheet pyralin, in pastel blues, greens, yellows, and brighter shades to complete any decorative scheme

Write for illustrated catalogs.



NEVER SPLIT SEAT COMPANY, Dept. 126, Evansville, Indiana, U. S. A.
Founded 1905
The Largest Manufacturers of Toilet Seats in the World

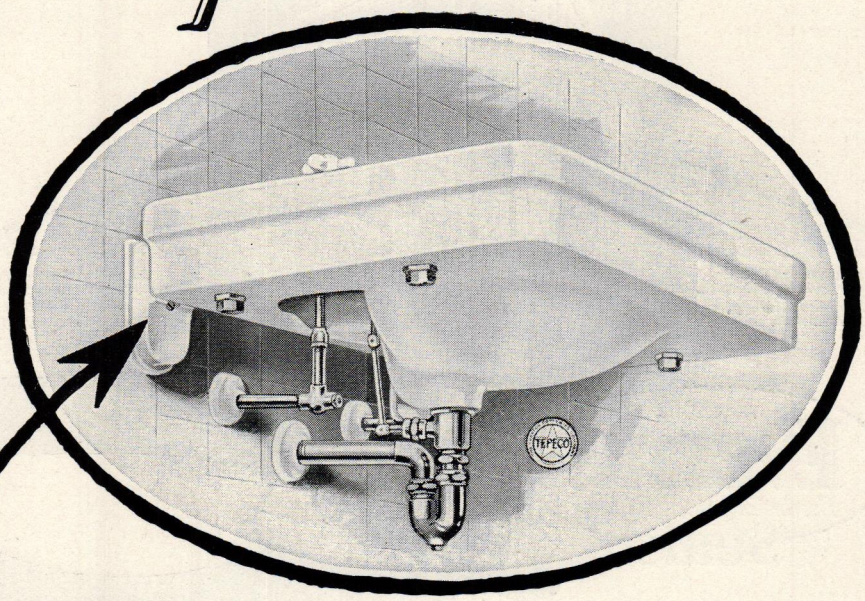
These Buildings
are among those completely equipped with
EVERNU Seats

Russ Bldg.—San Francisco
Equitable Life Ins. Bldg., New York
Barlum Hotel—Detroit
Union Station—Chicago
Wilson Bldg.—Philadelphia
J. C. Penny Bldg.—New York
Augustana Hospital Chicago
Public Schools—New York, Chicago, and other leading cities

NEVER-SPLIT SEATS

"Perma-White" Sheet Pyralin	"Coloro" Tinted Sheet Pyralin	"Evernu" Hard Rubber	White "Duco" Sprayed Pyralin	Varnished Wood Patented Construction

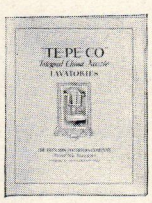
A Te-pe-co Product



A Marked Improvement in
CONCEALED BRACKET LAVATORIES

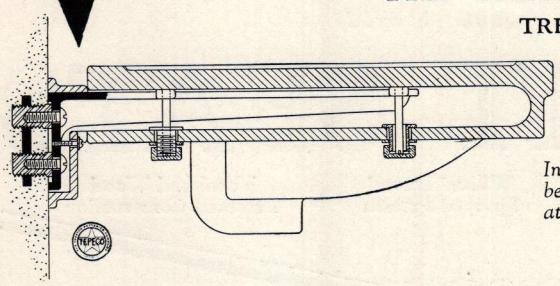
UNLESS the service is of an extremely severe nature the new Te-pe-co Concealed Bracket Lavatory on Wall Carrier will prove a welcome innovation to Architects for their plans in residences, hotels, apartments and buildings of a semi-public nature.

With a Te-pe-co Vitreous China Lavatory, in sizes from 24x20 to 33x24 can now be supplied this bracket, attached as per diagram below. Its adjustability permits leveling of lavatory. It eliminates the clumsiness of prior types of brackets. The result is an installation of pleasing appearance, simplicity and approved sanitation.



Our Lavatory Booklet, describing this fixture, if not already in your file will be gladly mailed.

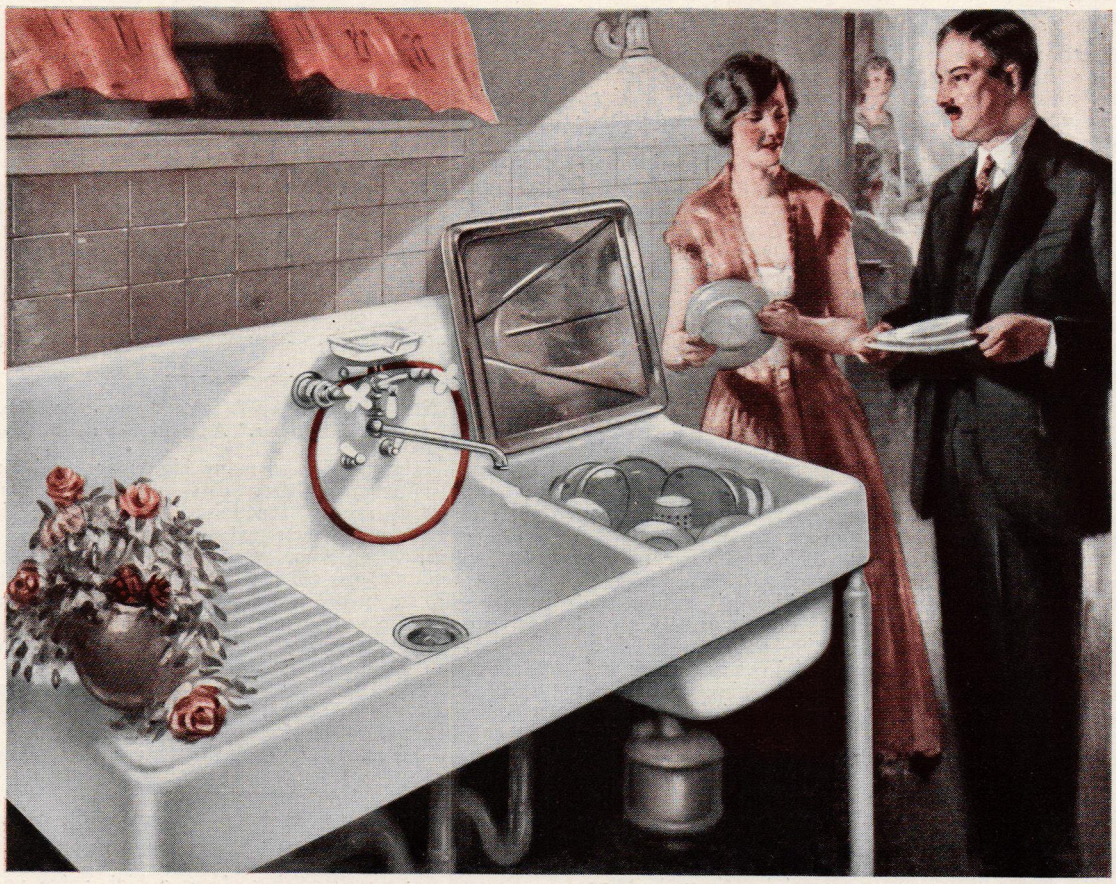
THE TRENTON POTTERIES COMPANY
TRENTON, NEW JERSEY, U. S. A.



In addition to leveling feature it will be noted that lavatory may be set at any desired height.

OUR GUARANTEE

The Trenton Potteries Company makes but one grade of ware—the best that we can produce—and sells it at reasonable prices. Our ware is guaranteed to be equal in quality and durability to any sanitary ware in the world. The Te-pe-co Trade Mark is found on all goods manufactured by this company and is your guarantee that you have received what you have paid for.



A fixture that confers distinction

The KOHLER ELECTRIC SINK

No other fixture or device for the equipment of the kitchen matches the Kohler Electric Sink in the distinction it confers.

This new fixture marks the beginning of electrical dishwashing to *satisfy the fastidious*. It makes it possible at last for the architect serving an exacting clientele to design a kitchen that is *completely* modernized in every detail.

The significance of the Kohler Electric Sink can best be appreciated by examining it personally, by seeing it work, by studying it, both as a dishwashing mechanism and as a fixture of enhanced all-round convenience. We urge you to see it. Kohler branches and jobbers who handle Kohler Ware can show you. If that is not convenient, write for descriptive matter.

KOHLER CO., *Founded* 1873, KOHLER, WIS.
Shipping Point, Sheboygan, Wis. · *Branches in Principal Cities*

KOHLER OF KOHLER

Plumbing Fixtures

Reviews of Manufacturers' Publications

TODHUNTER, INC. 119 East 57th Street, New York. "Lighting Fixtures." A useful booklet on their selection.

Architects and interior decorators know the difficulty experienced in obtaining lighting fixtures of a character suitable for use in old English or early American interiors. Almost invariably the fixtures are rather too ornate to be used with surroundings which are either severely simple or else so architectural that anything but the most carefully designed fittings would be out of place. This small booklet illustrates and describes an assortment of fixtures which is excellent indeed,—fittings of tasteful designs and of quite a variety of materials. The fittings include sconces, hanging fixtures and quite an assortment of "portables." Particularly desirable are some of the wall lights finished in "antique brass," a finish which will almost invariably be found suitable in early American or English surroundings.

MILWAUKEE CORRUGATING CO., Milwaukee. "Milcor Architectural Sheet Metal Guide." A brochure on roofing.

The importance of building for fire-safeness may be gathered when we read that the appalling ravages of fire take toll of some residence every four minutes, and a farm building of one sort or another every seven minutes; and that included in this daily list are 15 hotels, five schools, five churches and a hospital. Many of these fires could be prevented without the slightest sacrifice of architectural beauty by the use of metal roofing. Fire is usually spread by sparks from adjacent fires falling upon roofs of inflammable materials, and thousands of lives and many millions of dollars are lost every year through this fact. In this booklet there are illustrated and described the metal roofs manufactured by this concern, roofs of great variety, and including all the details necessary for their proper use.

PEERLESS UNIT VENTILATION CO., INC., Long Island City, N. Y. "PeerVent Heating and Ventilating Unit."

It is found that the most successful buildings, buildings in which it is most comfortable to live or work, are those which are the best heated and ventilated. Securing these highly desirable conditions is of course dependent upon using heating and ventilating apparatus, which to be really efficient must be simple in operation. This brochure deals with the widely known "PeerVent" heating and ventilating equipment, illustrates its simple mechanism and dwells upon some of its advantages. It occupies little more space than ordinary radiators. Many adaptations are furnished, including concealed and semi-concealed types, to meet special architectural needs. The PeerVent Unit System saves space, cuts down structural costs, eliminates large and expensive apparatus and apparatus rooms, boiler pits, ducts, sheet metal flues, etc. Ventilation can be stopped instantly when a Unit-equipped room is unoccupied. There is no waste.

WESTINGHOUSE ELECTRIC & MFG. CO., East Pittsburgh. "C L Circuit Breakers for Industrial Applications."

In many electrical installations in industrial plants it is necessary to use circuit breakers. An important detail of any circuit breaker is the character of its contacts,—main contacts, auxiliary or arcing contacts, and carbon contacts. These contacts are designed and arranged so as to assure the minimum voltage drop across the main contacts and the minimum burning during opening. This brochure goes into minute details regarding Westinghouse C L Carbon Circuit Breakers, which are designed especially for 250-volt industrial applications where a compact breaker is required. The short carbon arm, A and B, shown in Figure 1 and in diagram in Figure A-1 of the booklet, contributes to the compactness of the breaker and requires only the minimum headroom. Notwithstanding this desirable characteristic, the short arm allows sufficient space between the stud blocks and between the brush and the contact block for 600-volt operation, and it also allows a sufficient opening between the contacts to break a 600-volt arc, unless the breaker is used on high-power railway systems. These breakers, therefore, may be used in all forms of service up to those of 250 volts.

DETROIT STEEL PRODUCTS CO., Detroit. "The Fenestra Handbook of Steel Casements." A work on their use.

Growth of popularity of casement windows for residence structures of different types has resulted in study given to reducing their cost and to rendering complete the details which go with them. This booklet deals with the well known steel casements made by this firm and gives data which are valuable to architects and builders. In some quarters there exist doubts as to the practical value of this form of window, and this brochure illustrates by diagrams the construction of casements, does away with every objection likely to be raised in considering their use, and presents arguments for believing that the casement is the most appropriate form of window for buildings of several types. The importance of some of the data given should secure the brochure wide circulation among architects and builders.

VALENTINE & COMPANY, 456 Fourth Avenue, New York. "How to Use Valspar." A booklet concerning varnish.

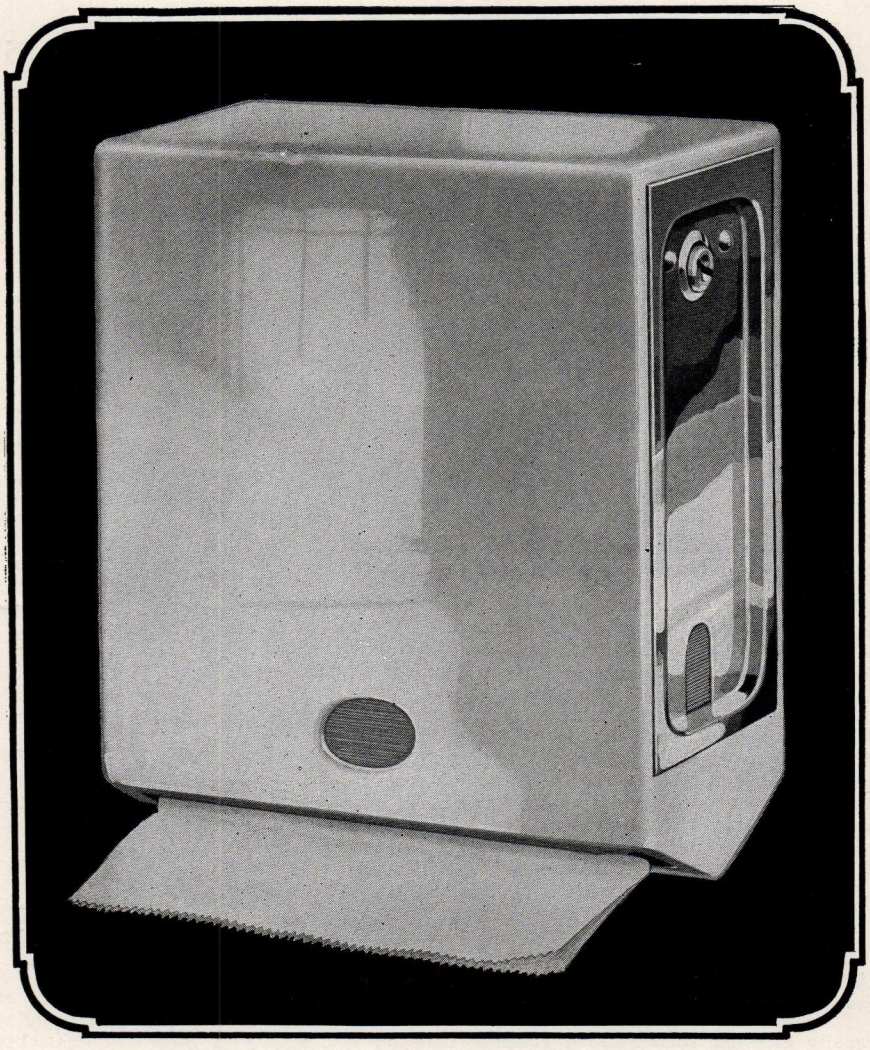
Varnish is useful for so many highly practical purposes that it is unfortunate there exists so widespread an ignorance of its nature and functions. This ignorance is general even among architects and builders, and it is of course most general among home owners, the very class most likely to benefit by a thorough understanding. This brochure, intended for the home owner, explains the proper use not only of the famous "Valspar" but of also that of "Valspar Enamel," and "Valspar Varnish-Stain," giving directions for the use of one or another of the materials on woodwork, furniture, floors, linoleum, oilcloth, automobiles, and wire netting. To make the use of "Valspar Varnish-Stain" and "Valspar Enamel Colors" simpler, there are given samples of the colors in which the materials are to be had.

PITTSBURGH REFLECTOR COMPANY, Pittsburgh. "Show Window Lighting." A valuable work on the subject.

Present-day merchandising places a high value upon the importance of show windows. Fifth Avenue, in New York, or State Street, in Chicago, shows excellent use made of these small but valuable areas upon which, in one way or another, merchants are spending sums which in the aggregate are amazing. Properly lighting a show window like correctly illuminating the stage of a theater must be carefully studied. Lighting a display window is one of the minor items in the cost of installing and operating, and yet upon its being well done its success is almost wholly dependent. This brochure is of considerable importance to architects and builders as well as to merchants and others interested in window displays. It goes with care into every detail of the subject and illustrates the fittings which are being used in the show windows of many of the leading department stores, high class shops and specialty houses.

KOHLER OF KOHLER. "The Principle and The Proof." A valuable brochure on current-producing apparatus.

Residents in large cities where electric current is supplied from vast central stations do not appreciate the difficulties experienced where such conveniences do not exist. There are also places furnished with electric current, but not satisfactorily. There are still others that need an additional source of current for emergencies, auxiliary purposes, or for some special use. Ships, hospitals, factories and even some institutions often face such a problem. This book describes the "Kohler Automatic Power and Light," a remarkable 110-volt, electric unit without storage battery, which places satisfactory, reliable and economical electric service within the reach of homes, farms, stores and every variety of business, regardless of location. It explains the principle of the Kohler unit, and tells the story of its development to its present advanced state of serviceability,—power and light at the press of a button. It describes the simplicity, the efficiency, and the economy of the unit. It shows its adaptability in every field where human beings live, work or play. It offers as proof the verdict of users in a great diversity of occupations. Here are facts and figures.



Specify

Onliwon Service on an Economy Basis

Reg. U. S. Pat. Off.

Onliwon Cabinets are the standard of fine lavatory equipment—they are trouble-proof and easy to refill. And Onliwon Service is economical. We have actual maintenance figures to prove that it is. And we'll gladly submit them to you.

Oliwon tissue is the product of the A. P. W. Paper Company—an organization with fifty years experience in the manufacture of fine tissue.

Onliwon

TOILET PAPER & PAPER TOWEL SERVICE

A. P. W. PAPER CO.
ALBANY, N. Y.

Reviews and Announcements

THE JOHN D. EMACK CO., Philadelphia. "Olde Stonesfield Roofs." Illustrations showing their tasteful use.

Much of the charm which distinguishes modern domestic architecture is due to close study of the means by which the beautiful architecture of the past was secured. Architects interested in use of stone for domestic structures, for example, have profited by study of the fine old houses still existing in the Cotswolds,—houses having walls built of stone and in fact roofed with thin slabs of a stone which splits readily into sheets. This collection of illustrations is from a firm producing fine roofing and flooring slates. It contains cuts of quite a number of modern houses built after old fashioned models by various well known architects, the illustrations proving that old fashioned materials when used with good taste may be relied upon now as ever to give dignity and interest of high degree to their surroundings.

NATIONAL STEEL FABRIC CO., Pittsburgh. "Reinforced Concrete Floors." A brochure showing their construction.

The great increase in strength which it gives to concrete causes the wide use of steel reinforcement. This of course is to be had in a number of forms, and this booklet describes and illustrates the valuable "steel fabric" which is being widely used for floor and roof slab construction. "The purpose of this book is to present certain tables and data which will simplify much of the tedious processes of computation, and also to discuss some of the more important phases of slab design from the standpoint of practical considerations of economy and structural efficiency. The extensive and successful use of National Steel Fabric over a long period of years offers ample justification for the data and information herewith presented, and should assure their acceptance as not only authentic and reliable but also indicative of the best practice of the day in this construction."

PORTLAND CEMENT ASSOCIATION, Chicago. "Concrete Masonry Construction." A work on an important topic.

The rapidly growing popularity of concrete masonry is due to its general adaptability for construction purposes, extending throughout the field of residential, commercial, and public structures. It may also be attributed to its being fireproof and waterproof. This interesting booklet contains 16 pages of detailed construction drawings, including drawings of types of concrete blocks and building tile, and details also of concrete floors for residences. Several tables showing the required or recommended thicknesses of walls of residences up to four stories in height and a table giving the spacing of supports for beams are included. There are also drawings showing concrete block wall sections, and concrete tile wall sections. This booklet describing and illustrating the latest approved practice in building with concrete masonry is invaluable to architects and builders.

THE INTERNATIONAL HEATER COMPANY, Utica, N. Y. "International Boiler Data Book."

The economy with which a building of any type is operated depends to a considerable extent upon the care with which its equipment has been designed. It would be wasteful and extravagant, for example, to provide radiation for heating in excess of what could possibly be required, or to install means of generating heat greater in quantity than the radiation could take care of,—and yet these are but two of the many details in which careless designing involves waste of fuel and consequently high operating costs. Another detail in which careful designing makes for economy in operation is in provision of smokeless boilers, since smoke represents merely loss of energy and consequently waste of fuel. This excellent little manual is a veritable gold mine of information, useful alike to the architect and builder. In addition to giving a vast amount of data which is of "universal application," it lists, describes and illustrates many different heating specialties.

Gordon Robb announces the opening of new offices at 14 Beacon Street, Boston.

George B. H. Macomber Co., builders, announce the opening of new offices at 38 Chauncy Street, Boston.

Laurence G. Noyes announces his change of address from 38 West 9th Street to 71 Park Avenue, New York.

Colton & Knecht are occupying new offices in the Grand Rapids National Bank Building, Grand Rapids, Mich.

Charles H. Higgins announces the removal of his offices from 19 West 44th Street to 101 Park Avenue, New York.

Arthur C. Haskell, architectural photographer, formerly of Somerville, Mass., announces that he is now located at 21 Cedar Street, Marblehead, Mass.

About April 15, Sloan & Robertson, architects, moved to their new offices occupying the 31st floor of the Graybar Building, 420 Lexington Avenue, New York.

Announcement has recently been made of the formation of the firm of Hentz, Adler & Shutze as successors to Hentz, Reid & Adler, 1330 Candler Building, Atlanta.

The New York Chapter, American Institute of Architects, announces the removal of its offices to the Architects' Building Annex, 101 Park Avenue, New York.

Fred W. Elliott, Chamber of Commerce Building, Columbus, O., has for sale bound volumes of *The Brickbuilder* and THE ARCHITECTURAL FORUM 1896 to 1918 inclusive.

Clyde R. Place, Consulting Engineer, long connected with the Grand Central Terminal improvements, has established offices in the Graybar Building, Lexington Avenue and 43rd Street, New York.

Jacob S. Pettebone and Stanley K. Walborn announce the formation of a partnership for the practice of architecture under the name of Pettebone & Walborn, with offices in the Second National Bank Building, Wilkes-Barre, Pa.

The Cincinnati Chapter of The American Institute of Architects has established an office for its executive secretary. Firms desiring to file their publications in the office may mail them to Perry F. Hoisington, Secretary, 902 Denton Building, Cincinnati.

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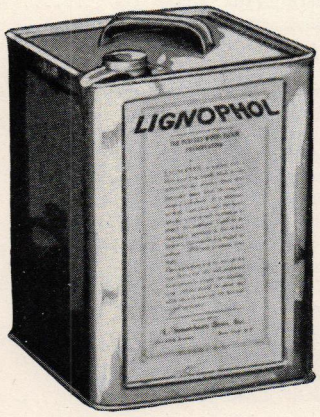

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Index to Advertising Announcements

Acme Brick Company 16
Adam Electric Company, Frank 174
Alberene Stone Company 50
Aluminum Co. of America 97
American Blower Company 204
American Brass Co., The ....Fourth Cover
American Chain Company, Inc..... 196
American Enameled Brick & Tile Co. 12
American Face Brick Association.. 18
American Institute of Steel Construction, Inc..... 63
American Laundry Machinery Co... 193
American Radiator Company 57
American Rolling Mill Company, The 216
American Seating Company 85
American Sheet and Tin Plate Co... 118
American Stove Company 164
American Walnut Mfrs. Ass'n..... 76
Appalachian Marble Company 26
A. P. W. Paper Co..... 231
Armstrong Cork and Insulation Company 116, 153
Armstrong Cork Co..... 17
Art Metal Construction Company.. 128
Arutex Co., Inc..... 88
Associated Business Papers, Inc., The 188
Athey Company 70
Atlantic Insulated Wire & Cable Co. 139
Austral Window Co..... 130
Automatic Electric Company..... 163

Bakelite Corporation 189
Barber Asphalt Co. 58
Barrett Company, The..... 115
Batchelder-Wilson Company..... 39
Beardslee Chandelier Mfg. Co..... 88
Beaver Products Co., Inc..... 27
Berry Brothers, Inc. 94
Birch Manufacturers, The..... 108
Bird and Son, Inc..... 86
Blabon Company, The George W... 29
Bonded Floors Company..... 77
Brasco Manufacturing Co..... 136
Bryant Electric Company, The.... 177

Carey Company, The Philip..... 159
Carnegie Steel Company..... 182
Carney Company, The..... 157
Carter-Bloxoned Flooring Company 31
Casement Hardware Company..... 130
Celite Products Company..... 119
Celotex Company, The..... 149
Cement-Gun Company, Inc..... 50
Cement Lined Pipe Co..... 214
Chamberlin Metal Weather Strip Co. 19
Chicago Pump Co..... 124
Chromium Corp. of America..... 186
Circle A Products Corporation..... 60
Clay Products Association..... 28
Clinton Metallic Paint Co..... 122
Clow & Sons, James B.....144, 145
Cohoes Rolling Mill Company..... 212
Colts Patent Fire Arms Mfg. Co... 136
Columbia Mills, Inc..... 67
Common Brick Mfrs. Ass'n..... 20
Compound & Pyrono Door Co., The 22-23
Concealed Bed Corporation..... 90
Concrete Engineering Co., The..... 141
Concrete Reinforcing Steel Institute 140
Concrete Surface Corporation..... 146
Congoleum-Nairn, Inc..... 112
Coppes Bros. & Zook..... 168
Corbin, P. & F..... 52
Craftex Company..... 82
Crane Co..... 223
Crittall Casement Window Company 125
Curtis Companies..... 103
Cutler Mail Chute Co..... 118

Dahlstrom Metallic Door Co..... 134
Davey Tree Expert Company..... 106
De Long Furniture Co..... 83
Detroit Steel Products Company... 129
Dixon Crucible Co., Joseph.....100, 135
Douglas Co., The John..... 224
Dunham Company, C. A..... 208
Du Pont de Nemours & Company, Inc., E. I.....92, 183
Duriron Co., The..... 220

Eagle-Picher Lead Company, The.. 98
Eastern Clay Products Association 28
Egyptian Lacquer Mfg. Company.. 93
Eljer Company..... 236
Emack Co., The John D..... 30
Excelso Specialty Works..... 220

Federal Cement Tile Company..... 110
Finzer Bros. Clay Co., The..... 28
Flax-Li-Num Insulating Co..... 184
Flexlume Corporation..... 124
Frigidaire Corporation..... 171
Frink Co., Inc., The..... 120
Fulton Sylphon Company, The..... 151

General Chemical Company..... 155
General Electric Company.....8, 9, 175
General Fireproofing Company..... 41
Georgia Marble Company, The..... 36
Gillis & Geoghegan..... 138
Glidden Company, The..... 96
Globe Ventilator Company 210
Grand Rapids Store Equipment Corp. 195
Grauer & Co., Albert..... 111
Guastavino Company, R..... 7
Guth Company, Edwin F..... 121

Hamlin, Irving..... 58
Hanley Company, Inc.....Third Cover
Harrington Company, Joseph..... 206
Hartmann Sanders Co..... 104
Heatilator Company 218
Hauserman Co., The E. F..... 59
Heggie Simplex Boiler Corporation.. 13
Heinz Roofing Tile Co., The..... 32
Hess Warming & Ventilating Co... 206
Higgin Mfg. Co..... 207
Higgins & Co., Chas. M..... 136
Hocking Valley Products Co..... 122
Holmes Disappearing Bed Company 90
Holtzer-Cabot Electric Company, The 174
Hope & Sons, Henry..... 130

Illinois Engineering Company..... 235
Imperial Brass Mfg. Co., The..... 214
Improved Office Partition Company. 72
Indiana Limestone Quarrymen's Association 24, 25
International Cement Corporation... 38
International Nickel Co..... 172

Jacobson Mantel & Ornament Co... 86
Jacobson and Company..... 81
Jenkins Bros..... 219

Kalman Steel Company..... 179
Kawneer Co., The..... 137
Kensington Mfg. Company..... 75
Kerner Incinerator Co., The..... 165
Kewanee Boiler Company 4
Kewanee Private Utilities Co..... 138
Kny-Scheerer Corporation of America 90
Kohler Company 229
Kosmos Portland Cement Co..... 42
Kraftile Company 117

Louisville Cement Co..... 35
Ludowici-Celadon Company, The... 34
Lupton's Sons Co., David..... 133

Macbeth-Evans Glass Co..... 123
Maddock's Sons Co., Thomas..... 217
Mason Fibre Company..... 45
May Oil Burner Corporation..... 200
McCray Refrigerator Sales Corp.... 43
McKinney Mfg. Company 53
Metalace Corporation, The..... 90
Milwaukee Corrugating Co..... 6
Milwaukee Valve Company..... 218
Mississippi Wire Glass Co..... 132
Morton Manufacturing Co..... 87
Moulding Brick Co., Thos..... 122
Mount & Robertson, Inc..... 58
Mueller Co..... 226
Murphy Varnish Company..... 99

Nash Engineering Co..... 192
National Building Units Corp..... 142
National Fire Proofing Company... 1
National Lead Company..... 95
National Mortar & Supply Co..... 40
National Paper Products Company.. 225
National Radiator Company..... 198
National Steel Fabric Company.... 176
National Terra Cotta Society..... 178
National Tube Company..... 215
Nelson Corp., The H. W.....199, 210
Never Split Seat Company..... 227
North Western Expanded Metal Co. 5
Norton Company 113

Otis Elevator Company..... 138

Pecora Paint Company..... 37
Pennsylvania-Dixie Cement Corp... 50
Pfaudler Co., The..... 206
Portland Cement Association..... 48
Pratt & Lambert, Inc..... 101

Ramp Buildings Corporation..... 11
Raymond Concrete Pile Company.. 3
Reeves Company, Robert C..... 100
Reischmann & Sons, M..... 88
Richards Wilcox Mfg. Co. Second Cover
Ritter Lumber Co., W. M..... 107
Robbins Flooring Company..... 108
Rockford Steel Furniture Company.. 84
Roddis Lumber and Veneer Company 102
Ruberoid Co., The 118
R. U. V. Co., Inc., The..... 143

Safety Car Heating and Lighting Company, The 46, 47
Sargent & Company 56
Schumacher & Co., F..... 79
Sedgwick Machine Works..... 160
Sheldon Slate Company, F. C..... 10
Sherwin Williams Co., The.....126, 127
Sloane Mfg. Co., W. & J..... 114
Smith & Eggs Mfg. Co., The..... 124
Sonneborn Sons, Inc., L..... 233
Speakman Company 222
Spencer Heater Company..... 211
Standard Conveyor Co..... 190
Standard Gas Equipment Corp..... 170
Stanley Works, The 54
Stone & Webster, Inc..... 49
Sullivan Granite Company..... 28
Sykes Metal Lath Company, The.. 181

Thatcher Company, The..... 162
Titusville Iron Works Company, The 209
Todhunter, Arthur 86
Trane Company, The..... 221
Trenton Potteries Company, The.. 228
Truscon Steel Co.....2, 194
Turner Construction Company 68

United States Gutta Percha Paint Co. 89
United States Gypsum Co.....44, 51
United States Quarry Tile Co..... 91
United States Radiator Corp..... 202
United States Rubber Co..... 109
Utica Heater Company..... 205

Valentine & Company..... 100
Van Zile Ventilating Co..... 210
Van Range Co., John.....166, 167
Vitaglass Corporation 131
Vitrolite Company, The..... 194
Vonnegut Hardware Co..... 55
Vortex Mfg. Company..... 191

Wallace & Tierman Co., Inc..... 185
Walworth Company 213
Warren Webster & Co..... 33
Wasmuth-Endicott Company..... 169
Wellston Iron Furnace Company, The 201
West Coast Lumber Bureau..... 105
Western Pine Mfgrs. Ass'n..... 108
Westinghouse Elec. & Mfg. Co..... 161
Wheeling Steel Corporation..... 180
White Door Bed Co., The..... 173
Whittall 78
Wickwire Spencer Steel Co..... 187
Williams Oil-O-Matic Heating Corp. 203
Wilmot Castle Co. 21
Young Pump Company..... 197

Zapon Company, The..... 65
Zenitherm Company 80
Zouri Drawn Metals.....14, 15

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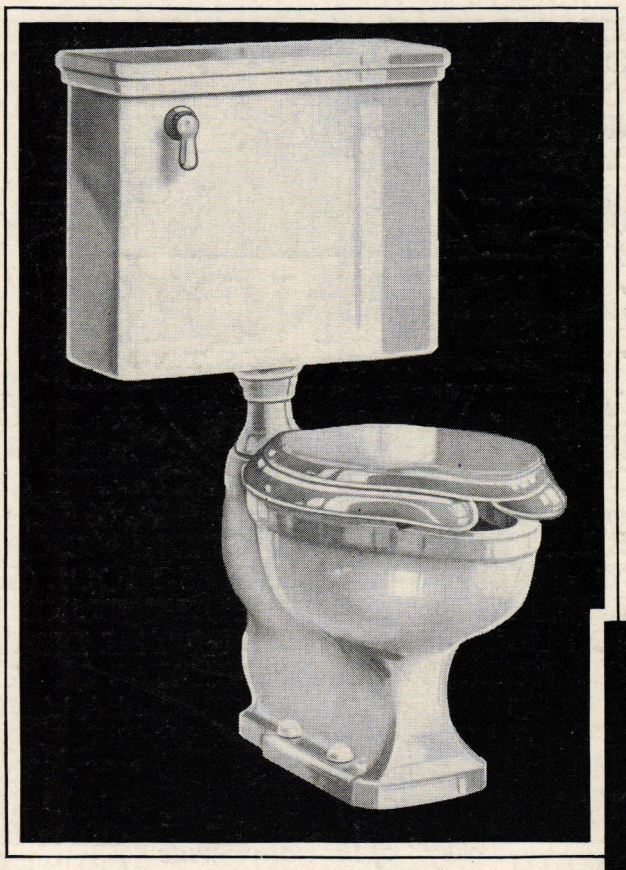

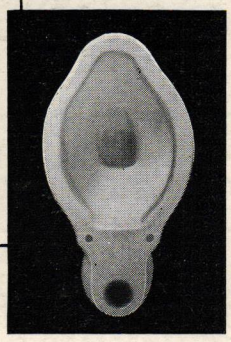

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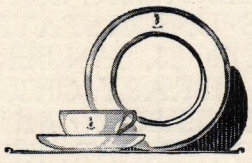

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The 1927 Convention, American Institute of Architects

THE Sixtieth Convention of the American Institute of Architects, which was held in Washington during the second week of May, was noted for the high quality of the many addresses delivered and the progressive spirit shown in the reports and findings of the Board of Directors and its several sub-committees. Following the precedent of former years, the opening session of the convention was devoted to the address of the President and to the presentation of the principal subject of discussion taken up by the convention.

The subject this year was "The Relation of Architecture to the Allied Arts." In this discussion the address on Architecture was delivered by the Chairman of the Committee on Allied Arts, C. Grant LaFarge of New York, followed by an address on "Landscape Architecture" by Arthur A. Shurtleff of Boston. The discussion of the Relation of Mural Painting to Architecture was conducted by Arthur Sinclair Covey of New York, the President of the Society of Mural Painters. John Gregory, the New York sculptor, spoke upon the Importance of Sculptured Decoration in Architecture. Lorentz Kleiser of New York gave expression to the importance of Craftsmanship in Architecture. These several addresses adequately expressed the need of appreciative coöperation between Architecture and the Allied Arts. At the first evening session of the convention a resolution was suggested that prominent and honored representatives of the Allied Arts and Crafts should be admitted to membership in the Institute. This resolution, however, met with but scant support and was referred to the Committee on Allied Arts without being acted upon.

The second and third days of the convention were devoted to the presentation of the reports of the many committees of the Board of Directors. Unfortunately, space does not permit the inclusion of the highly interesting reports of the Committee on Allied Arts, that on Architectural Decoration, the Small House Service Bureau, the Committee on Community Planning, the Committee on the Code of Ethics, Committee on Public Information, the Committees on Public Works and Plan of the City of Washington and many other committees. Copies of these reports in full may be procured from the Washington office of the American Institute of Architects. The closing of the convention was marked by the annual banquet, held in the auditorium of the Chamber of Commerce, where all of the convention meetings were held. Following the banquet these awards were made: Frank Holmes received the Craftsmanship Medal. To Lee Lawrie, famous for the sculpture and architectural decorations on the Nebraska Capitol and much other of the late Bertram G. Goodhue's inspired work, the Fine Arts Medal was presented. The significant and touching event of this important gathering was the presentation of the Howard Van Doren Shaw Gold Medal to his widow. The ceremony of presenting these three awards was followed by an address by Charles Moore, Chairman of the Commission of Fine Arts, on the subject of "Architecture and the Allied Arts." Thus the opening and the closing of one of the most successful conventions ever held by the American Institute of Architects were marked by notable discussions of the all-important subject, "The Relation of Architecture to the Allied Arts." The convention of 1927, in fact, will long be happily remembered.

No better exposition of the aims and ideals of the American Institute of Architects can be found than the thoughts of Milton B. Medary, President of the Institute, as expressed in his opening address, which together with C. Grant LaFarge's interpretation of the Relation between Architecture and the Allied Arts are quoted in part upon this and following pages.

President Medary's Address

THE American Institute of Architects, through the devoted service of its members over many years, has contributed to the machinery of practice, to the knowledge of materials and methods of construction, not only documentary forms but a fund of information invaluable to the profession, without which the inexperienced architect at the threshold of his career must meet many discouraging obstacles before finding himself free to devote his talents to the realization of his creative impulse in physical form.

The freedom with which his imagination may realize the noblest dreams of his spirit, within the limits set by material facts and forces, is greatly increased by this work of Institute committees which puts into his hands the slowly accumulated experience of his forerunners.

The heights to which the art of architecture may reach, freed from these concerns of its machinery, are limited only by the heights built under our feet, and as we build, greater heights are made possible of attainment.

In every phase of life we have below us the product of the toil and the aspirations of those who have gone before us—ours to use and to extend to the limits which their work has brought within our reach. In our own art, the scientific research work in the field of materials and methods and in the preparation of orderly procedures of practice has given the architect tools tried and ready for his use. To these tools our future architecture must owe great obligation; the artists who use them, yield grateful acknowledgement.

In another aspect, the American Institute of Architects has served the art of architecture well in preparing the ground for a nobler future growing out of a more understanding and sympathetic soil, for no great art so intimately expressing the humanities of any social system can long remain exotic. It must be woven out of the whole of life and be present to some degree in its every expression.

The American Institute of Architects has sensed and accepted this obligation and, through its publications and lectures and the proper use of publicity, has worked faithfully and diligently for a broader understanding of architecture as the physical language of human activities, and of the immense significance of all the arts in their power to make material necessities beautiful, and further, to destroy forever the fallacy that a gulf exists between the material and the beautiful. It is the artist's privilege and obligation to challenge this latter doctrine. It is ours to make all material things beautiful, and their use an ennobling and joyous experience. For this, I believe the American Institute of Architects has undertaken to pave the way.

With the work which has been done so far and which must be vigorously prosecuted, it has seemed the time was ripe to build our art upon the ground prepared and with the tools gathered for our use, and it has been thought well to

devote as much of the time of this convention as may be to a consideration of the elements of an art which have made it a living index to the social and religious institutions of nations and peoples since Abraham lived in the city of Ur.

Sincere civilization has always sought to express the life within itself and has never been satisfied with the expression of other lives, no matter how noble or how beautifully expressed, knowing instinctively that the form is but a shell except for the spirit of its creator contained within it.

Science is by its nature preoccupied with things which may be seen, or touched, or weighed, or measured—all else must be discarded as "unreal"—and by its searchings for facts and reasons it is the invaluable handmaiden of creative art; but every conscious living creature knows that it is only the vital part of himself, the part that cannot be seen, or weighed, or measured, that he wishes to express—the intangible, the universal, the eternal, that part of himself which is not material, which science has never reached, and which only in exalted moments seems within his own reach.

In the myriad confusions and complications of twentieth century life, men are bewildered by the surface manifestations of constantly changing forms pressing upon them and stretching as far as the vision may reach, and in this confusion is the promise of the awakening of a new springtime of art. In literature, in religion, in sculpture and painting, in music and the drama, as well as in architecture, the world is in revolt. We refuse to repeat the expression of other lives and demand the opportunity to add our own expression to the sum of truth and beauty built up through the ages. But, as in all revolts, we are passing through the extreme forms of complete repudiation with all its crude accompaniments, called for want of a better word, by the name of "jazz."

The architect hears everywhere: Let us have a new architecture, an American architecture; let us have done with the dealers in classic and mediæval forms; let us try something truly American! . . . This is plain sophistry. Just as well say: Let us have an entirely new written language, as well as the physical one; let us stop using the words used by Shakespeare and express our thoughts by sounds never heard before; and let us be entirely individual and no two of us use the same sounds! . . . This sophistry is due to the confusion which fails to differentiate between using the soul and mind of Shakespeare as our own and using the words with which he expressed the thing born in his own spirit; words which have become exquisite with every delicate shade of meaning only because men have long used them and understood them. Without them the power of beautiful expression would disappear. The written language is a living, changing thing, however, and slowly and surely, as Doric architecture became Ionic, and Roman Romanesque, and Romanesque Gothic, the English of Chaucer became that of the sixteenth century, of the eighteenth century, and of the present day.

Let us, then, in looking to the future, close our eyes to the changing multitude of surface manifestations and look below the surface for the roots out of which they spring, and let us search among the roots for those which are universal and have abiding character. On these let us build in our own way, with the freest fancy, expressing our own spirits. We need not copy last year's blossomings, but we may and should take what made these blossomings beautiful as our inspiration. Our work will then surely be ours and cannot be confused with carefully reproduced expressions of great souls long since dead. This latter is the plagiarism which proclaims its author's belief that architecture is no longer a living thing.

May I speak of the fallacy of an American architecture as a new national art, distinct and altogether different from other national architecture and from our own forms of the past? Every nation as long as we shall have nations, and particularly every clime, whether coinciding with national boundaries or not, will of necessity develop identifying characteristics in any truthful architecture; but the nineteenth century with its revolutionary contributions to communication between the peoples of the earth put behind us forever the isolation of national thought and expression in self-contained units, the influence of each unit limited to a slow advance along the commercial routes of Europe and Asia or transplanted violently as part of the spoils of war. To the rich inheritance of all past time, representing the most exalted expression attained by the noblest spirits of China, India, Persia, Egypt, Greece, Rome and mediæval Europe, are added streams of inspiration pouring in upon us from contemporary art throughout the world. The so-called "modern" movement in central Europe and the Scandinavian countries is as well known to American architects as to Europeans, and its outstanding examples are published and analyzed in the architectural press of America as freely as the work of our own architects. Most probably the new town hall at Stockholm has been given as careful study by American architects as any of the outstanding contemporary works in our own country. And I believe that architects throughout Europe keep as closely in touch with the work done here.

All of which points clearly to the fact that the architecture of the future will be influenced as directly by great work in any part of the world as the architecture of Greece was influenced by the works of neighboring cities or as each cathedral built in western Europe was influenced by those which immediately preceded it.

With the timely passing of period art and its forgeries of other men's minds and souls as well as the idiosyncrasies of their manual craft and skill, the architectural future has a field cleared of the blighting influence of the sophistries which have beset it on every hand, whenever we are ready to declare that we have done with them. We should not fear to build our own interpretation of today, as God gives us the inspiration and power to know and feel and see it in its most beautiful aspect, upon the great foundation made up of the aspirations and the sweat and blood of the past.

Our obligation is to contribute to the utmost that is in us to the great architecture of the world and to help those who follow us to contribute more on the structure we have thus developed. It is here that we feel the need of understanding clearly the nature of our opportunity and its challenge. We have chosen architecture as a medium by which each of us shall give his personality to the evolution of life. If we are to insure as great a contribution as comes from those who have chosen other media for their life expression, we must seek the fullest expression of our art.

What, then, is architecture in its fullest manifestation and what are the elements which must be present?

In schools and among professional artists, architecture is usually listed as one in a catalog of the arts. The crafts, for some indefensible reason, are classed separately, but certainly they are the very essence of art as applied to material things. Architecture has been called the "mother" of the arts, and this expression reveals recognition of a necessary relation of all the arts and their interdependence—in short, a family of the arts. I have come to the firm conviction that architecture can have no existence apart from the elements of which it is composed; that no architecture can be created or ever has been created which is not an assemblage of the arts; and that no truly great architecture ever was or can be except it be a complete fusion of all the arts into a perfect harmony, each dependent upon the others, the whole inspired at its conception by the appropriate beauty each holds ready for the enrichment of every other and of the whole. This is more than coöperation; it is the stimulation and cross-fertilization of all by the collective presence of a full orchestra of creative impulse. Who can read of the gatherings of artists in the gardens of the great art patrons of the Renaissance, or that earlier description of the building of Solomon's Temple, where the workers in stone and wood and iron, in gold and ivory and precious stones, were called to give their best to a glorious fabric, without feeling the influence these contacts must have had upon the whole? The objects taken from an ancient Egyptian tomb might have been the work of the cathedral builders of the thirteenth century, for both proclaim the presence of all the arts at their conception.

Here, then, lies the trail over which we must travel, hand in hand, a happy company of the arts, each enriching the others with a power and vision none could hope to achieve alone.

This convention has been planned to make such a theme its major motif; to inaugurate understanding coöperation of all those whose lives are dedicated to the service of the several arts, both in the schools and in the actual building of the fabric of the world; to help us to know each other better, that each of us shall be enriched by that knowledge, that in creating the material we may help each other to express the spiritual, that sculpture may once more be thought of as part of a parthenon without losing its dignity as sculpture; that painting may become again a vital part of

walls and ceilings and altar-pieces; that the names of artists will recall their part in collective compositions as do the names of della Robbia, Giotto and LeNotre. Upon this theme there have already been founded the American Academy in Rome, the American Federation of Arts, and the Architectural League of New York. Upon it our Committee on Education, backed by the Carnegie Foundation, has launched its program for a wider understanding of the significance of the arts, and upon it I hope the American Institute of Architects will build a program for the future in which all the elements of architecture shall be represented in all our contacts with the schools and the public as well as within our own profession, the profession of architecture.

Address by C. Grant LaFarge

THE complete report of the Committee on Allied Arts will, in due course, be presented to this convention in printed form. The recommendations therein advanced, their desirability, their practicability, will, we assume, be discussed, and the convention will declare its attitude toward a program which, if adopted, undoubtedly would commit the Institute to a continuing policy of long duration and which could be effective only if wholeheartedly supported.

For the moment let us consider the major principle which this committee was directed to express. The President of the Institute has said it many times; we state it again: That we shall now turn our attention to architecture as an art, having long debated it as a science, a profession. That we shall view it as an art in which all the arts of design are so interwoven, so interdependent, so essential, that unless their intimate relationship shall be clearly recognized and brought to fullness of realization, American architecture will not express the entire potentiality of American genius. Hence, that we must foster collaboration in the arts of design, the arts that in their sum compose what we call architecture. This being our goal, how shall we set out to reach it? There are two paths to follow, inform ourselves upon what our resources are, then open our minds and our hearts to the use of them; minds and hearts being opened, let our resolution be closed.

Our resources are so vast and so numerous, that even the mere glance at them is bewildering,—an ever-growing number of landscape architects, trained as but lately was undreamed of; mural painters, sculptors, whose performance is already notable, whose promise outstrips our present vision; an uncounted host of craftsmen, equipping us, the country over, with accessories to our buildings that more than once we shall find may bear comparison with works of the periods we like to copy; last, but not least in importance, schools—but on education we shall touch later on.

One of the proposals that we make is the widespread collecting of data covering the executed work of these various producers; its systematic recording in such wise that it may be constantly and promptly available to all our members. Under this plan the record would show to all the experience of others:—cost, absolute and relative to entire cost of building, some idea of the circumstances under which the work was done; how much there was of unison between the architect and his fellow artists;—in short, of collaboration, such as Benjamin W. Morris has inspiringly related concerning his Cunard Building and Seamen's Bank; also how much of his own design the craftsman contributed, as so often is the case. These would be some of the data. We believe they would be valuable as a dependable basis for estimating some percentage of total cost to be allowed beforehand for providing proper adornment of certain buildings, a proposal that has been before the Institute, but which we do not yet really know enough about to determine intelligently. We believe further that they would be profoundly helpful to many of our brethren who practice in other than the crowded metropolitan centers.

We speak of collaboration. What do we mean by that term? Perhaps, to clear our minds, we should first say what we mean by architecture. Surely no clever catch phrase will suffice, however poetic. It is all very well to say that architecture is frozen music, but it leads us nowhere, for our function is to conduct the orchestra. So we want to play our music, composing it at the same time, with no instrument so humble that its little note shall not be right in the completed symphony. If after that it freezes, very well. But we know architectural compositions which, because of faulty collaboration—may the gods forgive the mixed metaphor—do not jell! Pray don't tell us it was a case of too many cooks!

If we observe a beautiful building, wisely placed in a beautiful setting, complete in all its details and appointments, ready to serve its human purpose, who among us would dare have the hardihood to draw the rigid boundary line demarking its architecture, separating that art from its sisters? None, let us trust, among the enlightened body now being addressed. They know, none better, whence flows the quality that radiates from the monuments of a day long gone, that stirs us to our finger tips and excites our baffled envy. They do not imagine that some harried ambitious architect, after anxiously reviewing his photographs, has said to the august building committee: "Gentlemen, in view of all the circumstances, I think it had better be Romanesque"—or Gothic, or Byzantine, or Renaissance, or what you like. Or even that he has said: "For God's sake, let's be modern and show 'em!" They do not think that he made in his elaborate office all the details of every feature of the building and then ordered a modeler to follow his drawings in clay, cast the models in plaster so that a stone carver or a wood carver should cut from them, and so perpetuate the mud. They know that he did not summon a sculptor and say: "Here are the places for some statues. Make them, and make them to fit." Or a painter, and go through an equivalent formula. And so on, through the list. No; they know better. Then why should we adhere to an attitude of assuming these sad, mad, bad ways to be good? In extenuation, be it said, that we are inheritors. Men now living can recall the time when knowledge burst upon our predecessors. They remember an arid period, when the crafts were at a forlorn ebb, the allied arts lost among the easels, or the deplorable public park embellishments, and architectural design just emerging from Cimmerian gloom. But those times have changed, changed out of all recognition, and if we persist in behaving as though we still were in them, we deliberately close our eyes to the light.

Suppose, then, that we shift our point of view and contemplate another method of approach. As we take our stance it will surely not be amiss to ponder the words of an architect whose untimely death lost to us not merely one whom we loved, but one who quite surely had his feet upon the threshold of a glorious future. For Bertram Goodhue, great as was the contribution that his eager spirit made, was beyond a doubt opening the doors of wonder. And Goodhue said, "I should like to be merely one of three people to produce a building,—i. e., architect, painter, sculptor. You see what I mean. I should like to do the plan and massing of the building; then I should like to turn the ornament (whether sculpture or not makes no difference) over to a perfectly qualified sculptor, and the color and the surface direction (mural paintings or not as the case may be) to an equally qualified painter." These are the words of a man of genius, a man who in his own person embodied more, far more, of ability in the allied arts than most of us possess. Indeed, out of that ability, out of that knowledge sprang the modesty, the respect, that his wish reveals.

