

SEPTEMBER 1930

PENCIL POINTS

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Large illustration: Indiana Limestone residence, Columbus, Ohio. Martin & Martin, Architects. Below: detail, Indiana Limestone residence, Oyster Bay, L. I. Walker & Gillette, Architects.

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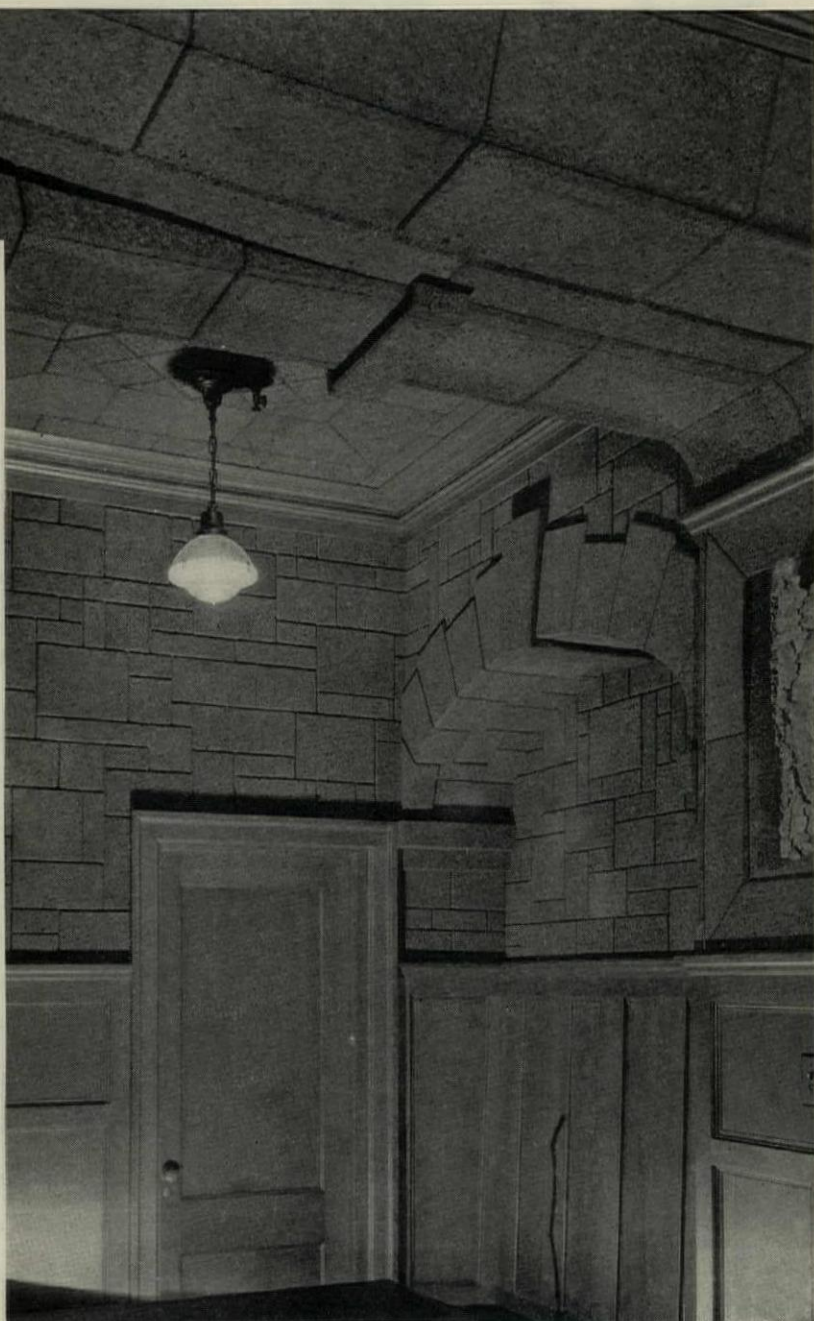
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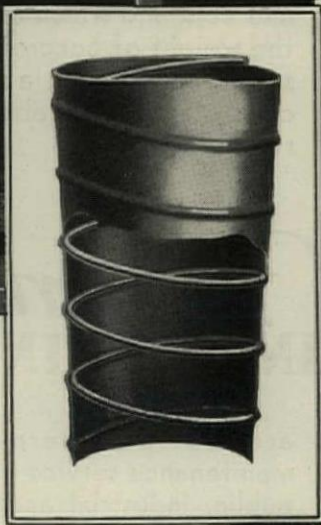
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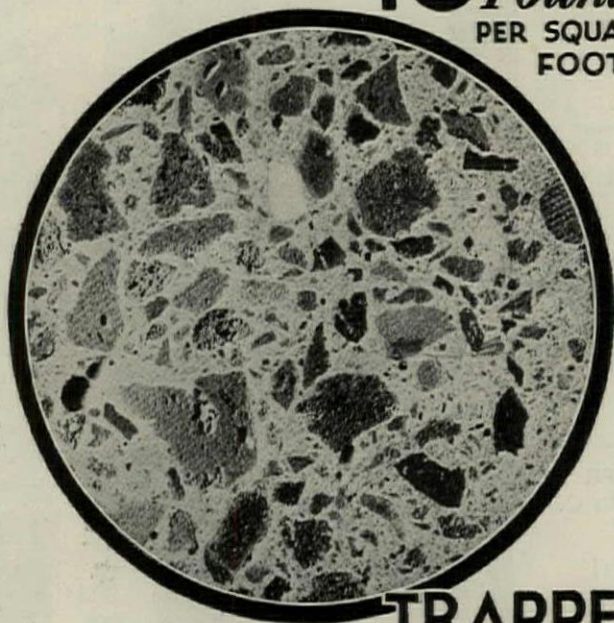
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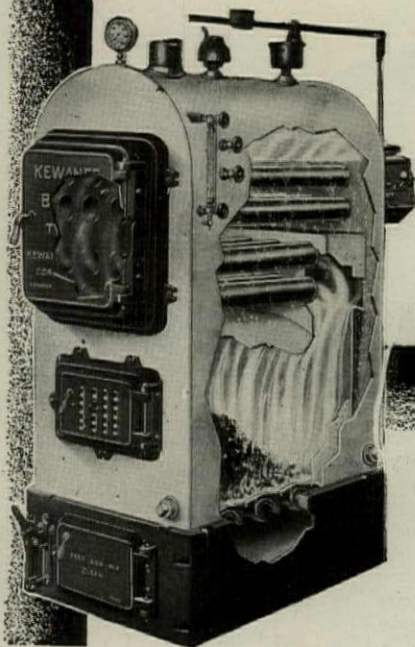
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He Took Up the Draftsman's Pencil to Battle Constipation