We are about to design a building, no matter just what kind, to stand in extensive grounds. We have, let us say, a pretty fair idea of the type we shall adopt. Forthwith, we shall summon the landscape architect into conference, for we are satisfied that his advice upon placing is valuable, and that according to position, our plan and our mass may be affected. We further know that his method of approach is different from ours; he works from the outside in, we from the inside outward. That is, his design must lead to our building, and our building will look out upon his design. These two functions must not be divorced; they must be united. We know something else—that just as our task is highly technical and requiring skill, so is his. Our common sense tells us to obey the familiar injunction to "keep off the grass." That grass, for us, is paper stretched upon a drawing board, to be covered with some sort of a plan that looks pretty enough on the paper and delivers us over to the tender mercies of the nurseryman with his catalog,—surely a mournful fate. Our landscape collaborator knows enough of architecture, its problems and how we attack them, and we in turn know enough of his art for us to be able to give each other intelligent criticism, as our designs develop, step by step and always in step. At least this should be the case. If it is not, we are not, either of us, properly educated.

The same thing holds true of the painter and the sculptor. The more of both that an architect can himself be, the more

will sympathetic comprehension reside in him, the more nearly will he be a duly qualified architect, fit to collaborate with other artists. And the more he knows, the less arrogant will he be; the less stubbornly insistent upon his all-pervasive grandeur, for modesty and humility are the children of wisdom, and much knowledge teaches us appreciation of the other fellow's difficulties and achievements. We are now, for the purposes of our present argument, projecting ourselves into a by no means unattainable Utopia. So we shall ask the painter and the sculptor not to work for us, but with us. Let us instantly disabuse our minds of the notion that we are about to abdicate, to shuffle off one iota of our responsibility. We need not stretch our imaginations unduly to think of, say, some great room. But can we not see ourselves pausing in our determination of that feature, with its main policy clear in our minds, its bones, so to speak, settled upon, but pausing while our collaborators discuss with us the details of its expression? Shall we not rejoice as their suggestions, following upon each others' heels, show us where and how details may be left to them; how spaces may be treated in ways we had not thought of; effects obtained; accents placed; harmony and rhythm found; the very solidity and structural significance of our design enhanced? A distinguished architect has drawn a picture in his paper read at the last regional conference in New York. Mr. Morris, describing how the Great Hall of the Cunard Building was worked out with Barry Faulkner, Ezra Winter and others, says: "Together we worked, composing the subdivisions of space, the enrichment of the dividing members and the general distribution and key of color. Throughout, Winter showed his mastery of the problem and never for a moment forgot his architecture; himself he forgot completely . . . it really was a great, happy family." He speaks of Faulkner's lovely wall maps, and tells how the color of the composition had to be brought down upon the walls, "and the whole arranged in a single composition, lying in peace and quiet upon the surfaces"; —how John Gregory had the floor as a virgin field, on which to make his wonderful seal, and of the good fellowship and harmony in which appear the works of Jennewein and Nebel and Yellin. Most movingly, in a few words, he refers to the Sunday visits of the mechanics and laborers of all trades, come with their families to admire. And he says that "here were the works of painter, sculptor, modeler and ironworker living in harmony and not intentionally, at any rate, shouting at one another. . . . What glorious fun!"

Consider now the craftsman. Thus to separate him, to set him apart, is but a clumsy device of convenience. For we know very well how much of him is artist and how much the artist must ever be a craftsman. Indeed, it is only in this restless, discontented day that we know of clamorous incompetence masquerading as art, under the shallow excuse of self-expression, claiming what the primitive savage would deny. Never can foul ignorance and clumsy posturing be source or evidence of originality. The skilled handiwork of the artificer is forever the sober, convincing proof that puts to shame the flimsy pretense of the untrained. In solemn verse Scripture gives the craftsman his full due.

The house is not complete until its master may live in it, and to make it so requires the work of many crafts. The architect, if he shall speak with perfect honesty, cannot say of it all, "I did it." Over and over again his dependence has been upon the skill of the craftsman. Perhaps he designed such and such a fine example of iron or bronze, of tile, of relief in whatever substance, making but a curt gesture of gratitude to the memory of the dead and forgotten master who afforded him inspiration, and trusting to cunning hands for the execution of his conception. Perhaps he leaned entirely upon the artificer. We have all done both these things. There is no hard and fast rule to lay down, but at least we should acknowledge our indebtedness.

We have established a great institution, founded specifically upon the idea of collaboration—the American Academy in Rome. To the Academy go the winners of fellowships in architecture, painting, sculpture and landscape architecture. They have passed through the school stage before they go, and are qualified for their three years of research, of close contact with all that Italy and the classic lands offer of stimulus to their riper development. There they live together, work together, talk together, travel together, learn to know each other and their several ways. Beyond the shadow of a doubt they come back here with a perception of the meaning to them all of architecture such as they had little glimmering of before they went. But why should they go unprepared in this respect? Why should not our schools here at home lead them from the very start along the paths of collaboration? We have fine arts courses in our universities. We have schools in which the arts of design are taught, in many cases several of those schools side by side. To what extent are they coördinated? Do they interpenetrate, teach and practice the community of endeavor, the identity of interest, establish the vital personal contact of artist with artist, without which their teaching can never, never be of full effect? Not much, we think; somewhat, sometimes; in a few cases, increasingly; mostly, not at all. Of this vast educational field we do not really yet know enough to say with accuracy just what exists or what promise is offered. We content ourselves for the moment with noting the deep importance of its adequate survey, with a view to shortly enormously increasing its usefulness.

The result of the annual election of officers of the American Institute of Architects follows:

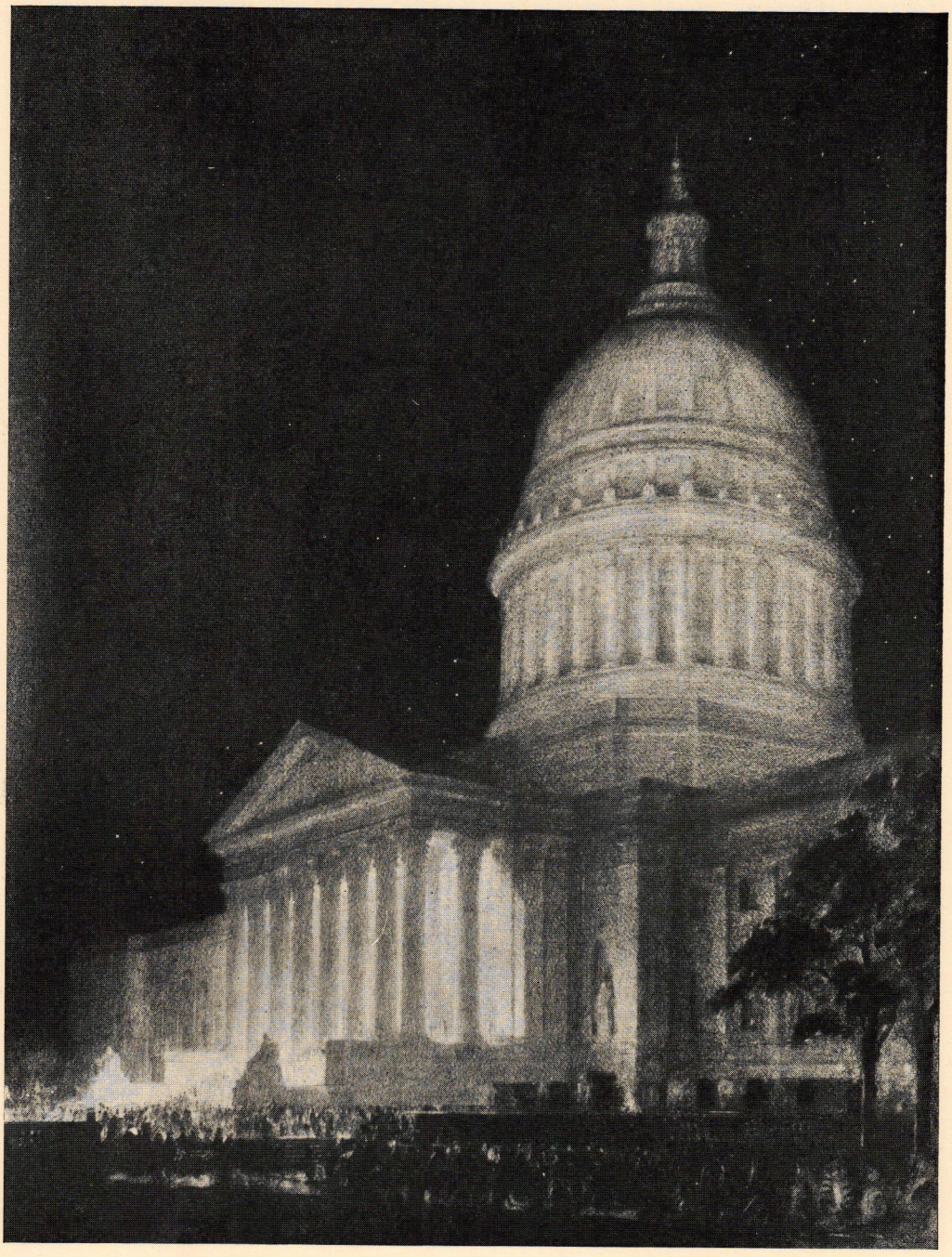
President and Director, Milton B. Medary, Philadelphia.
First Vice-president and Director, William Emerson, Boston.
Second Vice-president and Director, C. Herrick Hammond, Chicago.
Secretary and Director, Frank C. Baldwin, Washington.
Treasurer and Director, Edwin Bergstrom, Los Angeles.
Director, Fourth District, William H. Lord, Asheville, N. C.
Directors, Seventh District, Henry C. Hibbs, Nashville; Olle J. Lorehn, Houston, Tex.
Director, Ninth District, Myron Hunt, Los Angeles.

MEETING OF THE PRODUCERS' COUNCIL

COINCIDENT with the convention of the American Institute of Architects the Producers' Council held its semi-annual meeting and received reports of progress which not even its most sanguine sponsors had anticipated, in view of the short period in which this organization has been functioning.

It will be recalled that when the idea of having an organization of manufacturers of building products affiliated with the A. I. A. was first broached, there was some opposition to the movement. However, so wisely and so constructively have the affairs of the Council been administered that its probationary period has passed, and the Board of Directors of the Institute has sanctioned an official continuation of the Council for a five-year period. This automatically removes the necessity of proving the Council's right to existence and releases its full energies for the solution of important problems which will result in a better understanding between the architects and the producers.

Sessions of the Council were addressed by several architects, among them President Medary of the Institute, Max B. Dunning, William B. Ittner and Edwin H. Brown. The feature of the Thursday luncheon of the convention was an address by A. K. Baylor, of General Electric Company, representing the Producers' Council, who sketched in broad lines the benefits to be gained from coöperative effort such as the Council has sought to promote, and which has for some time been successfully undertaken in other fields. He placed particular emphasis on the work which has been done in the electrical industry in bringing the engineering profession and the manufacturer together for the benefit of both these bodies.



WEST VIRGINIA CAPITOL, CHARLESTON

CASS GILBERT, ARCHITECT

From a Drawing by Hugh Ferriss

The ARCHITECTURAL FORUM

Volume XLVI JUNE 1927 Number 6

Designing Capitol Buildings

By JOSEPH H. FREEDLANDER

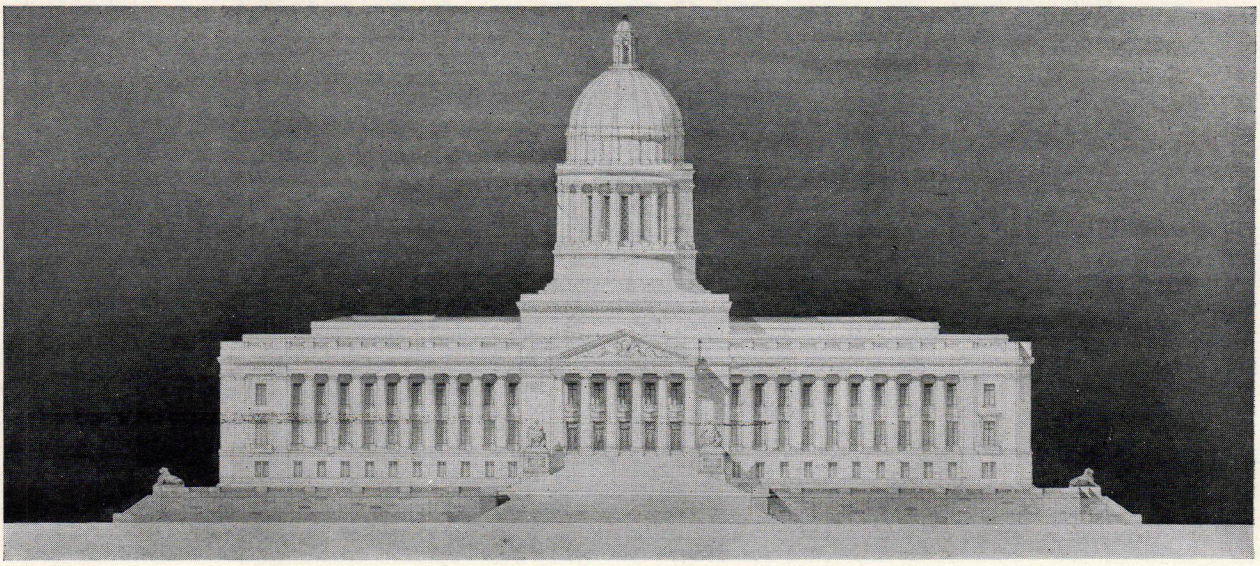
PREËMINENTLY, a state capitol must symbolize the majesty of government. It must be expressive of the stability and dignity of the state, and it must typify in its architecture the enduring place it holds in the federal government. Whether the facade be decked out in Classic, Gothic or Assyrian raiment is a matter of little moment, provided always that the impression conveyed be one of sincerity, simplicity and charm. From time immemorial, by virtue of tradition and custom, a dome has been thought necessary to embody this conception of a capitol building. Only within recent years has a new form, partaking of the nature of a tower, been essayed. Which best expresses the function of the state is a moot question; it is entirely a matter of opinion and taste, depending on the individual point of view and to some extent upon the environment.

The general arrangement of the plan has as well been a matter of tradition and precedent. The two houses of the legislature have usually been placed on the second floor, presumably to make provision for a vast flight of exterior steps, a feature associated in the public mind with every type of public building. This is wholly impracticable for several reasons. In the first place the public, in these days of high-speed elevators, objects to climbing stairs, and in fact we are credibly informed by eminent medical authorities that the leg muscles used in this prehistoric form of exercise are gradually becoming atrophied; secondly, an entrance to the ground floor with direct access to the elevators is usually provided; and in the third place, the entire space under the legislative chambers on the ground floor is wasted as far as it serves any practical purpose; occasionally it is turned into a "statuary hall,"—with all that that term implies. This use it would be well to avoid.

The senate and assembly with their dependencies should be located on the ground floor. Ready access thus tends to expedite the public business and saves much time in the despatch of routine affairs. The committee rooms should be conveniently grouped around the senate and assembly chambers, each of which should be provided with a spacious and commodious lounging room and ample cloak rooms. The lounge is the social center, and too much care cannot be exercised to make it attractive and restful,—as much so as a similar room in a club. Modern practice has clearly demonstrated that all of the other departments caring for the state's business should be housed in a separate building, connected by corridors, or in wings in the rear of the capitol structure proper. Arranged in this manner, the business of the departments can be carried on independently of the sessions of the legislature and without interference of any kind. In fact the entire legislative floor may, when the legislature is not in session, be completely closed off with a consequent saving of supervision and maintenance. Another important feature is the arrangement of the senate chamber and that of the house of representatives or assembly. They should be opposite, so that the respective presiding officers may face each other and may reciprocally see what is going on from the rostra. This is necessary when a concurrent resolution, or other legislation of a similar nature is to be passed. Other adjuncts briefly are a legislative library, a state apartment for the governor's receptions, a lobby for the two houses, and a commodious and spacious room for public hearings by the governor

All of the other governmental departments should, as was already said, he housed in wings, or, better still, as is being done at present in Albany, a separate building should be erected. In the state of New York these departments are so numerous that a modern office building is to be entirely devoted to them.

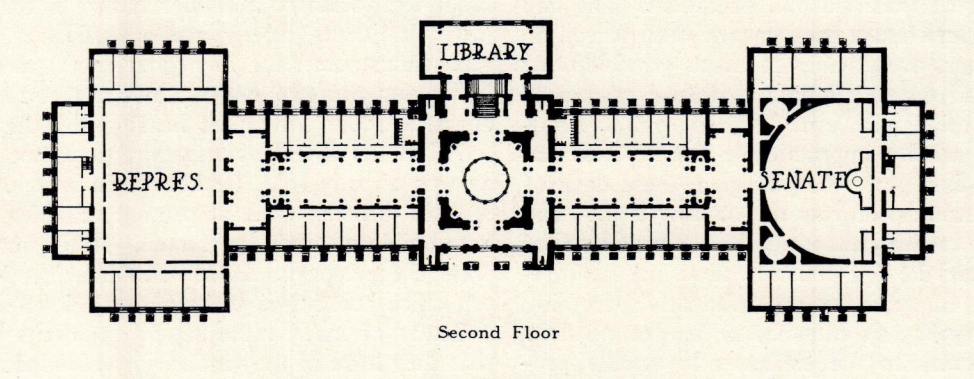
Study of many state capitol buildings will prove that they have in the vast majority of instances been modeled or patterned as closely as possible after the national capitol at Washington, two of the most notable exceptions being the New York capitol at Albany and that of Nebraska now being built at Lincoln. The former is an exception to the general rule which is hardly likely to attract a following, but the latter by reason of its great charm and originality may well exert a wide influence in the planning of such buildings for states which are not already well supplied with capitols. An architect who attempts to follow the excellent lead of the late Mr. Goodhue must, however, be prepared to face and to overcome more than a little opposition. The American people are very largely—if not irrevocably—committed to the firm belief that a state capitol must be designed



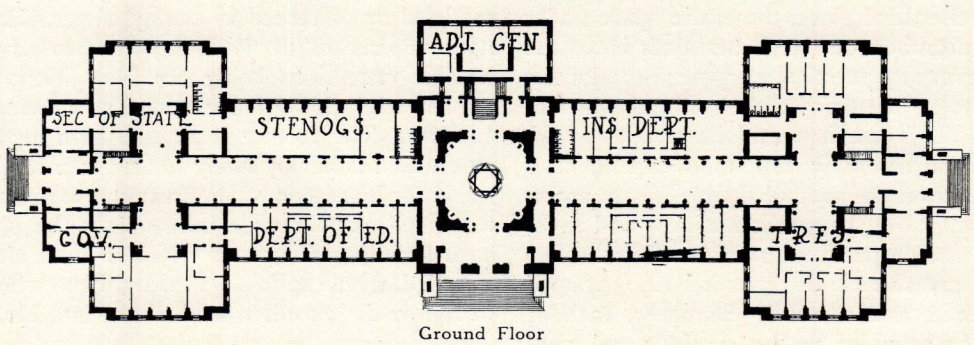
A Model, Missouri Capitol Competition
Joseph H. Freedlander, Architect

with four or at least two impressive facades in Classic fashion, replete with colonnades making use of some one or even more than one of the orders, and that the entire structure must be surmounted by a dome. Such is the popular idea, and any attempt to lead an advance in any other direction is likely to be attended with difficulty; public opinion is stubborn.

The state capitol, in fact, is a peculiarly American institution, called into being by conditions which are themselves peculiarly American. Elsewhere in the world a province or department may have its own governmental building or buildings, but in a country which is made up of 48 political units, each a sovereign state, it can readily be seen that this sovereignty must be given due and proper recognition. We have inherited from the antique world the idea that political power can and indeed should be given structural expression, and so we have impressive facades, colonnades and pediments, domes and sometimes minor domes as well; within, dignity is given suitable

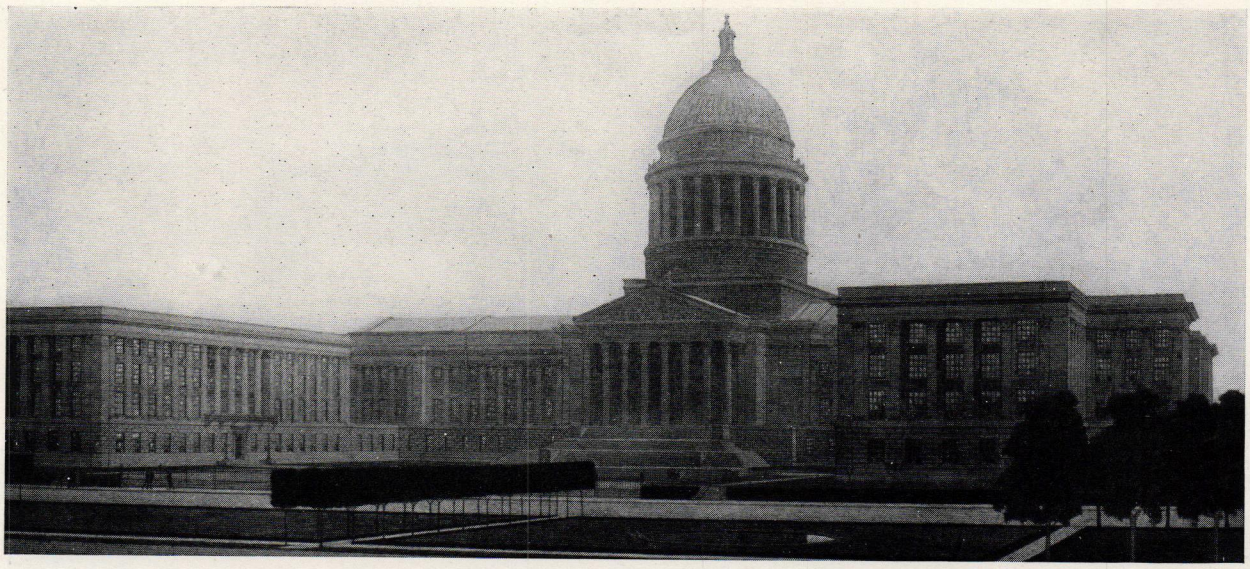


Second Floor



Ground Floor

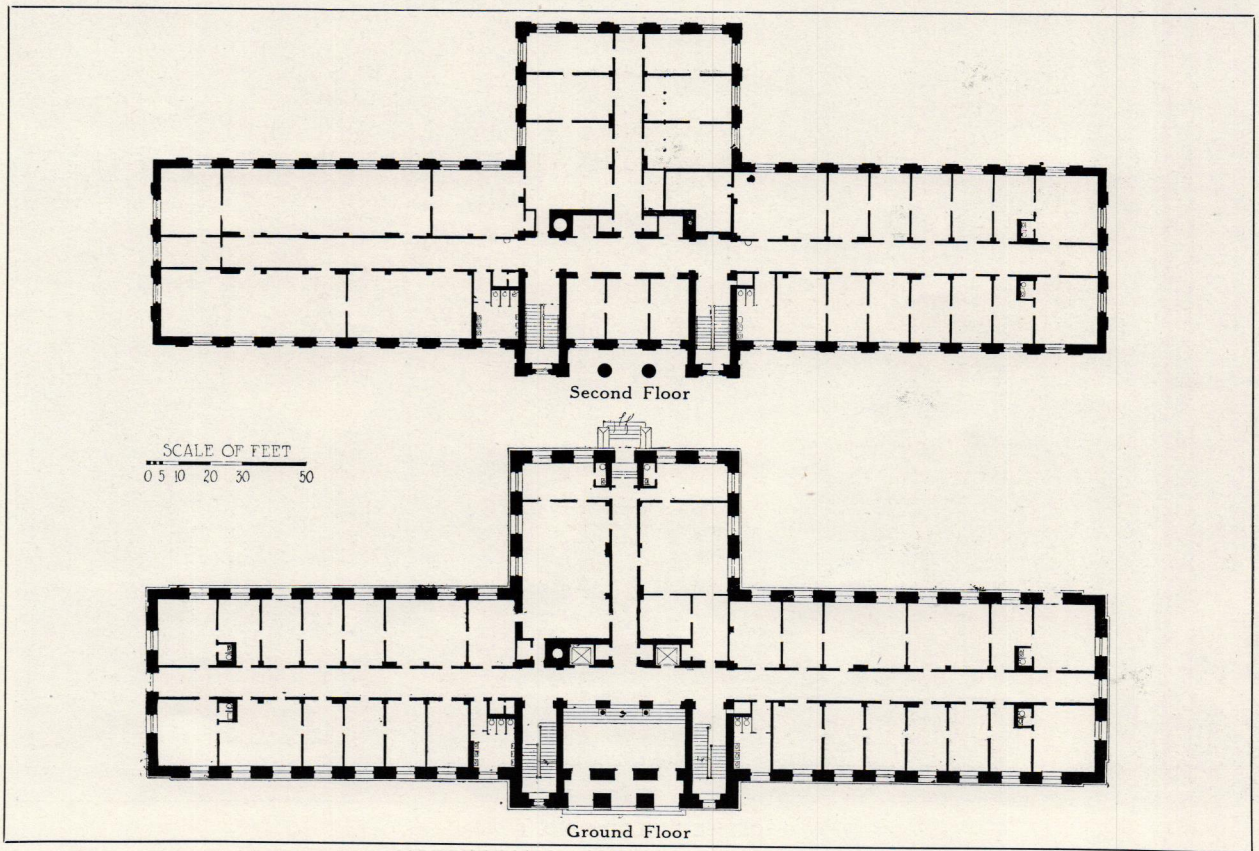
Plans, Preliminary Study, Missouri Capitol Competition
Joseph H. Freedlander, Architect



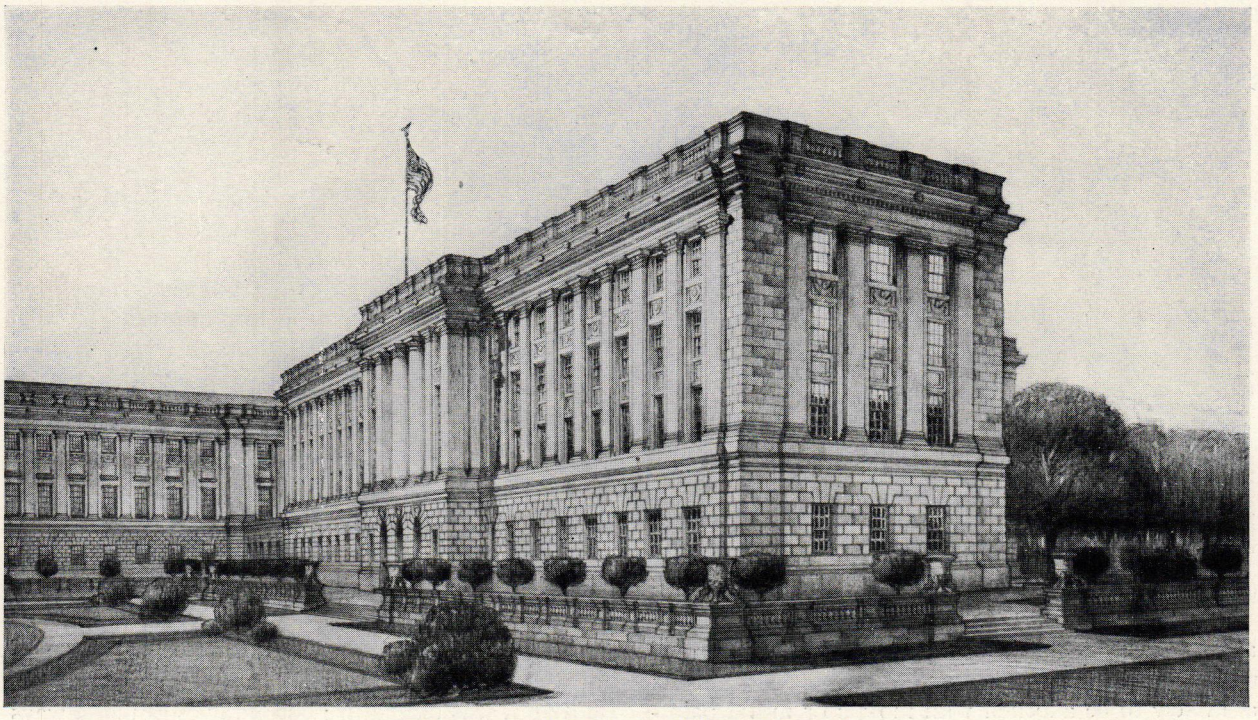
West Virginia Capitol, Charleston
Cass Gilbert, Architect

architectural recognition by walls and floors of marble, more colonnades at times, and ceiling areas are likely to be adorned with mosaic or mural paintings which draw somewhat freely upon history, mythology and symbolism,—with results which are sometimes fortunate and successful and sometimes not.

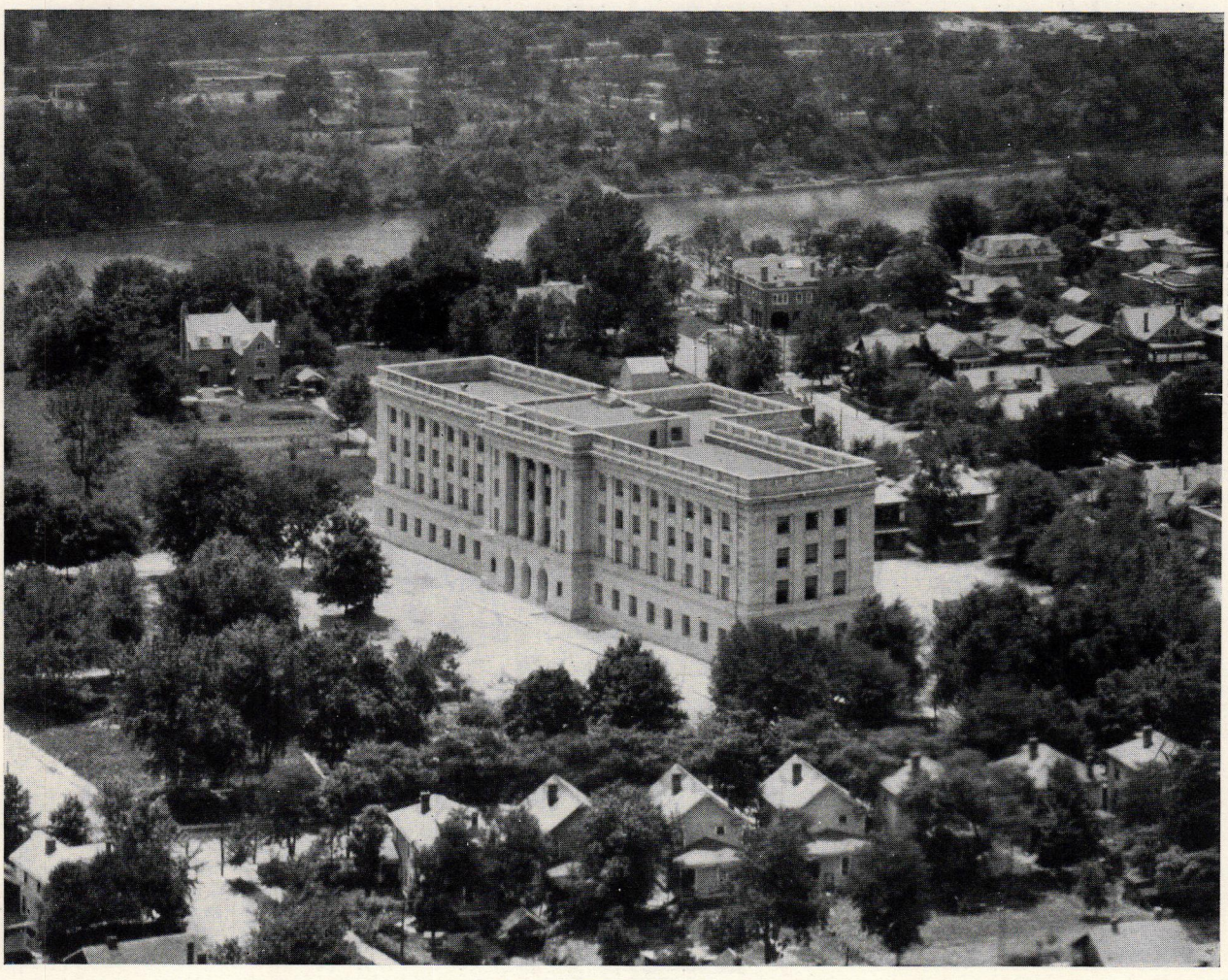
One thing, however, the architect of a capitol should always bear in mind,—that any attempt to enlarge a capitol building is almost certain to be attended by disaster. By some miracle the numerous additions which have been made to the nation's capitol have made it more beautiful and far more graceful than it was originally; but miracles cannot always be counted upon, and on the other hand there is the building which serenely crowns the brow of Beacon Hill, designed originally by the gifted Bulfinch, in the adding to which even architectural skill was not able to circumvent wholly the mischievous work of politicians, alert and eager whenever public work makes profitable the exerting of sinister influence.



Plans, Office Building No. 1, West Virginia Capitol, Charleston
Cass Gilbert, Architect



ARCHITECT'S DESIGN FOR OFFICE BUILDING



OFFICE BUILDING NO. 1

WEST VIRGINIA CAPITOL, CHARLESTON

CASS GILBERT, ARCHITECT

Essex County Hall of Records, Newark

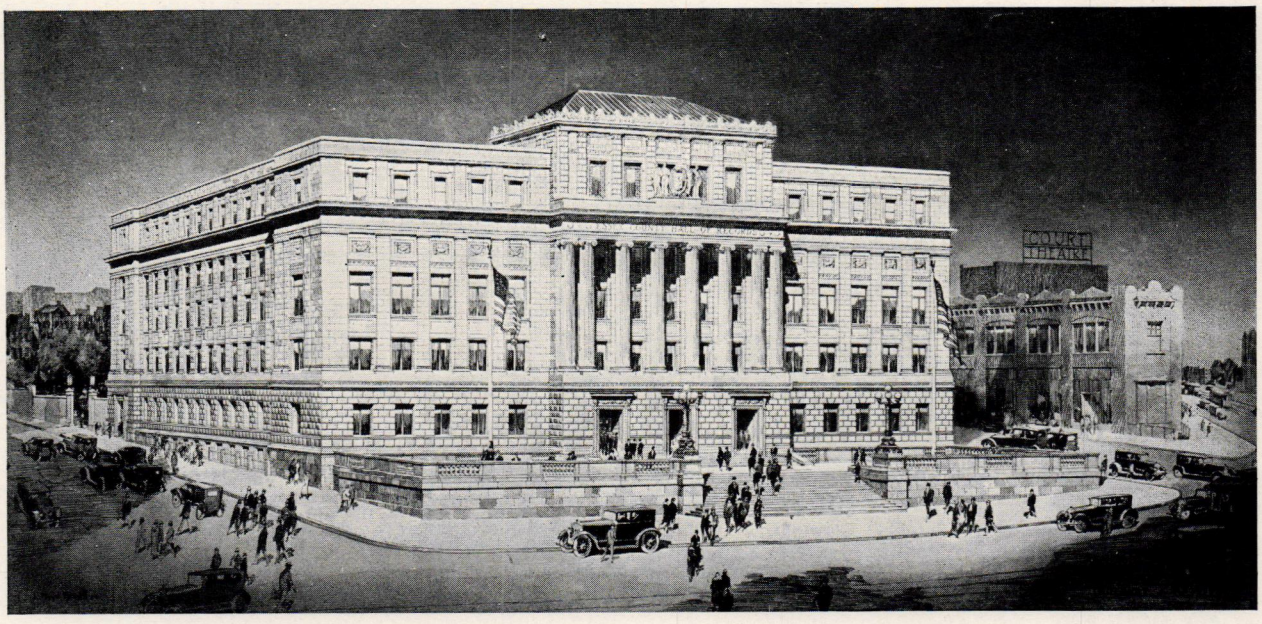
GUILBERT & BETELLE, ARCHITECTS

THE architect of a public building intended to serve the needs of a thriving and growing community is not always able to visualize or estimate the demands which may be made upon the structure ten or even five years from the time it is built; there are many instances where a structure has been entirely outgrown before it was even occupied.

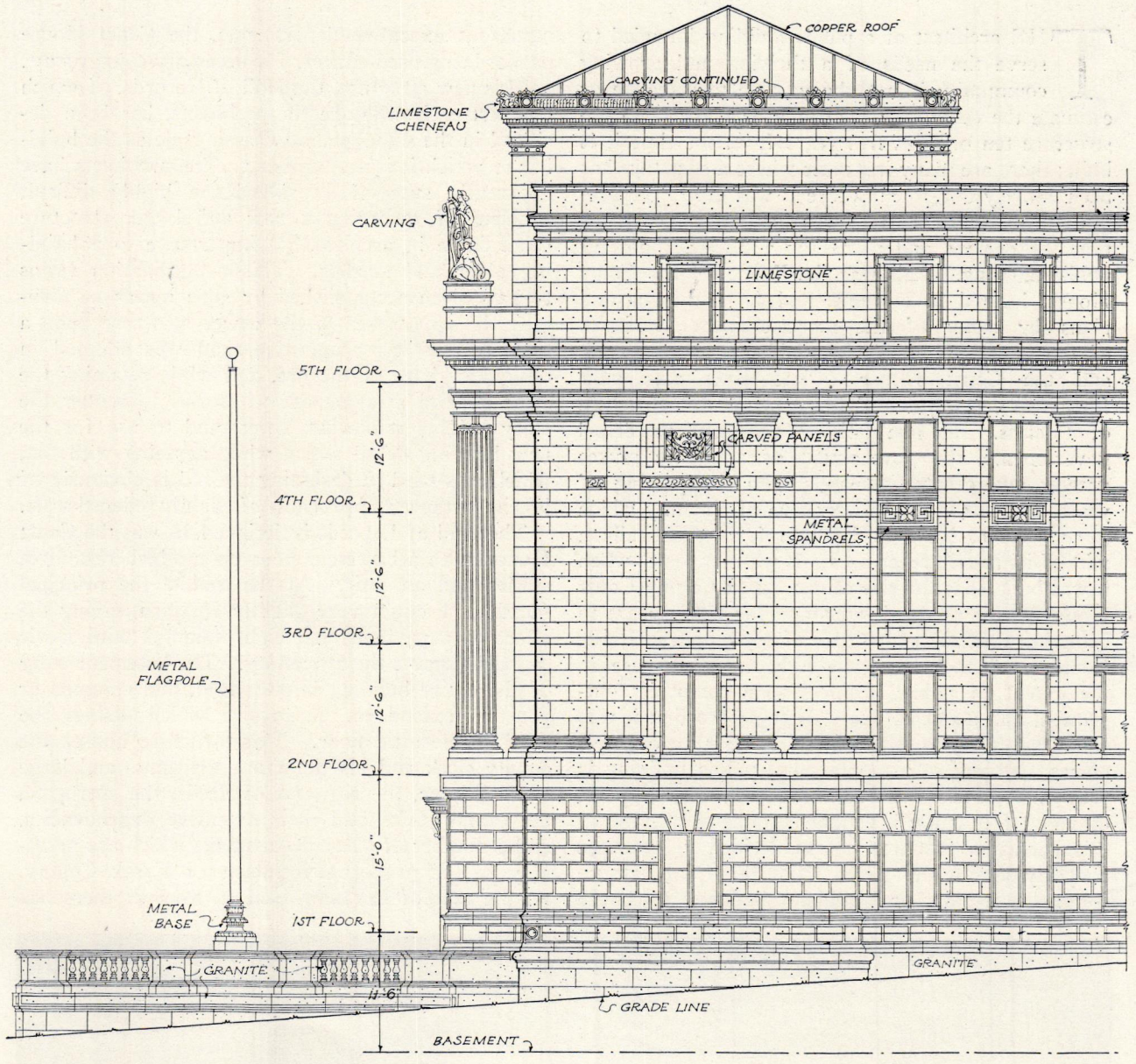
In the year 1902 there was instituted a competition for designs and plans for a highly important public building. This was the Essex County Court House, located in Newark, and from designs and plans by many of the most eminent architects of the period those of Cass Gilbert were selected, and the Court House (Plate 109) was built from them, being considered a successful structure of its class. But like national, state, and municipal governments, the government of a county makes greater and greater demands with the passing of years, and this is particularly true of a county which is so close to New York as to form practically a part of its metropolitan area. It was supposed, when it was built, that the size of the Essex County Court House would render it adequate for many years to come, but unexpected increase of population in Essex County and the correspondingly large increase in the extent of public business soon meant its outgrowth, and about 20 years after its erection it was found necessary to secure more area for the county's offices. Adding to a monumental public building is very rarely successful from an architectural point of view; frequently it cannot be done at all, and in this particular instance it was decided to purchase property across the street from the Court House for an accessory or auxiliary building to house numerous executive departments, the Court House proper being used entirely for necessary court rooms.

This new structure, the Hall of Records, of which Guilbert & Betelle are the architects, has been designed in the same general Classic style as the building to which it is an auxiliary. The architects have apparently successfully solved the highly difficult problem of rendering a new and larger structure subordinate in architectural importance to a building older and smaller. This subordination seems to have been accomplished by such means as planning the approaches to the newer structure upon a scale of far less magnitude than was adopted in designing those of the old, and while retaining the same general arrangement of stories to render the story heights somewhat lower, and to use for the new building detail which while agreeing with that which was used in designing the old is obviously of less importance and probably of slightly reduced scale.

The Hall of Records is designed, as was the Court House, with a basement floor upon which rest three stories and an attic. At the middle the principal facade is brought very slightly forward, giving the effect of a pavilion, and eight columns with Doric capitals support the attic story. The basement story of the entire building is rusticated, and columns or pilasters extend to the cornice which defines the base of the attic floor. This structure houses the county clerk and his numerous assistants and large clerical force, the registrar of deeds, the surrogate, the grand juries and their extensive dependencies, and a number of other departments which are necessary to the proper government of Essex County. At the rear of this new Hall of Records there has



Essex County Hall of Records, Newark
Guilbert & Betelle, Architects



ELEVATION AT CORNER

SCALE 10 0 10 20 30 40 50 IN FEET

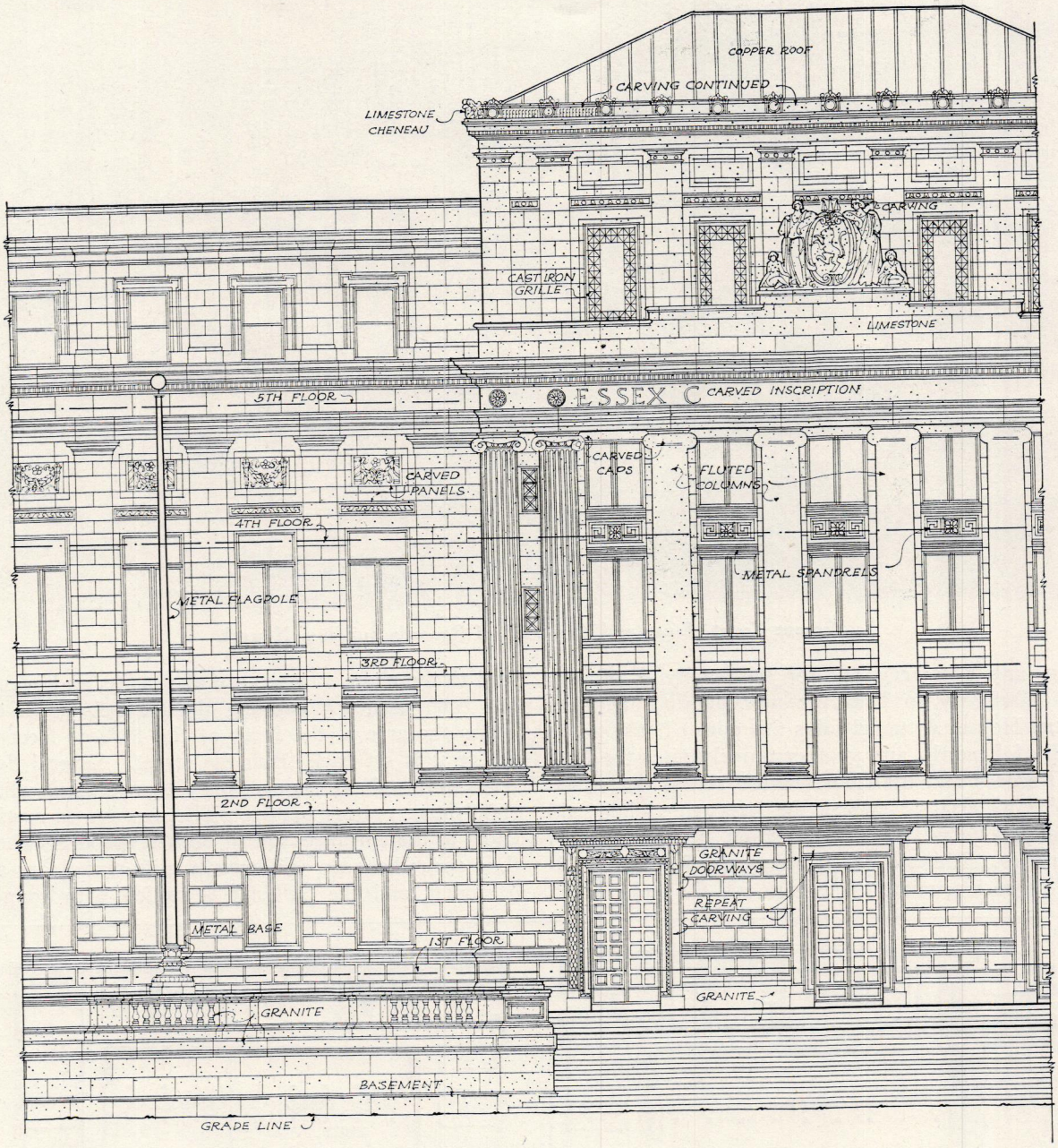
ESSEX COUNTY HALL OF RECORDS

NEWARK N.J.

GUILBERT & BETELLE ARCHTS, NEWARK N.J.

JUNE 1927

NO. 32



FRONT ENTRANCE DETAIL

SCALE 10 0 10 20 30 40 50 IN FEET

ESSEX COUNTY HALL OF RECORDS

NEWARK, NEW JERSEY

GUILBERT & BETELLE, ARCHTS NEWARK N.J.

JUNE 1927

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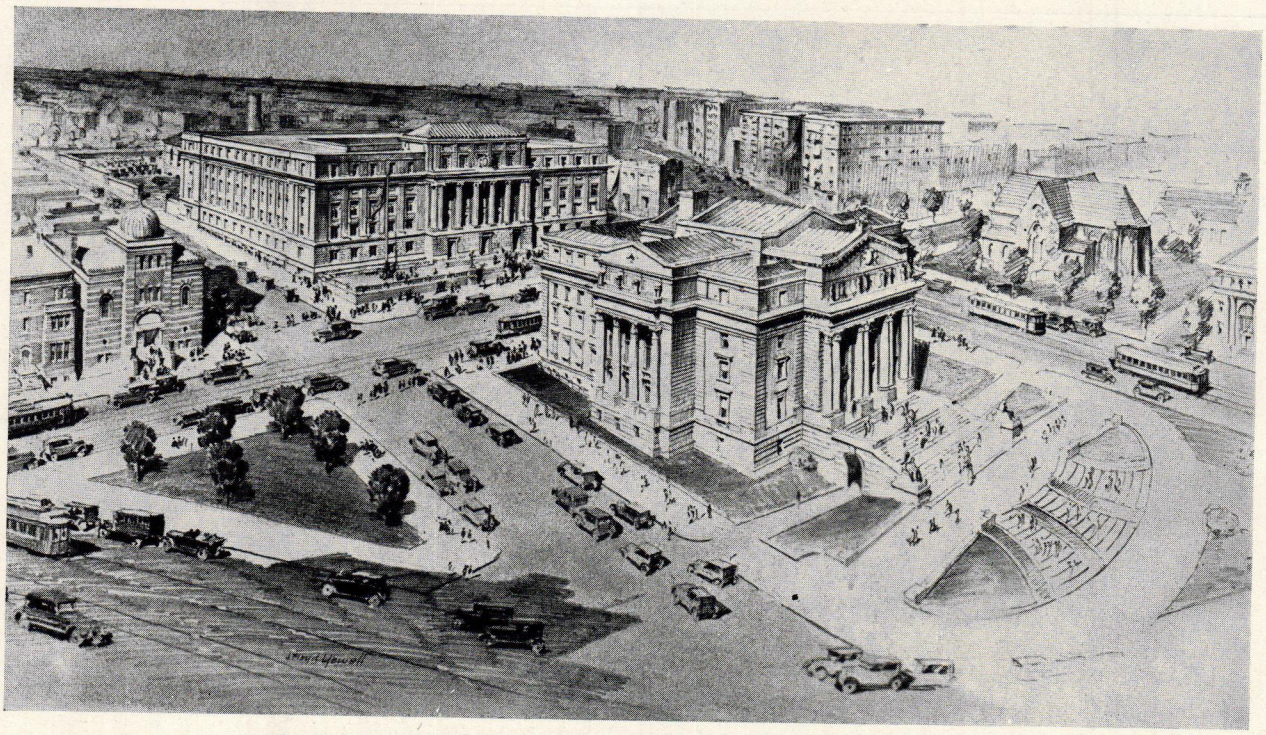
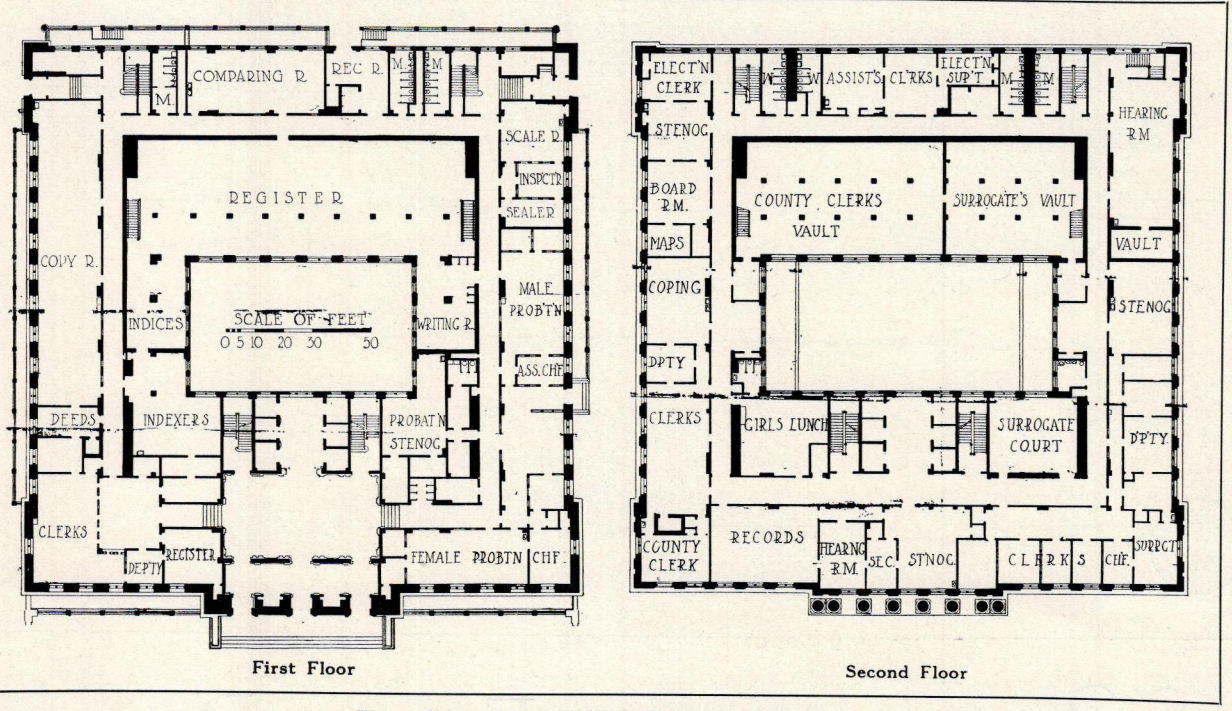


Present Court House and New Hall of Records Building, Newark

been built a power plant for the supplying of heat and electricity to both the new building and the Court House. A tunnel joins this power house to the Hall of Records, and another tunnel unites the Hall of Records and the Court House across the street.

The materials of which the structure is built aid considerably in the interpretation of its classical character. Limestone has been used for the building's exterior; much of its trim and the steps which lead to the main entrance are of granite, and granite has been used for building the parapet which encloses the area at the front of the Hall of Records where it is set back from the street. Several flagpoles of metal are supported by bronze bases which stand upon granite plinths. The massive decorative doors at the entrances are of bronze, spandrels where they occur between windows on different floors are of metal, and the building is roofed with copper.



First Floor

Second Floor

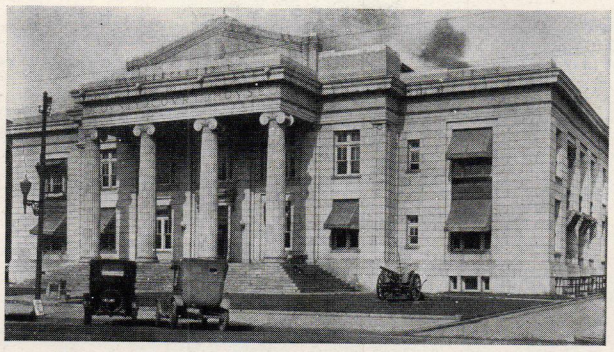
Plans, Essex County Hall of Records, Newark

Guilbert & Betelle, Architects

Designing and Planning of Court Houses

By A. TEN EYCK BROWN

THE designing of the average public building, regardless of its size, must necessarily be approached from an entirely different angle from that of the usual commercial structure, primarily on account of its very diversified requirements, and secondarily by reason of the need for thorough and simple circulation. In the usual court house, regardless of its location or variation in requirements, there are, at any rate in modern structures, three main divisions,—first, that of the officials having to do constantly with the public; second, that of the court or courts and their adjuncts; third, that of the jails, covering administration and cell blocks, exercise corridors, etc.

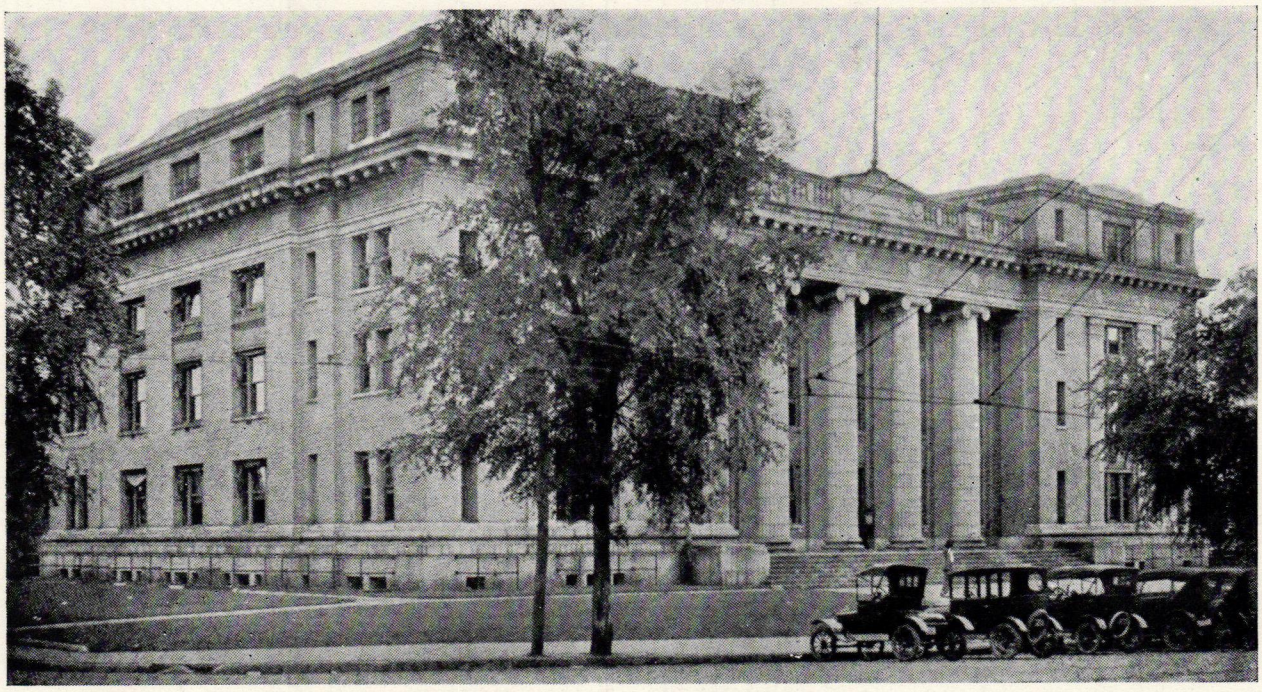


Rowan County Court House, Salisbury, N. C.
A Ten Eyck Brown, Architect

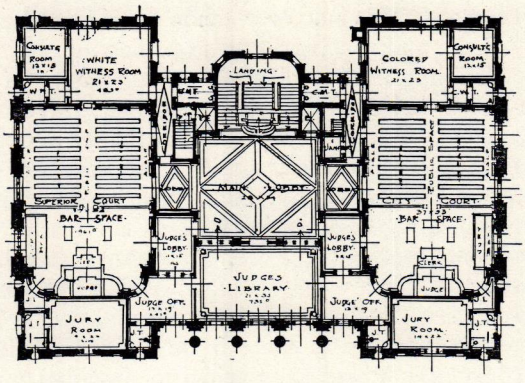
The first requirement calls for a simple, straightforward plan, as the accommodation of the officials must be considered on the basis of prompt and efficient service to the public. Therefore, entrances, exits, public lobbies or areas, stairs, elevators, and other means of proper circulation are of paramount importance. The second requirement as to courts and their adjuncts also, of course, includes the all-important items of proper ingress and egress and general circulation, also the proportion of the court rooms devoted to the bench, bar and jury and public. In order to secure a really thoroughly working unit, the adjuncts, covering judges' private rooms, chambers, etc., rooms for solicitors or attorneys, jury rooms, jury dormitories, etc., must be accessible from the bench end of the room, and preferably opening off a private corridor with separate staircases or elevators in a tall building. Then, too, the best handling of prisoners in criminal courts from jails or detention rooms within the buildings or outside through private means of access is an essential item. The third item, of jails, in the modern sense is almost a problem in itself, but the main features to be taken care of are large, airy cells, containing not less than four prisoners or more than eight, and opening directly off of day rooms with ample ventilation. Circulation and good means of oversight by the guards, are essential. The arrangements for sanitary requirements and ample utility corridors are also important. While the feeding of the prisoners can be done in the day rooms or dining rooms, use of the former is considered preferable. This necessarily brings us to kitchens, store rooms and refrigerator rooms, which must be well laid out and convenient in plan and location for direct service. Another important point is the accommodation for the administration offices, living quarters for guards, matrons, doctors, etc., together with infirmaries for sick prisoners. The segregation of the sexes and races must be carefully studied, which is also true of that of the juvenile prisoners, into which must enter proper study of the various classes of prisoners, indicating, as can be seen, a special problem in itself.

Naturally, in the last analysis, simplicity and directness in planning result in, first, convenient structures, and second, in buildings easy to take care of and involving a minimum of upkeep. In consequence, careful study must be given to the selection of simple and durable material, both in the structures themselves, their interior finish and in the mechanical equipment, as no class of building receives the hard usage, or ordinarily receives as little care as public structures. This not only tends to reduce the cost of upkeep and repairs, but also makes the sanitation of a building used at all times by all classes of people much more efficient and feasible. Mechanical equipment of buildings of this character should be most carefully designed, specified and installed, especially in regard to plumbing, tube systems, intercommunicating telephones, etc., as no matter how handsome and well laid out a structure may be, if these essentials are not satisfactory and durable and more or less "fool-proof" the result will not be satisfactory, especially as there is no class of buildings so constantly subjected to criticism, just and unjust, from the man on the street and the temporary occupants of the various offices as a court house. Therefore, the avoiding as far as humanly possible of any tenable cause for criticism should be had in mind at the outset. There is likely to be enough anyway!

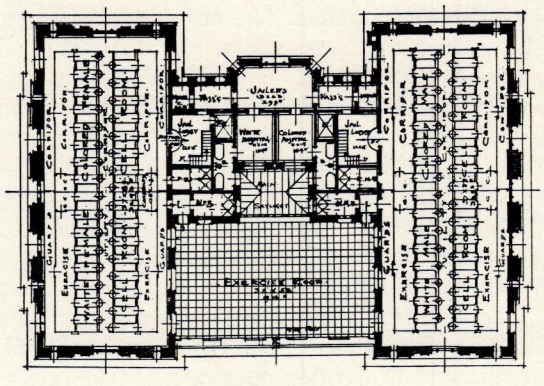
While the writer has designed a great many court houses of different sizes and degrees of importance throughout the southern territory, a certain number only have been selected for illustration here in order that the different developments of the problem may be shown in more or less detail as to sizes and accommodations, and the changes in the use of such buildings in the last 10 or 15 years noted. One outstanding detail, which has never been a part of the average court house, is the jail, which of recent years has become incorporated in especially the larger structures, for reasons of economy, convenience and sanitation, all reasons which are quite obvious when there are taken into consideration the inconvenience and dif-



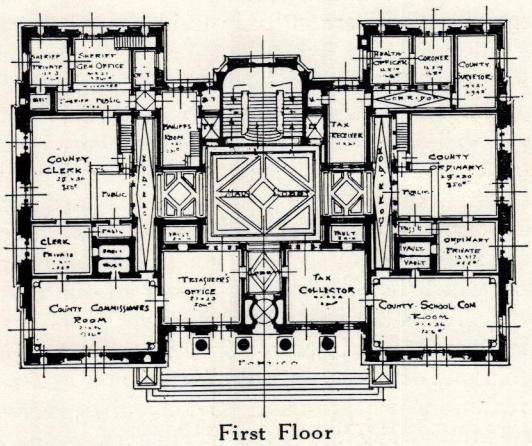
Clarke County Court House, Athens, Ga.
A. Ten Eyck Brown, Architect



Second Floor



Third Floor



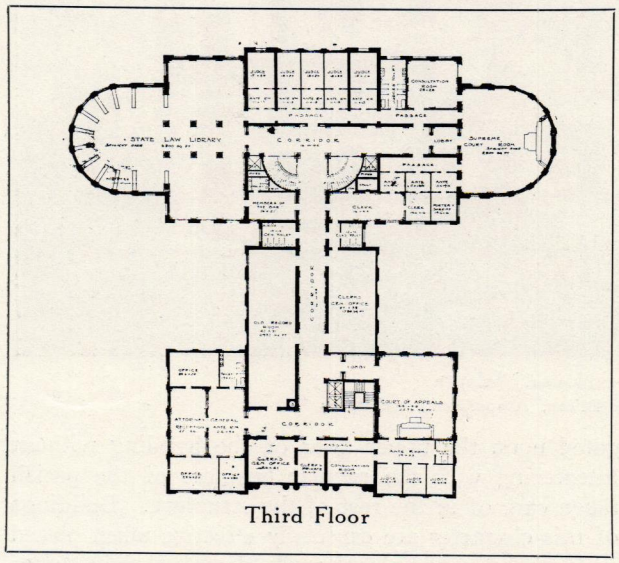
First Floor

ficulties that have been caused by separate structures in the average community. There are approximately three classes of buildings which might well be considered here: first, that necessary for the small county community; second, that for the larger counties where small cities are used as county seats; and, lastly, where the county seat is an important city, and where what might be called the "metropolitan" building is required, all departments well equipped.

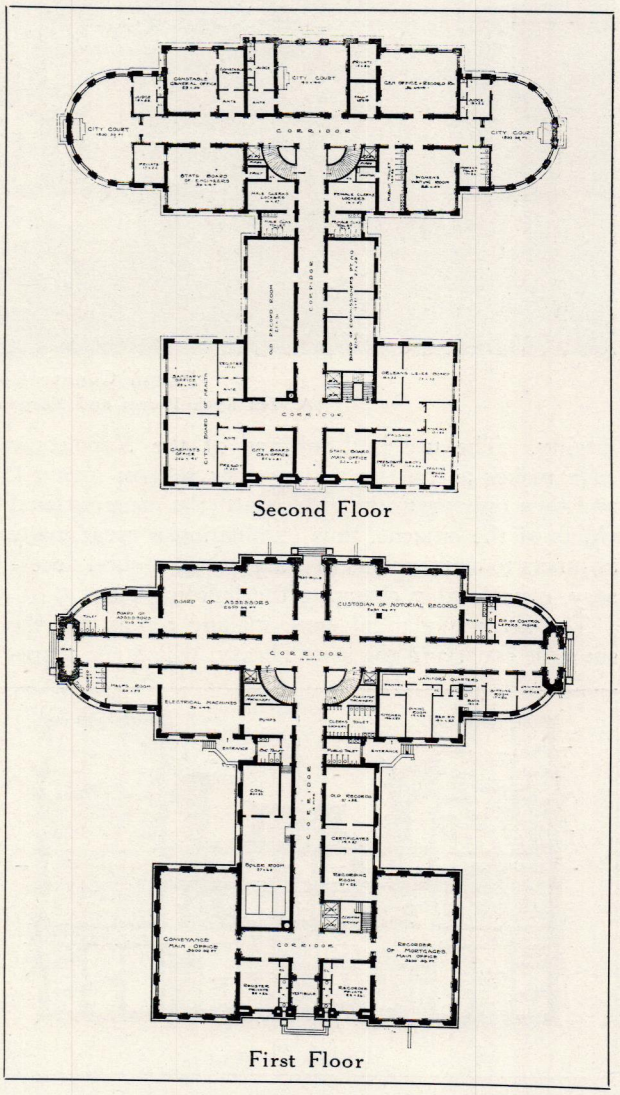
Orleans Parish Court House, New Orleans. This building, the design of which is the result of a competition held some years ago, is probably one of the last monumental structures not carried out along the lines of the monumental office building, as most modern court houses of importance now are. The layout of this building was primarily worked out on

Orleans Parish Court House, New Orleans

F. W. Brown, A. Ten Eyck Brown, and P. Thornton Marye, Associated, Architects



Third Floor



Second Floor

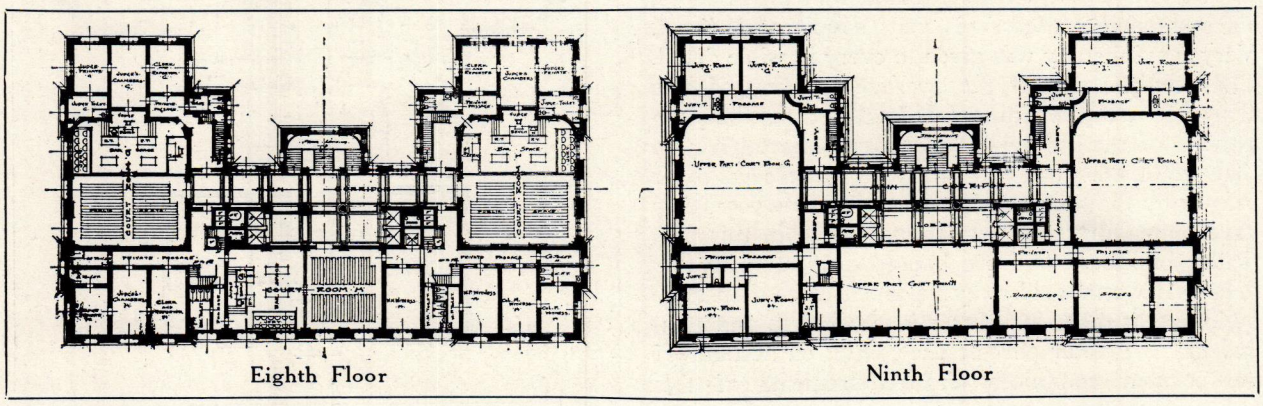
First Floor

account of the climate, in order to secure the greatest amount of air and ventilation, resulting in a plan in which every room or space is on the outside. It will also be noted that the circulation as to corridors, elevators and staircases is very simple and direct. Very careful study was given to every possible detail. The requirements of the average building of this character are quite different in this community on account of the difference in the fundamental law, in that while the duties of the various officials cover practically the same needs as they do elsewhere, they have quite different designations. Also in this particular building there are housed a great many offices that would ordinarily be taken care of in state buildings or other structures in the North and East and in the greater part of the South, on account of the peculiar conditions and requirements of this

Fulton County Court House, Atlanta
A. Ten Eyck Brown and Morgan & Dillon, Associated, Architects

locality. The use in Louisiana of the Napoleonic code makes a trial by a jury very seldom invoked, and then only upon the exercise of the constitutional rights of the citizens, thus eliminating a great many adjuncts to court rooms that are usually found necessary, considerably changing the building plan.

The accommodations here include rooms for the supreme court and the state library, which are segregated upon the upper floor of the building without interfering with the regular business of the parish taken care of in the rest of the structure. Buildings of this character are especially effective when placed in large open areas and made parts of civic center plans. The general schemes, however, for the usual public building and its location are dependent on so many conditions that each community necessarily



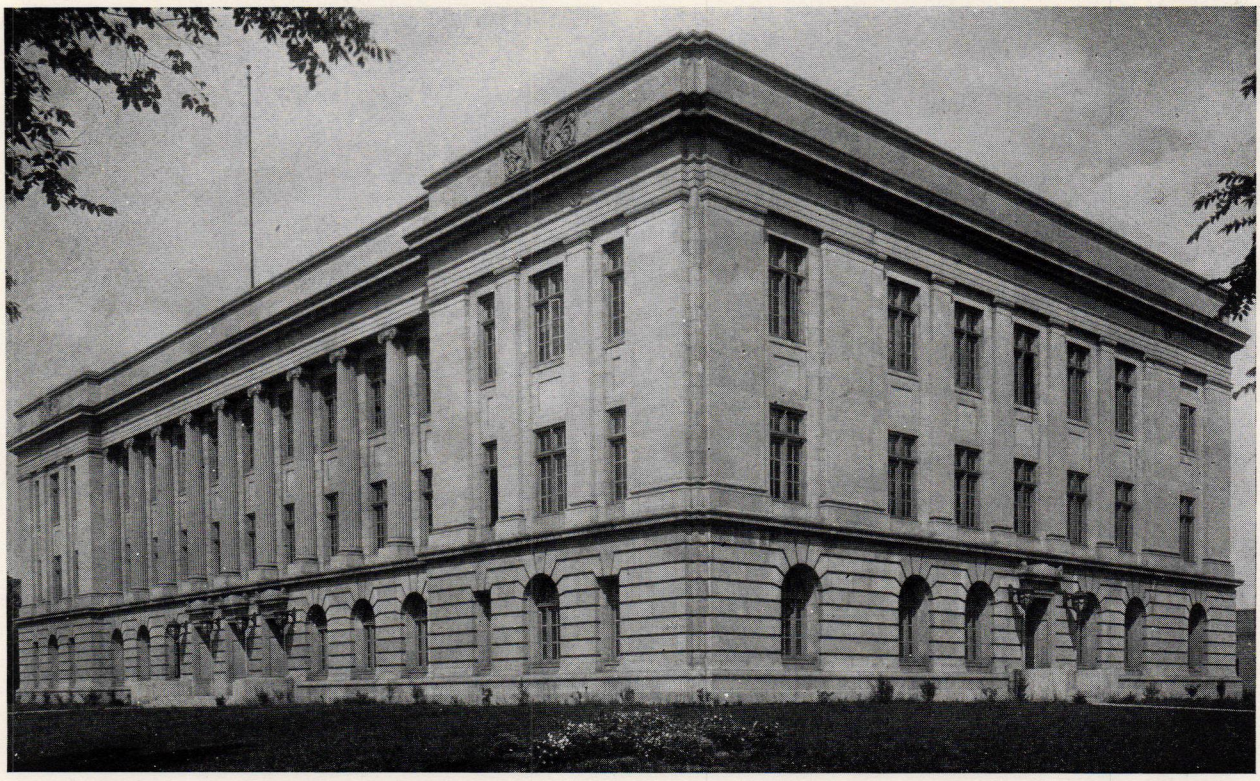
Eighth Floor

Ninth Floor

Albany County Court House, Albany
Hoppin & Koen, Architects

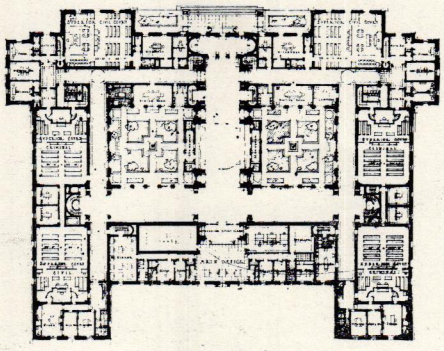
must work out its own problems in the required way.

Rowan County Court House, Salisbury, N. C. This building is an example of that usually required for the average-sized community, and in addition to the usual accommodations for the county officials it contains one court room with the usual adjuncts described in the opening paragraphs of this article as necessary for the proper conduct of the business of the average county. The structure is entirely of reinforced concrete. The exterior is of Rowan County granite, except that the columns, entablature and main cornice are of granite terra cotta. There is no

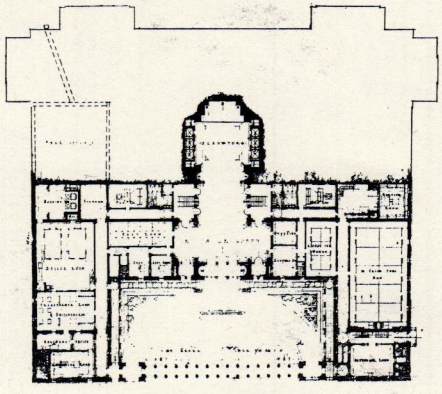


Douglas County Court House, Superior, Wis.
J. W. Royer and E. S. Radcliff, Architects

Preliminary Study for Providence Court House Competition



Tentative Plan of
Benefit Street Floor

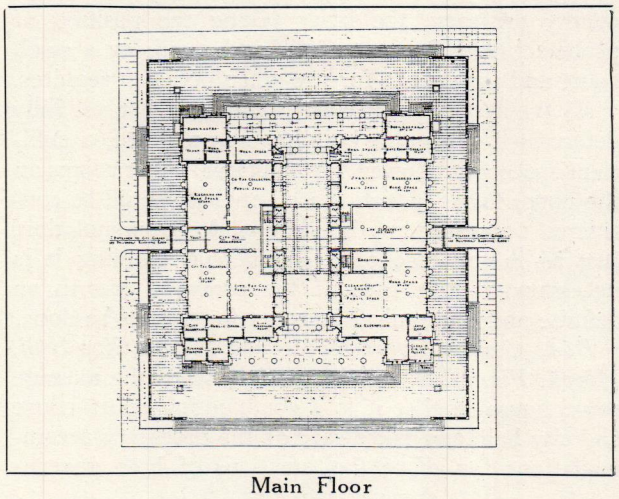


Tentative Plan of
South Main Street Floor

Dade County Court House and Miami City Hall
A. Ten Eyck Brown Architect; August Geiger, Associated

jail in this building, it being on an adjoining site, but this feature is taken care of by a detention room in the basement to which prisoners are brought as they are needed in the court room on the second floor. The need of such a room is entirely evident.

Clarke County Court House, Athens, Ga. At the time this structure was built, the combination of court houses and jails was first being discussed, and used in a few isolated cases throughout the country. It was adopted here primarily for reasons of economy and secondarily for reasons of convenience. The accommodations covered in this building are slightly different from those of the average court house, in that in addition to the usual business offices for the county officials there is taken care of complete equipment for two different court rooms and a library



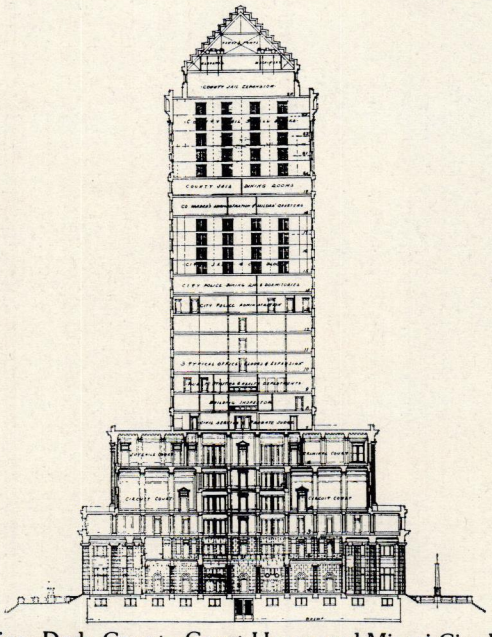
Main Floor

connected across the second floor at the front of the building, laid out in a very symmetrical manner. They take care of, to a reasonable extent, the requirements explained in the beginning of this article, in regard to the various necessities for proper court house planning to obtain good circulation convenient to court rooms by the officials; and it disposes the various functions in their proper and logical relation to the entire structure.

Fulton County Court House, Atlanta. Of the metropolitan court house type referred to, this building is perhaps a very good example, in that it carries out the idea of the monumental office building, while at the same time it takes care of the peculiar requirements of this class of structure. In a general way, this building is ten stories high and contains besides the usual record rooms, official departments, etc., 13 court rooms with their adjuncts. The entire basement, which is practically out of ground on account of the use of a sunken area immediately adjoining its outer walls, is occupied by the record rooms of the county clerk, tax receiver, ordinary, etc., with the exception of a small portion which is devoted to the use of the detention room in which prisoners are held during the sessions of the various courts. The first floor is designed with a large central lobby with elevators opening off of it on either side and a monumental staircase toward the rear, while grouped around the central lobby are the public spaces and main offices of the officials having daily contact with the public, consisting in this instance of a tax receiver, county clerk, tax collector, county sheriff and county ordinary, the latter taking the position of probate judges in most states and requiring a small court and jury room for use when occasion requires.

As the necessity for court rooms was not yet fully determined when this building was planned, a sufficient space was allowed for additional court rooms on the upper floors, which is a point that should be considered regarding any building under contemplation, just as in the case of a commercial building it is necessary to take care of the probable growth on definite and economical lines, as far as can be done.

Dade County Court House and Miami City Hall, Miami, Fla. This building differs from the average court house in that it is a combination court house and city hall, and takes care of the necessary accommodations for all of the functions of both governments, including all of the necessary courts, jails, etc. In view of these requirements, a design was adopted that results in the placing of the officials of both governments that have dealings with the public frequently on the main level, while the other officials, courts and jails are accommodated in the upper stories. In a structure of this character, where so many departments are housed under one roof, the problem of circulation to be taken care of vertically by stairs and elevators is most serious, and has been successfully solved here by installing batteries of elevators having particular floors to take care of, although practically 50 per cent of them run through the building from top to bottom.



Section, Dade County Court House and Miami City Hall
A. Ten Eyck Brown, Architect; August Geiger, Associated

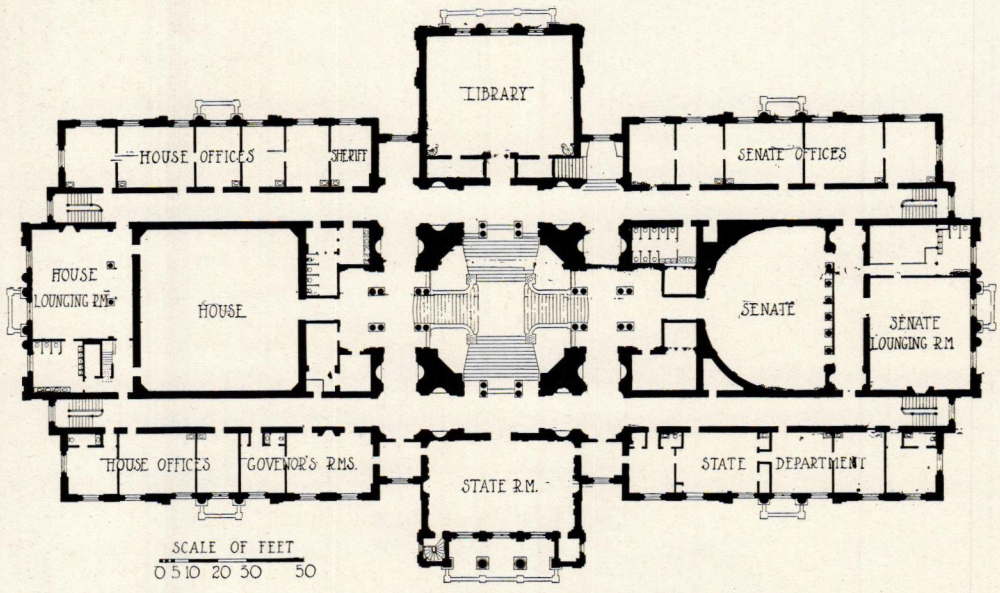
The basement of this structure, which is secured by raising the first floor above the street and making the approach easy and gradual by the introduction of a wide terrace around the entire building, is used for a garage for the cars of all of the county and city officials, thus solving a problem which is growing more and more complex on account of restricted parking area. This basement also makes possible the taking of prisoners into and out of the special elevators under cover, without the necessity of their being taken through the public halls and corridors.

The mechanical features of this building are especially interesting in that they have so many functions to take care of, consisting of the usual needs of the general offices and courts, and the special needs of the jails and the accommodations for the administration of the latter, together with living quarters for jailers and other attendants. In the layout of the jail portion of this building particular attention has been paid to securing the most modern accommodations possible, which will result in the use of larger cells as described in the beginning of this article, together with a day-room system of feeding and the exercise space for the prisoners, while other important details such as kitchens, laundry, infirmary, etc. are taken care of in a very complete manner, with the result that the operation will not only be feasible but convenient, and easily covered from a sanitary standpoint, the latter being one of the most serious questions where a jail building is incorporated in a court house. Also in this case ample provision is made in the various departments for future expansion, which point was particularly looked out for in the sizes and number of the court rooms and floors.

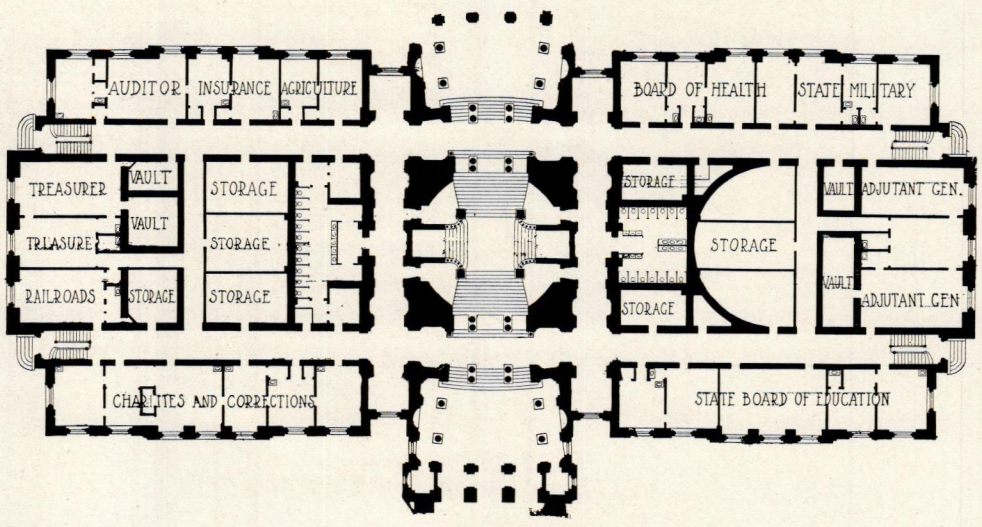
Plans on Back

RHODE ISLAND CAPITOL, PROVIDENCE

McKIM, MEAD & WHITE, ARCHITECTS



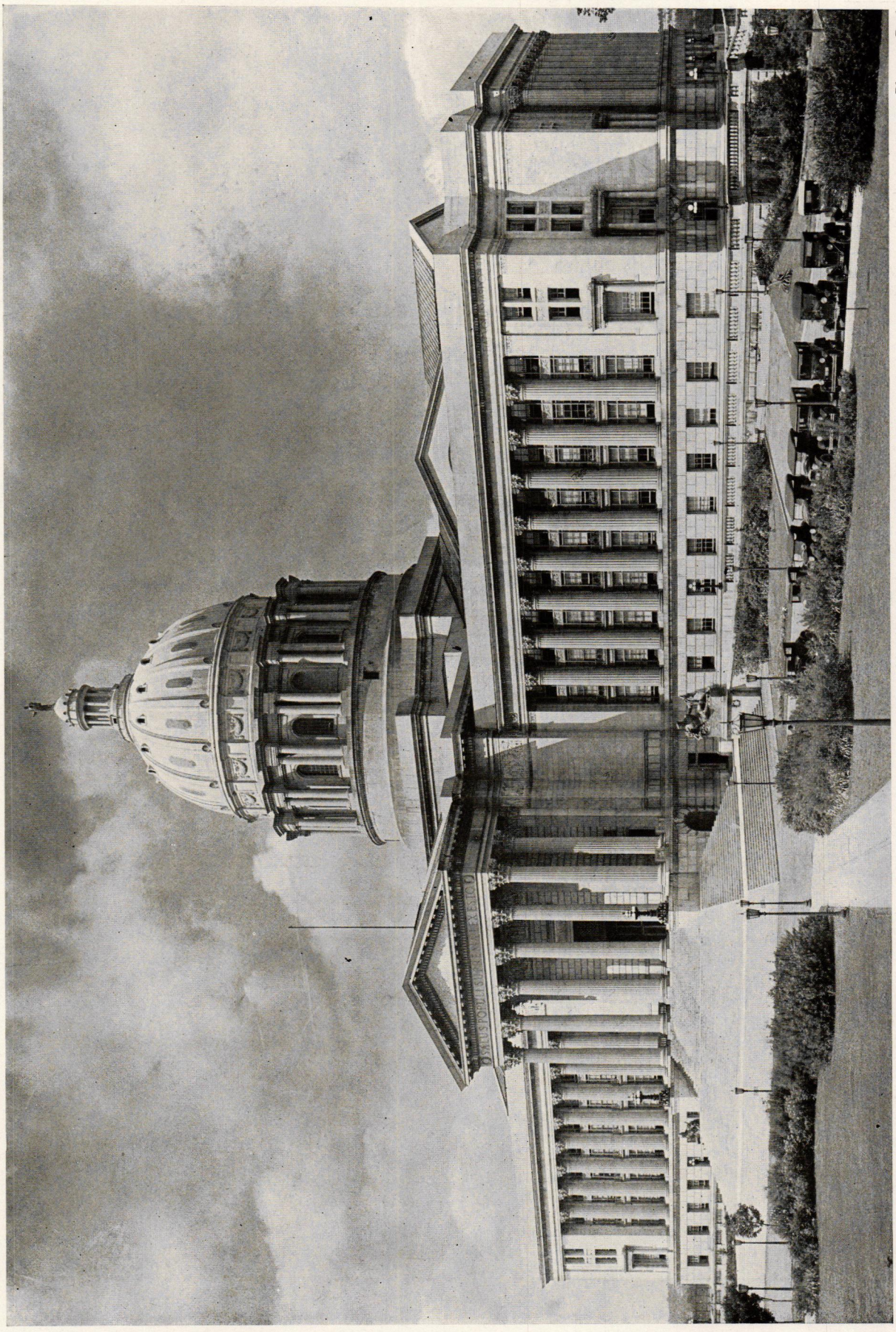
SECOND FLOOR



FIRST FLOOR

PLANS, RHODE ISLAND CAPITOL, PROVIDENCE

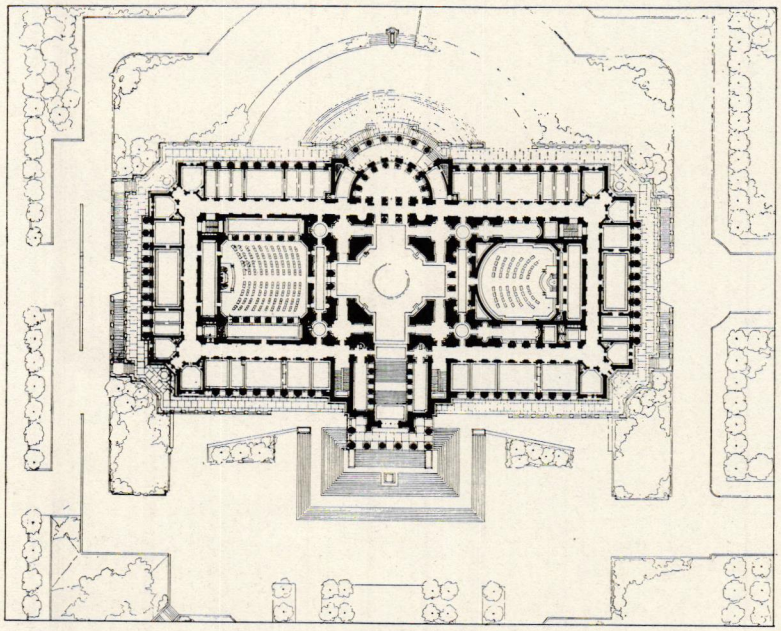
McKIM, MEAD & WHITE, ARCHITECTS



Plans on Back

MISSOURI CAPITOL, JEFFERSON CITY

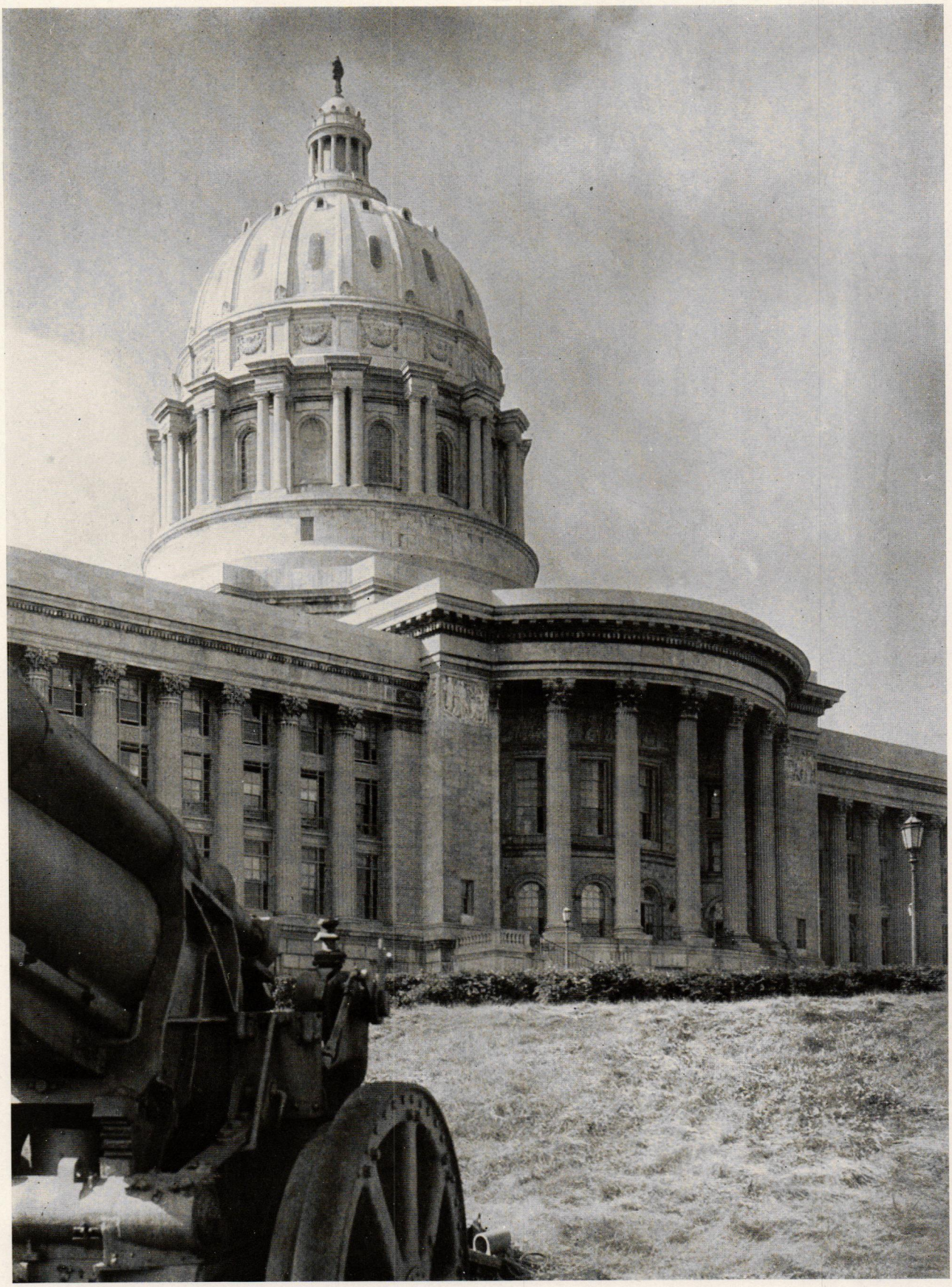
EGERTON SWARTWOUT, ARCHITECT



GROUND FLOOR

PLANS, MISSOURI CAPITOL, JEFFERSON CITY

EGERTON SWARTWOUT, ARCHITECT

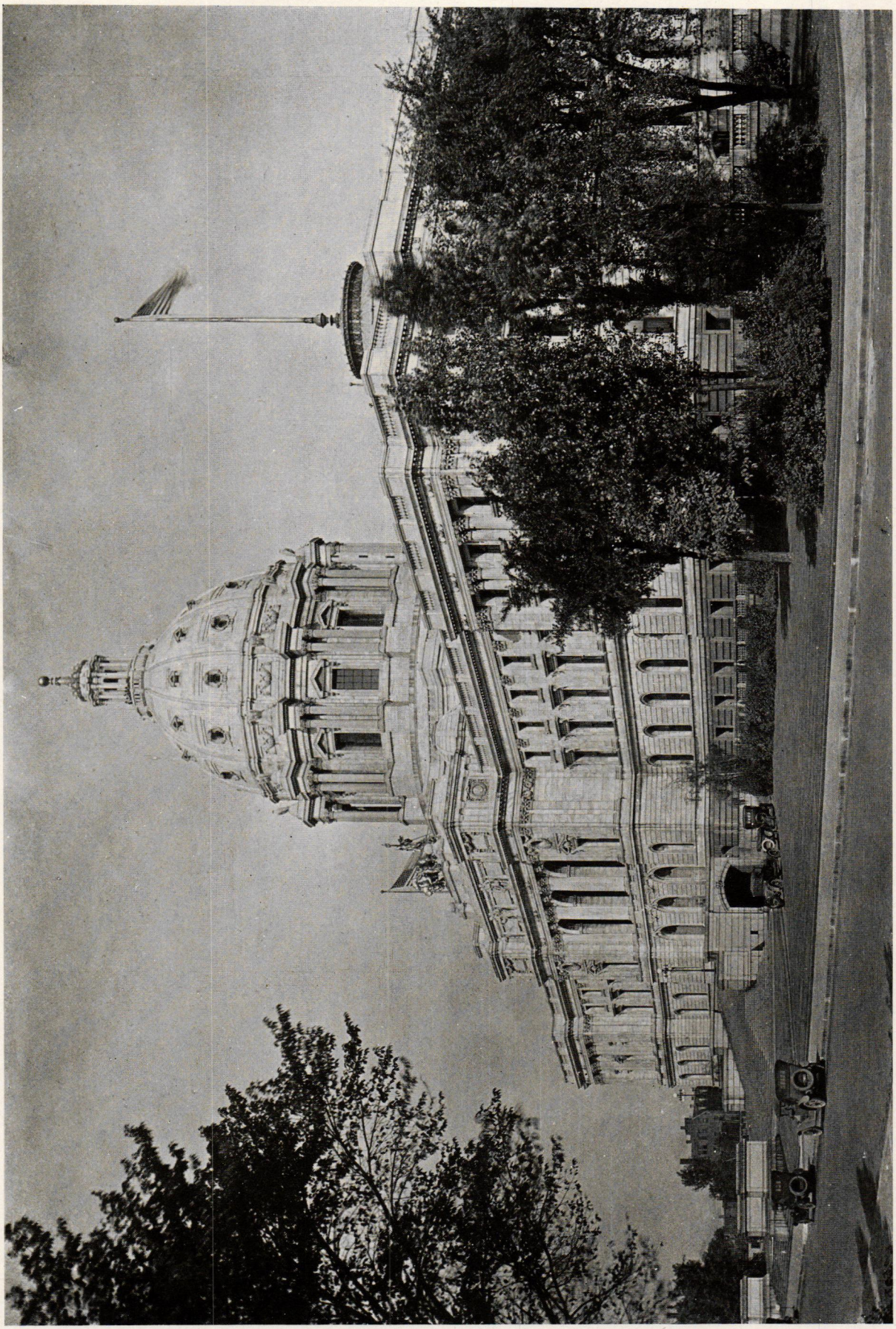


Photo, Sigurd Fischer

MISSOURI CAPITOL, JEFFERSON CITY
EGERTON SWARTWOUT, ARCHITECT

Photo. Sigurd Fischer

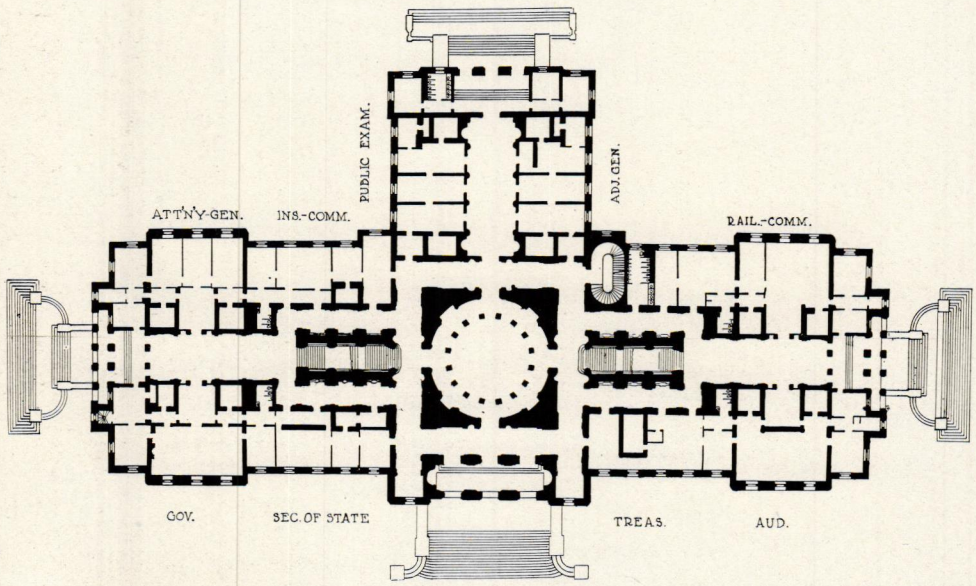
MISSOURI CAPITOL, JEFFERSON CITY
EGERTON SWARTWOUT, ARCHITECT



Plans on Back

MINNESOTA CAPITOL, ST. PAUL
CASS GILBERT, ARCHITECT

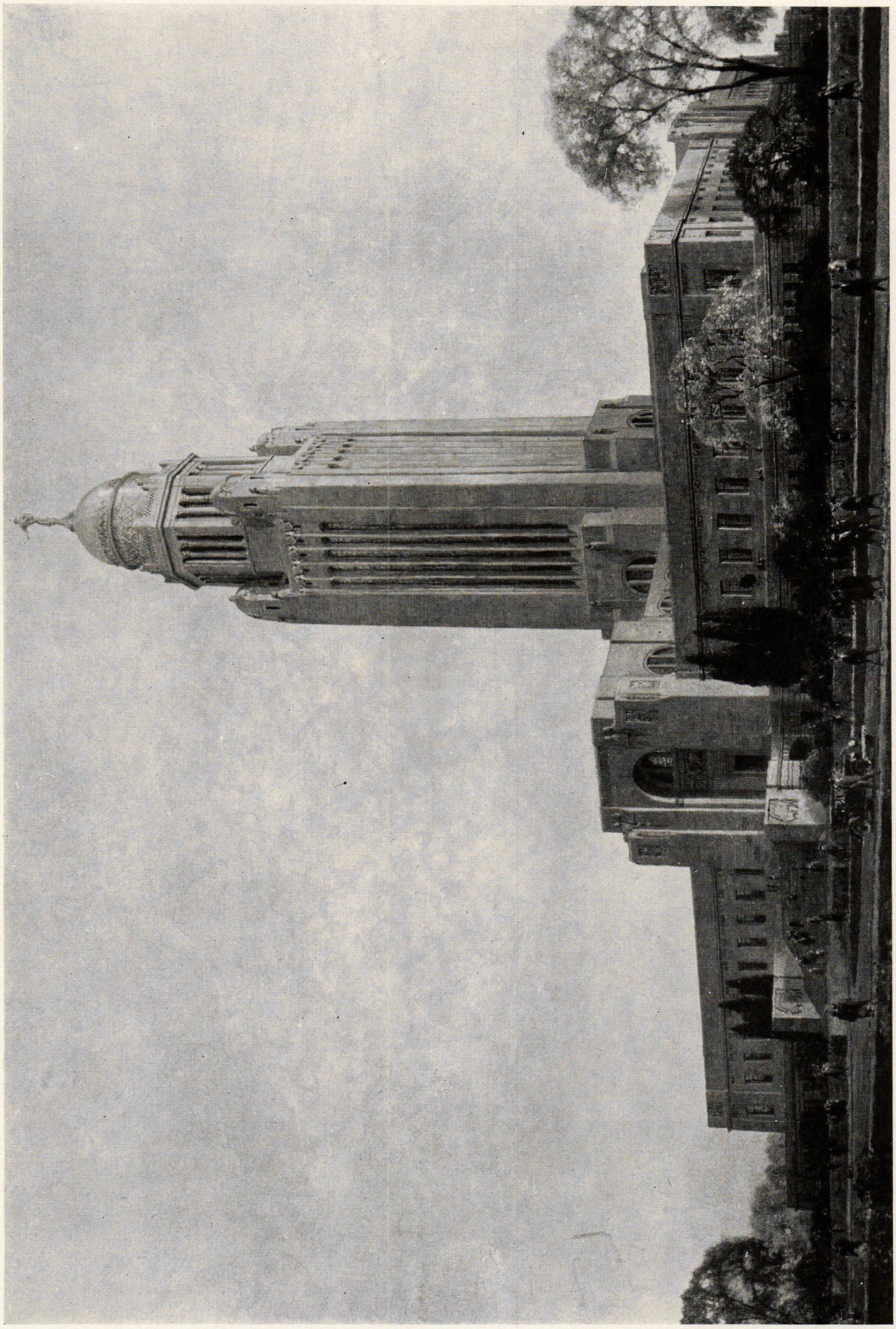
Photo, Kenneth Clark.