The daily output of a lathe operator drops. A child grows listless and inattentive as the school day drags into afternoon. An office worker slumps idly at his desk, neglecting the work before him.

The boundless energy that drove a business genius to the top rung of the ladder, slips silently away, leaving only a dull clod of a mind and body.

Yet doctors tell us that constipation is really nothing but a habit—or rather the lack of one. It is a chronic disorder, of millions, induced by irregular evacuation during youth.

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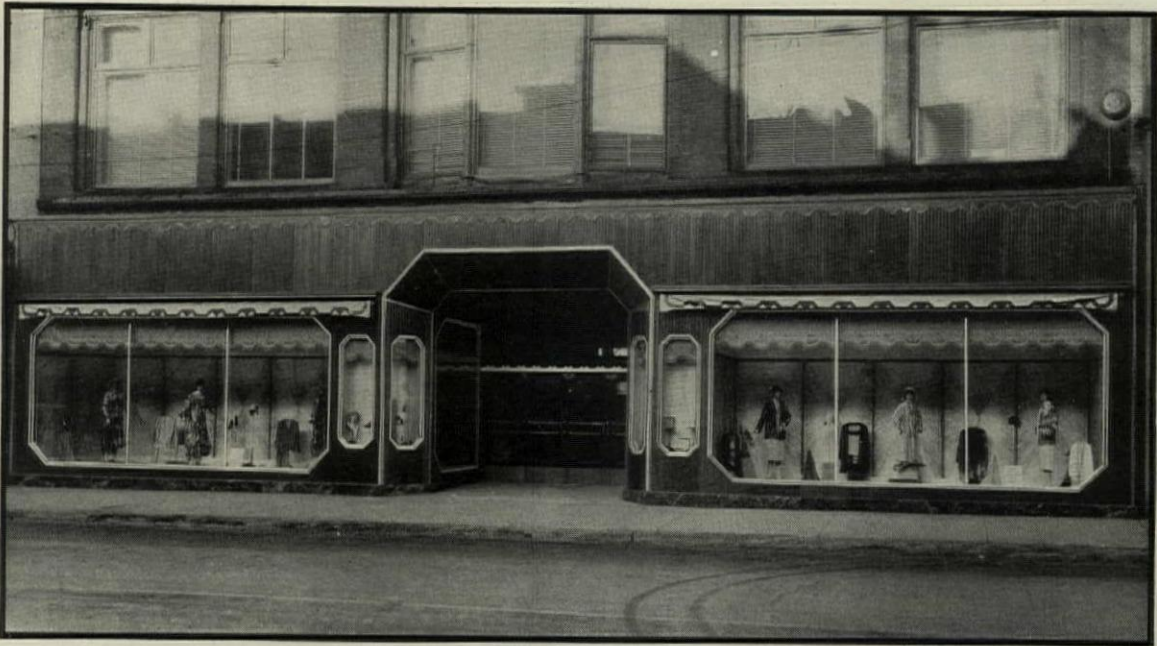
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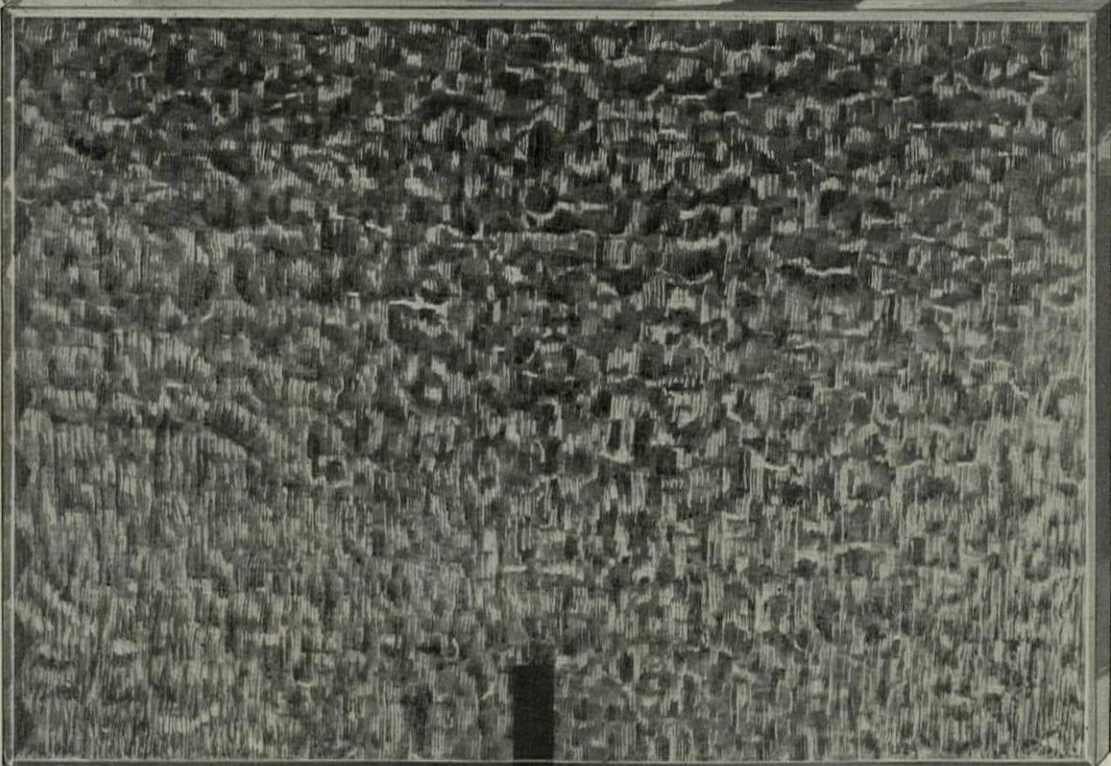
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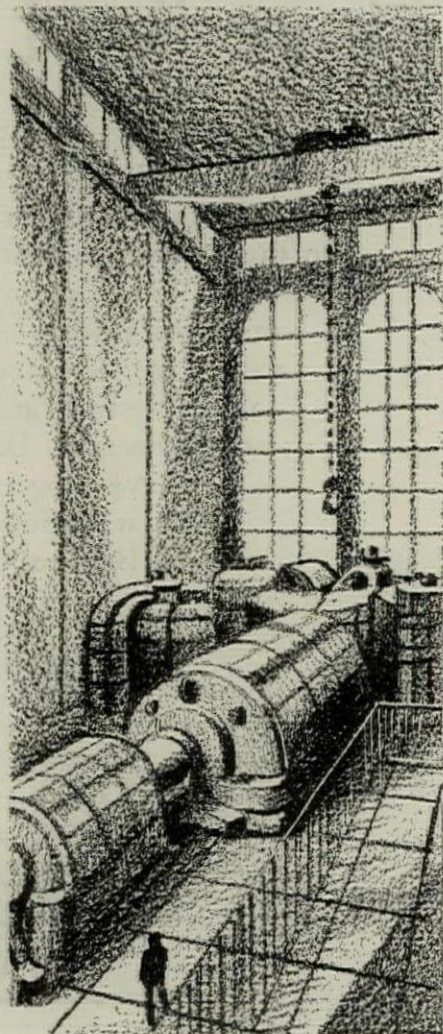
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A MESSAGE TO ARCHITECTS FROM THE
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Acoustone Ceiling, Trust Department, Northern Trust Company, Chicago. Frost & Henderson, Chicago, Architects.