GROUND FLOOR

PLANS, MINNESOTA CAPITOL, ST. PAUL

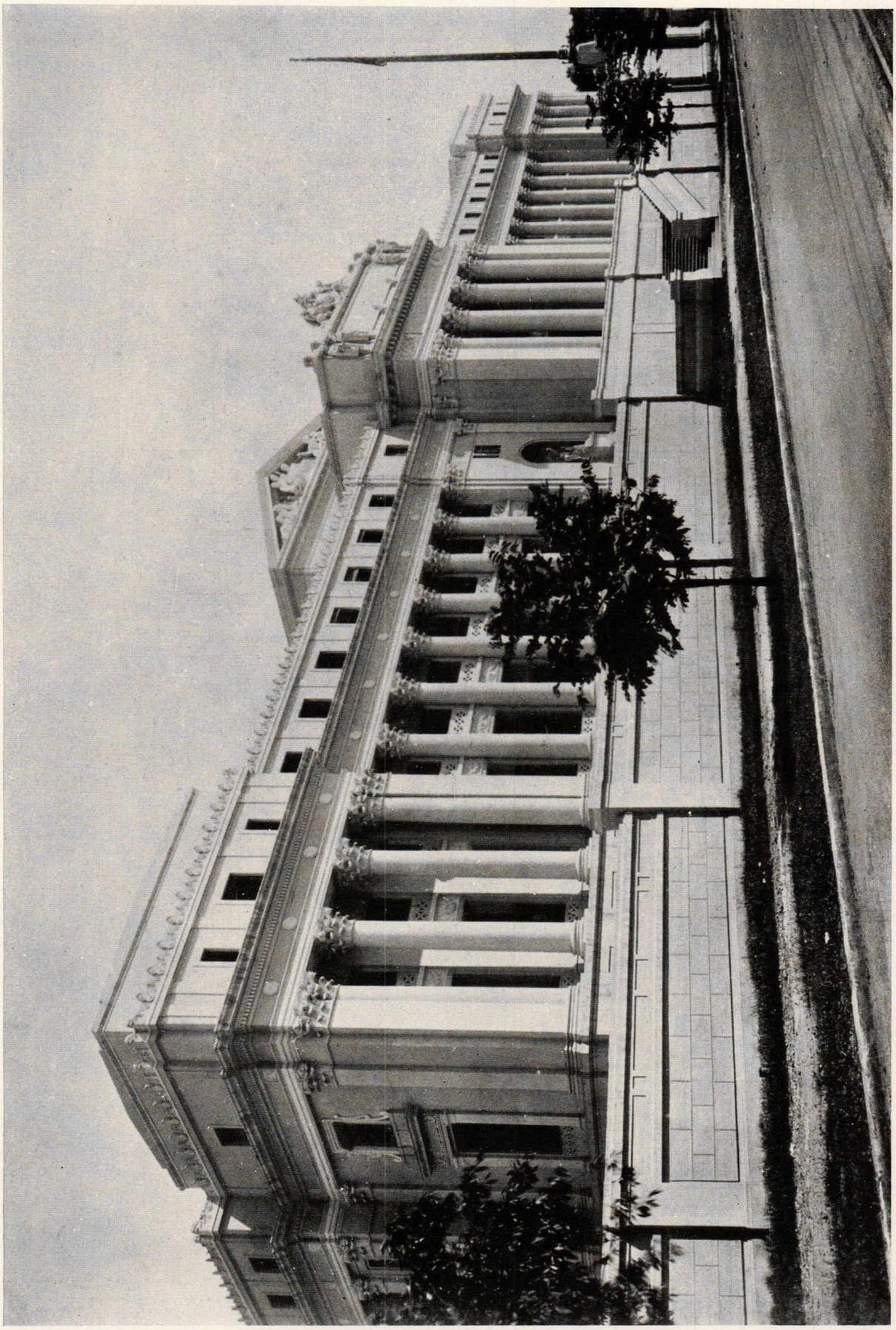
CASS GILBERT, ARCHITECT



NEBRASKA CAPITOL, LINCOLN

BERTRAM GROSVENOR GOODHUE ASSOCIATES, ARCHITECTS

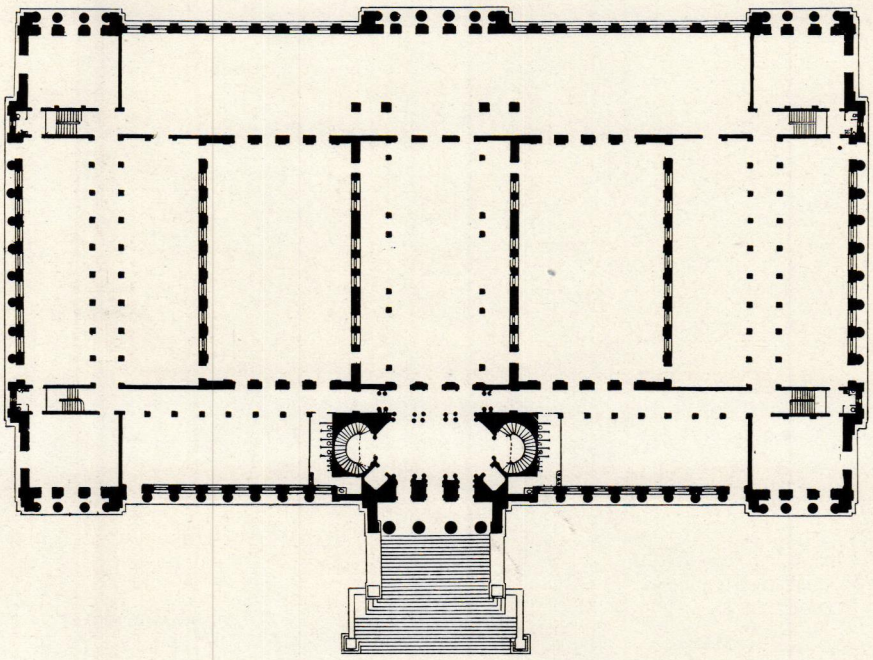
Photo. Peter A. Juley & Son



Plans on Back

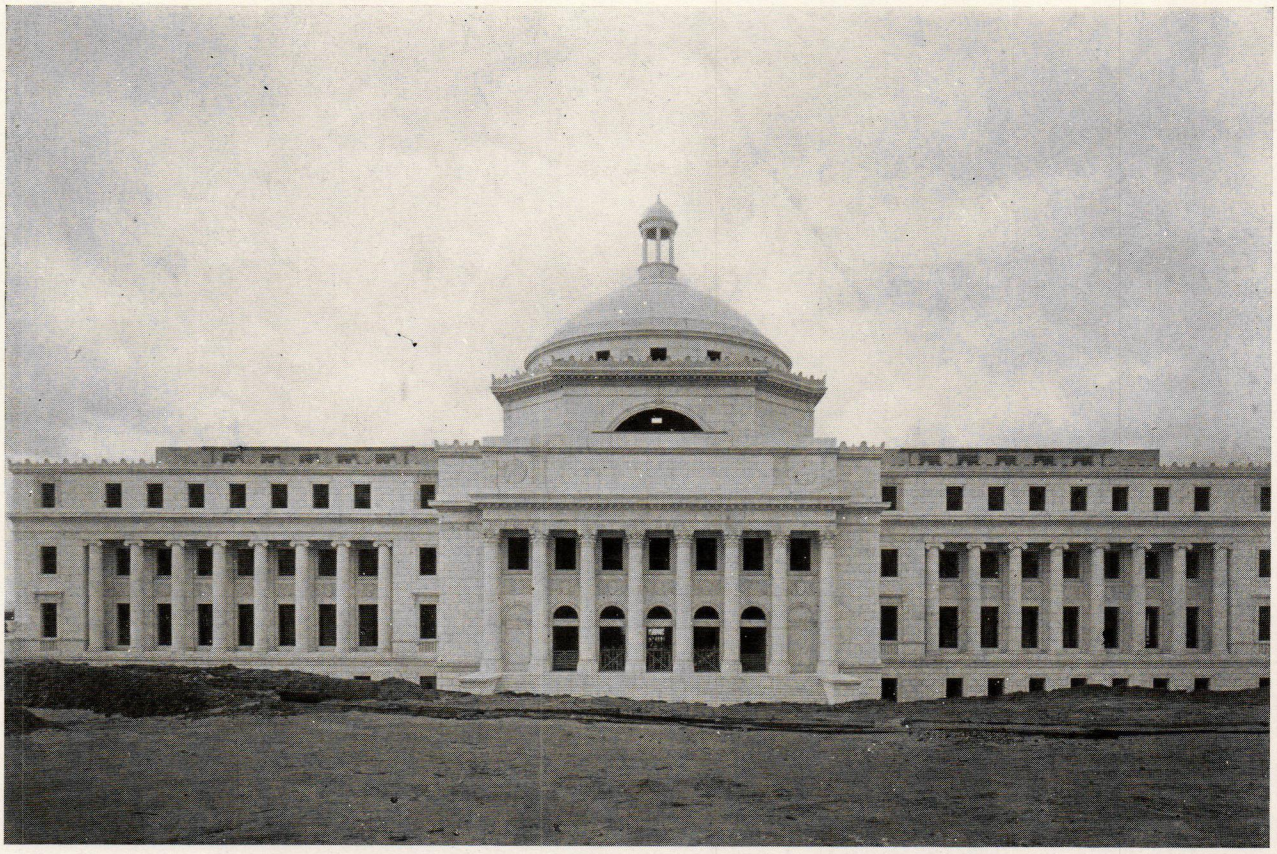
INSULAR CAPITOL, MANILA

RALPH HARRINGTON DOANE, ARCHITECT

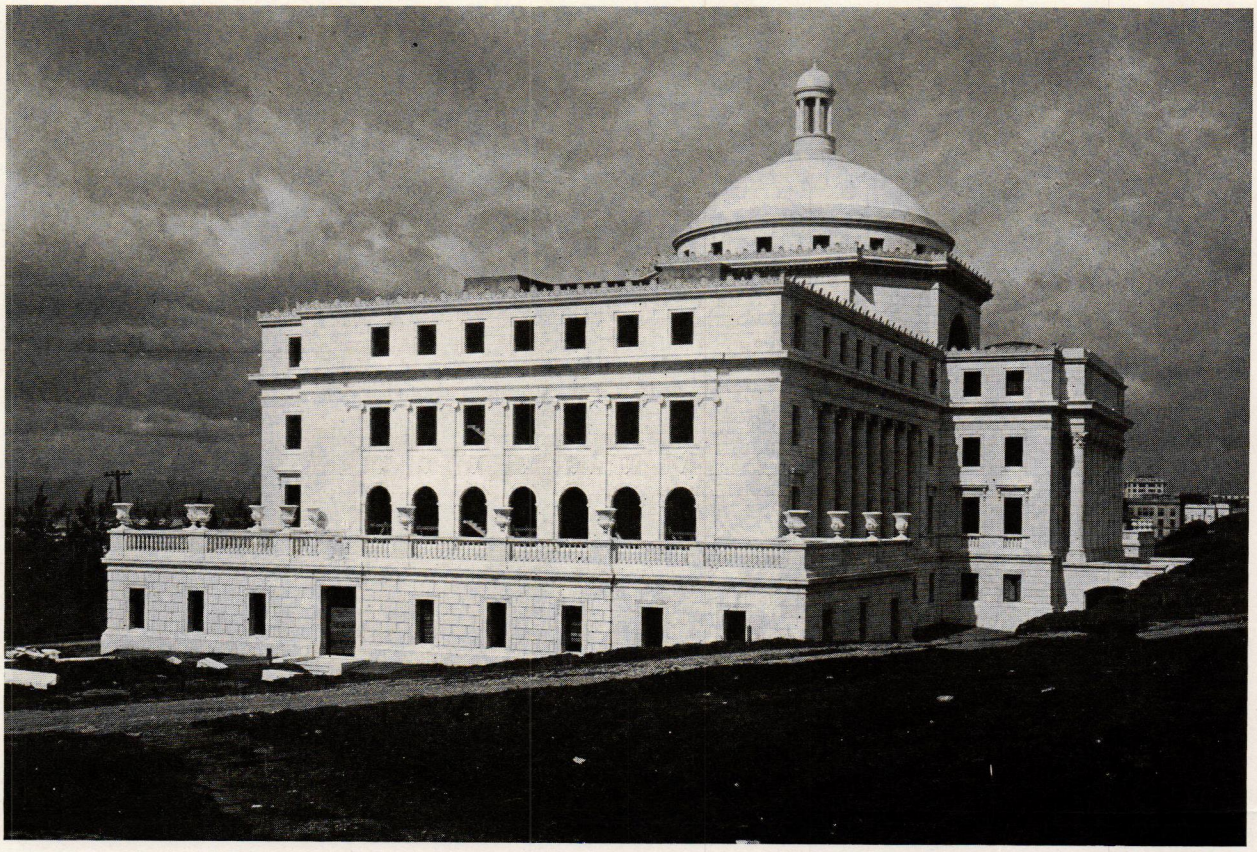


PLANS, FIRST FLOOR, INSULAR CAPITOL, MANILA

RALPH HARRINGTON DOANE, ARCHITECT



GENERAL VIEW OF MAIN FACADE

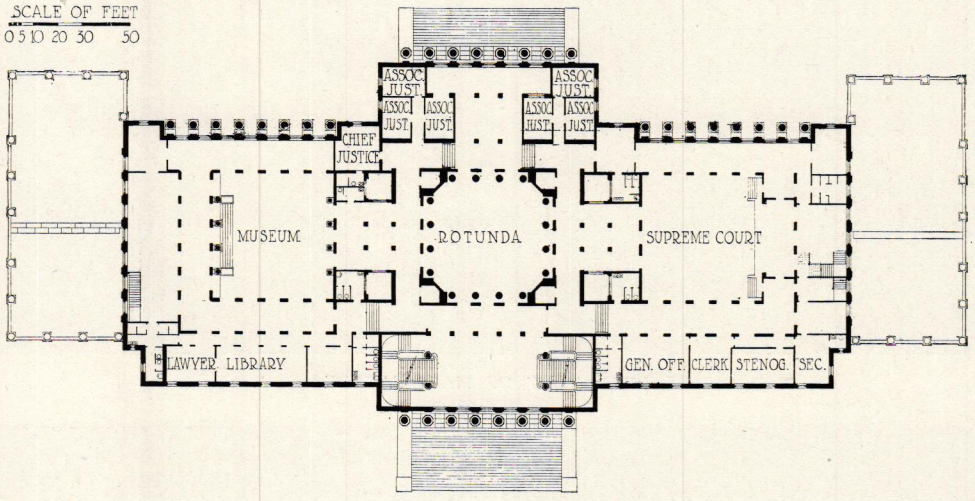


CAPITOL OF PORTO RICO, SAN JUAN

CARMAEGA & NICHOLS, ASSOCIATED, ARCHITECTS

535

Plans on Back



GROUND FLOOR

PLANS, CAPITOL OF PORTO RICO, SAN JUAN

CARMAEGA & NICHOLS, ASSOCIATED, ARCHITECTS

The Capitol of the Philippines

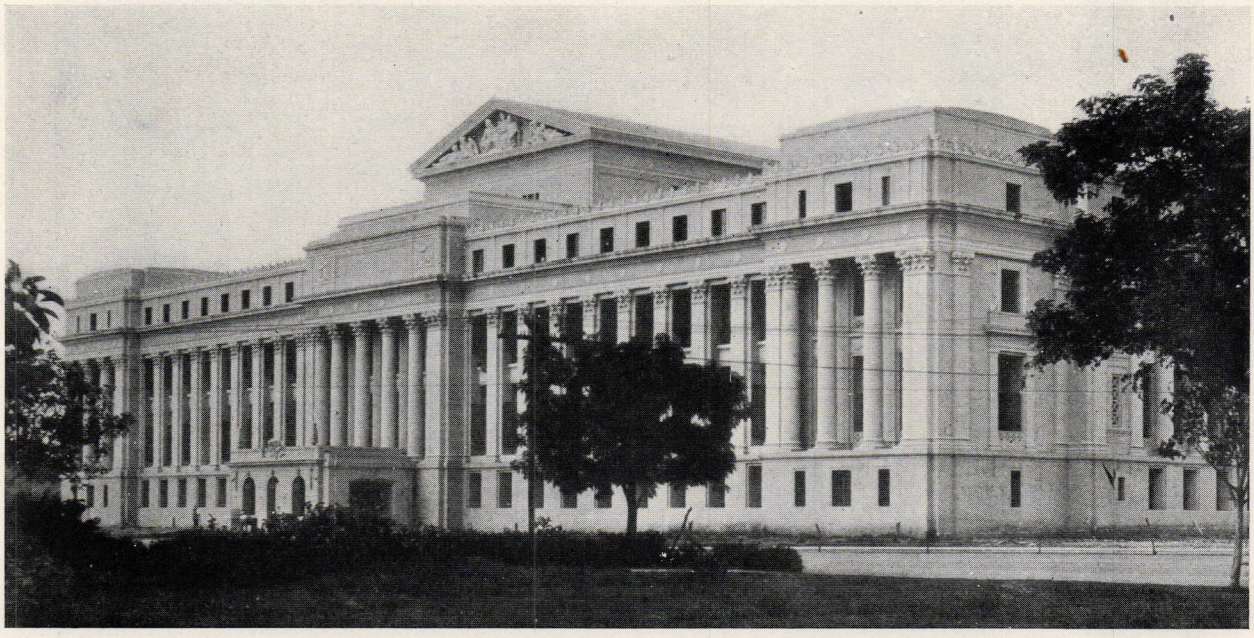
By CHARLES G. LORING

THE beginning of the century saw the constitution following the flag to the Philippine Islands, and the establishment of civil rule saw the government's architects following the army engineers. All unheralded, our one and only autonomous overseas department for official art came into being. Sanitation and road building were the first essentials, but there was soon an insistent demand for markets and schools, for town halls and court houses, and finally for an insular building or capitol.

To the Old World powers with many colonies such procedure was a matter of course, but to the United States bearing the "white man's burden" was a novelty; the supreme court, the feelings of the anti-imperialists, the A. I. A., and the native press all had to be considered. Before the Islands were fully pacified, a far-sighted policy was adopted, and Daniel H. Burnham was called upon to lay out a comprehensive scheme for the city of Manila, and about 1905 the so-called "Burnham plan" was established by law. Shortly afterwards the office of consulting architect was developed to take charge of the execution of the plan as well as the program for the government buildings throughout the Islands. The office drew its authority from the governor general and was responsible only to him. William E. Parsons, from Mr. Burnham's office in Chicago, was appointed at a time when the output of designs became of real importance. The impress of his incumbency is left chiefly in his town planning covering many communities, including the summer capitol in the hills at Baguio. J. Corner Fenhagen was later appointed assistant consulting architect, and under him there were produced a number of brilliant designs, and about 1912 he succeeded Mr. Parsons.

The official "Burnham plan" not only called for the capitol building in Manila but had even located its exact position. Mr. Osmania, speaker of the native house and very powerful politically, wished the new building located at Cebu, his home town, on another island. A complete deadlock resulted. At that time the house and senate sat in the old *adjutiamento,* which dated back to the preceding century, and in front of it were the foundations of a government hall, projected by the Spanish rulers. This served as a reminder of the delays of Spanish rule, and the records show that although only the foundations were in place, the expenses for the completed structure were all listed as having been met!

Early in 1915 Mr. Fenhagen went back to the United States, and Ralph Harrington Doane, of Boston, who was serving as assistant, was made the consulting architect. To him an appeal was made by President Queson of the Philippine senate and a leader of equal political power to Osmania. Queson favored the Manila rather than the Cebu site and was eager for the legislative building to be undertaken at once. The Spanish failures were a spur to action. President Queson succeeded in getting the necessary funds voted, and to break the stalemate over location, the consulting architect made the preliminary sketches for a superb library to be erected on the site designated in the "Burnham plan," but a library so designed that it could be used temporarily as the legislative hall. A full set of working drawings was prepared, including 22 plans, elevations and



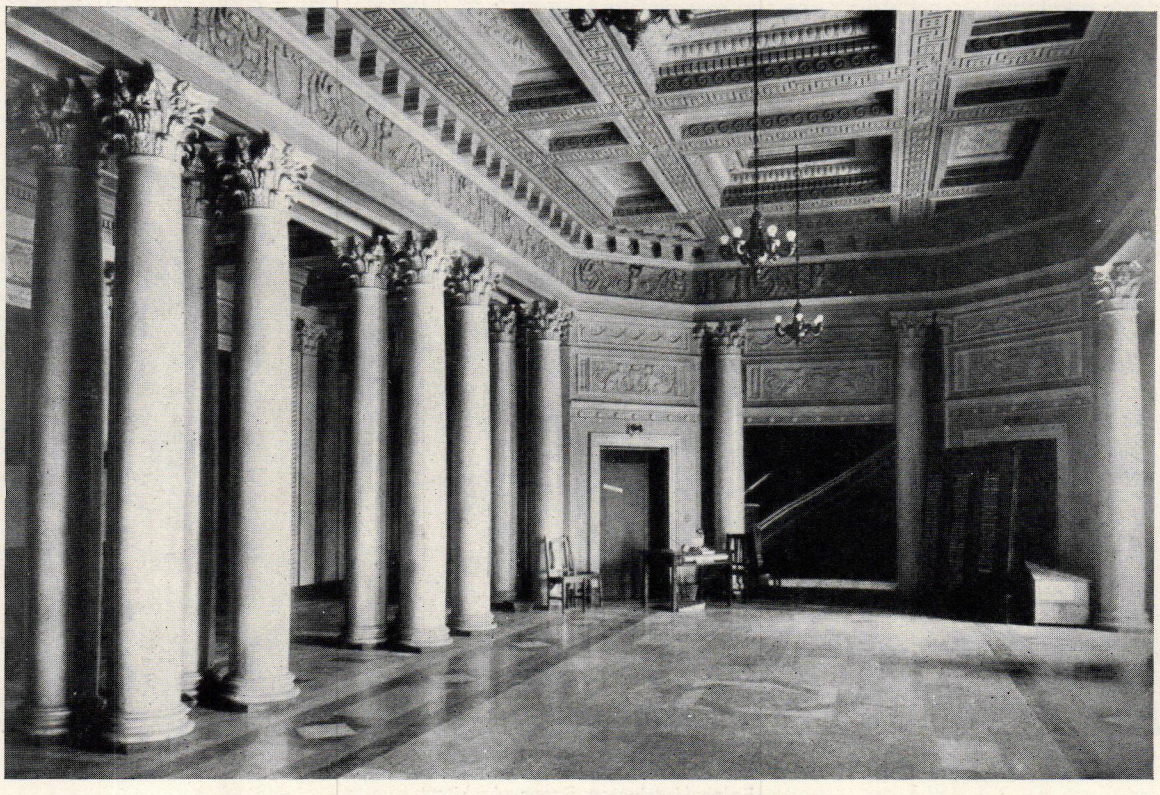
Insular Capitol Building, Manila
Ralph Harrington Doane, Architect

sections at eighth scale and ten elaborate detail sheets at three-quarter scale; estimates were obtained, and early in 1918 Mr. Doane signed the contract for the foundations just before he returned to America to enter the army. After his departure four Philippinos were appointed as assistant consulting architects, dividing up the work which had formerly been handled by the one American chief, and to Juan Arellano was assigned the execution of the new capitol building. Mr. Mandelbaum, an American and the head draftsman under Mr. Doane, remained.

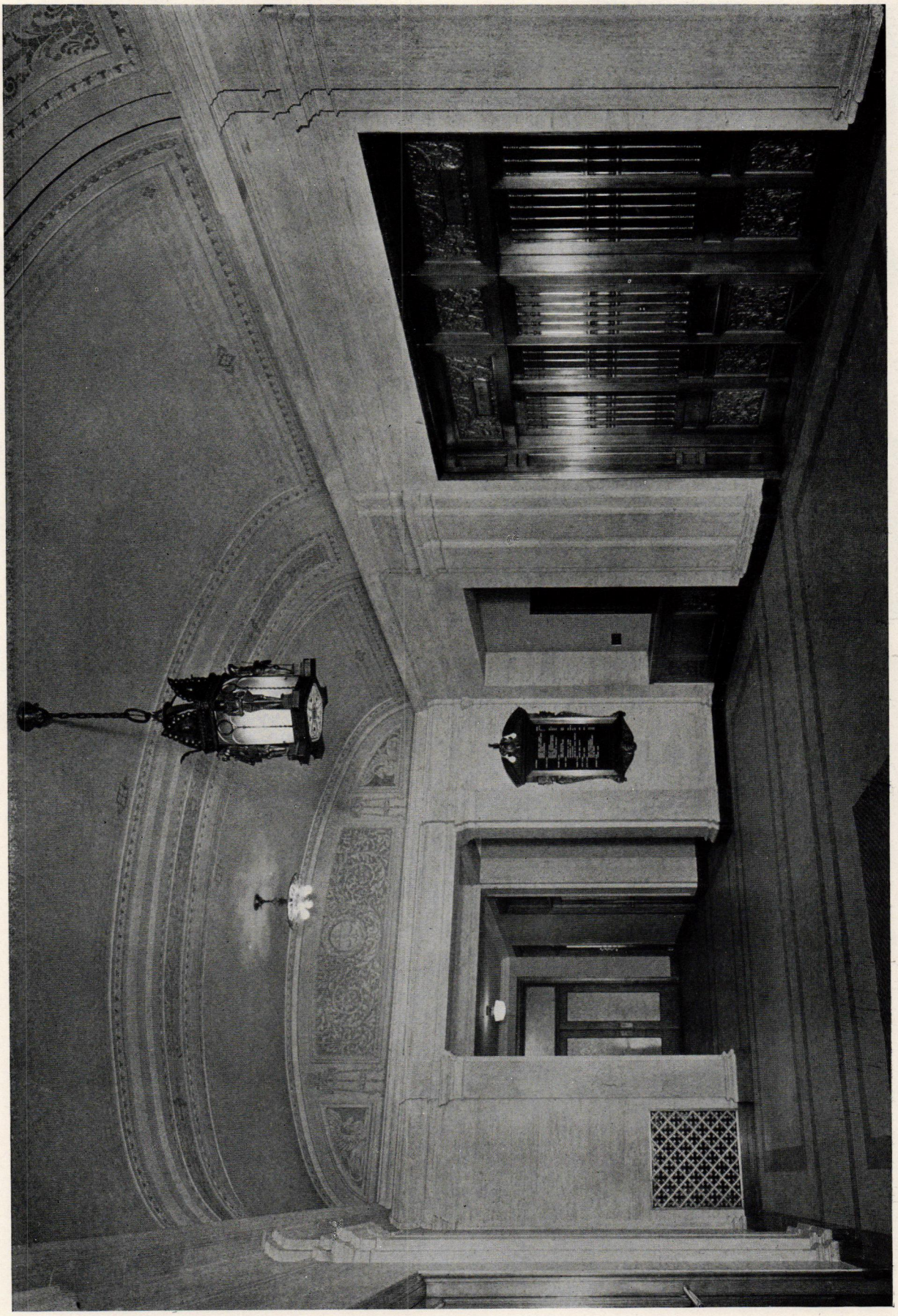
The plan of the capitol is like a figure eight, containing two large courtyards. The bar across the middle, which separates the two courtyards, contains at the present time the house of representatives and the senate chamber. It is intended that these two great halls will be used as the principal reading rooms when the structure is converted into a public library. The entire rear portion of the building was designed as a fireproof shell without any heavy reinforced concrete construction on the interior from basement to roof, and this void is temporarily filled in with second class construction providing offices for the senators, representatives and clerical staff. Eventually these wooden cells will be removed and the entire space filled in with tier on tier of book stacks.

By comparing the original working drawings, made ten years ago, with the illustrations of the building at the time of its formal opening last winter, reproduced on these pages, some changes made under the direction of Arellano may be noted. An attic story has been added over the principal order, doing away with the pediment over the main entrance. The simple gable end of the high central mass of the building containing the reading rooms has been elaborated into a formal classical pediment filled with sculpture. The size of the basement windows has been increased, and the main flight of stairs which led up to the portico of the principal entrance has been replaced by an inclined driveway, a concession to the fact that in Manila everyone drives. In the main the capitol is of reinforced concrete veneered on the outside with cast stone where the aggregate is chips of white marble, with the surface bush-hammered. The interior has considerable cast stone.

While Mr. Doane's original design shows no trace of "Spanish influence" and although, at first glance, there appears in it to be slight recognition of the characteristics of tropical climates, nevertheless architectural concessions have been made to meet conditions imposed by the climate. A characteristic of buildings in the Spanish style is that they were either designed with heavy walls, small fenestration, producing dark, cool interiors, or as especially notable in domestic work, that they were built with virtually two exterior walls separated from each other by a gallery permitting circulation around the exterior of the building and creating a shady zone, thus permitting large fenestration without admitting too much sunlight and heat. The capitol building by virtue of full and three-quarter columns has the shady zone about it which has been referred to a characteristic of domestic work. Furthermore, the windows are so designed that they slide into pockets behind the colonnade, so that in clear weather the building may have all the appearance of a pavilion.



Senate Lobby, Insular Capitol Building, Manila
Ralph Harrington Doane, Architect



MAIN LOBBY, POLICE DEPARTMENT HEADQUARTERS, BOSTON
RITCHIE, PARSONS & TAYLOR, ARCHITECTS

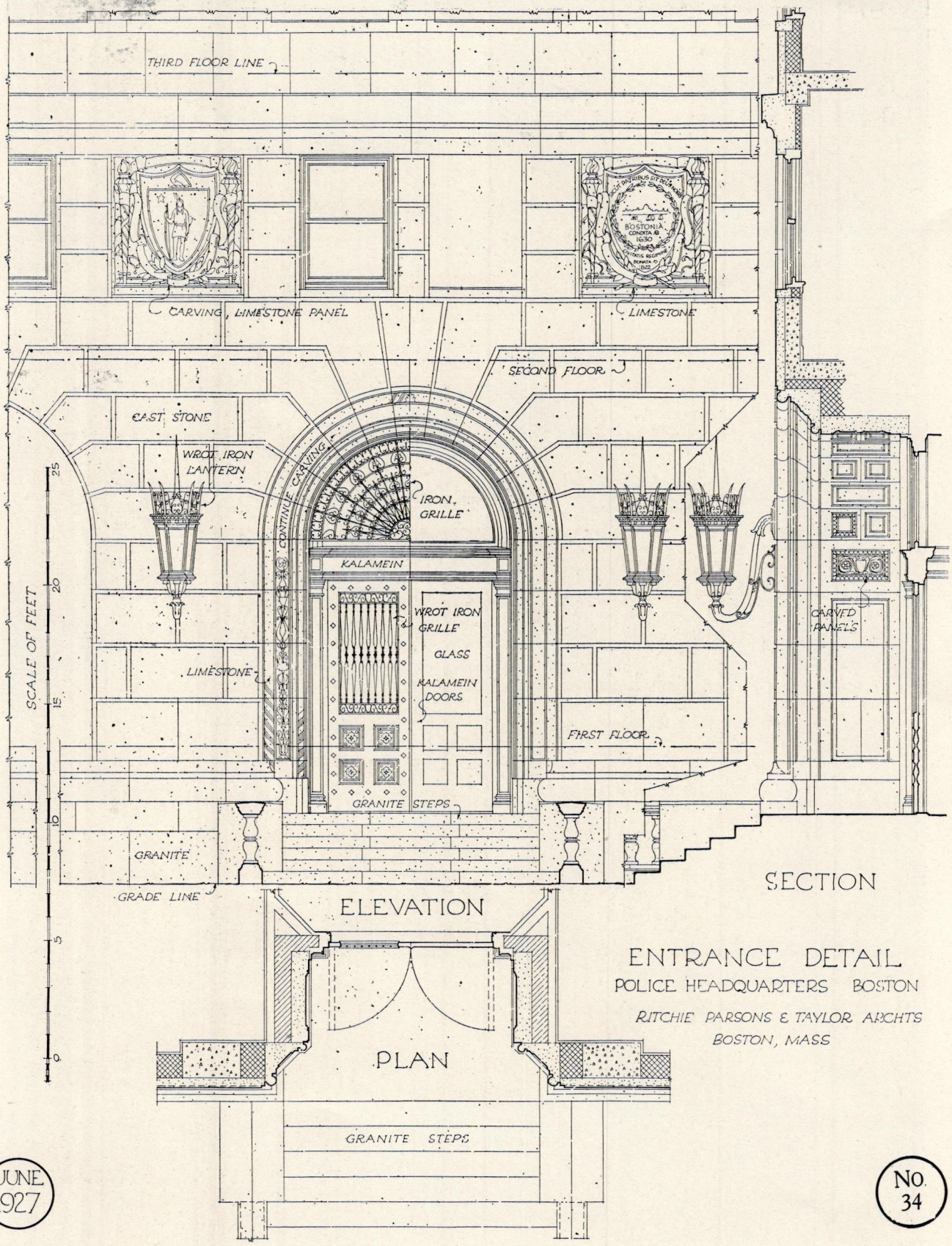
BRONZE DEDICATION TABLET

BRONZE FLAGPOLE BASE

POLICE DEPARTMENT HEADQUARTERS, BOSTON

RITCHIE, PARSONS & TAYLOR, ARCHITECTS

MAIN ENTRANCE DOORWAY, POLICE DEPARTMENT HEADQUARTERS, BOSTON
RITCHIE, PARSONS & TAYLOR, ARCHITECTS



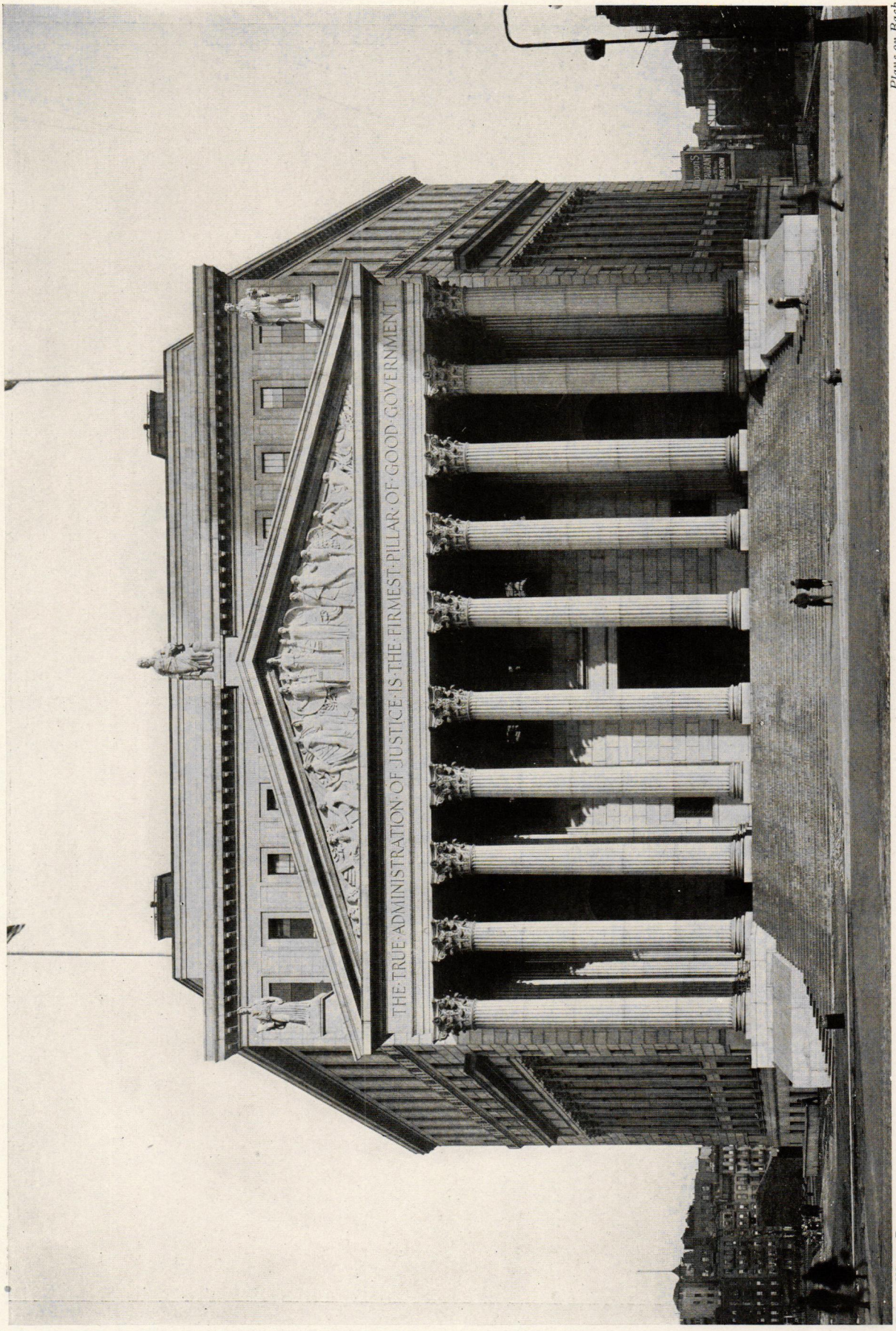
ENTRANCE DETAIL

POLICE HEADQUARTERS BOSTON

RITCHIE PARSONS & TAYLOR ARCHTS
BOSTON, MASS

JUNE 1927

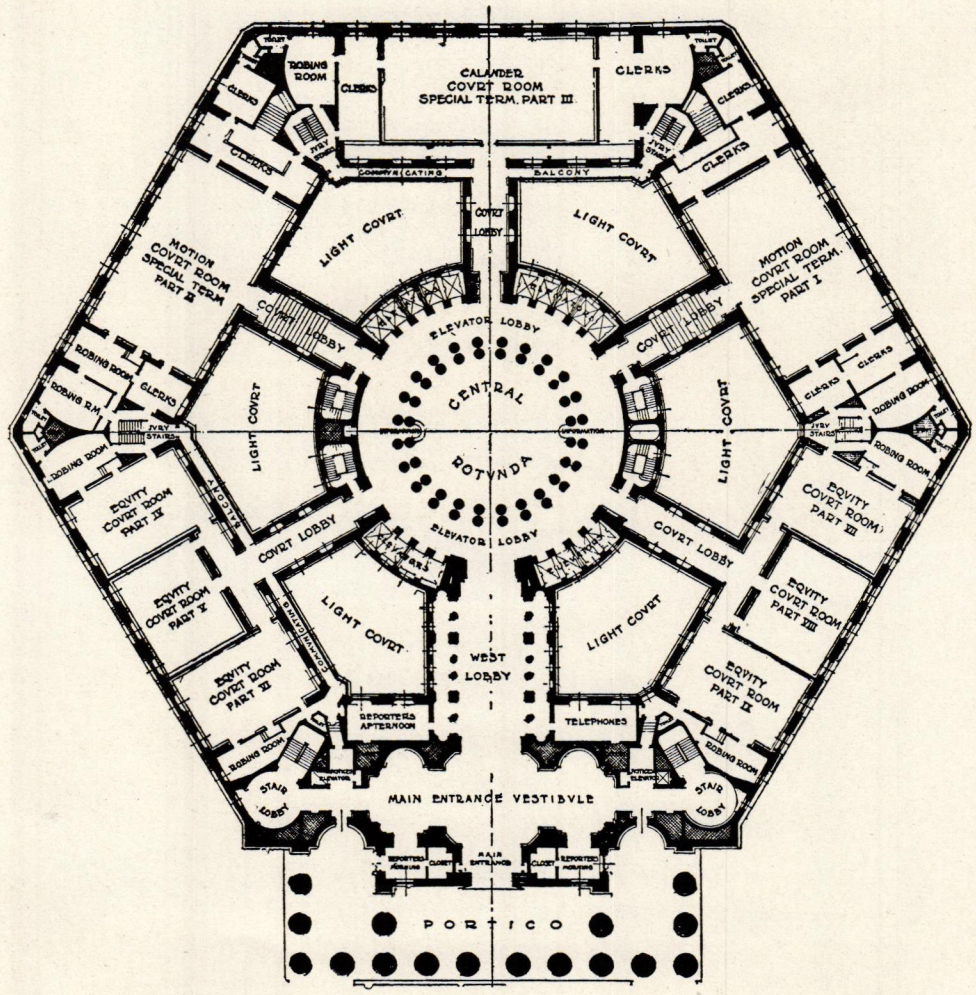
NO. 34



Plans on Back

NEW YORK COUNTY COURT HOUSE
GUY LOWELL, ARCHITECT

Photo. Wurts Bros.



PLAN, FIRST FLOOR, NEW YORK COUNTY COURT HOUSE

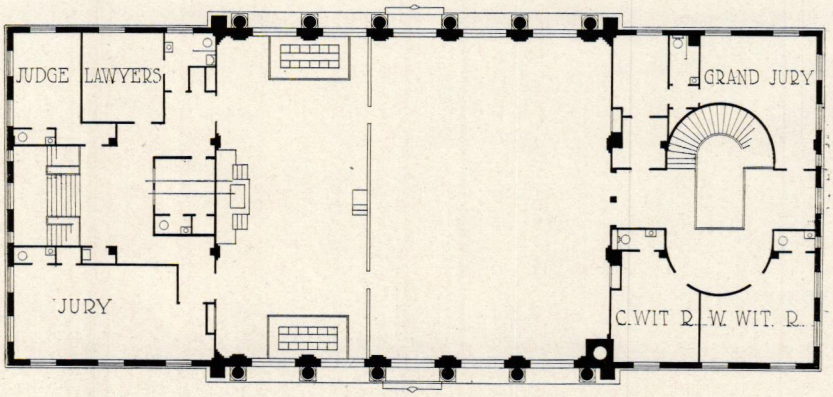
GUY LOWELL, ARCHITECT

MAIN ELEVATION

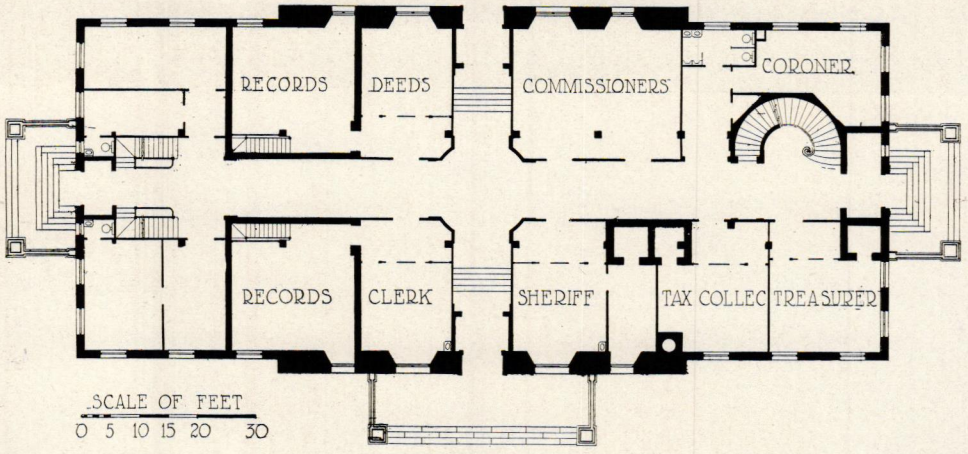
Plans on Back

COURT ROOM, CATAWBA COUNTY COURT HOUSE, NEWTON, N. C.

WILLARD ROGERS, ARCHITECT



SECOND FLOOR



FIRST FLOOR

PLANS, CATAWBA COUNTY COURT HOUSE, NEWTON, N. C.

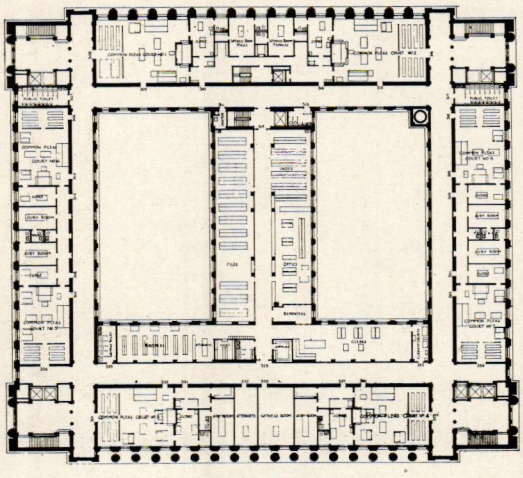
WILLARD ROGERS, ARCHITECT

MAIN ELEVATION

Photos. Charles H. Longley

HAMILTON COUNTY COURT HOUSE, CINCINNATI

RANKIN, KELLOGG & CRANE, ARCHITECTS



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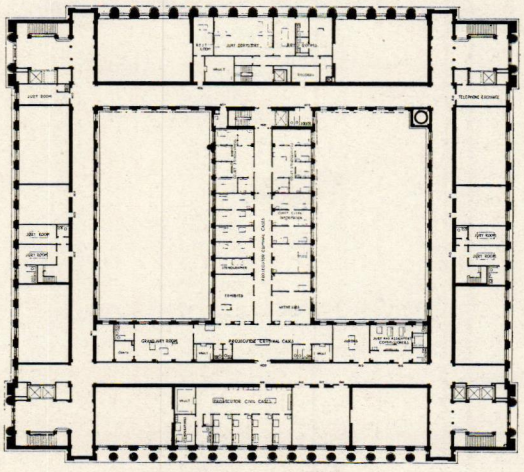
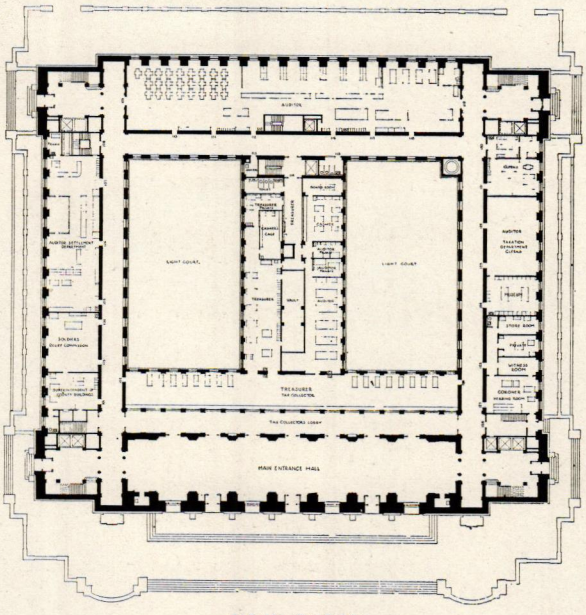


FOURTH FLOOR



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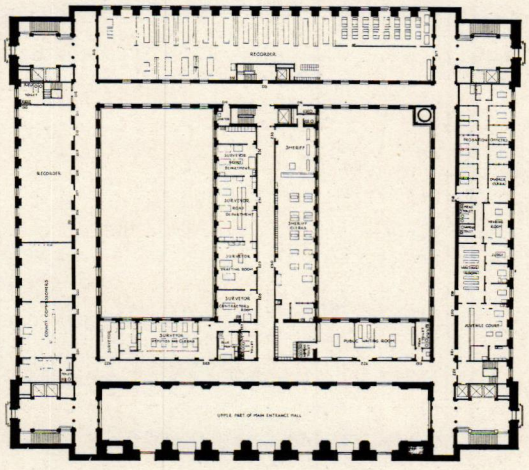
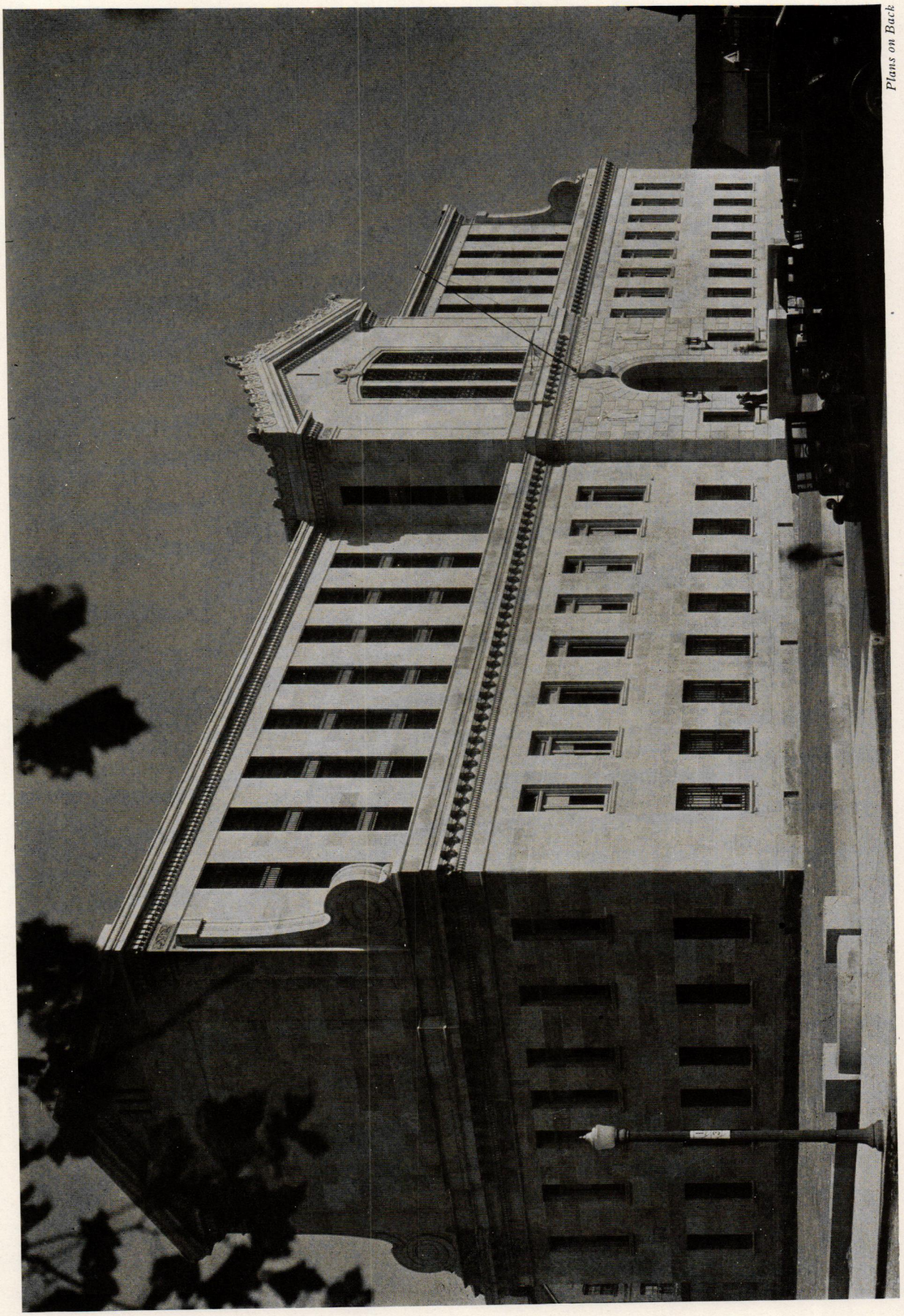


SECOND FLOOR

PLANS, HAMILTON COUNTY COURT HOUSE, CINCINNATI

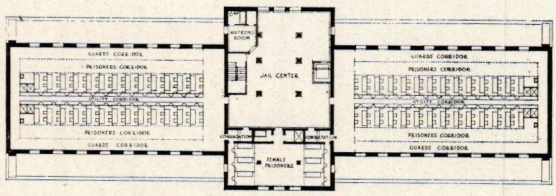
RANKIN, KELLOGG & CRANE, ARCHITECTS



Plans on Back

COURT HOUSE, MEMPHIS
JONES & FURBRINGER, ARCHITECTS

Photo, Tebbs & Knell, Inc.



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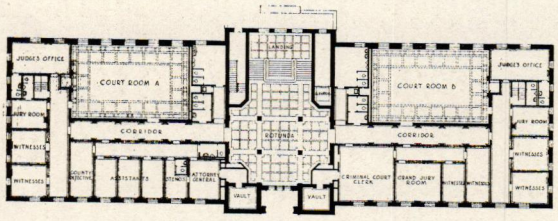

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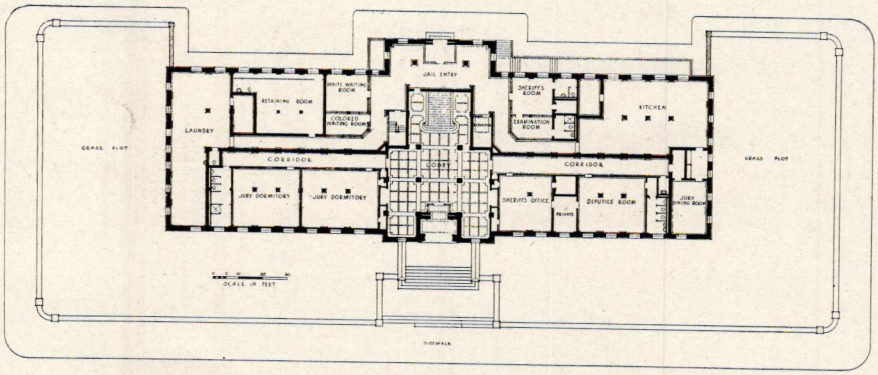


FIRST FLOOR

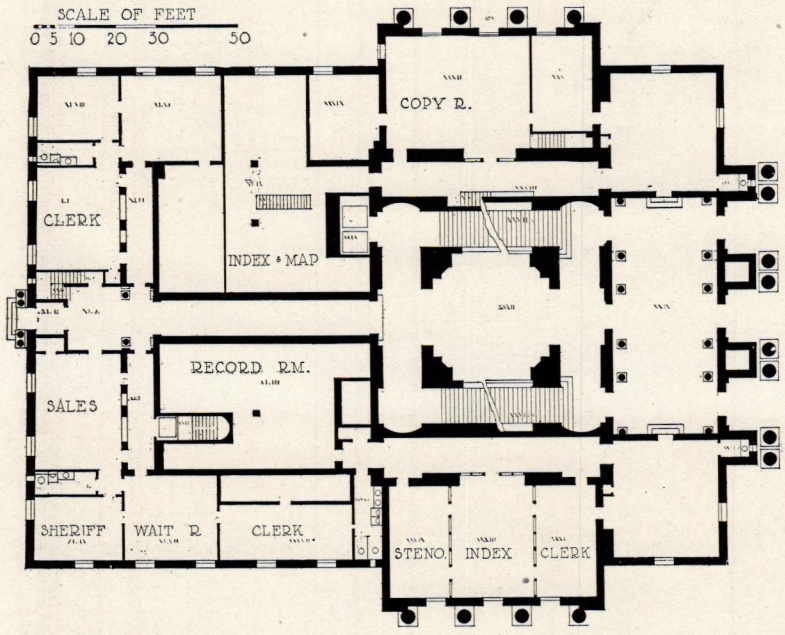
PLANS, COURT HOUSE, MEMPHIS

JONES & FURBRINGER, ARCHITECTS

Photo. John Wallace Gillies

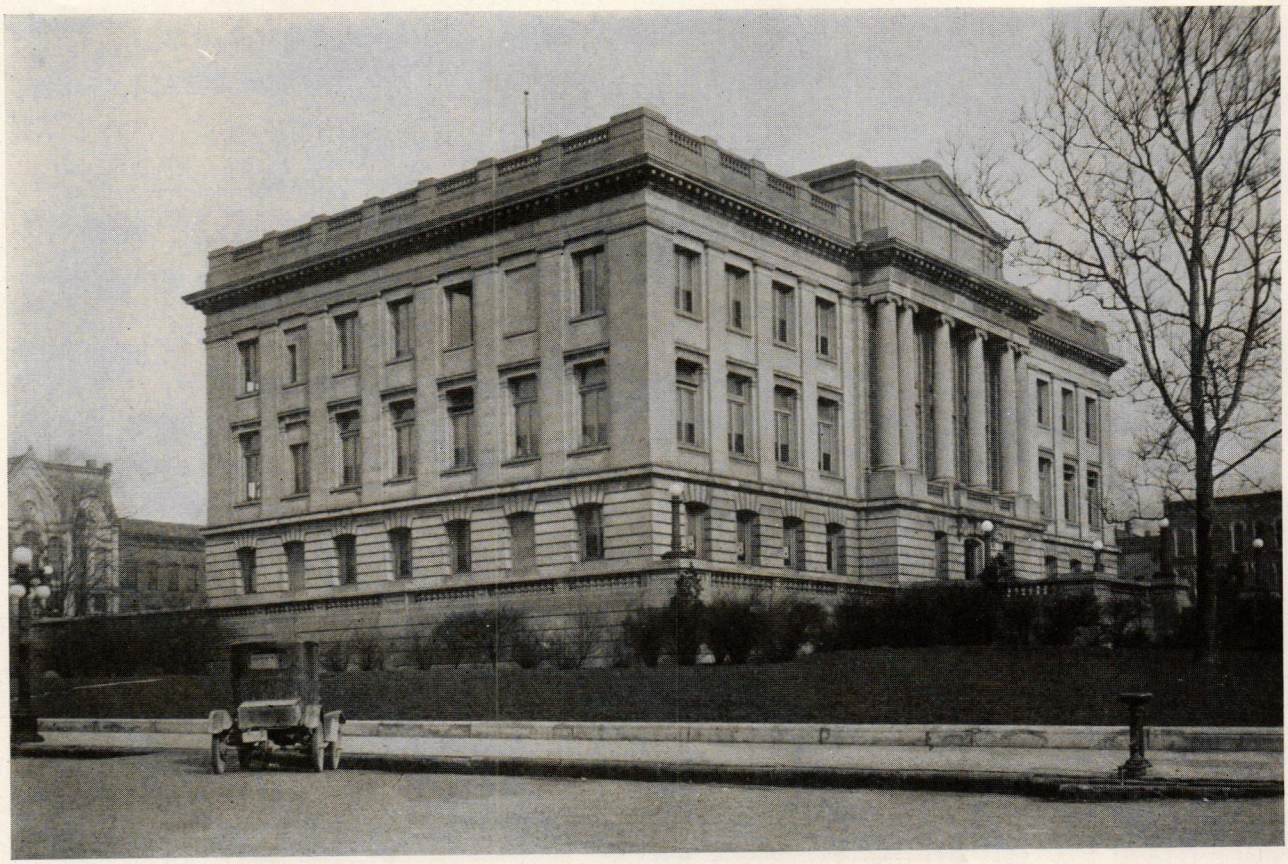
Plans on Back

ESSEX COUNTY COURT HOUSE, NEWARK
CASS GILBERT, ARCHITECT

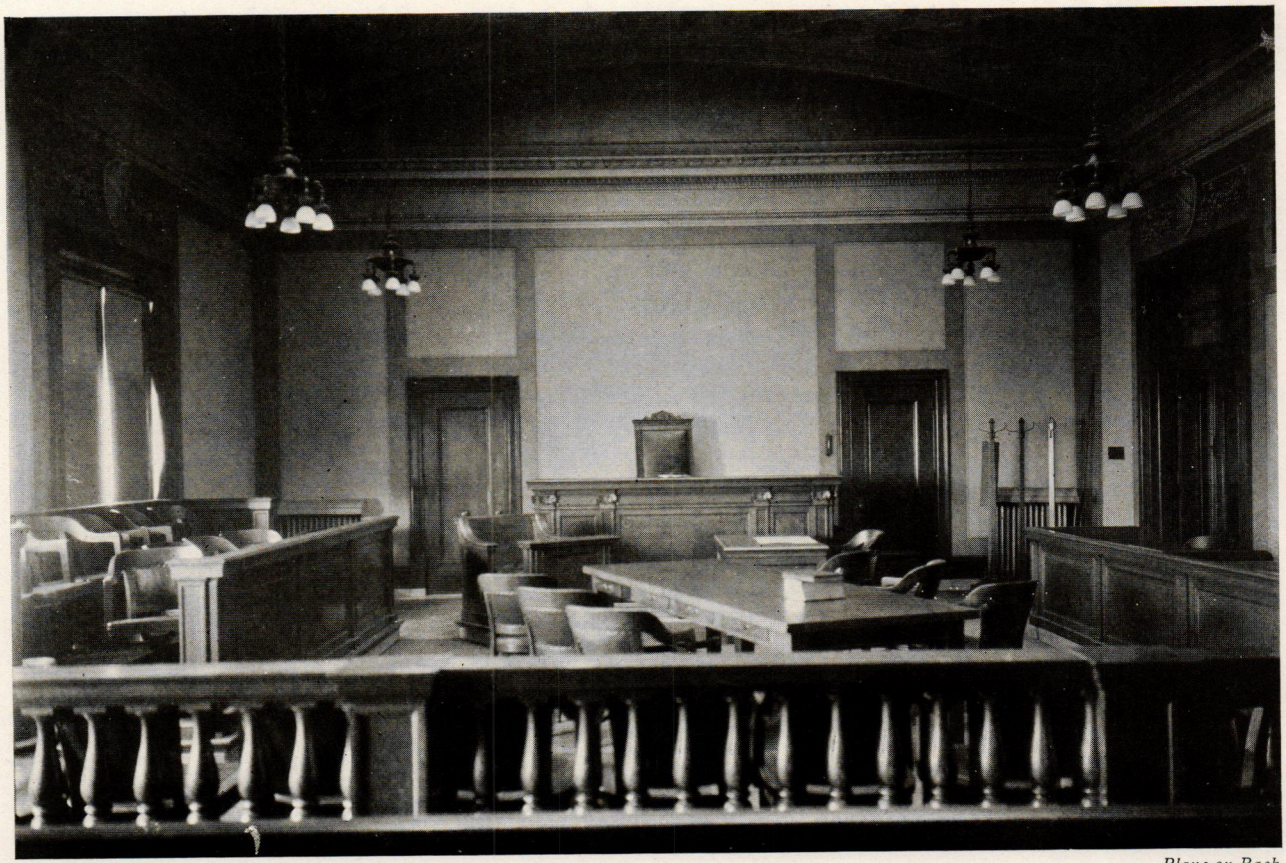


PLANS, FIRST FLOOR, ESSEX COUNTY COURT HOUSE, NEWARK

CASS GILBERT, ARCHITECT



GENERAL VIEW

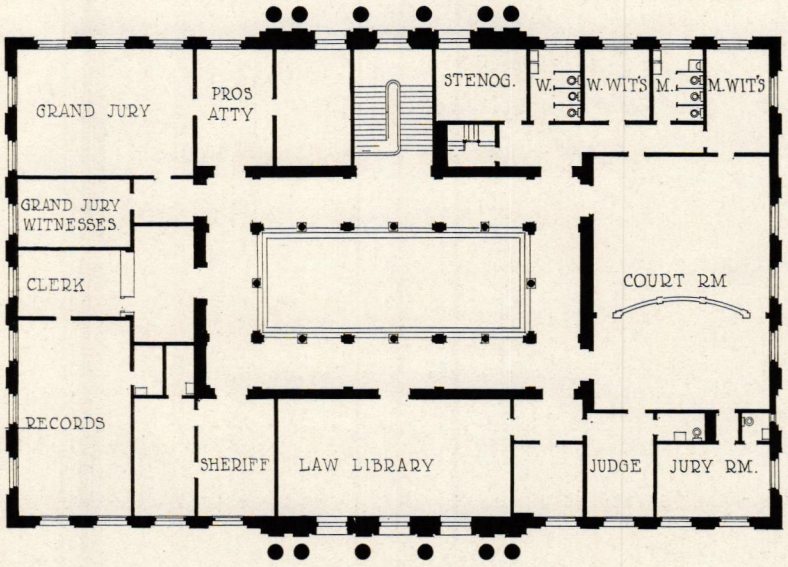


Photos. S. M. John

Plans on Back

COURT ROOM, HARDIN COUNTY COURT HOUSE, KENTON, O.

RICHARDS, McCARTY & BULFORD, ARCHITECTS



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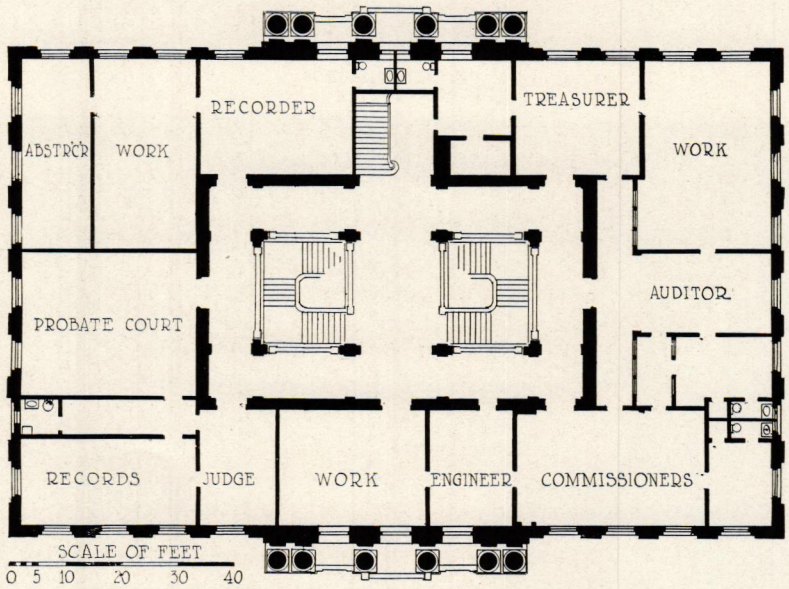

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PLANS, HARDIN COUNTY COURT HOUSE, KENTON, O.

RICHARDS, McCARTY & BULFORD, ARCHITECTS

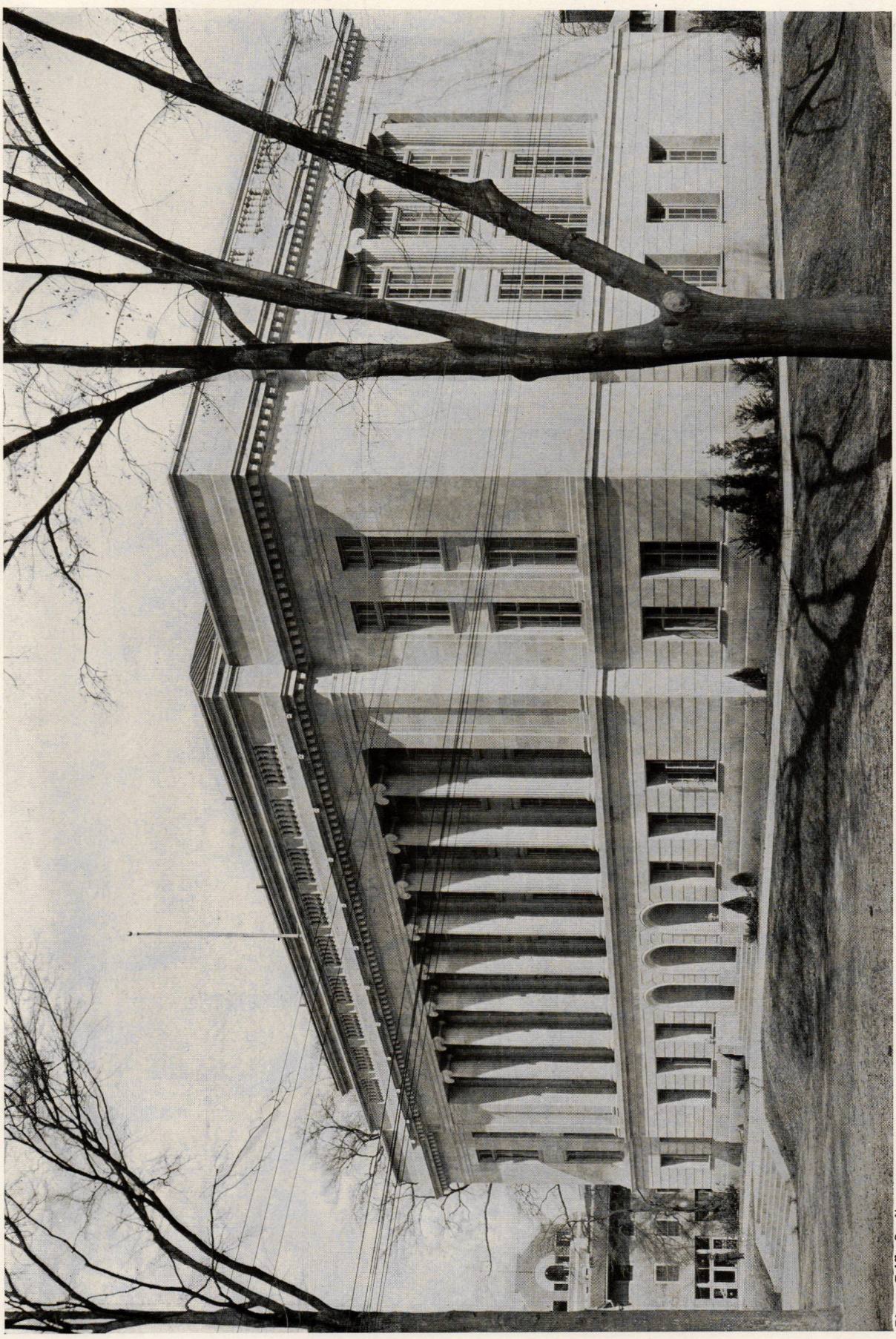
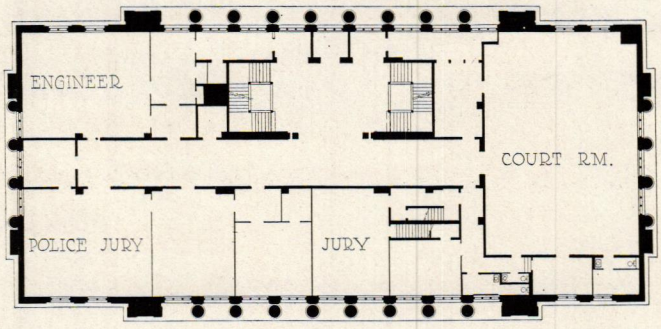


Photo. Griffin Studio

Plans on Back

OUACHITA PARISH COURT HOUSE, MONROE, LA.

J. W. SMITH, H. H. LAND, AND D. CURTIS SMITH, ARCHITECTS



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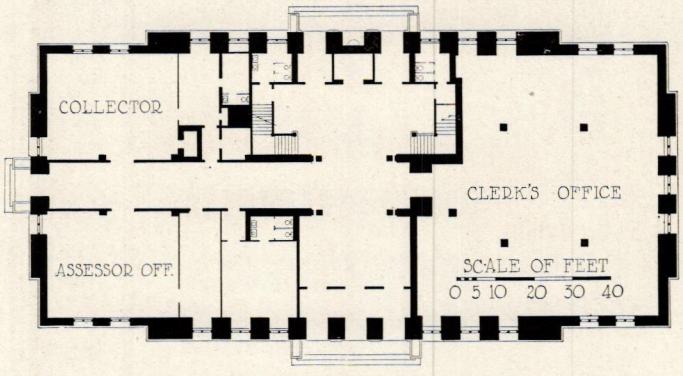

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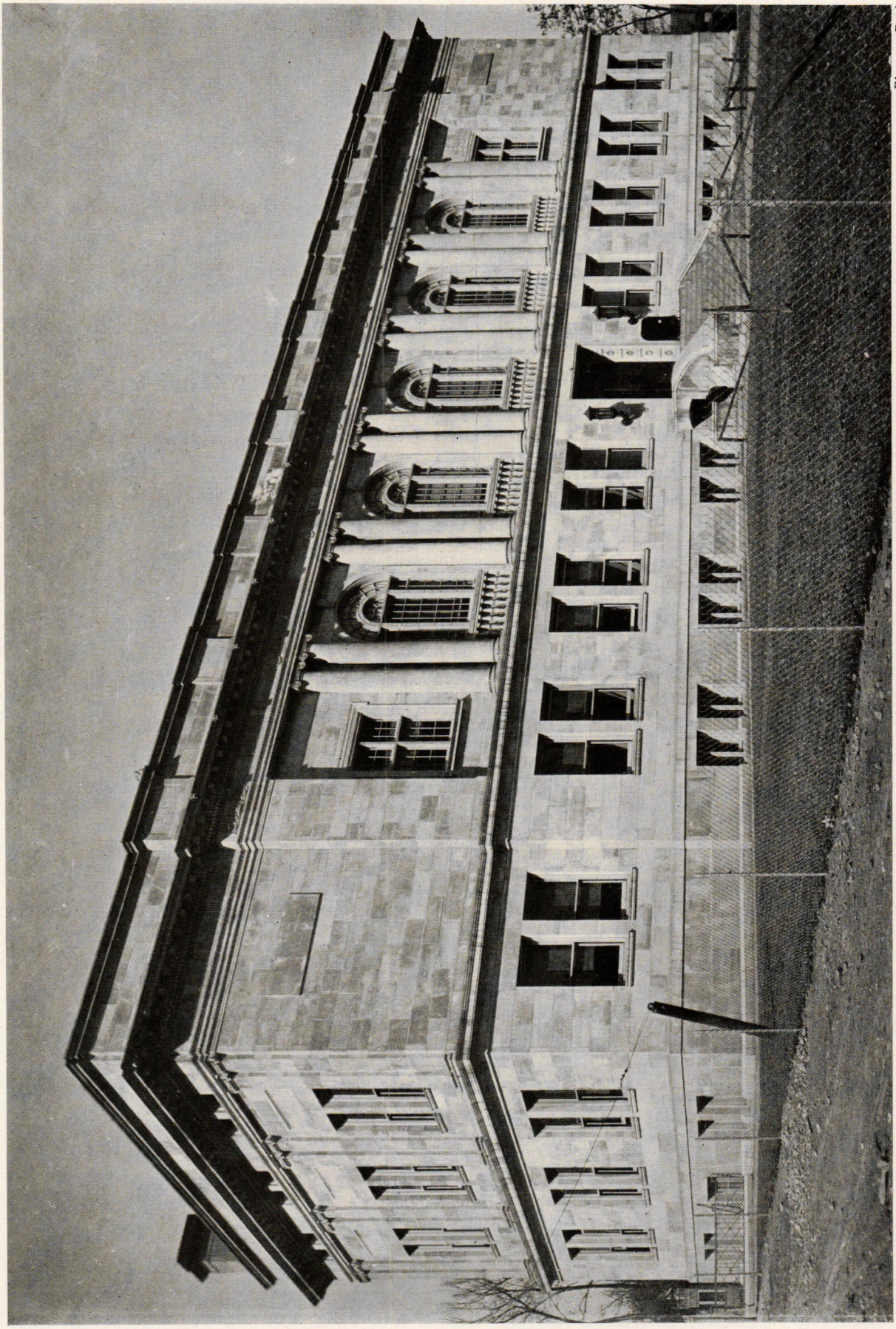
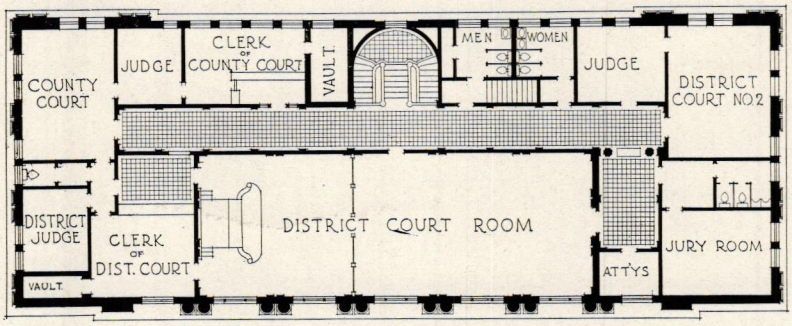


Plans on Back

MESA COUNTY COURT HOUSE, GRAND JUNCTION, COLO.

EUGENE G. GROVES, ARCHITECT



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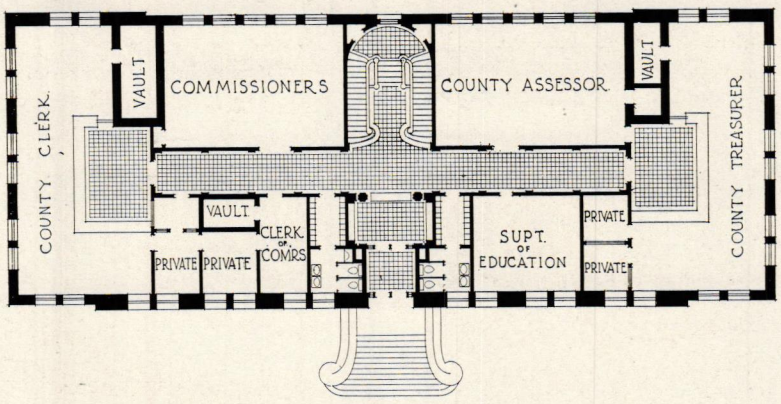

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PLANS, MESA COUNTY COURT HOUSE, GRAND JUNCTION, COLO.

EUGENE G. GROVES, ARCHITECT

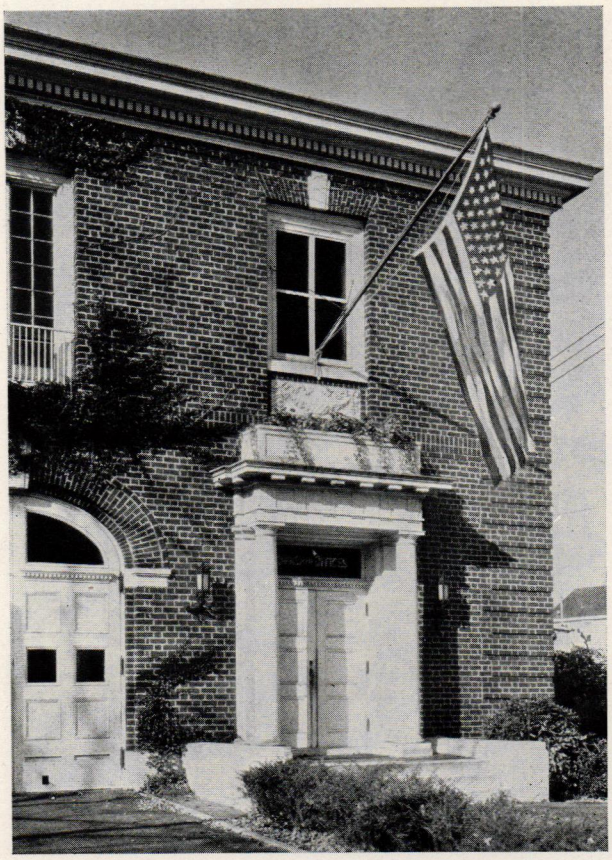
City and Town Halls

By CHARLES G. LORING

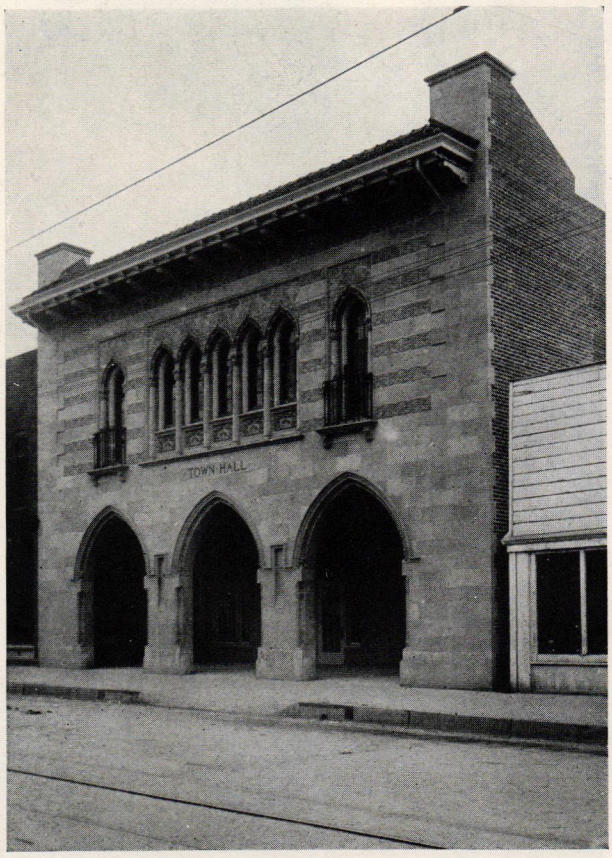
TOWN government in America antedated government state or federal, and the precedents for housing the offices of such local governments are logical in plan and indigenous in character. The very conservatism of our smaller communities has embodied itself consistently in their town halls, and although there are a few survivals of Victorian Gothic and Richardsonian Romanesque and a few revivals of the gay nineties and the *cinquicento,* the work of the semi-professional architects of the northern colonies has held its own. Possibly it is to be regretted that for the sake of variety, if not for the sake of art, there is so little expression through architecture of the modern phases of our complex life such as the Farmer-Labor Party, Greenwich Village, the Single Tax Enclaves, Herrin, Ill., and Hollywood, Cal., all phases well to the fore.

In the south, where the first organization was by parishes and not by townships, and where the form of government was based on an aristocracy of wealthy slave owners rather than on a democratic commonwealth, the building of town halls was negligible. The old state capitols, city halls and court houses are interesting and full of inspiration, with many characteristics adaptable to town halls. In the extreme southwestern states, which were settled under Spanish influence, there were a few municipal buildings, such as the Alamo in San Antonio, which might be included as legitimate precedents. In California, however, the early rule was so directly ecclesiastical, and till the middle of the last century the population was so scattered and its civic construction so primitive, that it is only during this present century that such buildings of small proportions have been successfully designed anywhere in California.

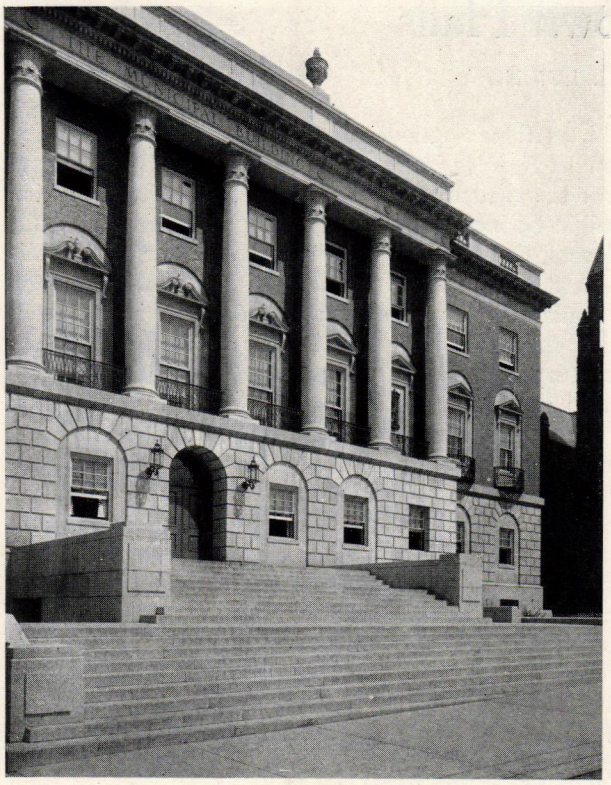
City halls may rejoice in towers and colonnades, expand into gigantic office buildings and ignore past precedents, but town halls maintain the even tenor of their ways both in the form of architecture and in its structural expression. Three examples are outstanding: Independence Hall in Philadelphia (ascribed by many to Andrew Hamilton, who served on the building committee), with its brick clock tower and copper roof; the "Town House," built in 1713 in Boston, and now known as the "Old State House," also of red brick and in plan excellently disposed about a circular stairway; and the City Hall in New York, designed by John McComb in 1803 (when the population was hardly 79,000) and faced with stone, in detail having a French flavor, whereas



Fire Station and Town Hall, Milburn, N. J.
Horatio W. Olcott, Architect



Town Hall, Littleton, Colo.
J. B. Benedict, Architect



Municipal Building, White Plains, N. Y.
Joseph H. Freedlander, Architect

the two older buildings show rather a British influence. Dissimilar they are in plan, silhouette, material and derivation, yet their vivid expression of the political ideals and practices of the founders of the republic links them into one broad style. And that style today is cogent and germane. Some of the town halls which tell the sound and sturdy story of the republic are less well known, not on account of architectural deficiencies but because of out-of-the-way settings. The neo-Grec building at Salem, Mass., constructed in 1838, is a "dated specimen," typical of the last phase of our architecture before the beginning of the dark ages of art which shrouded the middle of the nineteenth century. Its granite facade is a stern example of the Greek revival type of architecture, and its type is re-echoed in John Russell Pope's hall at Plattsburg. The "Hall" at New Castle, Del., built about 1750, with its two-story wings, open cupola and white facade, is a staunch model, being successfully followed to this day.

The essentials of modern town hall planning are encompassed in a simple frame. Because the hall is for a town, it presupposes that the administrative functions are simple and compact and that land values are not excessive; so the building may be only a few stories in height with open grass plots about it. The problems of circulation and lighting are simplified almost to zero. Where the building in addition to the offices contains an auditorium for the gath-

Photo. Tebbs & Knell, Inc.

Municipal Building, Plainfield, N. J.
Laurence F. Peck and William L. Bottomley, Associated, Architects

erings of the townspeople, there is a conflict between these two types of public use, with peak loads at different hours,—a conflict between at least two kinds of elements, unrelated in their sizes and functions, which must be reconciled on the facades. Where the fire engine house is incorporated in the building or the street front is rented out for stores, or where a ticket office for the movies must be grafted on the main entrance, the problem in design is sublimated out of the confines of a brief survey. In the township with scant population which has outgrown a couple of rooms over the dry goods store, between the dentist and the attorney, the new public office building must be kept small. The first cost and the upkeep are measured in terms of price-per-bushel or mill-hand-wage, and the demands on the architect's ingenuity are in inverse ratio to his fee. The charming miniature designed by Lewis E. Welsh at Greenfield, N. Y. is the blue ribbon example of the pocket edition. It is a striking example of the small town hall.

Of particular importance is the grouping of the body politic on all-day duty around one center where it can work behind a rail and act as proxy for half a dozen elective but part-time officials. Incidentally, this rail or counter can be put to great advantage if it is made a good 40 inches high for the public's convenience in writing, and if it is covered with brass-bound linoleum and has the entire inner side a nest of stock metal drawers for filing. Here the records

View of Auditorium
Robbins Memorial Town Hall

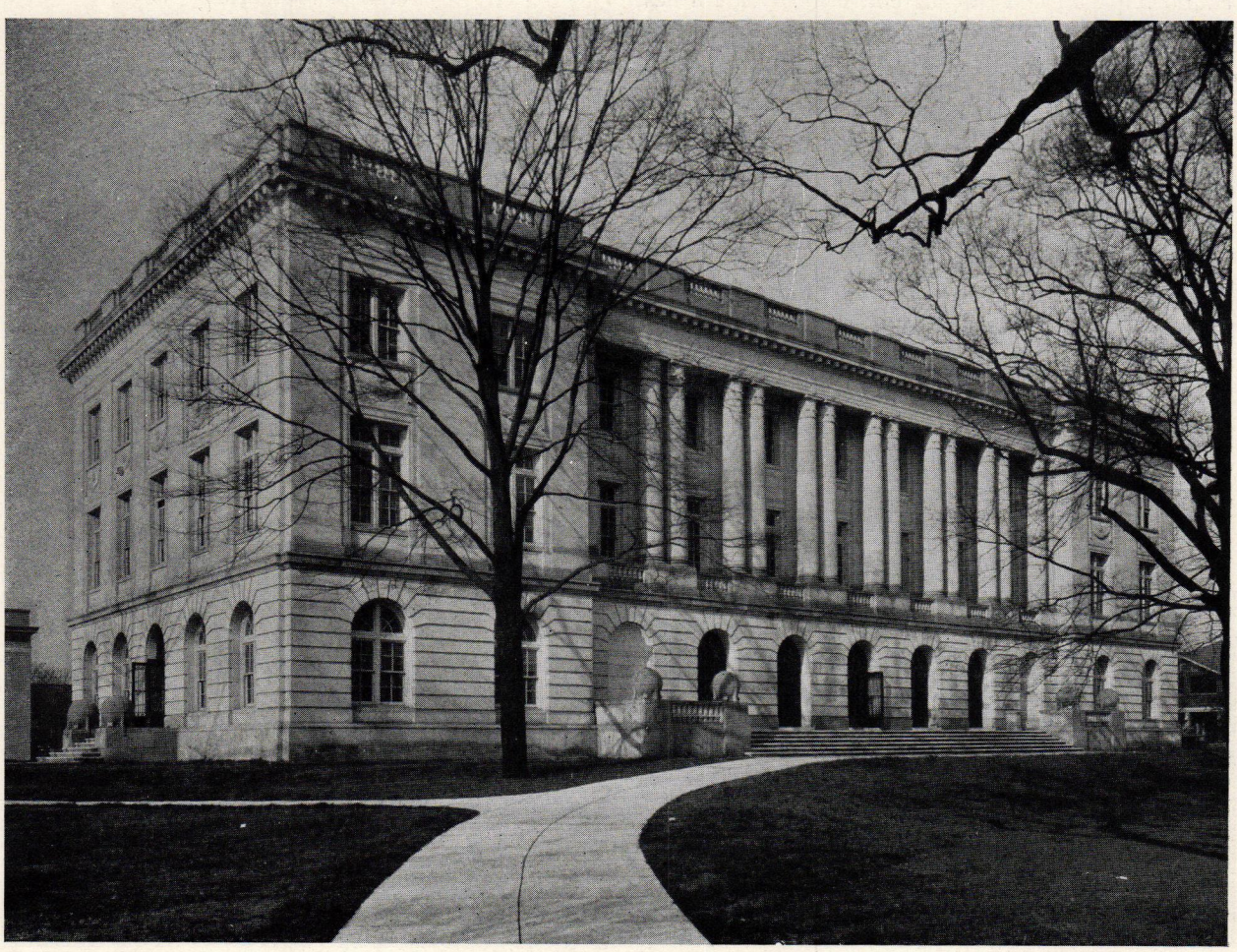
Photo. George E. Lawrence Co.

Robbins Memorial Town Hall, Arlington, Mass.
R. Clipston Sturgis, Architect

Municipal Court and Public Safety Building, Des Moines
Vorse, Kraetsch & Kraetsch; Keffer & Jones; Sawyer & Watrous, Associated, Architects

of births and of dog taxes, of water mains and fire permits are all in order and close at hand. The grouping of departments also simplifies the concentration into one fireproof safe of important documents, which of course must be properly protected.

In one town hall serving a population of almost city size, the departments were coördinated, with all the financial offices on the first floor, on one side of



City Hall, Charlotte, N. C.
C. C. Hook, Architect

Municipal Building, Teaneck, N. J.
Ludlow & Peabody, Architects

the main entrance, including the treasurer, collector, auditor and assessor. From them a private stairway led directly to the large fireproof storeroom in the basement which supplemented the smaller vaults in the offices. On the other side of the lobby were the street, water, engineering and building departments, with a common drafting room and special filing shelves for blueprints. These two groups were placed

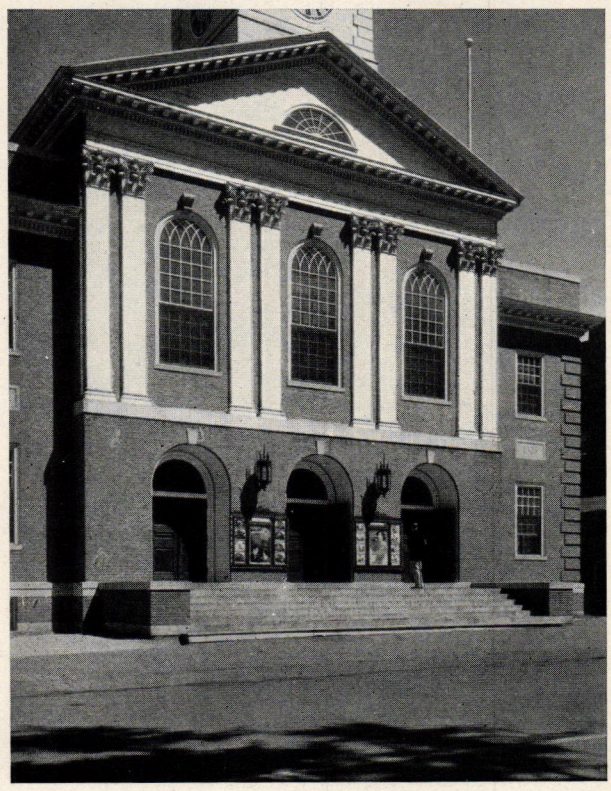
City Hall, Burlington, Iowa
W. F. Weibly, Architect

Photo. Peter A. Juley & Son

CITY HALL AND MEMORIAL MONUMENT, PLATTSBURG, N. Y.
JOHN RUSSELL POPE, ARCHITECT

MUNICIPAL GROUP, SPRINGFIELD, MASS.
PELL & CORBETT, ARCHITECTS

on the ground floor because they were most frequently used by the public. On the second floor were the council chamber, the clerk's room, divided by a counter into public and private spaces, and the two rooms for the town manager and the offices less often consulted by the townsfolk and more deserving of privacy and quiet. In the well lighted basement were the bureau of weights and measures and the office of the board of health with its small clinic and large waiting room, and both departments had convenient access to the street through a side door. In addition to the telephone central, the boiler plant and janitor's room, there was a comfort station with an outside entrance for men and an inside entrance for women. Usually the school board office is located in the high school building, and that of the chief of police next the lockup. They prefer the feeling of independence, and it simplifies the town hall janitor service at night. Exceptional conditions are the only justification for allowing space for such organizations as the library, the chamber of commerce, veteran societies and the Red Cross. In one town a strong drive was made to include in the basement a restaurant, which could be used once in a while as an adjunct to community gatherings in the auditorium and six days a week as a meeting place for those interested in the town's affairs. It is almost to be regretted that this extreme case of non-governmental function was not adopted; would it have become a center for serious minded clerks or for the town's scheming politicians?



Town Hall, Lebanon, N. H.
Designed by Jens Fredrick Larson

An auditorium, if there is one, or the council chamber, if it is of sufficient size, may be hired by the citizens for more general purposes. Space for legislation is used comparatively few times during the year, and if an entrance is so planned that the hall may be cut off from the rest of the building, it can serve the taxpayers for lectures, dances, and meetings, and become a definite source of income. An auditorium should be equipped with a thoroughly fireproof motion picture booth, not only for entertainment but also for projecting information to be discussed at meetings. Unless the lot is sloping and so allows easy access on two levels, the sensible practice is to place the auditorium on the main floor, both for the convenience and for the safety of large gatherings. As basement rooms are not desirable and offices above a hall are not easily arranged, the auditorium has often been developed naturally as a one-story rear wing. The auditorium on the second floor of the main building gives to the exterior a more monumental mass and involves less foundation and roof surface, and so it is sometimes adopted.

There is a great opportunity to make the town house interesting from the historical point of view. No place can be more appropriate for relics and records of the town's past,—not alone the formal bronze tablets or stained glass windows, but rather the incorporation in the public lobby of some handsome old doorway, taken from a house erected in the early days, or a quaint tavern sign, if there are colonial traditions, or Indian relics and the primitive utensils of the "frontier era." The corridor walls may be made a museum and hung with early prints and old photographs showing the neighborhood in bygone days; the first railroad, Main Street before the boom and such like "transmittenda" proclaiming civic growth. The treatment of the exterior lends itself to the use of many of the larger conventional elements of decoration in an expressive manner. The cupola connotes the bell calling the voters to exercise their privilege of franchise or warning them of conflagrations; the second story balcony visualizes the town fathers haranguing the citizens. Corporate seals or state and municipal coats of arms (if translated with due regard to the long-established canons of heraldry) become appropriate and beautiful points of design, always adding distinguished dignity.

Two modern halls in the grand manner are the Robbins Memorial Town Hall at Arlington, Mass., by R. Clipston Sturgis, and the Municipal Building in Plainfield, N. J., by Laurence F. Peck and William L. Bottomley. The first is designed in stone and recalls, though it does not copy, the City Hall in New York; the second, of brick with massive stone trim, is Georgian with a dusting of Piranesi. The first contains a town hall used for "representative" town meetings, for, large as it is, it could not contain all the voters; the second is a city hall and so needs no auditorium, but in general size and in the number of offices it might serve for a large town.

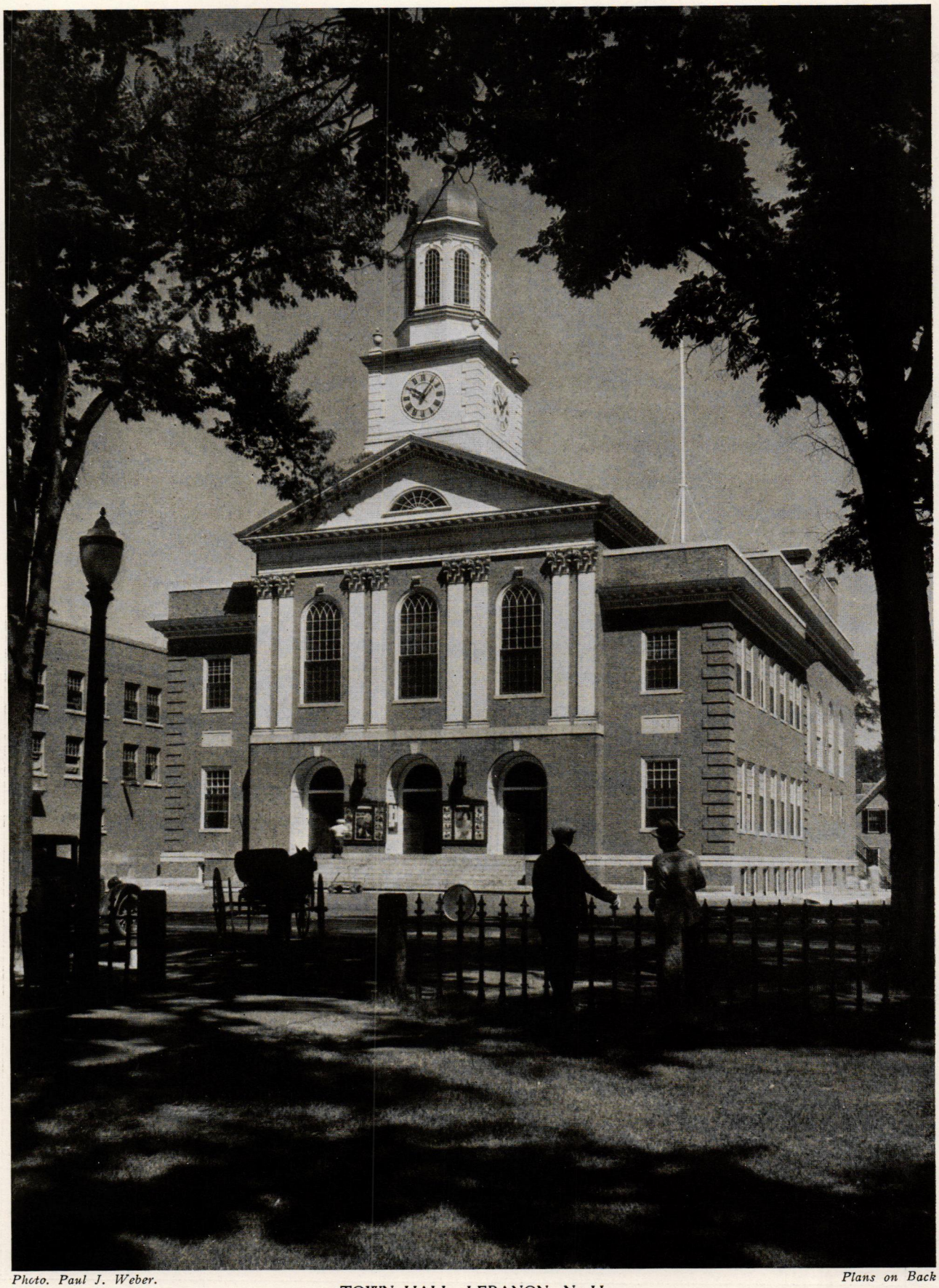
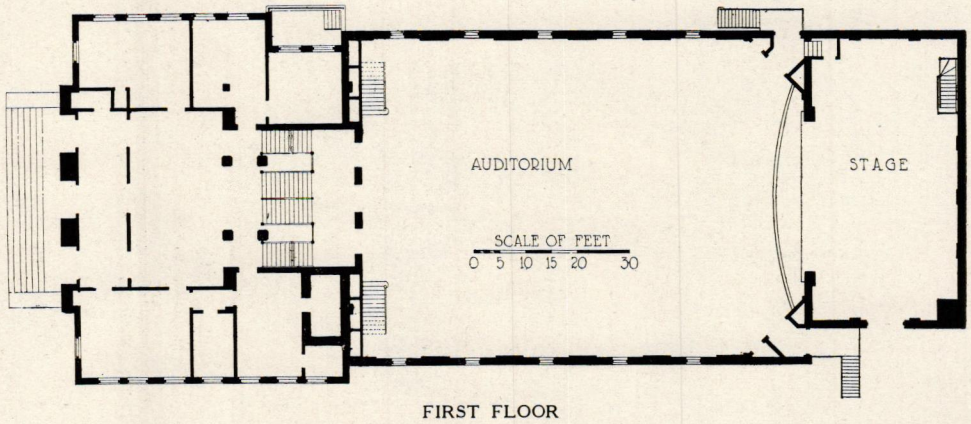


Photo. Paul J. Weber. *Plans on Back*

TOWN HALL, LEBANON, N. H.

DESIGNED BY JENS FREDRICK LARSON, WHILE A MEMBER OF THE FIRM OF LARSON & WELLS



FIRST FLOOR

PLANS, TOWN HALL, LEBANON, N. H.

DESIGNED BY JENS FREDRICK LARSON, WHILE A MEMBER OF THE FIRM OF LARSON & WELLS

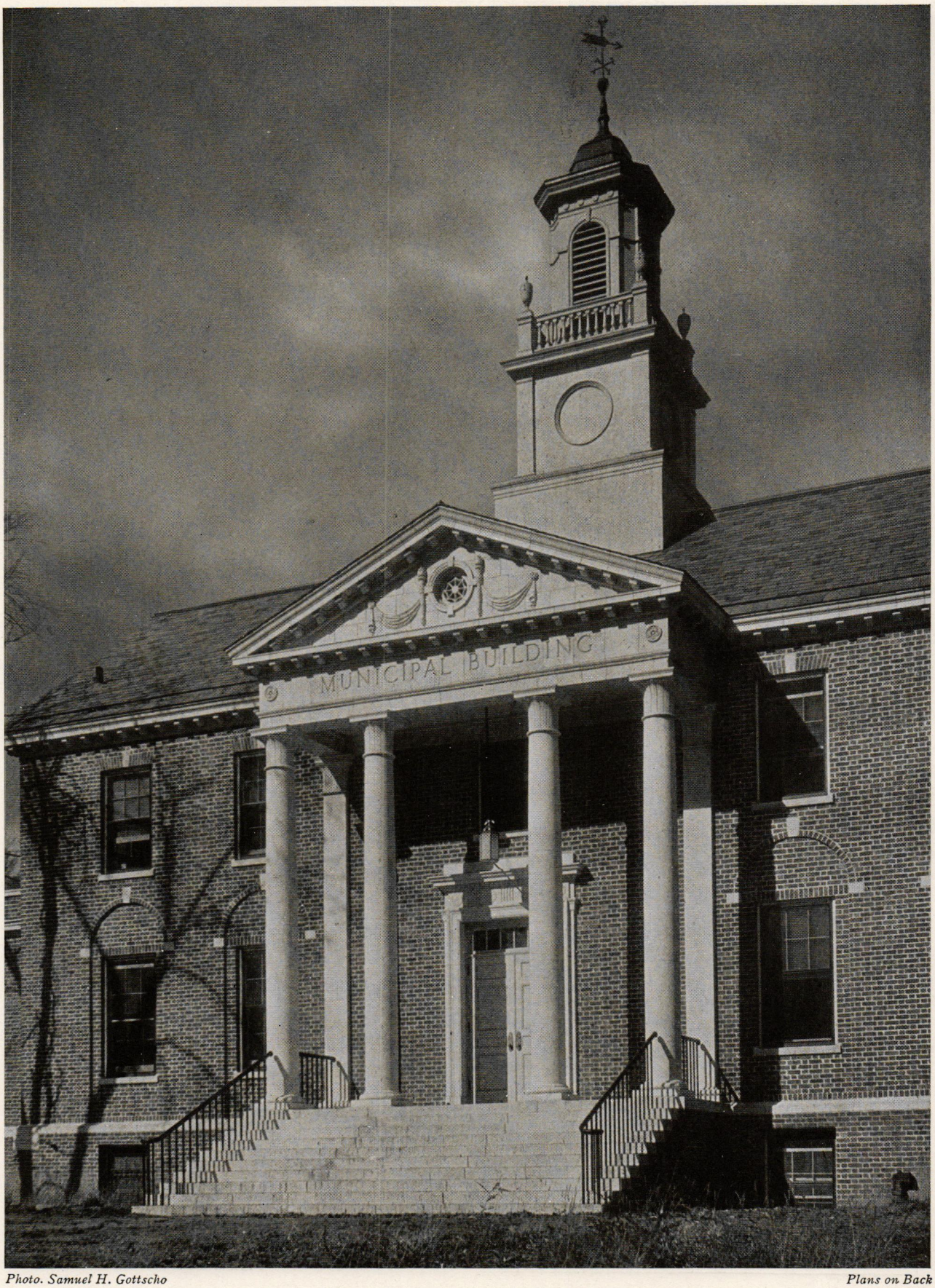
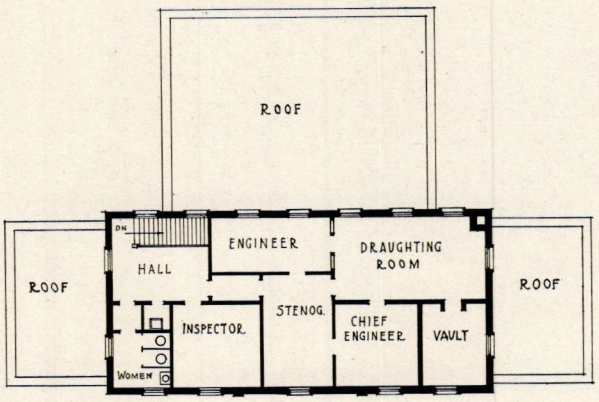


Photo. Samuel H. Gottscho

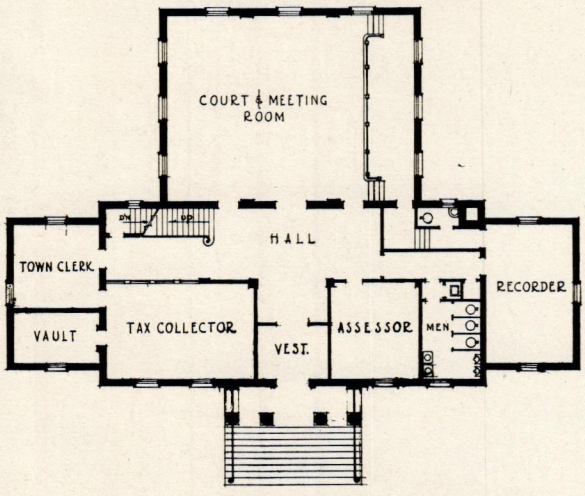
Plans on Back

MUNICIPAL BUILDING, TEANECK, N. J.