A Solution to the Difficult Problems in Architectural Acoustics

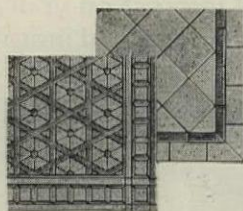
WHILE the problems in Architectural Acoustics have always been perplexing, the demand for comfortable noise levels has grown so rapidly that many architects realize, more than in the past, the need for an organization which can take full responsibility for the acoustical phases of its assignments.

Through the creation of many types of acoustical materials and methods of application and through the development of a competent staff of experts—as well as through the maintenance of skillful installation crews—the United States Gypsum Company has endeavored to make an exact science of what were once vague theories and unreliable opinions.

The result is that the United States Gypsum Company is well prepared to counsel with

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The many designs, patterns and color combinations which may be obtained with Acoustone make its use highly desirable in connection with any type of masonry, as well as other interiors.

Tile, is usually prescribed.

Acoustone is a scientific sound-absorbent—light in weight and possessing a texture that resembles travertine. It is easily and quickly installed on new or old walls and ceilings without interruption to business. Supplied in a wide variety of shades, shapes and sizes, it readily lends itself to any

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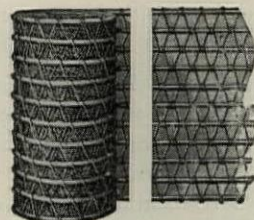
Recognized as the most efficient and economical means of concrete reinforcement, this product is in general use throughout the nation. An evidence of interest on your part will bring detailed information and literature.