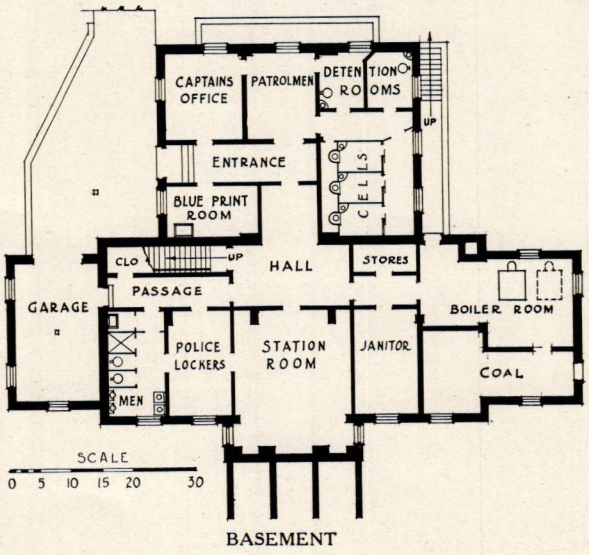
LUDLOW & PEABODY, ARCHITECTS



SECOND FLOOR



FIRST FLOOR



BASEMENT

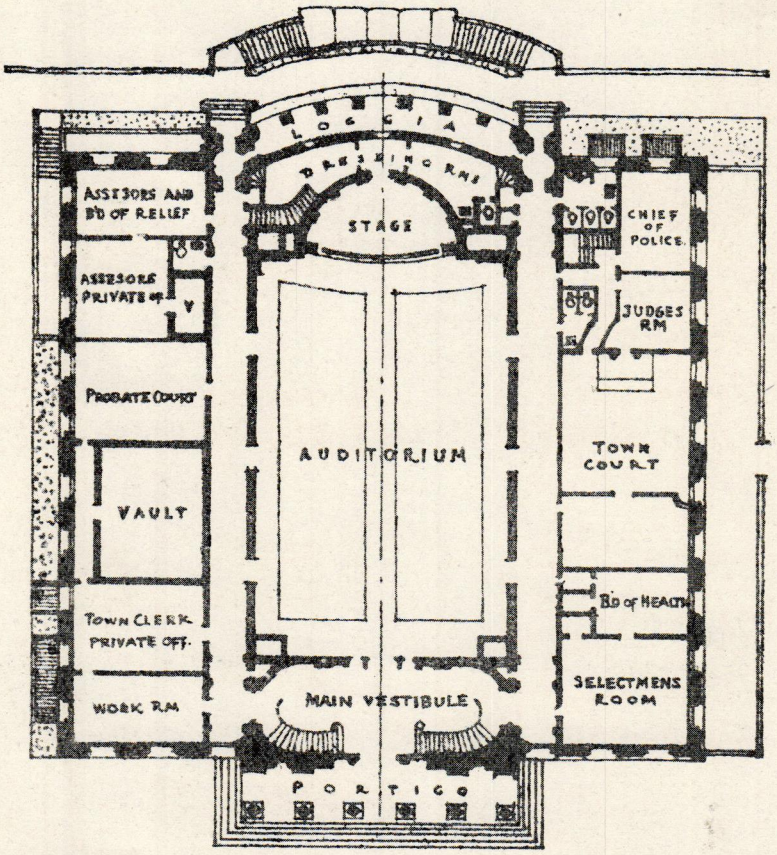
PLANS, MUNICIPAL BUILDING, TEANECK, N. J.

LUDLOW & PEABODY, ARCHITECTS

Photo. De W. C. Ward

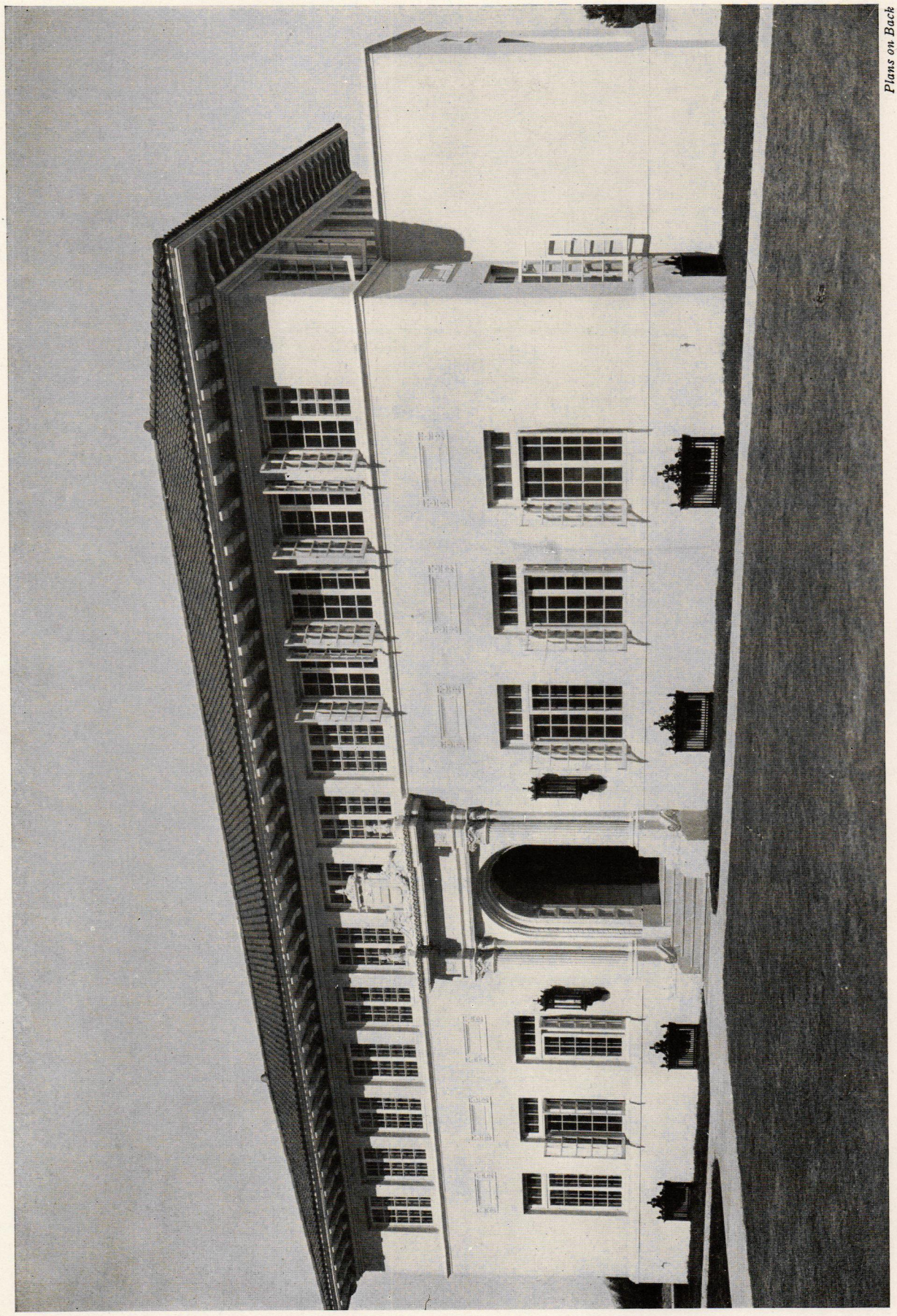
Plans on Back

TOWN HALL, MILFORD, CONN.
EGERTON SWARTWOUT, ARCHITECT



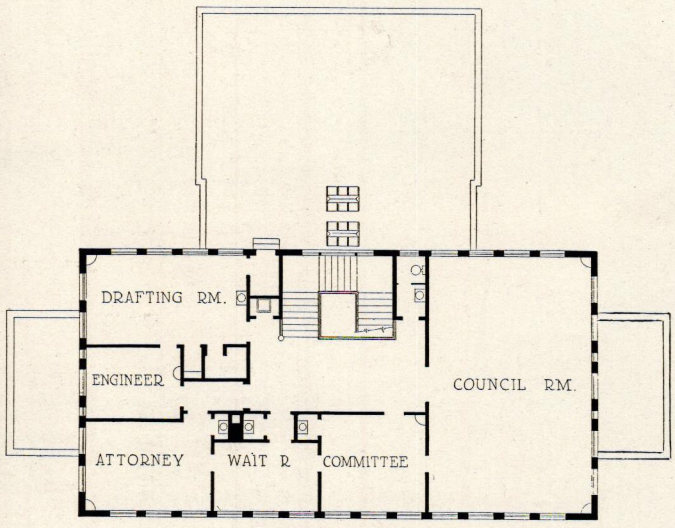
PLANS, GROUND FLOOR, TOWN HALL, MILFORD, CONN.

EGERTON SWARTWOUT, ARCHITECT

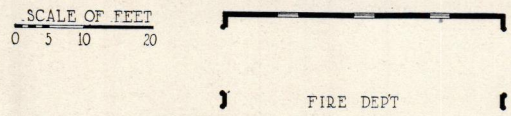


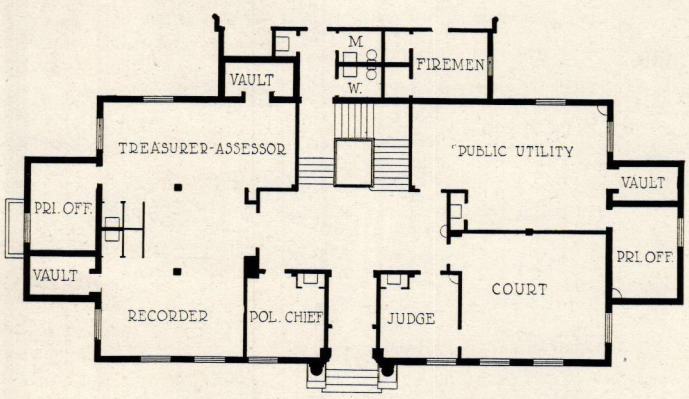
Plans on Back

CITY HALL, YUMA, ARIZ.
LYMAN & PLACE, ARCHITECTS



SECOND FLOOR

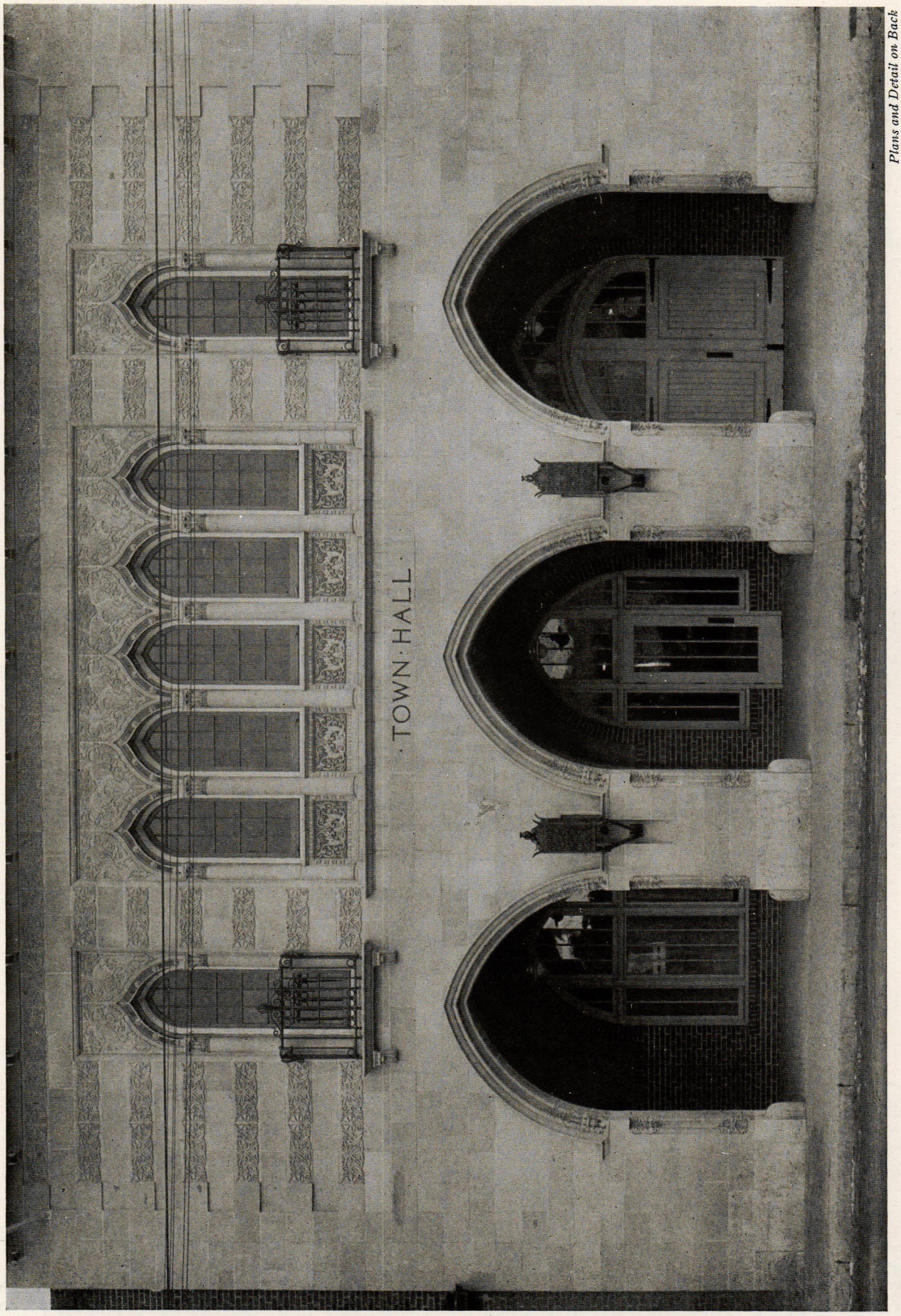




FIRST FLOOR

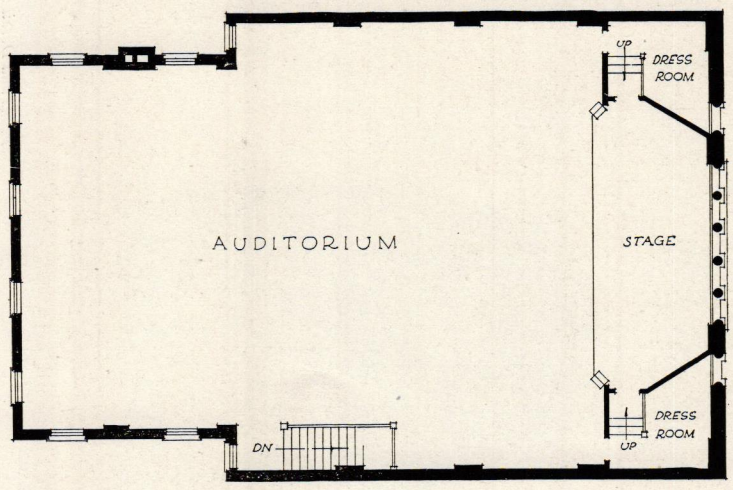
PLANS, CITY HALL, YUMA, ARIZ.

LYMAN & PLACE, ARCHITECTS

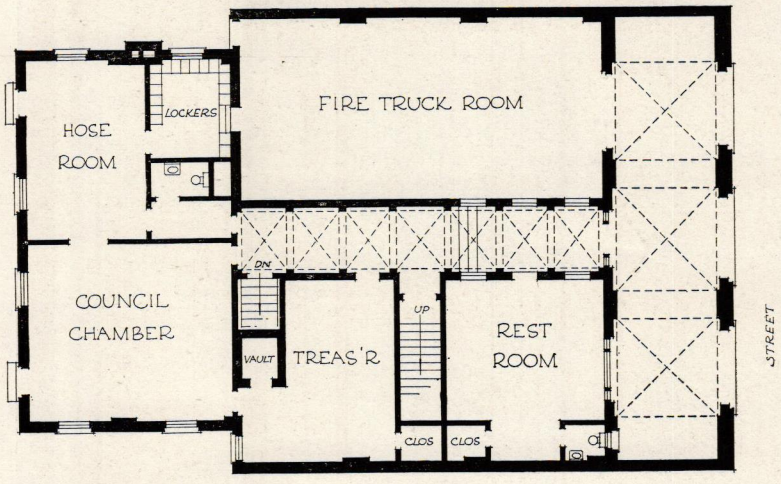


Plans and Detail on Back

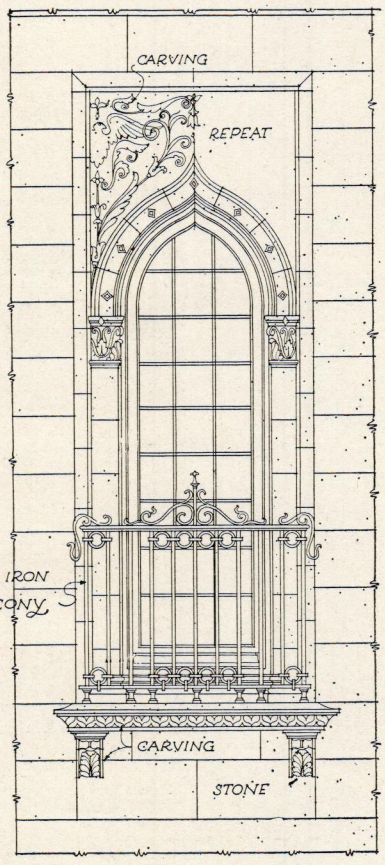
TOWN HALL, LITTLETON, COLO.
J. B. BENEDICT, ARCHITECT



SECOND FLOOR PLAN



FIRST FLOOR PLAN



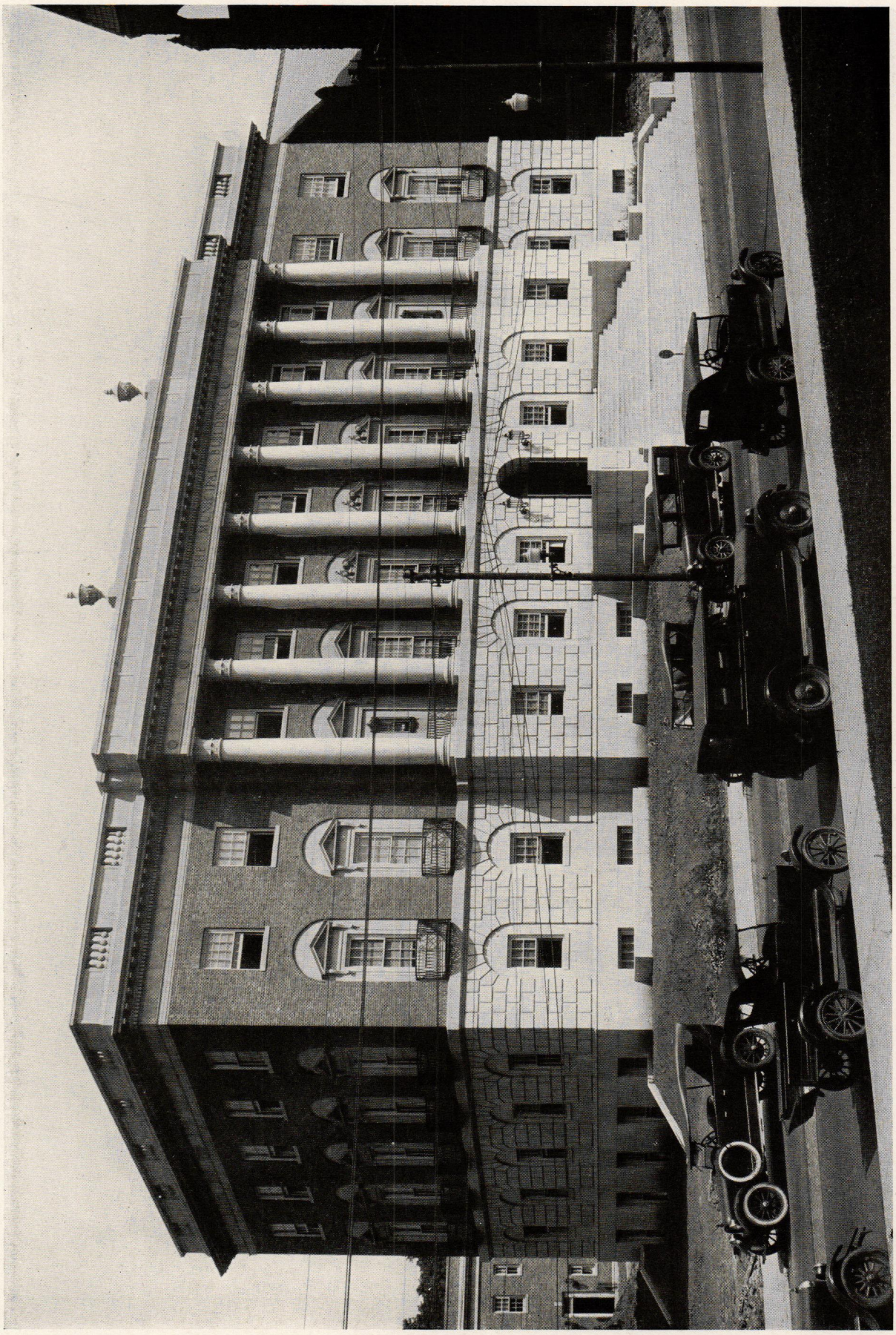
DETAIL OF WINDOW
SECOND STORY

PLANS AND DETAIL OF TOWN HALL

J B. BENEDICT ARCHITECT
DENVER, COLORADO

JUNE 1927

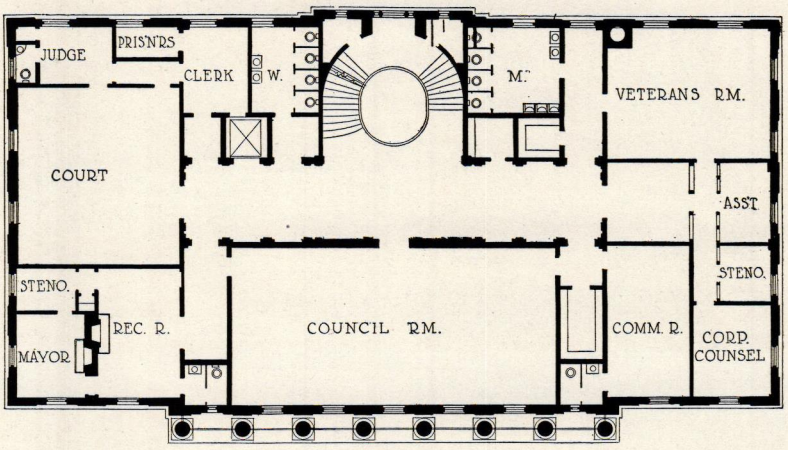
NO. 31



Plans on Back

MUNICIPAL BUILDING, WHITE PLAINS, N. Y.
JOSEPH H. FREEDLANDER, ARCHITECT

Photo. Wurts Bros.



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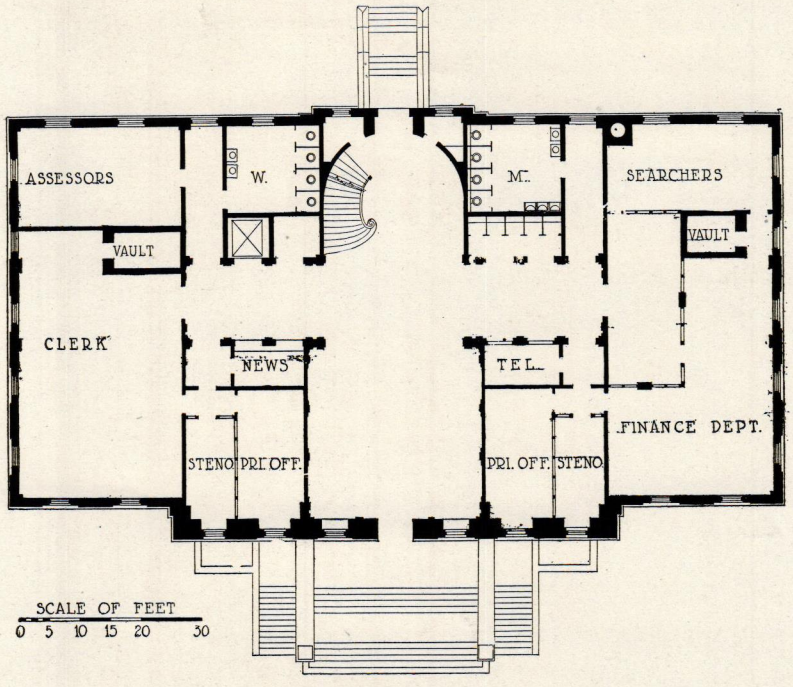
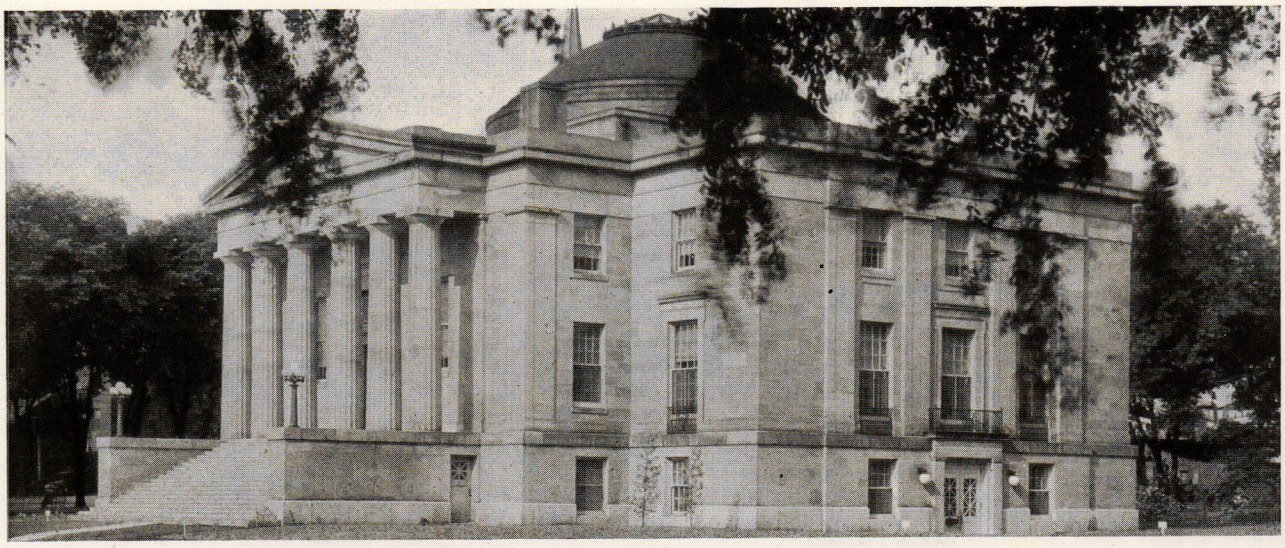


FIRST FLOOR

PLANS, MUNICIPAL BUILDING, WHITE PLAINS, N. Y.

JOSEPH H. FREEDLANDER, ARCHITECT



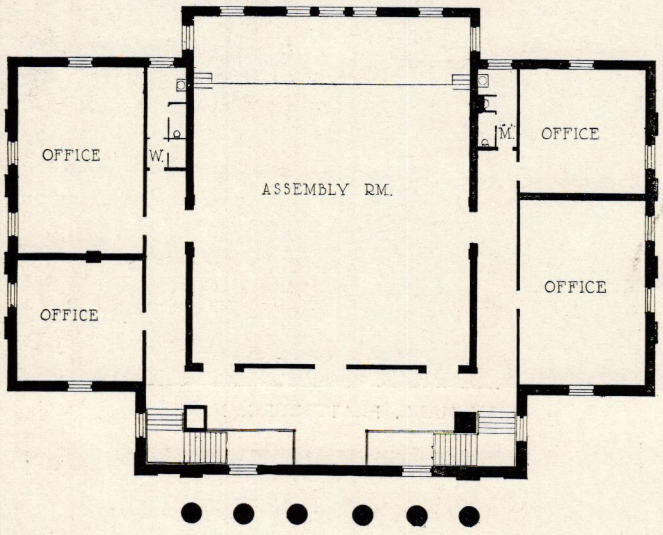
CITY HALL, PLATTSBURG, N. Y.

Photos. John Wallace Gillies

Plans on Back

DETAIL, CITY HALL, PLATTSBURG, N. Y.

JOHN RUSSELL POPE, ARCHITECT



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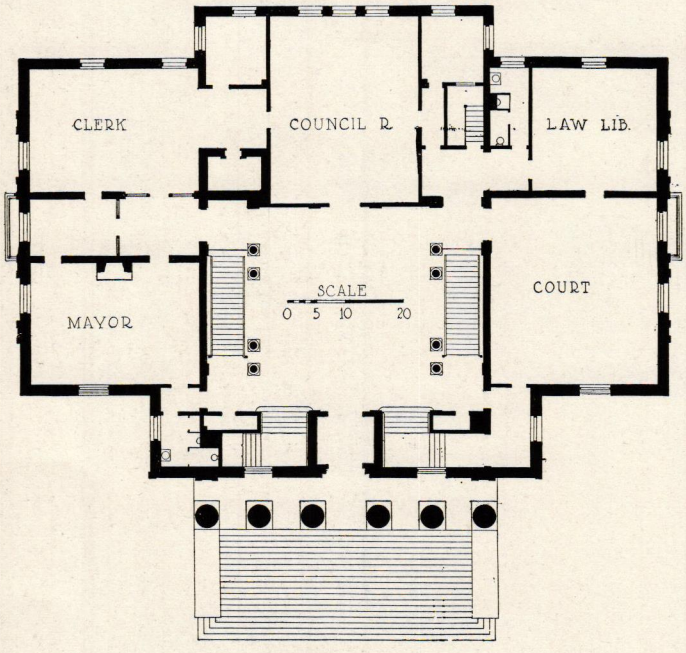
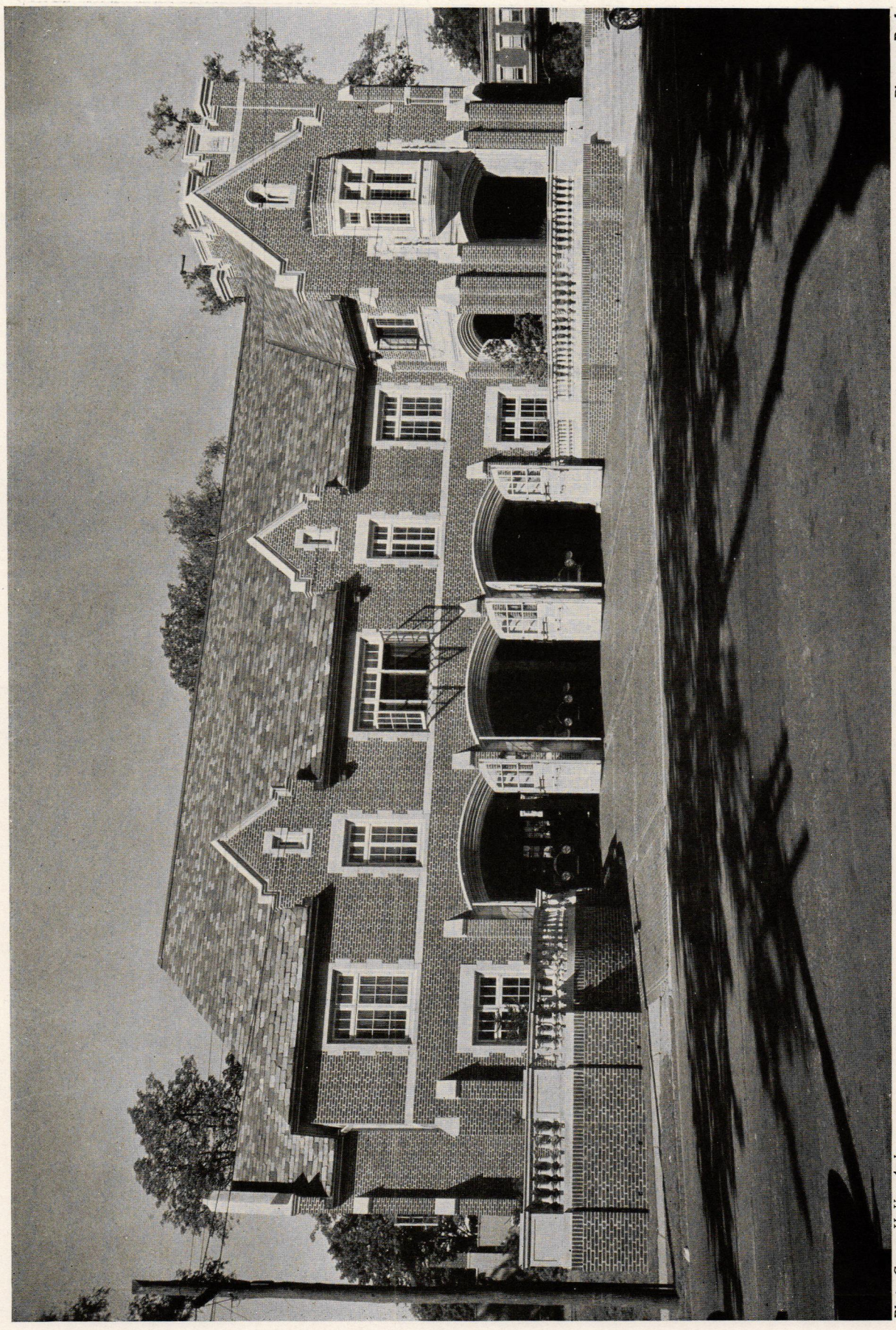


FIRST FLOOR

PLANS, CITY HALL, PLATTSBURG, N. Y.

JOHN RUSSELL POPE, ARCHITECT

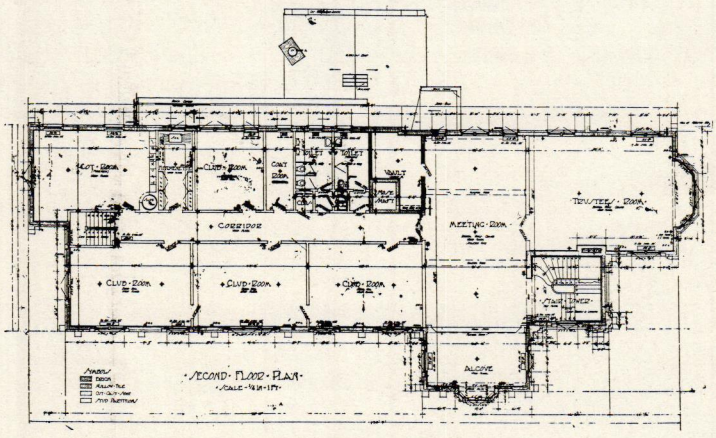


Plans on Back

FIRE HOUSE AND TOWN HALL, LARCHMONT, N. Y.

FRANK MOORE, ARCHITECT

Photo. George H. Van Anda



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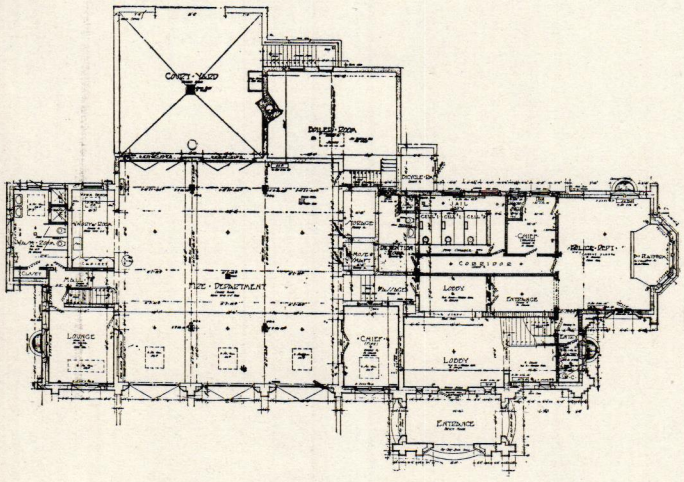


GROUND FLOOR

PLANS, FIRE HOUSE AND TOWN HALL, LARCHMONT, N. Y.

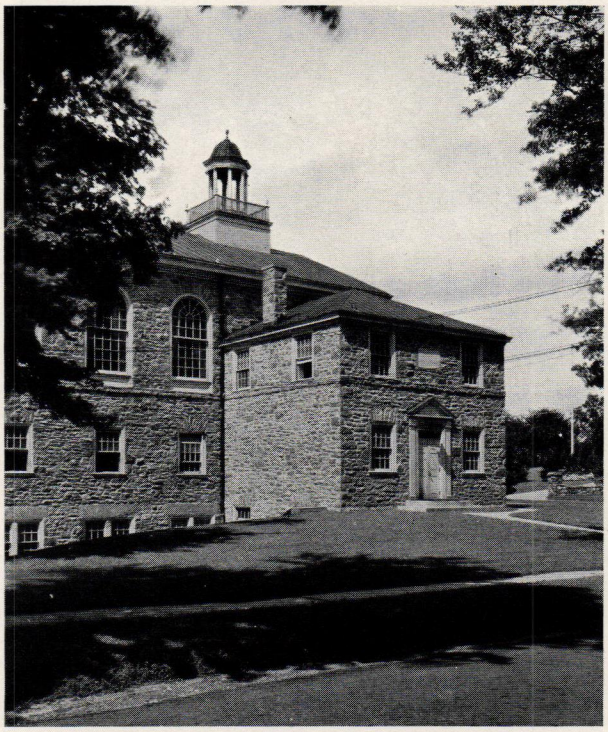
FRANK MOORE, ARCHITECT

Fire House and Auditorium, Larchmont, N. Y.

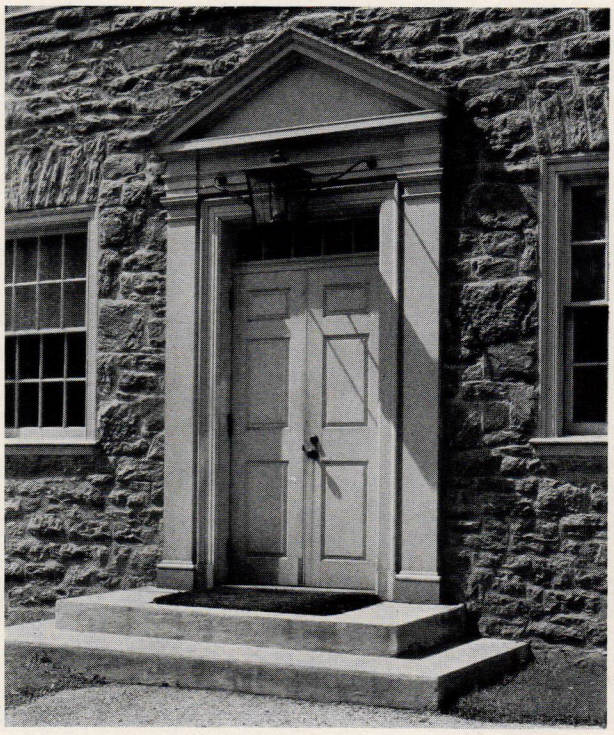
CHARLES F. MINK, Architect; OTTO R. EGGERS, Associated

WHEN the Town Board of Larchmont found that new quarters for its fire department were needed, it was decided to hold a competition for designs for a building to properly accommodate its equipment. In addition to space for the fire department, club quarters for volunteer firemen, including an auditorium, were to be included in the building. The site purchased was most admirable. It is a plot 200 by 250 feet, with streets on three sides. Large trees are on one side and in the background. The front faces Weaver Street, an old road over which Washington marched on to White Plains. The architects who designed and planned the building chose the early American style. Local stone, which was easily obtainable in the vicinity, was used for the exterior walls. The stone varies considerably in color, including gray, orange and browns in its range, and is laid with a warm toned mortar, brought out not quite flush with the stone faces. Windows, doors, trim and cupola are of wood, painted a light cream. The roof is of copper with standing seams, the copper left the natural color to weather with exposure.

As the basement is considerably below grade, the matter of securing light and air was of great importance. To overcome the objection to areas, which would have made dark and dreary rooms, the ground level was gently graded down to the window sills, so that grass is visible from inside. This arrangement has made the basement rooms very pleasant. Bowling alleys, billiard room, club room, boiler and coal rooms are all located on this floor. The main entrance to the auditorium is from the side street through an impressive paneled hall. The fire apparatus room, office, kitchen and firemen's reception rooms are placed around the apparatus room. The second floor contains an auditorium seating about 400 people with a stage at one end. Men's and women's rest rooms adjoin at the rear. Sleeping quarters for firemen are also provided. A feature of the plan arrangement is that the club rooms, auditorium and the fire apparatus room may all be used at one time without interference with one another. Examination of the illustration upon Plate 128 and the floor plans upon the back will show that the building has been designed and arranged with unusual taste and skill. Its restrained and dignified architecture would well entitle the structure to an honored place in even the most distinguished surroundings; the rich color and texture of the stone are well set off by the cream color of the trim; the arrangement of the large windows which light the auditorium is entirely successful, and the cupola or belfry suggests New England architecture at its best. Study of the plans will show the skill with which the building has been arranged to meet rather broad requirements. The wide doors intended for fire apparatus open, as they should, directly into the apparatus room, making passing in and out easy. Since this fire house is served by a volunteer company, the sleeping accommodations usually necessary in a fire station are probably not required, but (entirely apart from the auditorium) the structure contains complete offices, kitchen, etc.



View from Side Street



An Entrance Door

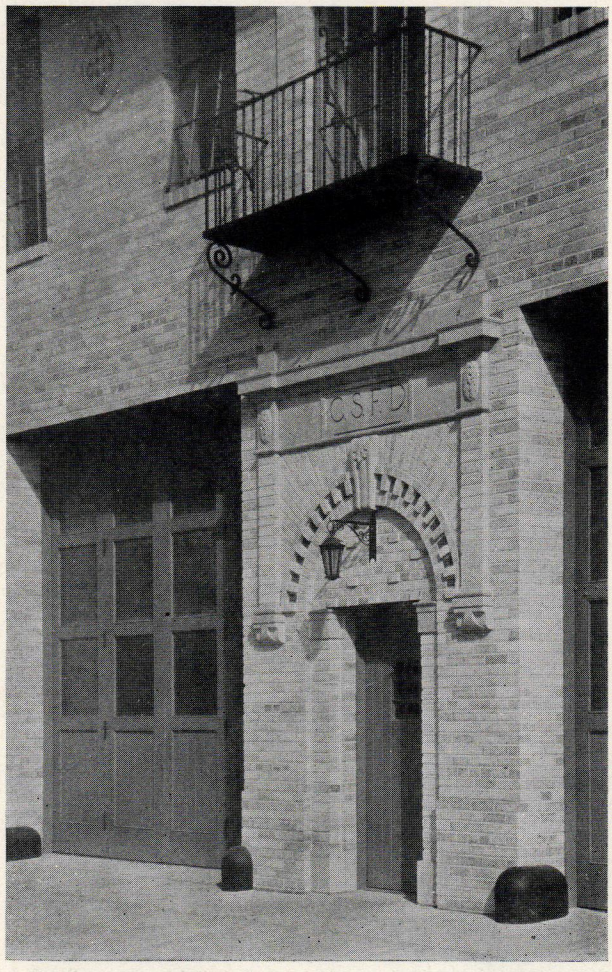
On the Designing of Fire Houses

THROUGH departmental standardization, the designing of the fire house is now a very simple matter, admitting of little variation. There is not even a classification into types, since all the houses are designed to accommodate two pieces of apparatus and their crews or companies. The house designed to accommodate more, like a fire company house being built in Jamaica, N. Y., is exceptional, as it is considered more desirable to have a number of smaller units widely distributed than to have a concentration of apparatus in any one place. Site is a factor also, as land with more than a 50-foot front is often hard to find, and the model plans have been laid out, as a rule, on a basis of 50 feet of frontage.

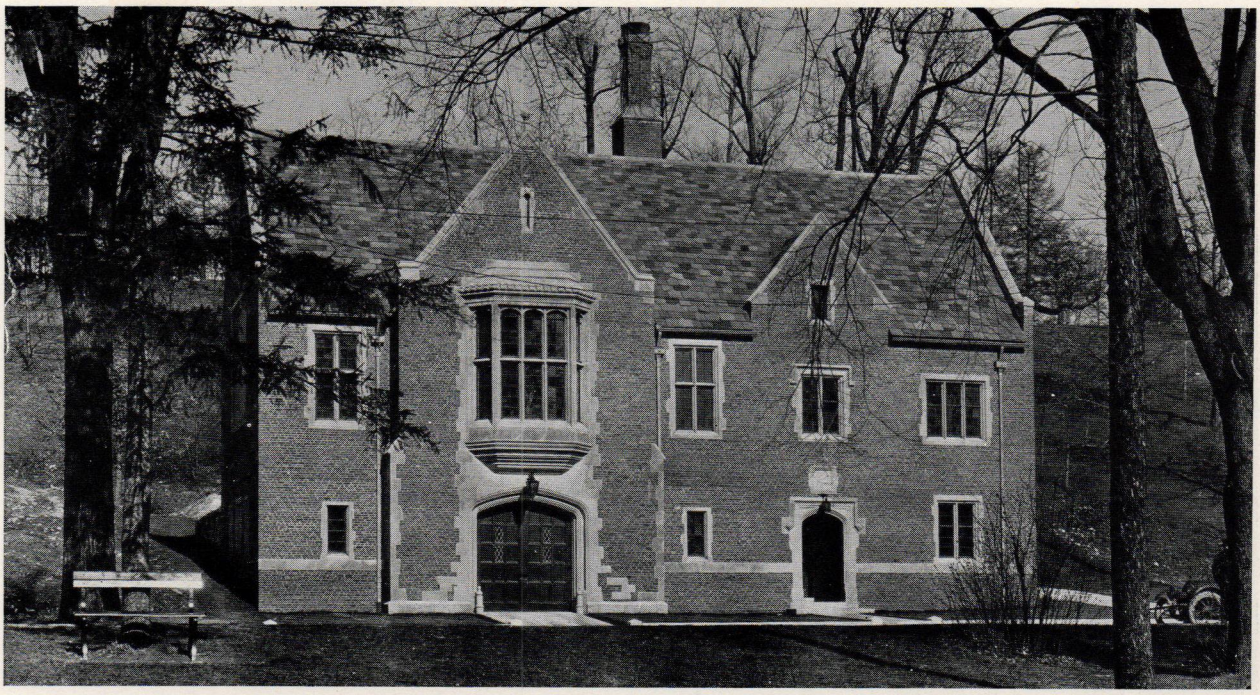
The standard fire-fighting unit to be accommodated by the newest type of fire house in New York consists of two pieces of apparatus,—an engine and a hook-and-ladder truck, each with its company. The company consists of from 14 to 20 men, of whom not less than half are on duty at any given time of the night or day. Their time, in other words, is "half on and half off," but the dormitory accommodations provide for the full complement of men. In most houses there is also provision for separate quarters for a battalion chief or deputy chief. The dormitory is a perfectly plain room with metal cots in a row, and standard steel lockers. A wash room opens from the dormitory, and in addition to stairs down to the main floor, the old pole for the quick sliding descent of the men is still a part of the standard design, though its location is not always the same.

Other than these few governing factors there are no special requirements in the designing of the modern fire house. Its construction is fireproof, and the exterior is generally simply treated in brick and stone, with no expenditure on ornamental effects. In some instances the desirability of relationship to neighboring architecture becomes a factor in the design of the exterior, as in a fire house now being built at Forest Hills Gardens, or in the fire house which is joined to the picturesque half-timbered Y. M. C. A. building lately erected at Westport, Conn.

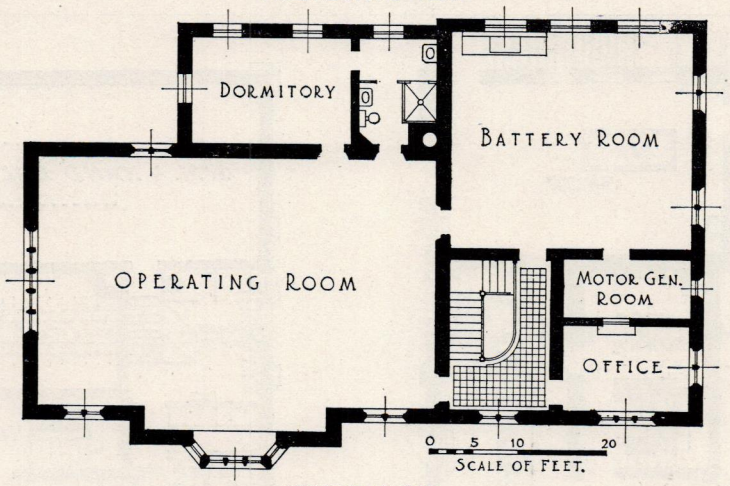
Fire Truck Entrance, Fire Station, Cleveland
Herman Kregelius, Architect



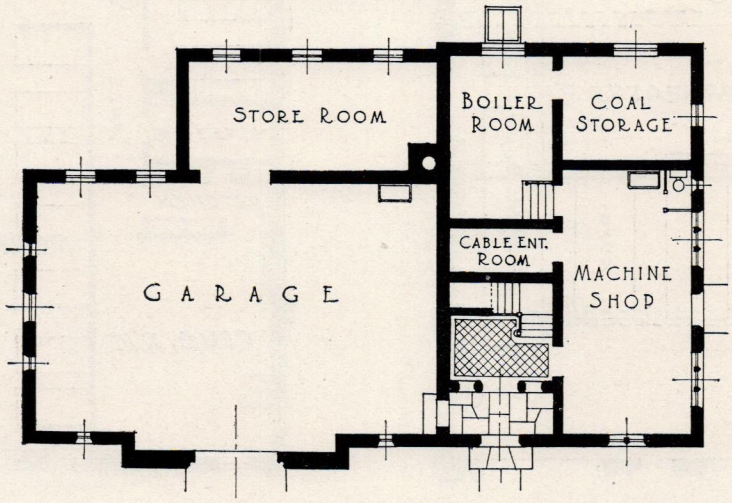
Doorway, Fire Station, Colorado Springs
T. MacLaren, Architect



PERSPECTIVE VIEW

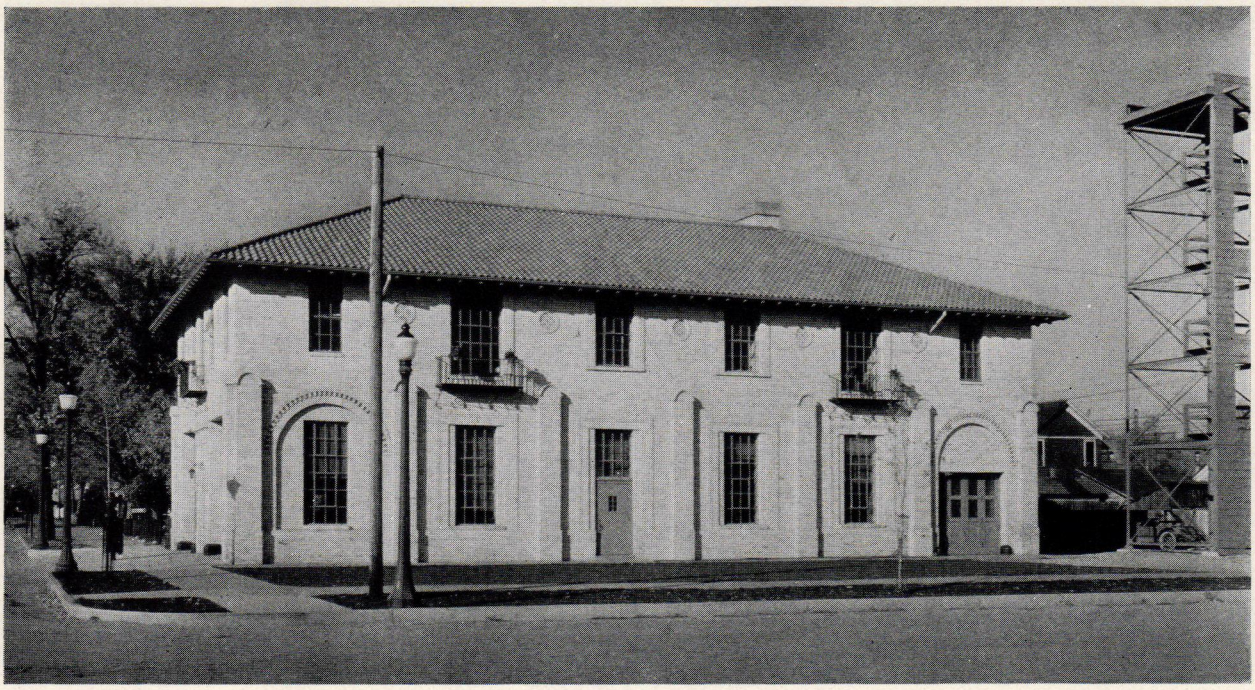


SECOND FLOOR

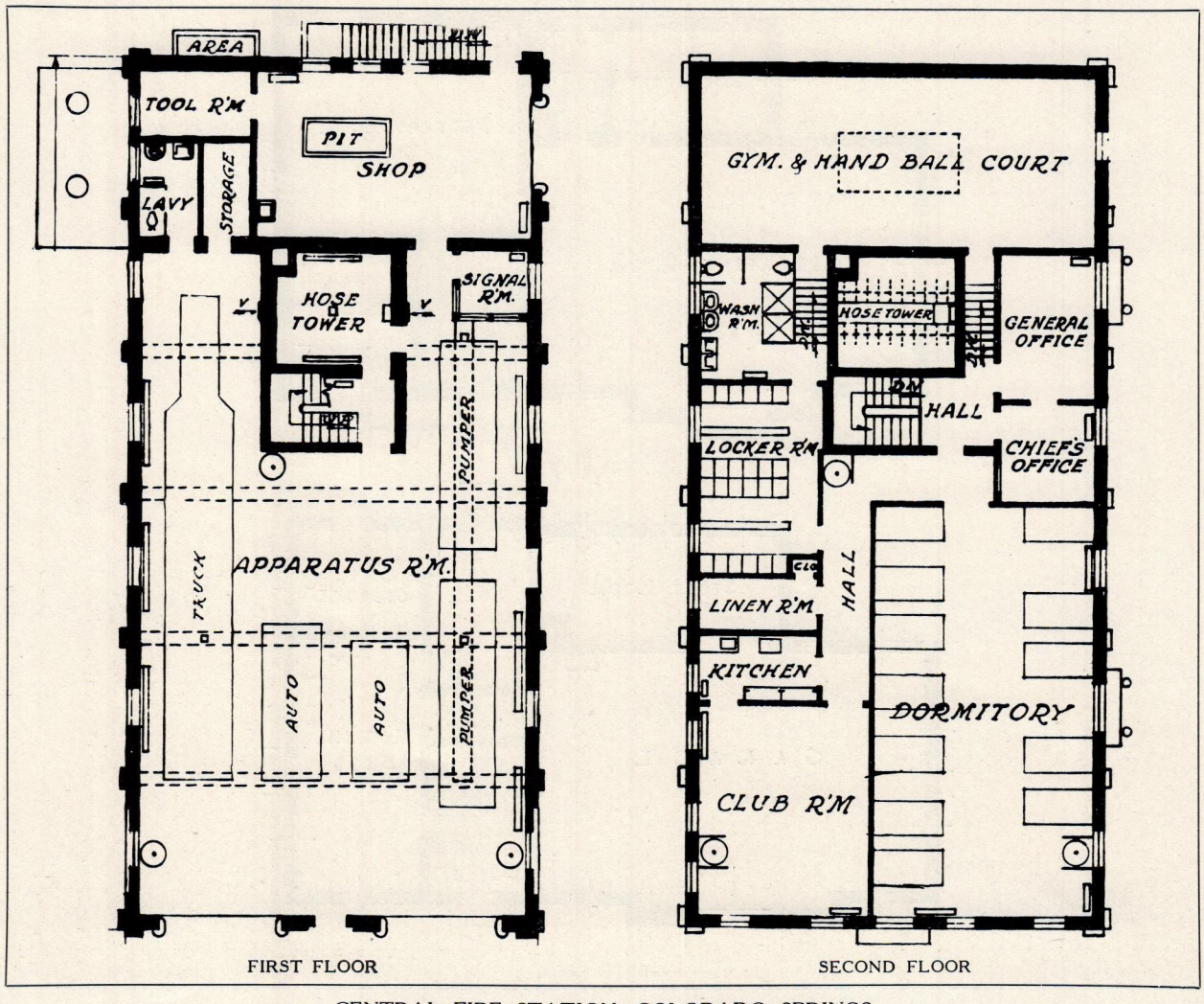


FIRST FLOOR

FIRE ALARM TELEGRAPH STATION, WORCESTER, MASS.
L. W. BRIGGS COMPANY, ARCHITECTS



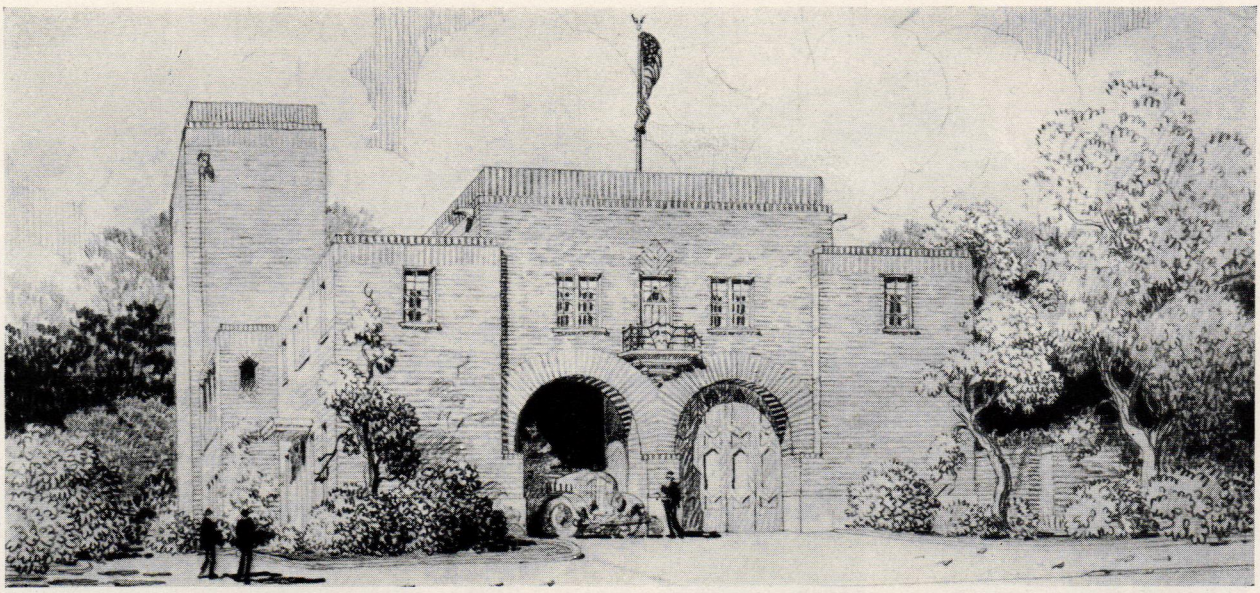
SOUTHWEST VIEW

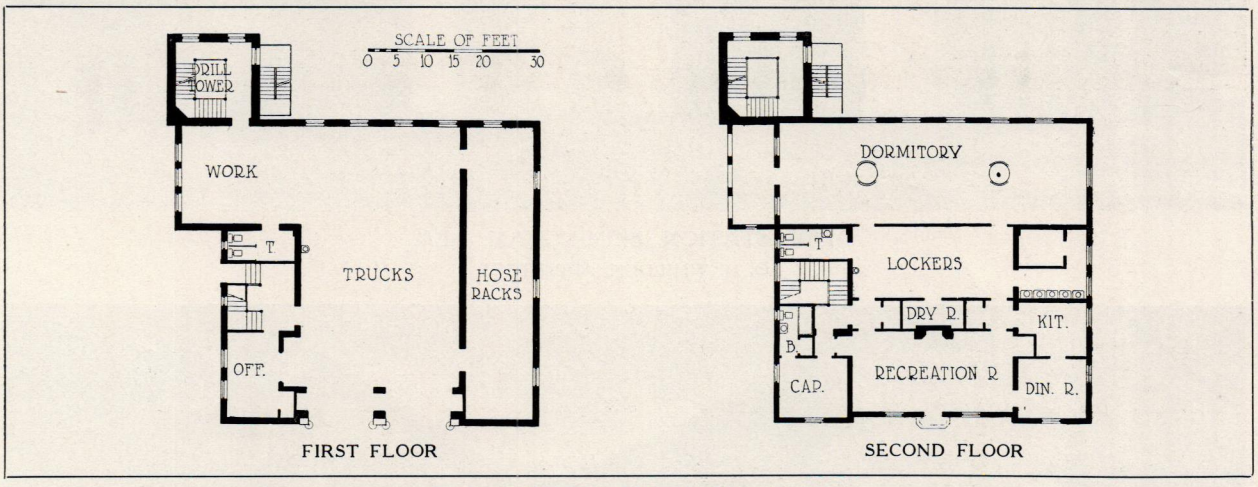


FIRST FLOOR SECOND FLOOR

CENTRAL FIRE STATION, COLORADO SPRINGS

T. MacLAREN, ARCHITECT





FIRE STATION, ASHEVILLE, N. C.
DOUGLAS D. ELLINGTON, ARCHITECT

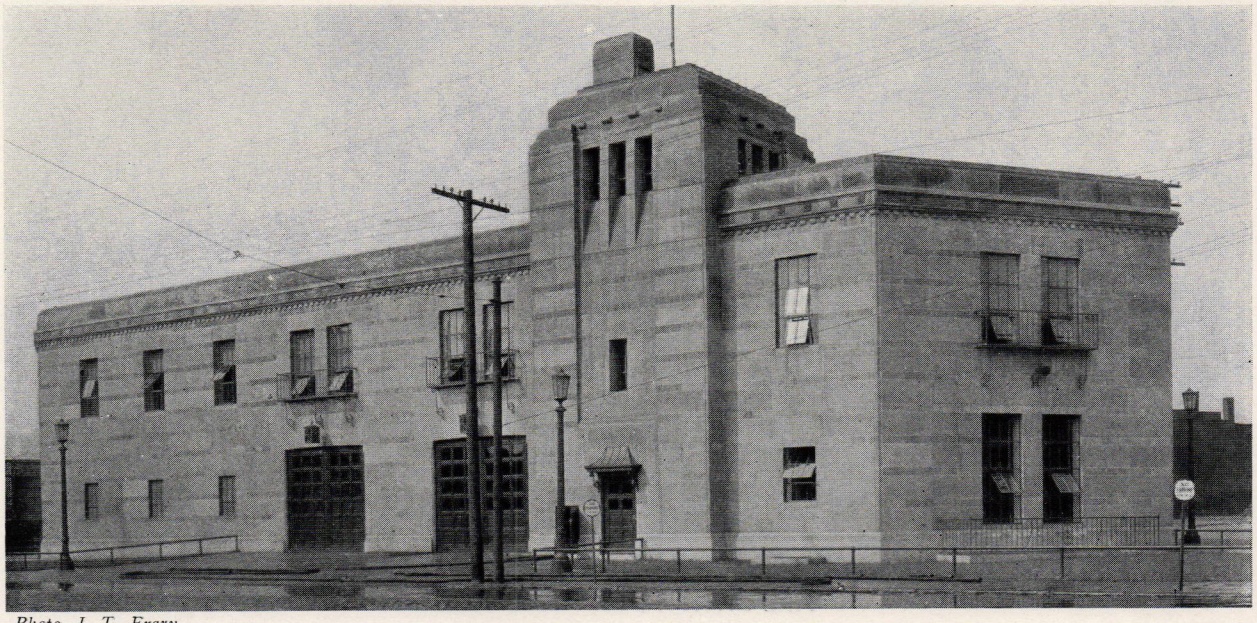


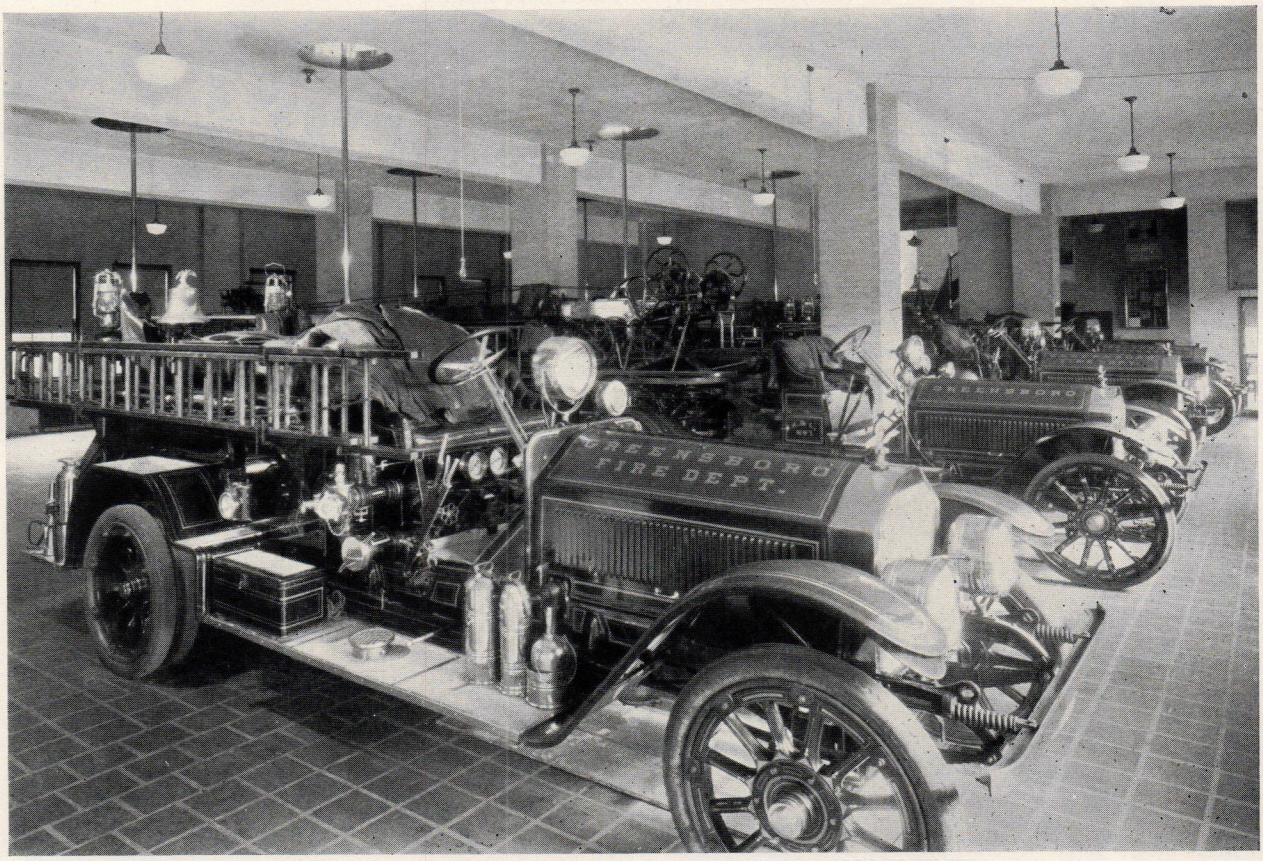
Photo. I. T. Frary

FIRE STATION AND SIGNAL HEADQUARTERS, CLEVELAND
HERMAN KREGELIUS, ARCHITECT

FIRE STATION, BIRMINGHAM, ALA.
O. D. WHILDEN, ARCHITECT

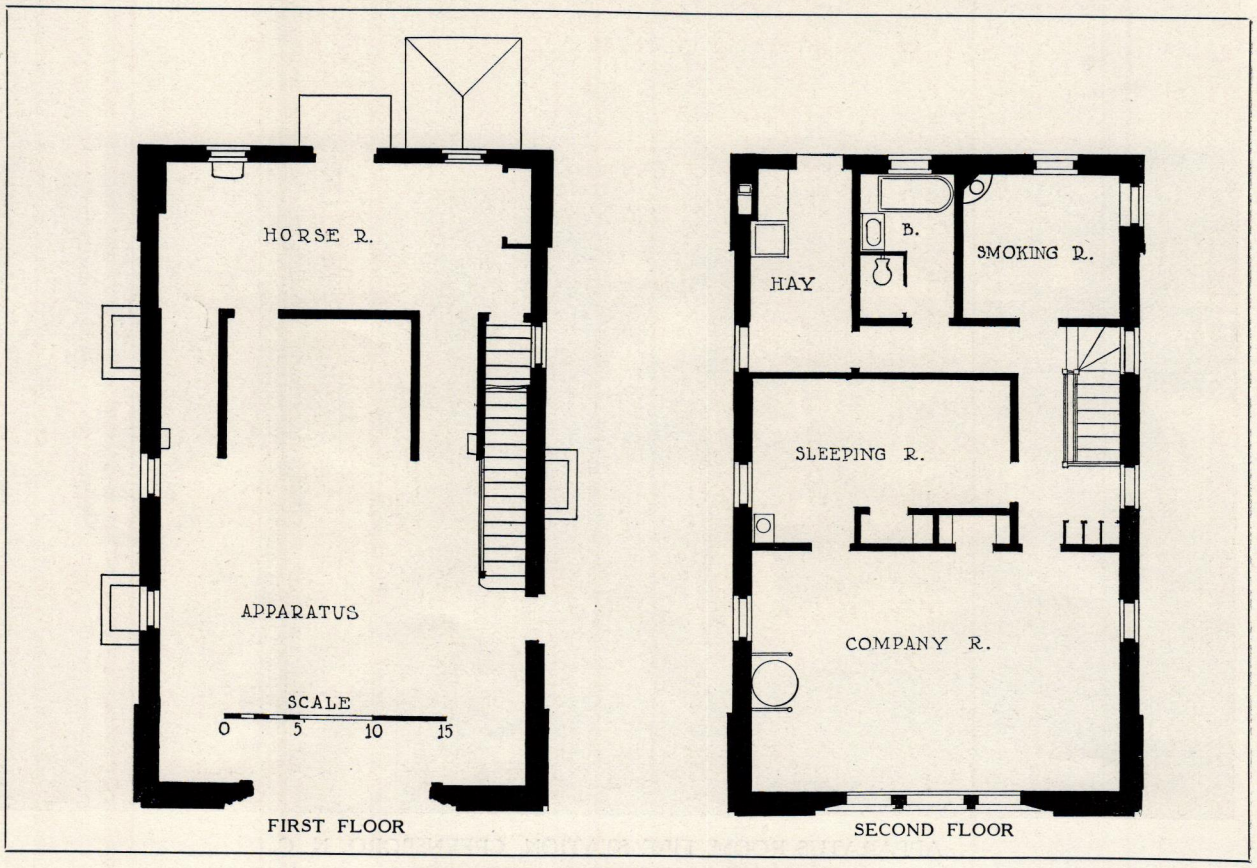
FIRE STATION, DANVERS, MASS.
STEBBINS & WATKINS, ARCHITECTS

FIRE STATION, GREENSBORO, N. C.
CHARLES C. HARTMAN, ARCHITECT



APPARATUS ROOM, FIRE STATION, GREENSBORO, N. C.
CHARLES C. HARTMAN, ARCHITECT

FIRE STATION, BEVERLY, MASS.
KILHAM, HOPKINS & GREELEY, ARCHITECTS



PLANS, FIRE STATION, BEVERLY, MASS.
KILHAM, HOPKINS & GREELEY, ARCHITECTS

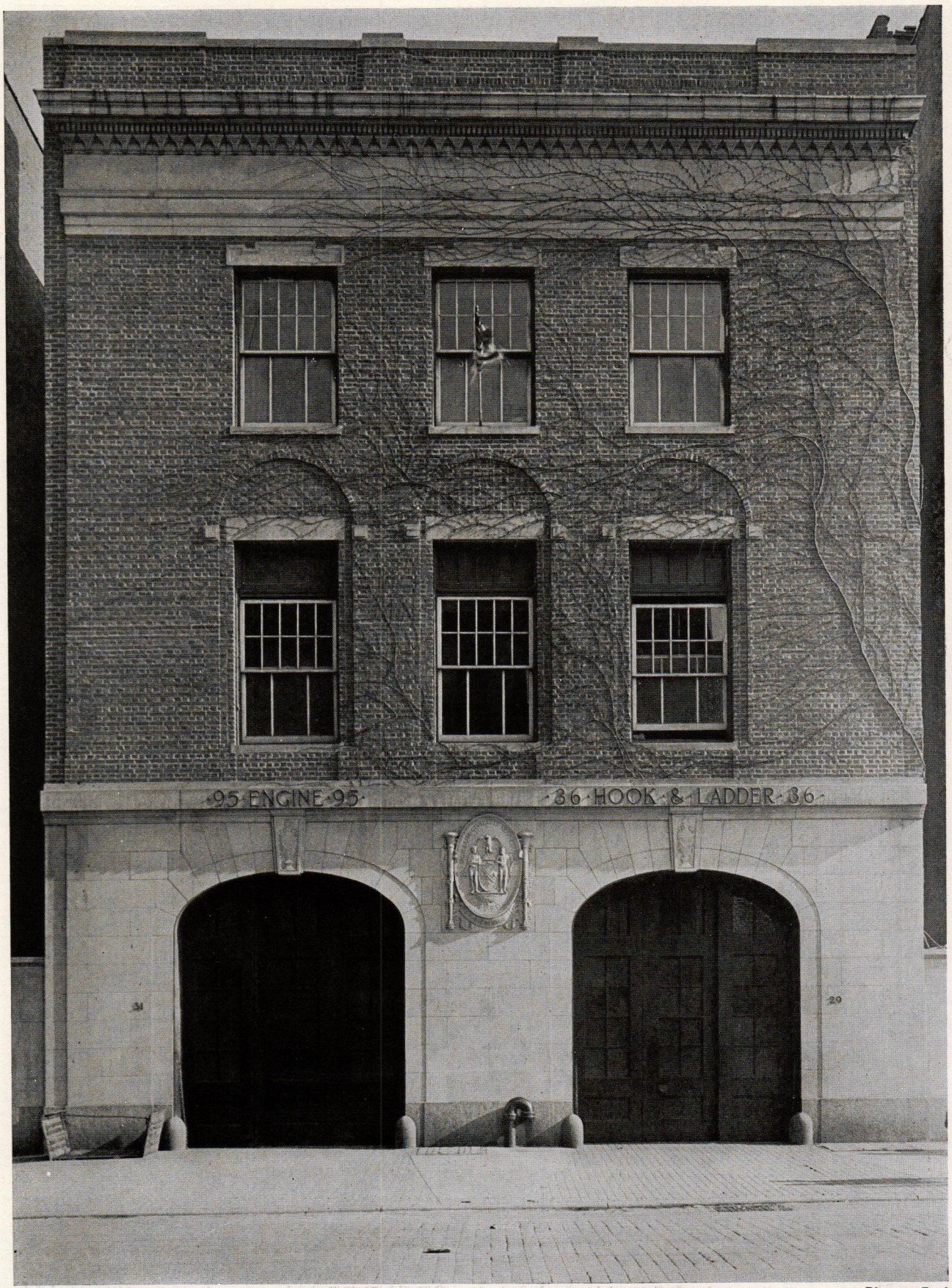
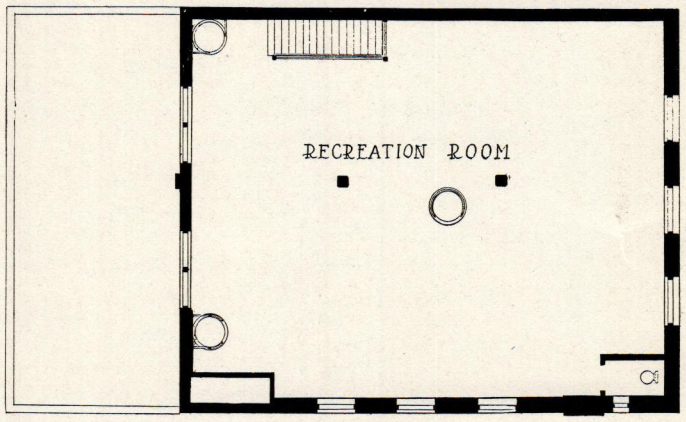


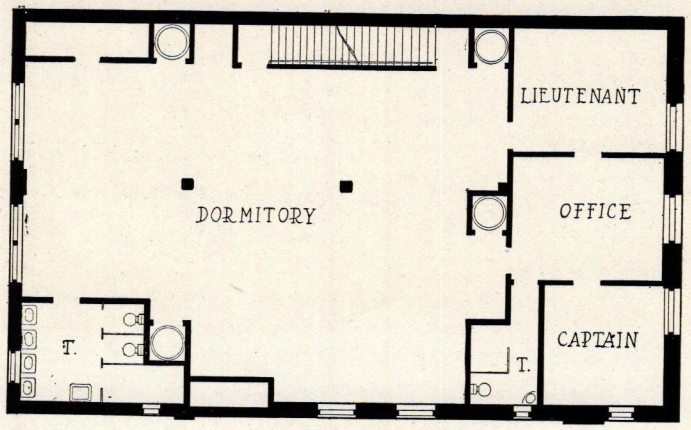
Photo. Drix Duryea

Plans on Back

FIRE HOUSE, VERMILYEA AVENUE, NEW YORK
DENNISON & HIRONS, ARCHITECTS



THIRD FLOOR



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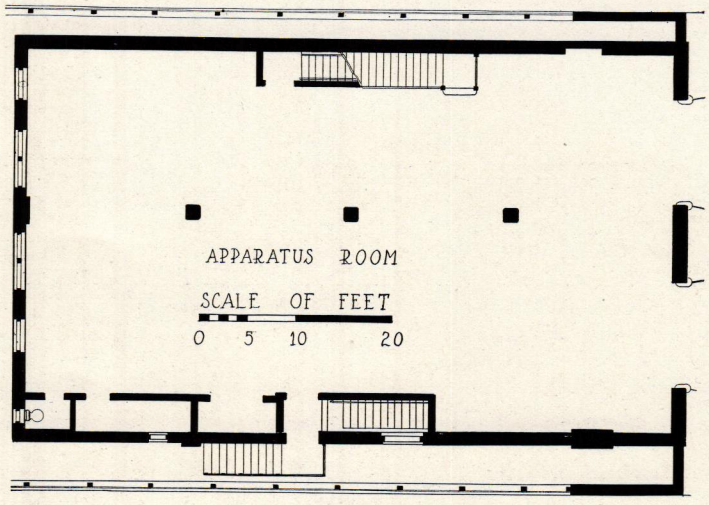


FIRST FLOOR

PLANS, FIRE HOUSE, VERMILYEA AVENUE, NEW YORK

DENNISON & HIRONS, ARCHITECTS

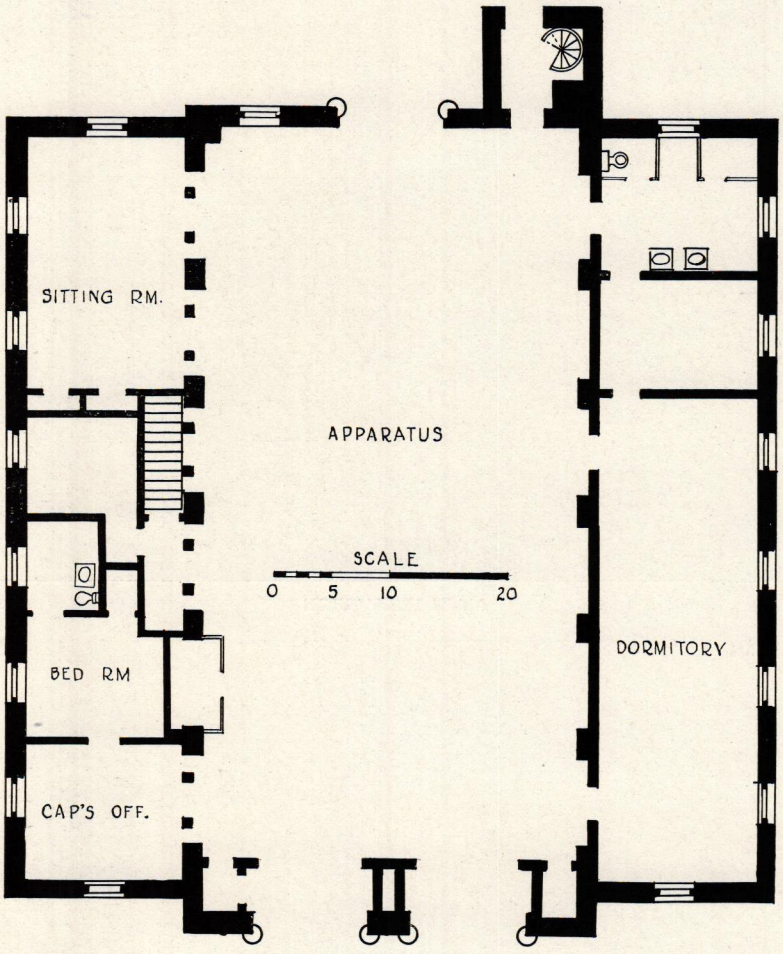
MAIN ELEVATION

Photos. P. H. B. Wallace

Plans on Back

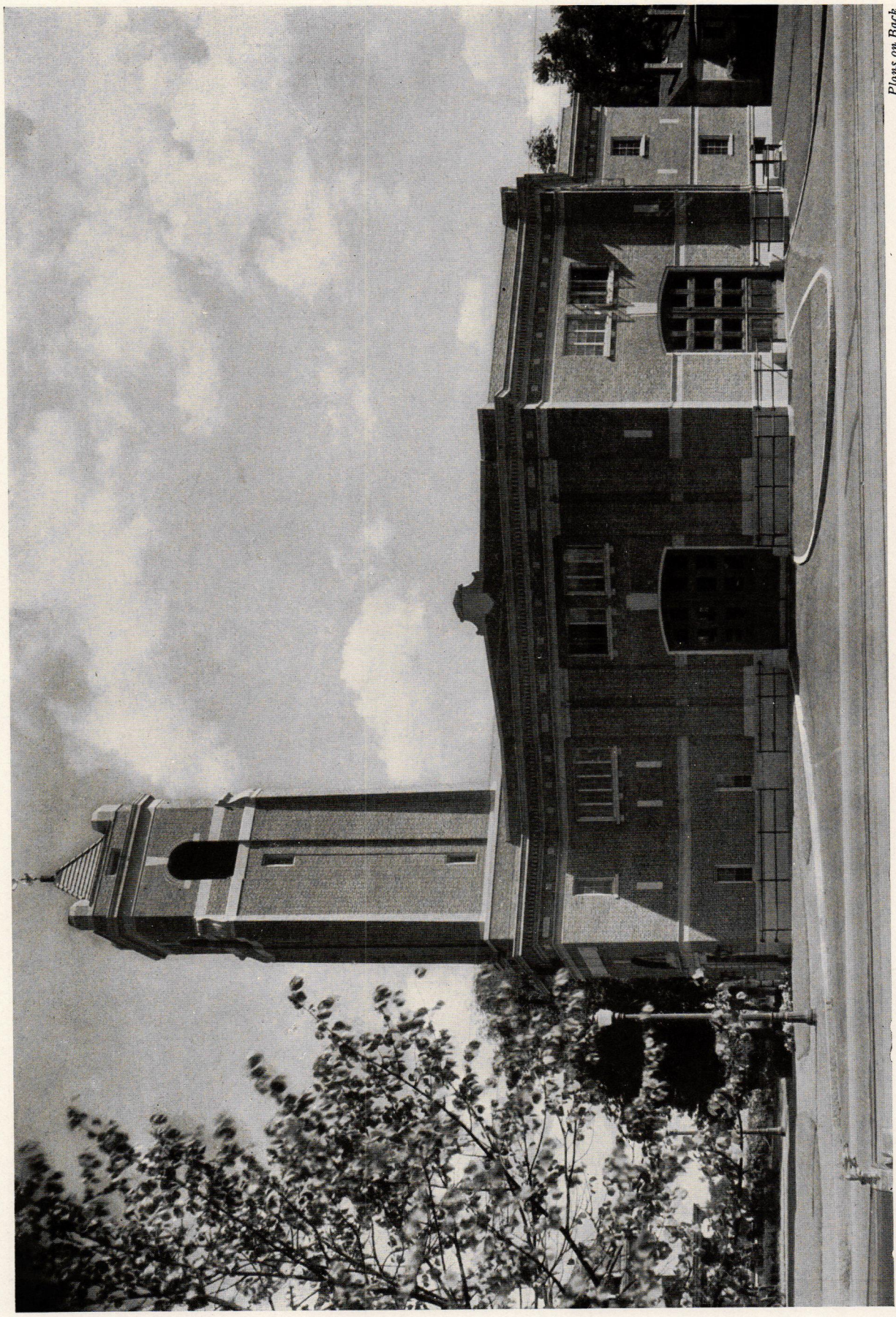
BYBERRY FIRE HOUSE, PHILADELPHIA

RANKIN, KELLOGG & CRANE, ARCHITECTS



PLANS, FIRST FLOOR, BYBERRY FIRE HOUSE, PHILADELPHIA

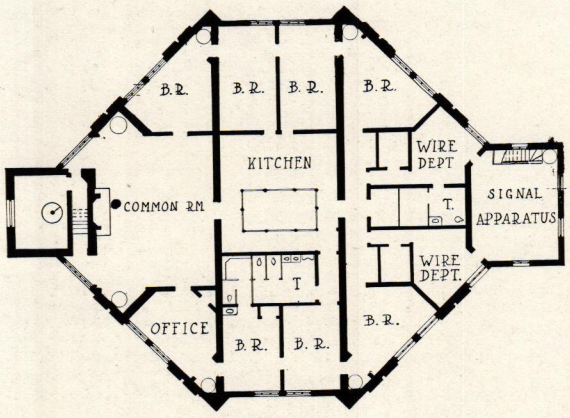
RANKIN, KELLOGG & CRANE, ARCHITECTS



Plans on Back

FIRE STATION, ARLINGTON, MASS.

Photo. Paul J. Weber



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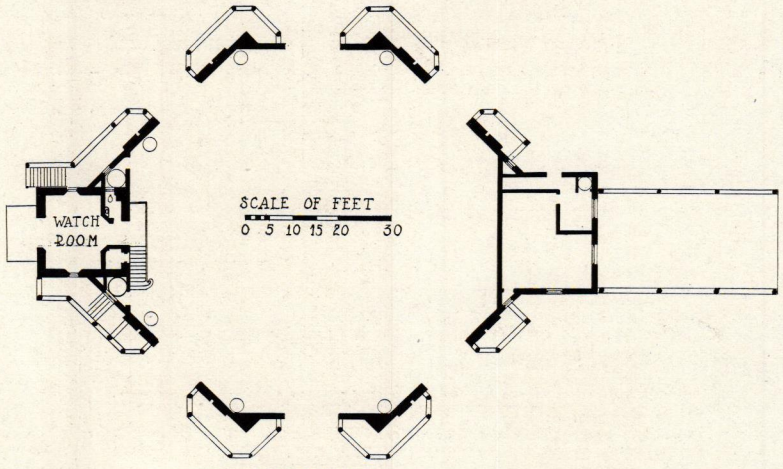
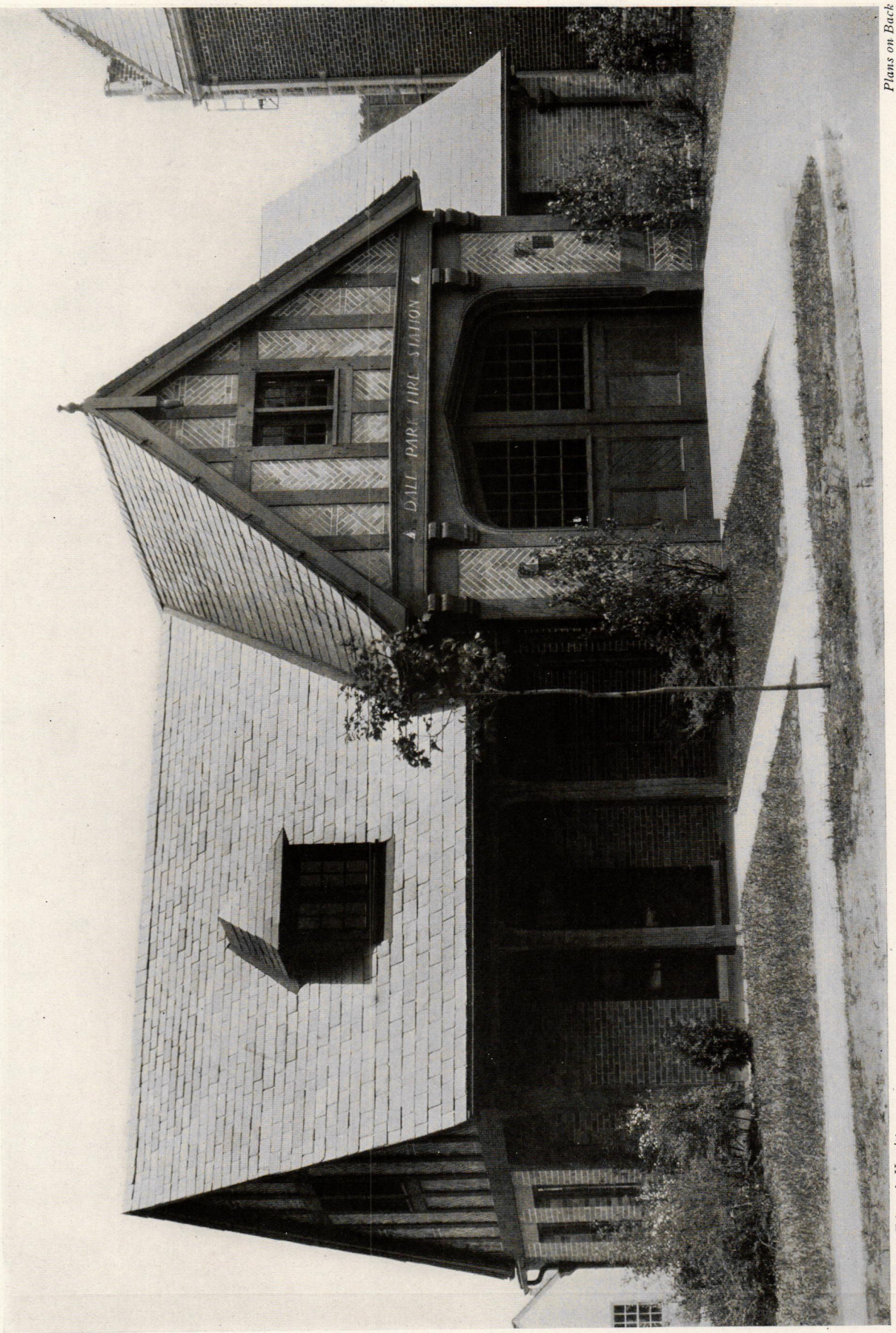


FIRST FLOOR

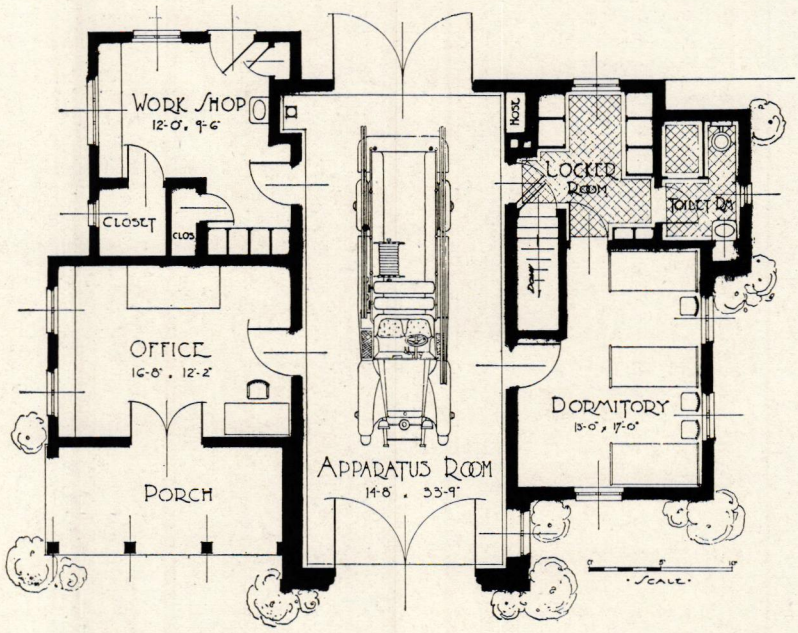
PLANS, FIRE STATION, ARLINGTON, MASS.



Plans on Back

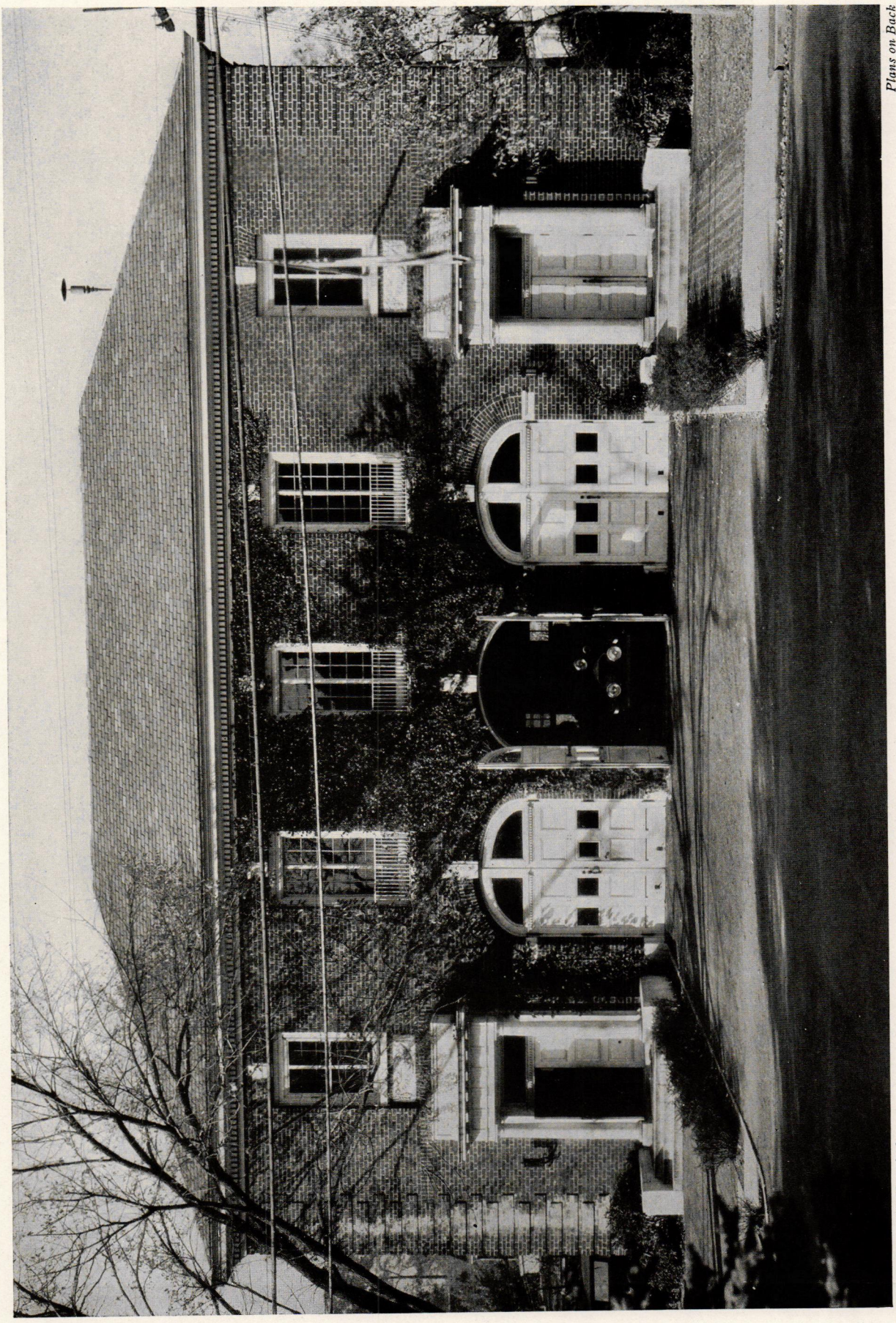
FIRE STATION, MARIEMONT, O.
CHARLES F. CELLARIUS, ARCHITECT

Photo. Mattie Edwards Hewitt



PLANS, FIRE STATION, MARIEMONT, O.

CHARLES F. CELLARIUS, ARCHITECT

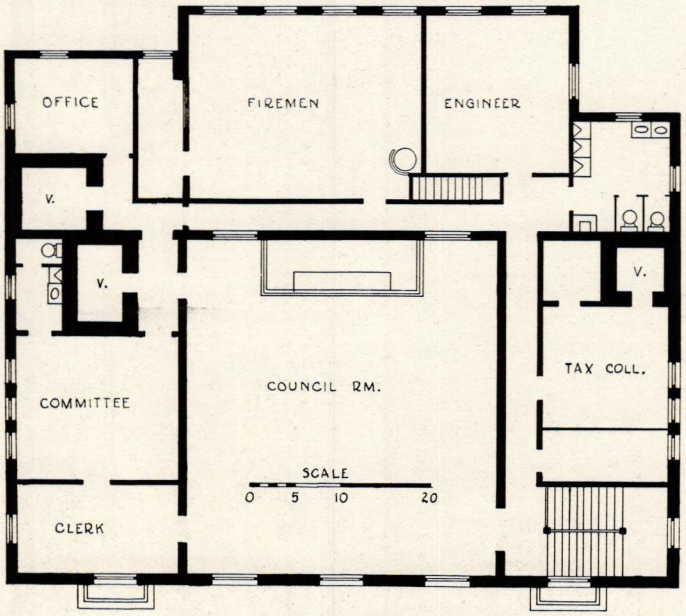


Plans on Back

FIRE STATION AND POLICE HEADQUARTERS, MILBURN, N. J.

HORATIO W. OLCOTT, ARCHITECT

Photo. George H. Van Anda



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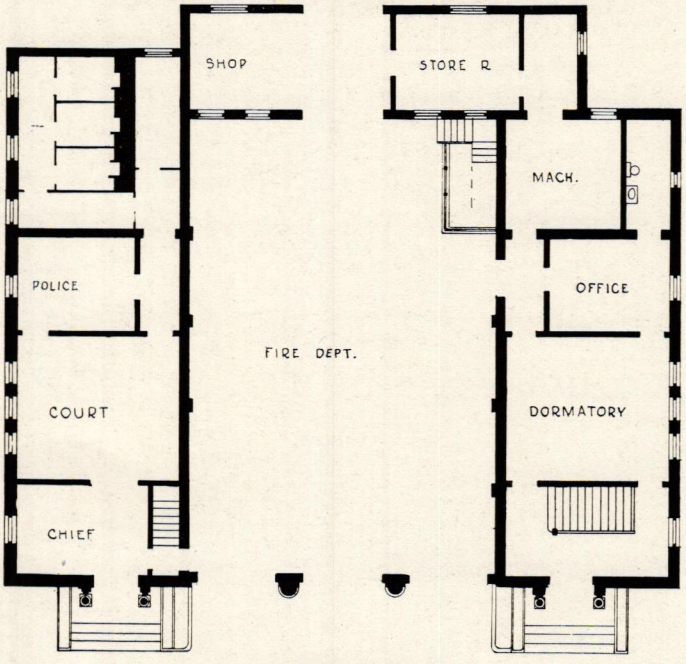
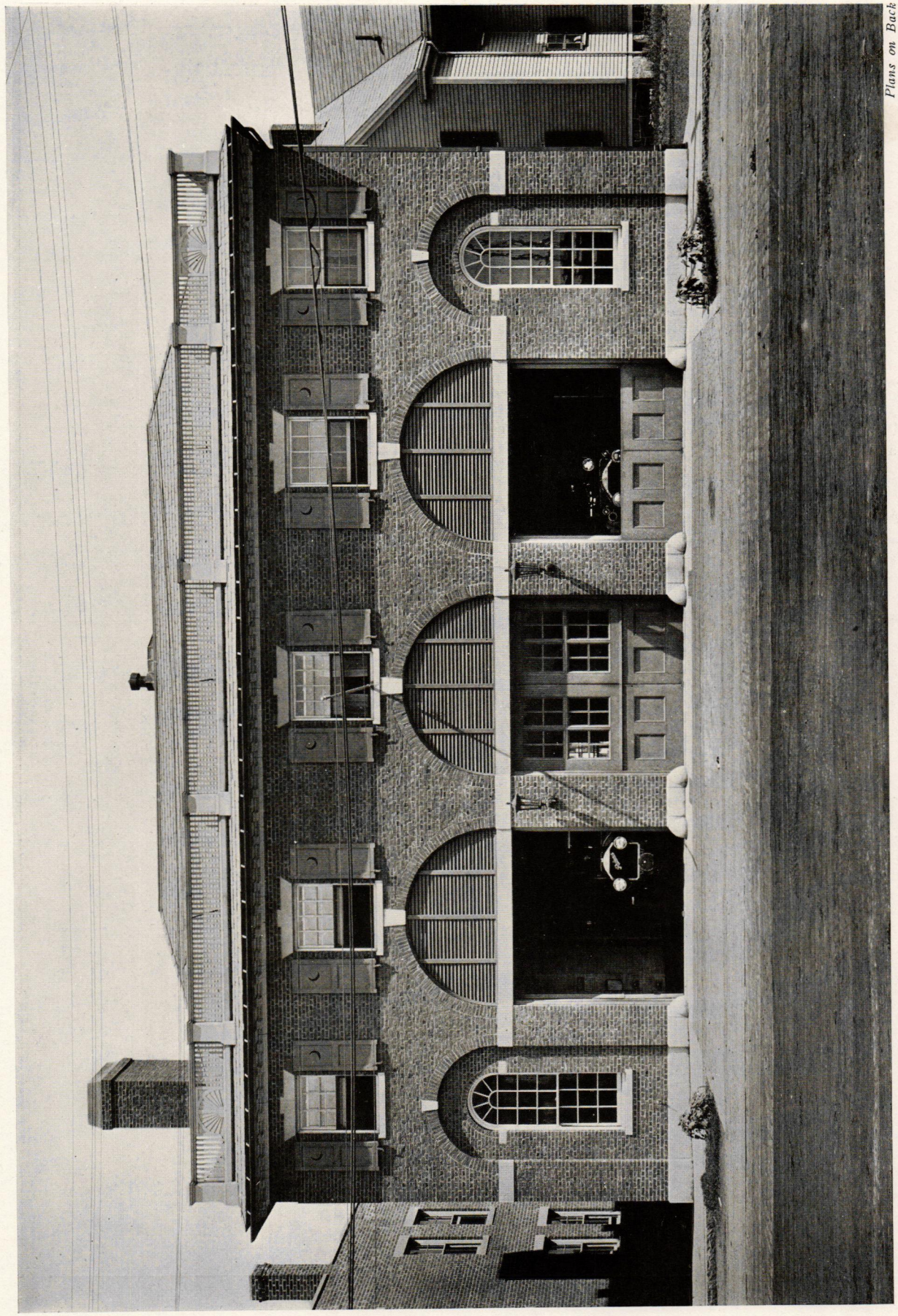


FIRST FLOOR

PLANS, FIRE STATION AND POLICE HEADQUARTERS, MILBURN, N. J.

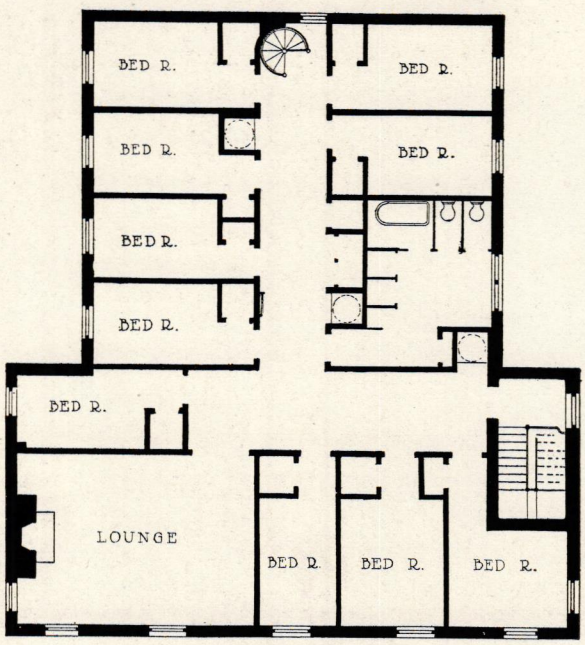
HORATIO W. OLCOTT, ARCHITECT



Plans on Back

FIRE STATION, SALEM, MASS.

KILHAM, HOPKINS & GREELEY, AND P. H. SMITH, ARCHITECTS



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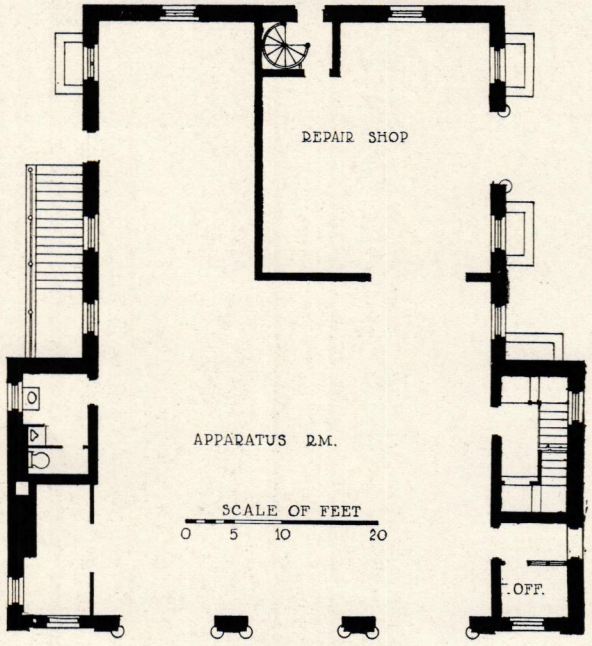
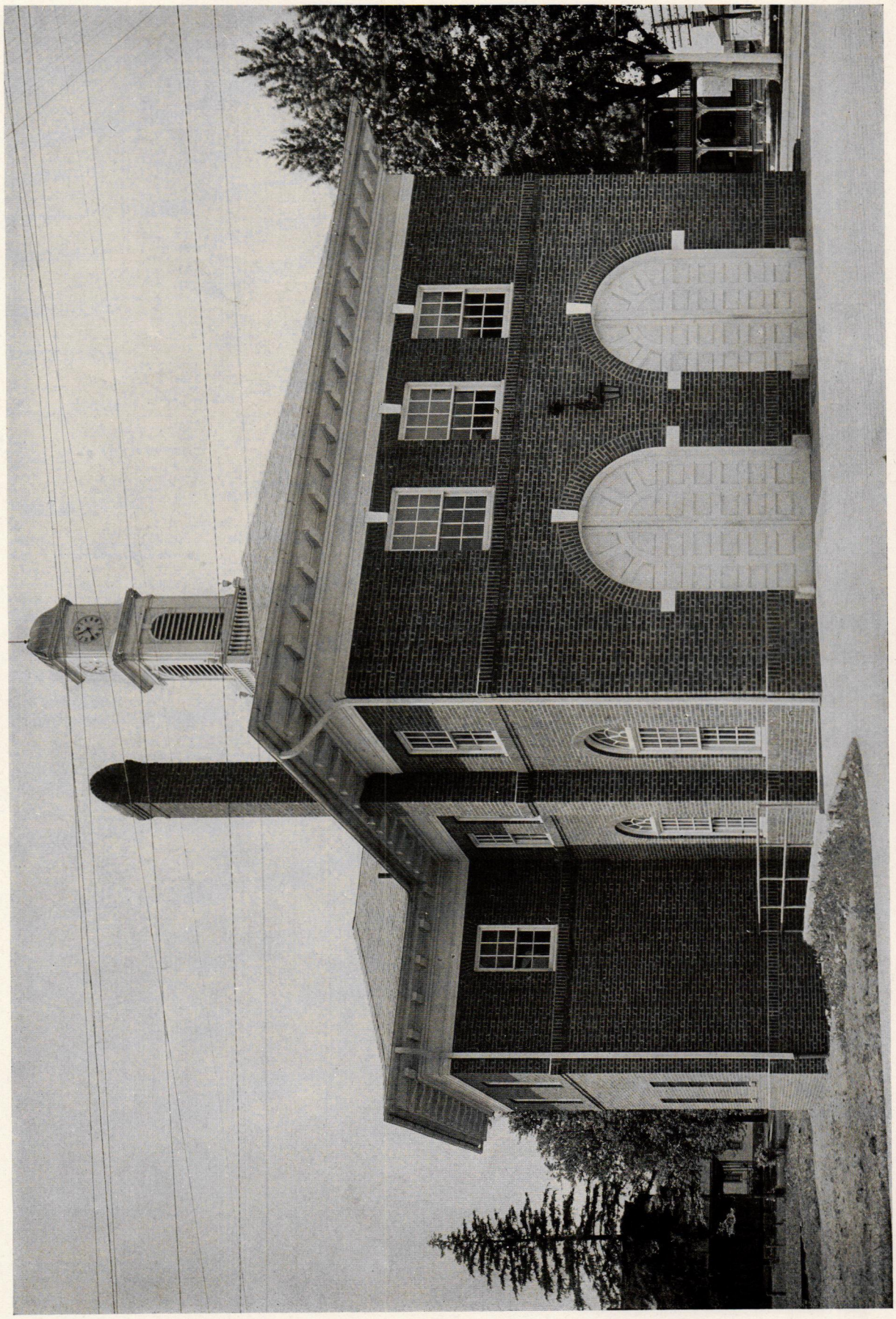


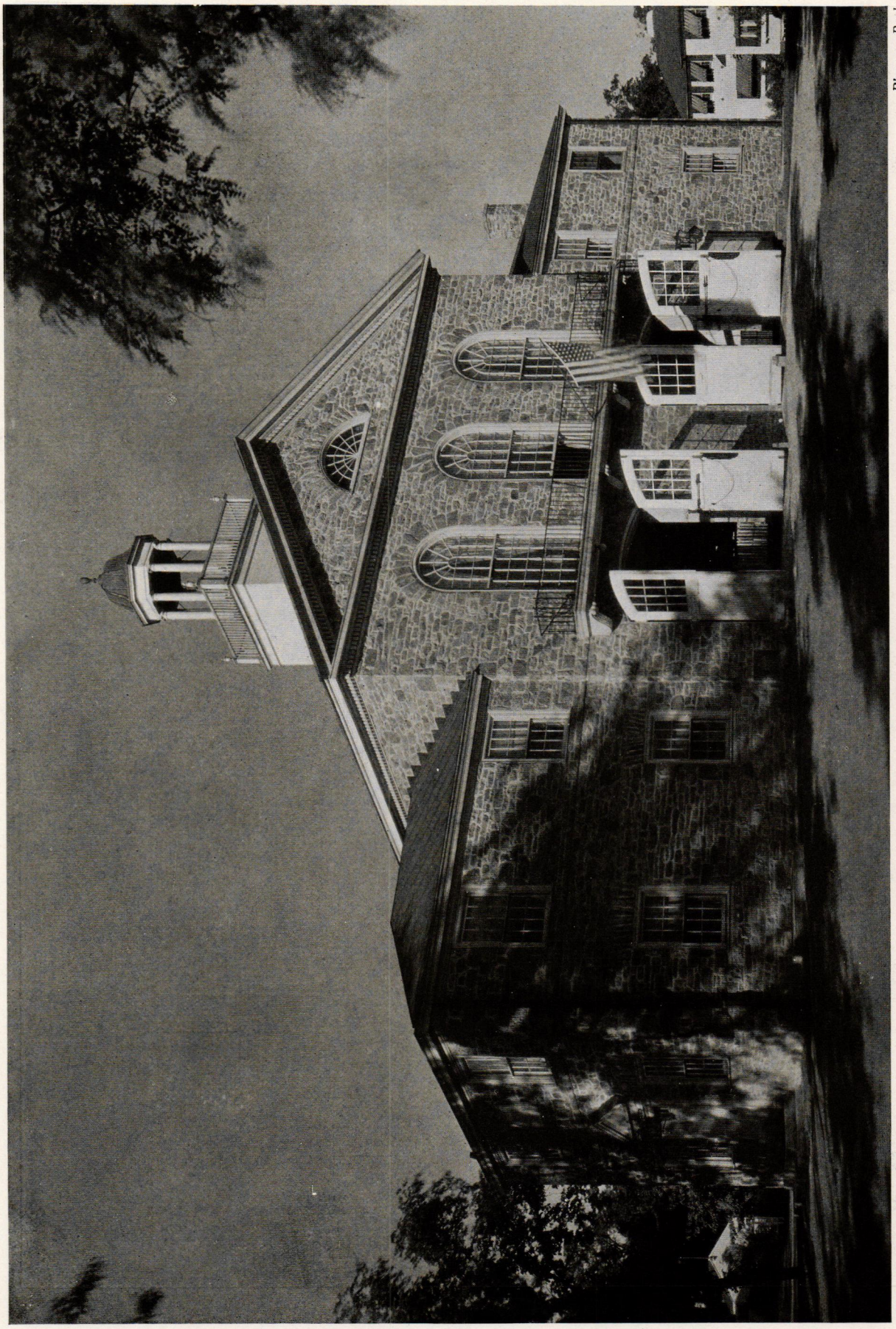
FIRST FLOOR

PLANS, FIRE STATION, SALEM, MASS.

KILHAM, HOPKINS & GREELEY, AND P. H. SMITH, ARCHITECTS



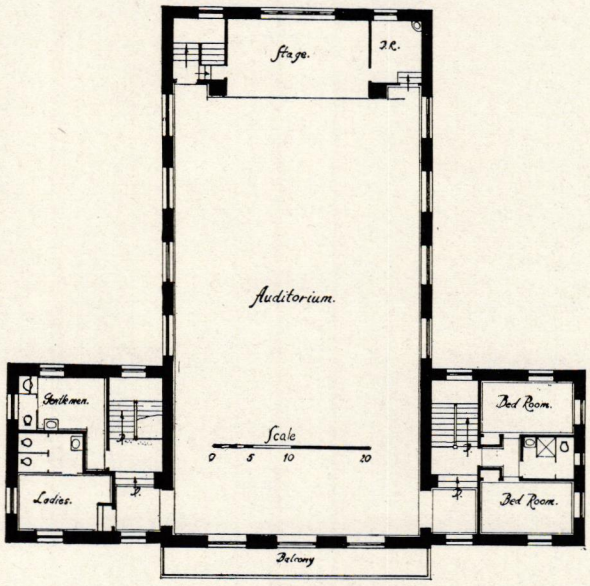
TOWN HALL AND FIRE STATION, SWEDESBORO, N. J.
SIMON & BASSETT, ARCHITECTS



Plans on Back

FIRE HOUSE AND AUDITORIUM, LARCHMONT, N. Y.
CHARLES F. MINK, ARCHITECT; OTTO R. EGGERS, ASSOCIATED

Photo. George H. Van Anda



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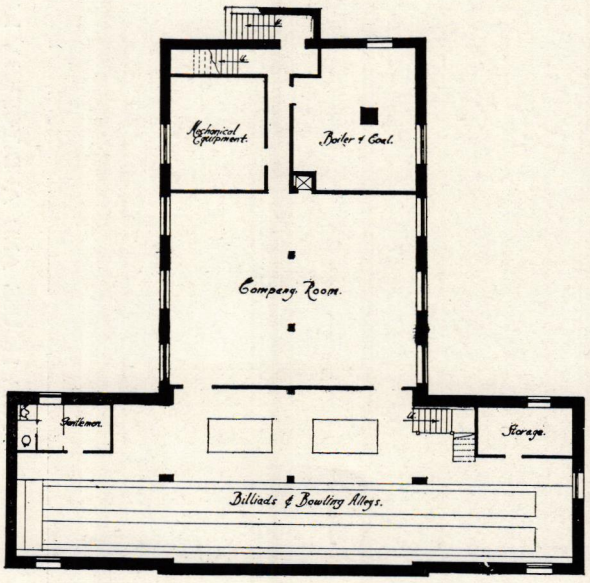
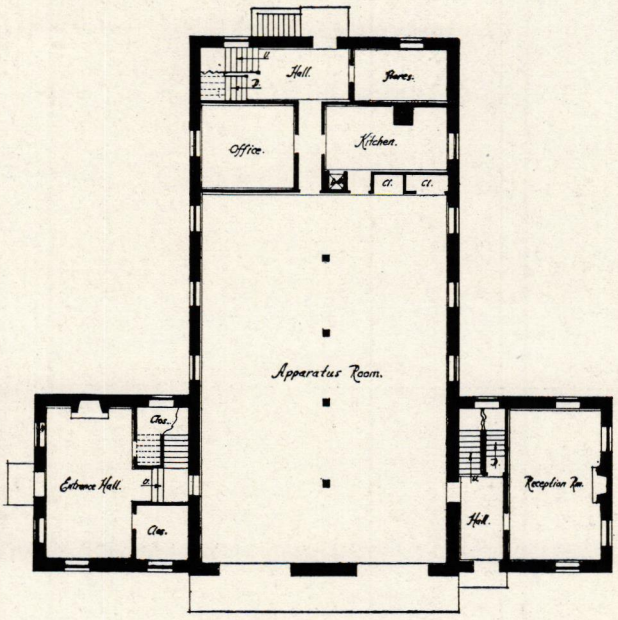


BASEMENT



FIRST FLOOR

PLANS, FIRE HOUSE AND AUDITORIUM, LARCHMONT, N. Y.

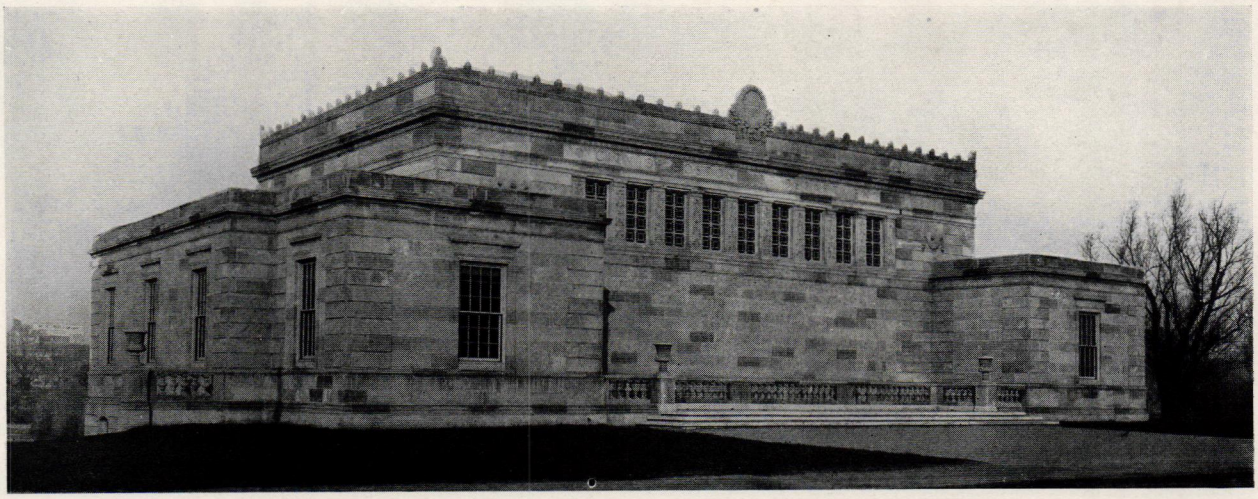
CHARLES F. MINK, ARCHITECT; OTTO R. EGGERS, ASSOCIATED

Fire Alarm Headquarters, Boston

O'CONNELL & SHAW, Architects

DEVELOPMENT of the fire alarm system of a city naturally keeps pace with the growth of the entire fire department. In the development of a community from a town into a city and from a small city into a large municipality there are involved all the changes which are wrought when a small fire department grows into a highly organized and intricate system. In any enlightened modern community these changes are likely to be accompanied by expressions of constantly improving architectural taste as the primitive structures which serve one period of the city's growth give way to buildings more expressive of the municipal dignity.

The new fire alarm building for the city of Boston is a conspicuous example of the growing tendency of cities to install fire alarm equipment in buildings which are not only practical for the operation of such systems but which are also distinct architectural additions to their surroundings. In most cities fire alarm systems during many years were installed in obscure corners of city buildings, usually in the fire headquarters. Experience over a number of years showed that many of them were in buildings which were by no means fireproof. Once or twice every year a fire would break out in such a building, absolutely destroying fire alarm headquarters and leaving the fire department and the citizens wholly without fire alarm protection. The engineers of the National Board of Fire Underwriters began a number of years ago to insist that such systems be installed in isolated, fire-resistive buildings. These buildings in the beginning were unimpressive, but



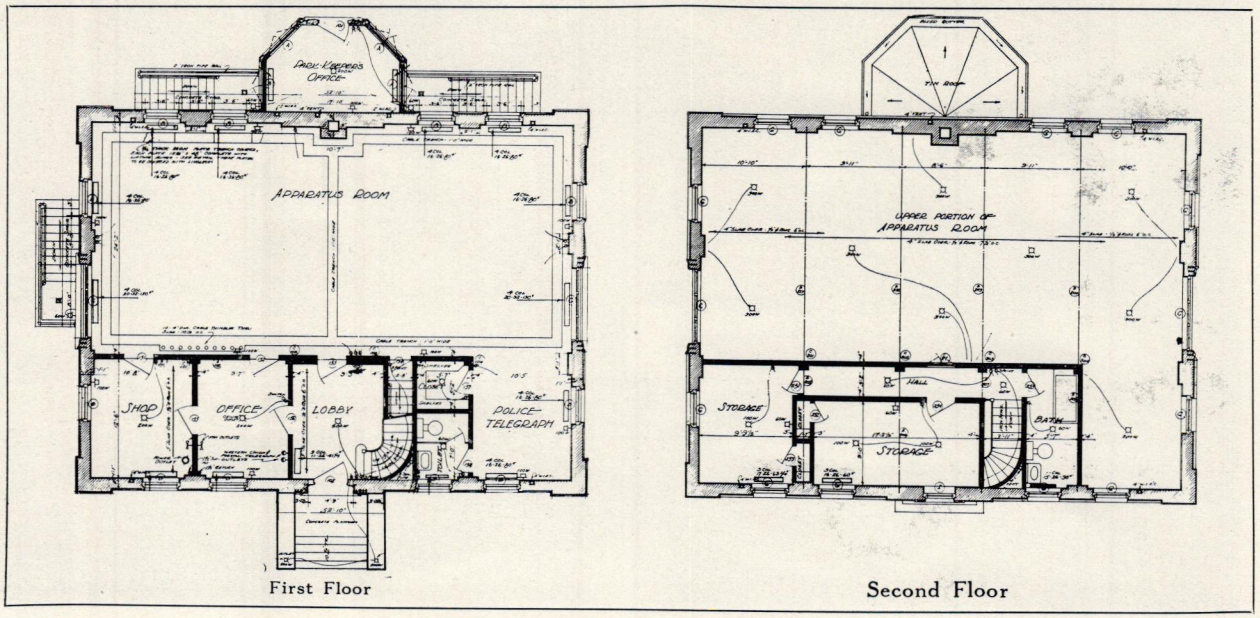
View from Entrance to Fenway

Main Apparatus Room, Fire Alarm Headquarters, Boston
O'Connell & Shaw, Architects

General View of Exterior

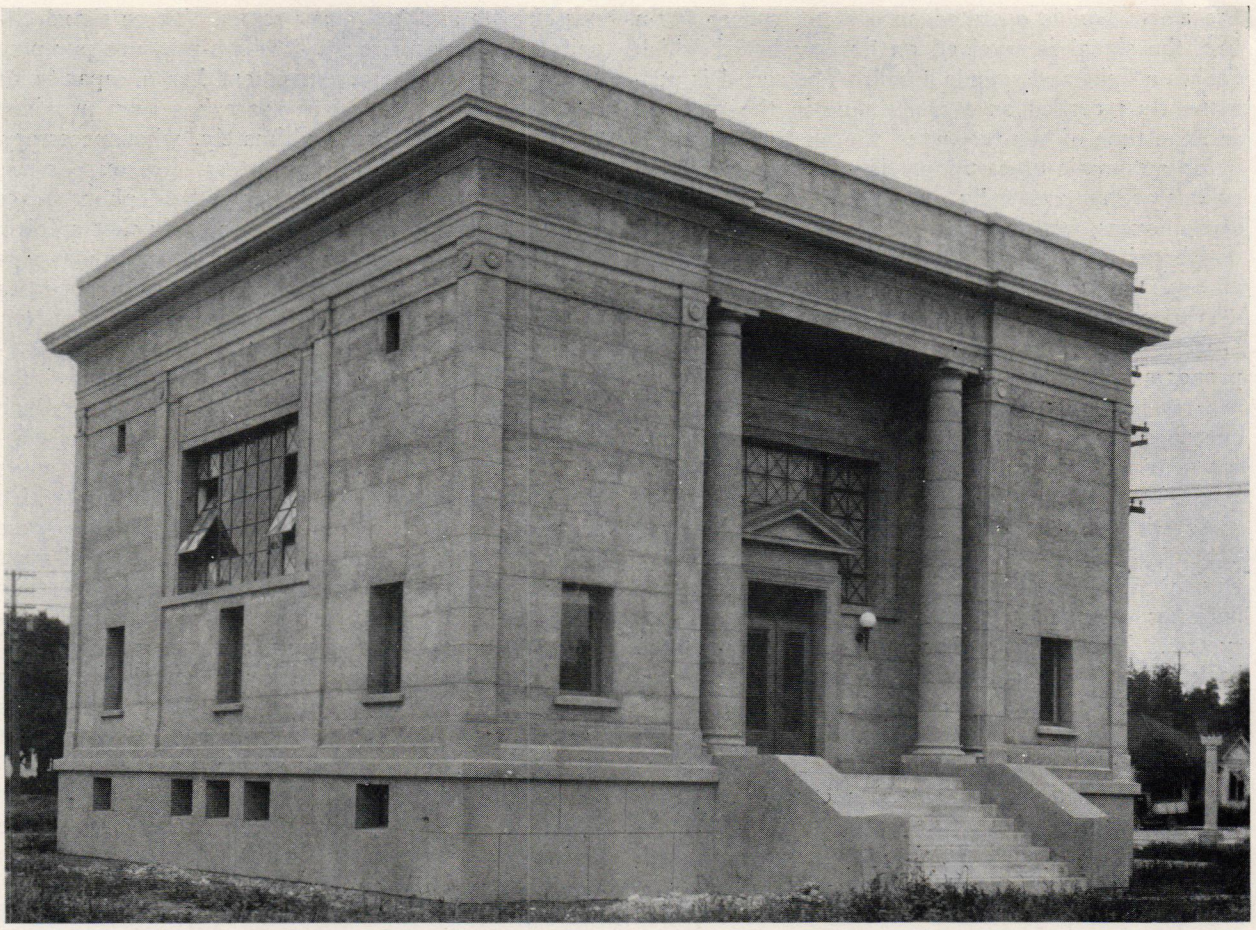
slowly city officials began to realize that the importance of the service and the usual locations of the offices made it imperative that the design and appearance of such buildings be founded on sound architectural principles. This is now being generally done.

A number of cities have located such buildings in parks, since such sites supplied proper isolation and frequently offered the only appropriate sites near the centers of cable distribution. Providence, Richmond, Stockton, Cal., and Boston have all erected buildings which in their architecture and equipment marked a conspicuous advance over



First Floor Second Floor

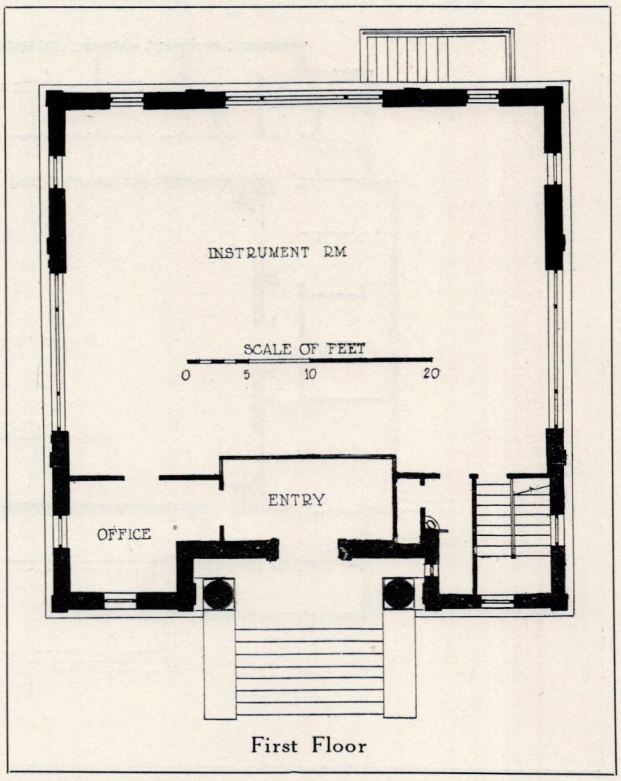
Fire Alarm Station, Richmond, Va.
Carneal & Johnson, Architects



A General View

earlier buildings. The architects of the new structure in Boston were faced with external conditions unusual in most such projects. Permission had been obtained from the state legislature to erect the building on land belonging to the Metropolitan Park System, subject to approval of the type of building by the park commissioners. Opposite the site selected, at one of the chief entrances to the Fenway, were a memorial gate and a circular plot of land where it was planned eventually to install a statue. It was necessary, therefore, that the new building not only be of a type that would agree in character with the surrounding district but also that it furnish a suitable background for any future statuary. The entrances to the building were, therefore, placed at either end, permitting the front of the structure to be unbroken by an entrance. The structure itself is in architectural agreement with its distinguished surroundings, use having been made of a modified Classic style developed in limestone. Separate offices are provided for the fire commissioner, the superintendent of fire alarms and his assistant. Rooms are provided for training new firemen to be telegraphers, as all Boston firemen must be familiar with the Morse code of telegraphy.

The central office fire alarm apparatus in a city as large as Boston is of course as complete as that of any power station or telephone office. When a



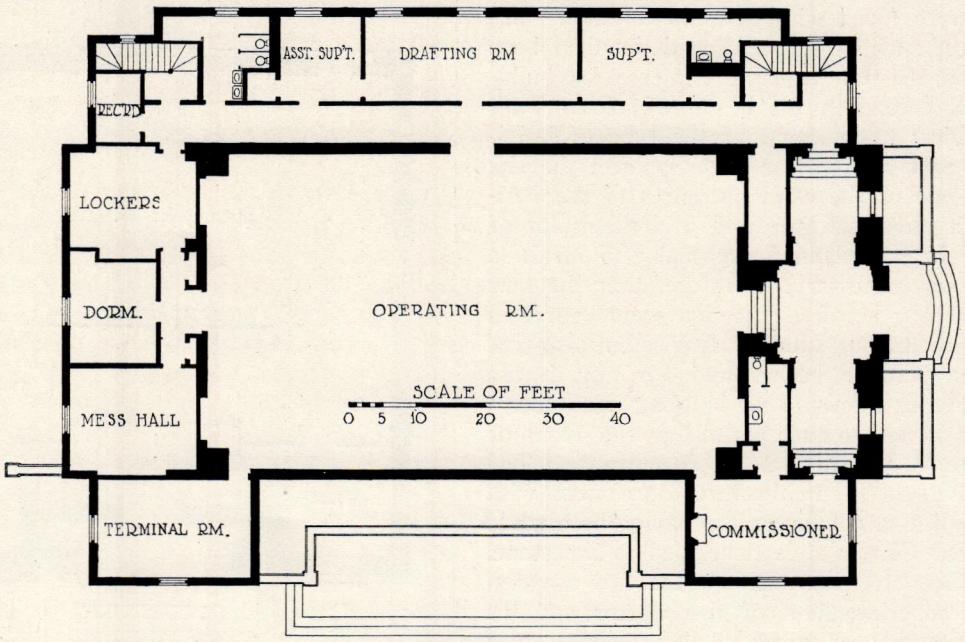
First Floor

Fire Alarm Office, Stockton, Cal.
Mayo, Cowell, Bissell & Co., Architects

fire alarm box is operated on a street corner for a fire, the signal is received on a relay board which flashes a light and sounds a bell. The signal is permanently recorded on a paper tape in the register, and the time of the receipt of the alarm is stamped by an automatic time stamp. In smaller cities these signals are automatically re-transmitted to the apparatus houses, but in a large city, where there is a danger of alarms for simultaneous fires, and where all fire companies do not answer all alarms, the underwriters require a manual office where the alarms are set up on large transmitters and sent to the proper engine houses. All telephone alarms of fires are received at the telephone switchboard and sent out over the same transmitters. Duplicate circuits are provided from the central office to the apparatus houses throughout the city. The boards to which these are connected are also provided with means for telegraphing to the various stations. Storage battery switchboards are provided for charging the batteries which provide the electrical energy for the system. These storage battery boards are mounted back to back with the box line relay boards to conserve space. A protector board at the end of the room is equipped with fuses, lightning arresters and similar devices to protect the central station apparatus from lightning and foreign currents. Radio transmitting and receiving sets are provided to enable fire alarm headquarters to keep in constant touch with the fire boats, though they may be absent.

There are at present in service some 1425 fire alarm boxes connected to 76 box circuits, 18 tapper circuits and 16 gong circuits. Three signal circuits are connected with the high-pressure pumping system. The present equipment has a capacity of 2000 boxes, and sufficient space has been provided to care for 5000 boxes ultimately, when necessary.

The switchboards, transmitters, registers, relay, gong and joker boards together with telephone boxes and radio equipment made it necessary that a fairly large room be provided, especially as space was necessary for future extensions. The acoustic properties of the room became, therefore, an important matter, as a confusion of directions might lead to an incorrect alarm. The entire ceiling and walls of the room have been covered with a special board which absorbs the sounds and eliminates echoes. The electrical energy for operating the fire alarm circuits is provided by some 6000 cells of battery which occupy a separate room in the basement. These individual cells are mounted on porcelain and glass strips on metal battery racks arranged to be easily inspected and readily cleaned and filled. The basement floor was treated with a waterproofing compound. Metal battery racks are bolted directly to the floor. To eliminate possible seepage, these racks are mounted on blocks which are an integral part of the floor. A gasolene-driven generator is provided in the basement to furnish electrical current when desired. All of the fire alarm circuits are brought to a terminal rack on the first floor and then distributed to the various boards and instruments. Approximately 50 miles of wire was used inside of the building to make all the necessary connections.



First Floor

Plan, Fire Alarm Headquarters, Boston

O'Connell & Shaw, Architects

Heating and Ventilating Public Buildings

By ALFRED J. OFFNER, M. E.

Of Offner & McKnight, Consulting Engineers

THE designing for public buildings of their extremely important heating and ventilating systems, of the plumbing and electrical work should wherever possible be done under the direction of competent engineers specializing in such work. As well as the architect, the engineer should be a master of his profession and fearless in carrying out the work in the best interests of the public he is serving. The materials and apparatus used should be of proper design, of best workmanship, and suitable for their purposes. All unnecessary apparatus and material should be eliminated, and the system should be designed so as to give the best results in the simplest way. The result will be a plant not only straightforward in design and reasonable in first cost, but also a plant low in cost of maintenance and economical in operation. Should the architect's fee be so small that he cannot obtain engineering services, the community should contract for such work directly. It will more than pay in the results obtained. The builder entrusted with the erection of the building, and the contractors installing the various parts of the mechanical equipment should all be financially sound and masters of their respective trades. The work should not be awarded as payment for favors extended to the party in power. With capable architects and engineers planning and supervising the work and skilled workmen installing it, the resulting building can only be a source of pride to the community. The heating and ventilating of public buildings should be designed to obtain the best results. Machinery of every description and all concealed apparatus which requires attention from time to time as to adjusting, possible repairs and cleaning should be easily accessible. The system should be designed to properly fit the available spaces and should be in agreement with the architecture of the building. Care on the part of the engineer together with the cooperation of the architect will result in the visible parts of equipment harmonizing with the building.

Shall Current be Generated in the Building?

Whether the mechanical equipment of public buildings should include power plants for the generation of electric current depends not only on the sizes of the structures but also on local conditions. In small public buildings, the isolated power plant cannot compete with the central electric plant, and it is very questionable whether it can in large buildings. Against the cost of electric current bought from outside sources there must be considered the first cost of such a plant, the interest and depreciation on this additional investment, the maintenance charges of such an installation, the cost of fuel and water, and the cost of additional skilled labor. Of course, with a generating plant, the exhaust steam from the engines can be used to heat the building during the winter at no additional cost. In the summer this available heat is generally wasted, for the amount that can be used for heating water for the plumbing system is but a small percentage of the total load. A generating plant requires considerable area. As a rule, much storage space is required in public buildings, and therefore any area in the basement of such a structure can always be used advantageously.

Shall Heat Be Bought from Outside?

In localities having community central plants selling energy in the form of steam or hot water for heating buildings, the question often arises as to whether the heat should be bought or should be generated in the building. The decision in favor of one as against the other alternative is not so well defined as in the case of the electrical plant. As with the isolated power plant, the question is answered in the relative costs of the two. In the event that heat is bought from outside sources, spaces should be provided in the building for a possible boiler plant, for fuel storage, and for a chimney. This is a paying protection to the owners in case of failure on the part of the central plant, and it is also insurance against the rates' being excessive. The heat in the condensation as returned from the heating system and other equipment, whether returned to the central plant or not, should always be conserved. It is generally used in partly heating water for the plumbing system. In many localities there are laws requiring that the condensate be cooled before it is wasted, to prevent damaging the sewers, which must be avoided.

Types of Heating Systems

A building may be heated by the use of one or (in combination) of three media,—air, water, or steam. The heat, using any one of these media, can be circulated without the use of any moving apparatus, the results being obtained by natural means (gravity), and it can also be circulated by mechanical means.

Heating by Air. Heating very small public buildings by warm air with gravity circulation, i. e. warm air furnaces, is rarely done. While this method of heating is the cheapest to install, it is also the most expensive to operate, especially if the air is taken from outdoors. If the air is recirculated, in order to reduce the cost of fuel, the main advantage, outside of initial cost, claimed for this type of heating, namely, use of fresh air, is defeated. The operation of this type of heating is not as positive as with either steam or water, as wind pressures are likely to affect the proper air circulation and distribution of the heat. The heating of certain public buildings, such as railroad stations having very large rooms, is most successfully and generally best done by warm air

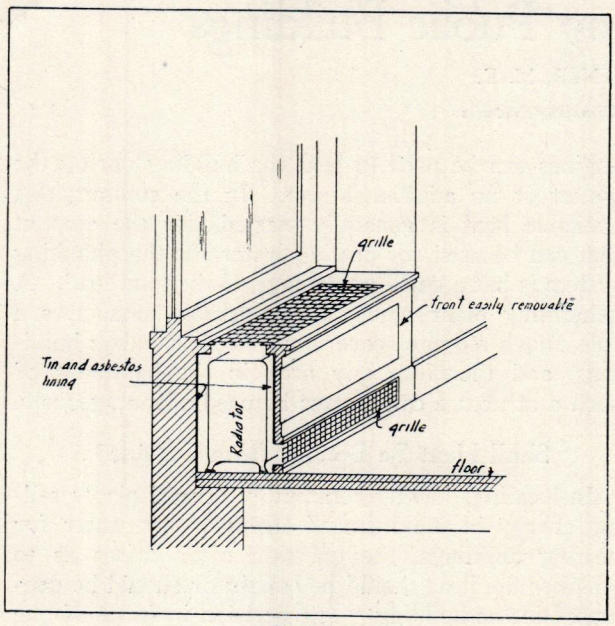


Figure 1

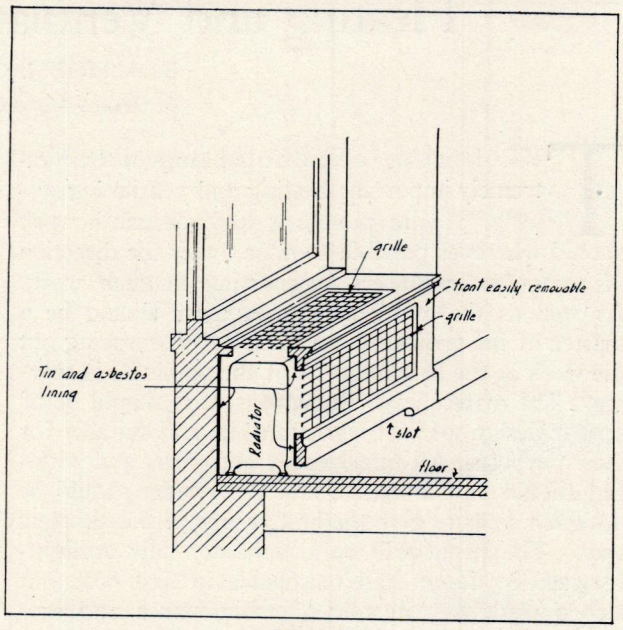


Figure 2

Methods of Concealing Radiators Under Window Sills

forced in by fans. The heat distribution of such a system is positive. It permits quick reheating, especially if arrangements are made for recirculating the air. The temperature of the air should be under automatic control, keeping the rooms at an even temperature, and the amount of air supplied should be controlled by the proper manipulation of dampers.

Water Heating. While heating of public buildings by hot water can be done successfully, there are certain disadvantages that must be considered before this type of heating is decided upon. For buildings which during the night, over week ends, and on holidays are only partly heated, if heated at all, the hot water heating system, especially if of the gravity type, has the disadvantage of being not responsive to quick reheating. It is also not so responsive to sudden changes in the outside temperatures. There is also the possibility of its freezing, during the periods of reduced heating, caused by careless operation. One advantage of heating by water, is its central temperature regulation. The temperature of the building can be kept fairly uniform by regulating the water temperature at the boiler according to weather conditions, making the water warmer as the weather becomes colder, and cooler as the weather becomes warmer. In small buildings, the gravity system can be used, but in larger buildings, especially if they are long and low, pumps must be used to circulate the water. Hot water heating cannot be used for high buildings, due to excessive pressure, unless the heating system is divided into zones.

Heating by Steam. Steam is generally selected for public buildings. It is most suited for this kind of structure, being flexible in operation, permitting quick heating up and cooling, and being adapted to all sizes and heights of buildings. For smaller structures the so-called one-pipe system can be used to advantage. It is simple to install and operate and is reasonable in first cost. For larger and better public buildings, the vapor or modulation types of steam heating, operating under very low steam pressures, are recommended. With modulation steam control valves on the radiators and with constant low steam pressures, the amount of steam supplied to each radiator can be controlled to suit the occupants. This type of heating eliminates the use of automatic air valves on the radiators. The traps used on the return ends of the radiators should be of the thermostatic type and positive in their operation. For very large buildings the vacuum system of steam heating is often used. In this system the air and condensation from the radiators are removed by means of a vacuum pump, generally operated by an electric motor.

Temperatures and Radiation

Heating systems are designed to heat the various rooms of a building to certain temperatures with a minimum low outside temperature prevailing at the locality of the building. Table No. 1 (given on page 616) gives the temperatures generally maintained.

The radiators required to heat the various rooms are preferably placed under windows. In this location they are most efficient, look the best, and are the most out of the way. In more important rooms and in rooms where a certain dignity is desired, radiators are often concealed by being enclosed in wood or metal, harmonizing with the finish of the room. Enclosing radiators in such a fashion reduces their heating efficiency, and they must, therefore, be made larger than would be necessary if they were exposed. The amount of increase in size depends upon the type of enclosure and the area of openings provided. Concealed radiators are generally made 33⅓ per cent larger than exposed radiators. Proper openings should be provided in the radiator enclosures for the circulation of air. The inlet opening should be

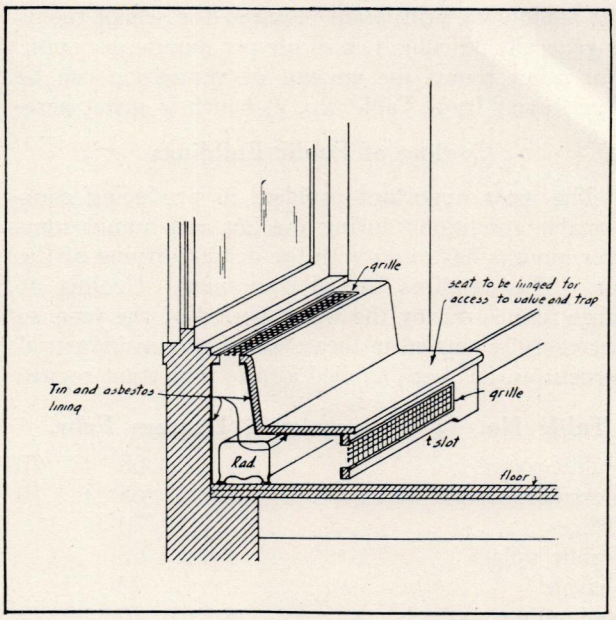


Figure 3
Concealing Radiator Under Seat

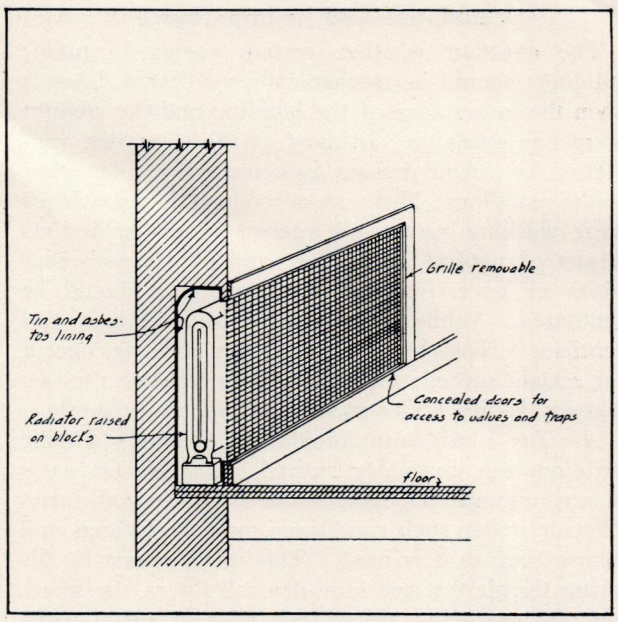


Figure 4
Concealing Radiator in Wall

located on the front of the enclosure, always below the lowest portion of the radiator. If it is impossible to place the inlet at the floor level, the radiator should then he raised. The outlet grille should be at the top of the radiator, either on the face of the enclosure or, if the radiator is located under a window, preferably in the sill, an arrangement often used.

Radiator enclosures should be lined with galvanized iron and asbestos to protect the woodwork against the action of the heat. They should be so arranged as to give easy access to the radiators and valves in case of necessary repairs and for cleaning purposes. Control valves should have extension stems to bring the wheels or handles outside of the enclosures for easy operating, or the grilles should have concealed doors for access to the valves. Where radiators are concealed under seats, the seats are sometimes hinged to permit access to the valves. There are various methods of concealing radiators. Figures 1 and 2 show typical arrangements where radiators are located under windows. Figure 3 shows an arrangement for concealing radiators under seats. Radiators concealed in walls may have grilles covering the entire fronts of the radiators as illustrated by Figure 4, or there may be a grille near the floor and another near the ceiling as shown by Figure 5. In rooms where special sanitary precautions are desired, such as infirmaries or rooms where water is likely to be spilled on the floor, as in toilets, bathrooms, etc., radiators should be hung on walls and the pipe connections to them be brought through the walls above the floors. This will give a clean sweep under the radiators. The pipe connections should come either through the baseboard or above it, so that the wall plates will lie flat and not project over one or the other. Figure 6 shows a typical arrangement for hanging radiators, often used because of its convenience and its great practicability.

The Importance of Selecting Boilers

The type of heating boiler to be used in a public building depends on the size of the structure and the space available. For smaller buildings, cast iron boilers of the sectional type are often used. This type of boiler can easily be added to, should the structure be made larger. For most of the larger buildings, steel boilers of the tubular type should be used.

Concerning Choice of Fuels for Heating

Whether to use wood, coal, oil, or gas as the fuel in heating a public building depends upon what is available, its cost, and the possibility of obtaining it easily. Where bituminous coal must be used, precautions must be taken to reduce the amount of smoke to a minimum. In this respect public buildings should set a good example to the rest of the community. In smaller public buildings, if oil is the fuel to be used, burners which can be easily and properly serviced and that will burn the heaviest oil that does not require preheating should be selected. This will permit the use of the cheaper grades of oil. In larger buildings, burners burning the heavy oils which require preheating can be used. This will permit the burning of the cheapest fuel oil available. While gas is the ideal fuel, especially for small buildings, its cost of operation in nearly every case prevents its general use,—almost always, in fact.

Heat Regulation and Its Advantages

All important rooms, all rooms occupied by large clerical and working forces, and all rooms subject to crowded attendance should have their heating under automatic control. This will not only keep the rooms at even temperatures, preventing over- and underheating, but will also save fuel. Installing automatic heat regulation, under these conditions, is advisable.

Ventilation and Its Importance

The question whether certain rooms in public buildings should be mechanically ventilated depends upon the importance of the building and the amount of money available. In most of the states the ventilation of school houses is compulsory. In other public buildings, likely to accommodate crowds or large working forces, all interior rooms having no means of natural ventilation, and all rooms where odors or excessive heat are produced, should be ventilated. While it is possible to both heat and ventilate a room by the duct system directly, except for certain special cases it is best to separate the two systems, having each system independent of the other.

Air for Ventilation Should Be Cleaned. Public buildings are invariably located in the busiest parts of a community, on streets that are dirty and dusty. The air under such conditions must be filtered and cleaned before it is used. This can be done by filtering the air through semi-dry cell filters, the filtering medium being either split wire or metal baffle plates dipped in an adhesive liquid. The air can also actually be washed by passing it through sprays of water as is the method much used in air washers.

Arrangement of Ventilating Systems. In large buildings the ventilating systems are arranged in units, each unit taking care of certain parts of the building most likely to be used at the same time. This arrangement makes the ventilating systems flexible and economical in operation. In the winter, the air before being delivered to the various rooms must be tempered to prevent drafts and cooling.

Unit Ventilating Systems. For the air supply to individual rooms or to rooms far apart, the unit ventilating systems can readily be used. The entire air supply ventilating unit consisting of air intake, heating element, and fan and motor, is contained in one enclosure and is placed in the room ventilated.

Amount of Ventilation. The amount of ventilation to be provided for each room depends upon the purpose for which the room is to be used, its size and its location. In cases where it is fixed by law, the amount of ventilation required for school rooms is generally 30 cubic feet of air per minute per pupil. For other rooms the amount of ventilation can be determined from Table No. 2, which is given here.

Cooling of Public Buildings

The most important problem in producing comfortable conditions during the hot and humid summer months has to do with the dehumidifying of the air. This requires special equipment. Cooling of large rooms, during the warm period of the year, so successfully applied in theaters and certain industrial structures, has been applied also to important rooms.

Table No. 1; Temperatures, Degrees Fahr.

Public rooms	68	to	70
Corridors, halls, etc.	65	to	70
Offices	70		
Public toilets	65		
Private "	70		
Swimming pools	70		
Auditoriums	65	to	70
School rooms	68	to	70
Gymnasiums	60	to	65
Hospitals	70	to	75
Operating rooms	75	to	80
Court rooms	70		
Prisons	65		
Workshops	60	to	65

Table No. 2; Ventilation Requirements

	Cu. ft. per min. per occupant	Air changes per hour
Offices	—	3 to 6
Toilets	—	10 to 20
Auditoriums	15 to 20	—
School rooms	30 or by law	—
Hospitals	30 to 75	—
Court rooms	—	6 to 8
Prisons	10 to 20	—
Public waiting rooms	—	3 to 5
Libraries	—	3 to 4

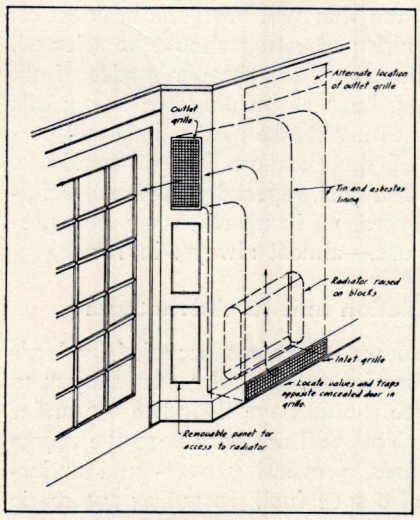


Figure 5
Concealing Radiator in Wall

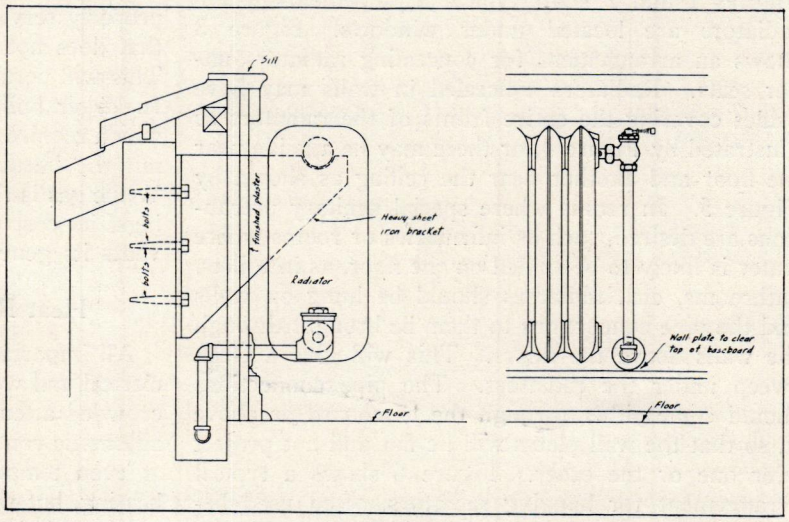


Figure 6
Method of Hanging Radiator Upon Wall