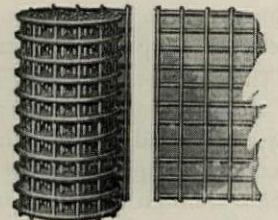
Wire Fabric being laid on floors of Carew Tower



The Carew Tower, Cincinnati, Ohio—Walter Ahlschlager, Architect, Chicago—Delano & Aldrich, Associate Architects, New York—Starrett Building Co., Contractors, Chicago—Lieberman & Hein, Consulting Engineers, Chicago



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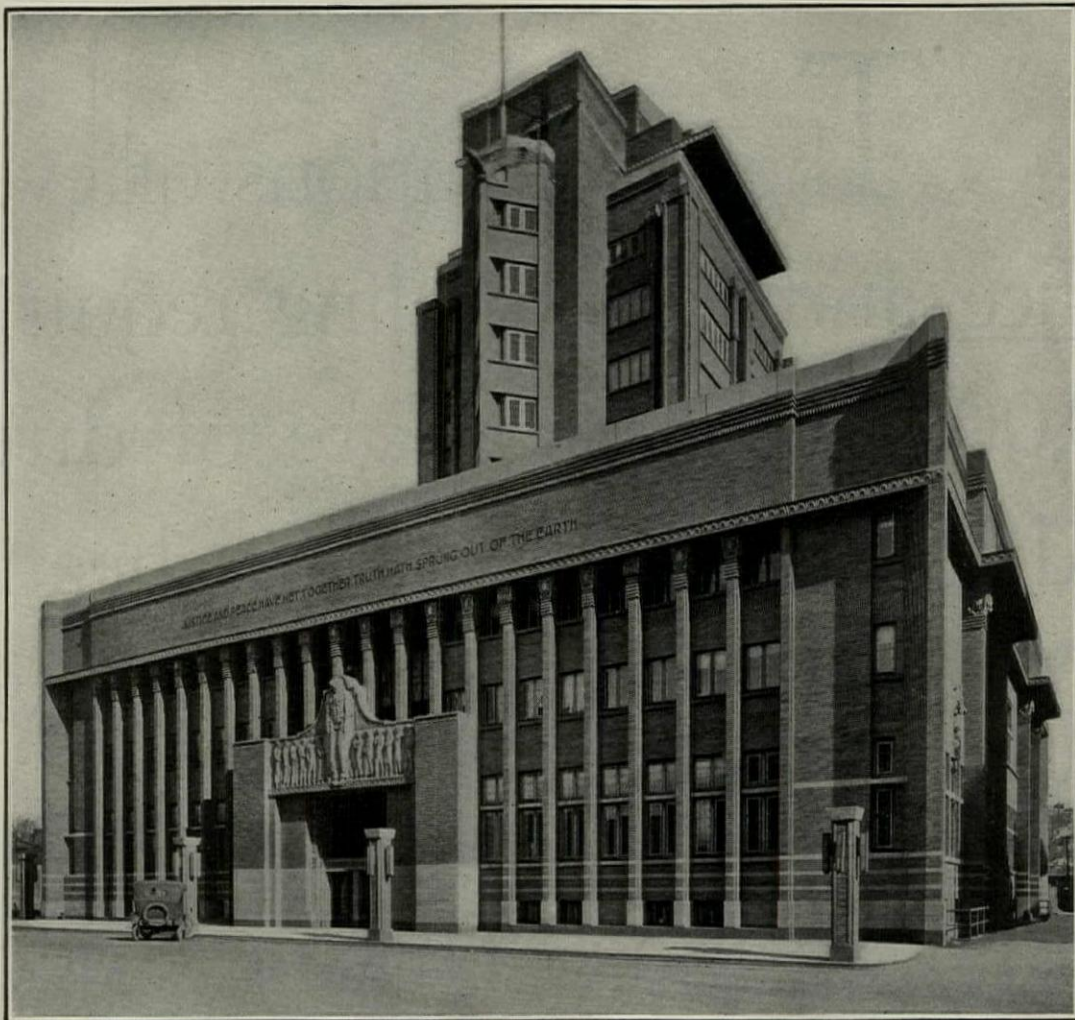


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Woodbury County Court House, Sioux City, Iowa. William Steele, Architect

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Manufactured in three separate and complete lines, Crittall Casements are available in a wide variety of types and sizes. Norman and Stanwin Casements are offered in standardized units—while Universal Casements are custom-built in steel or bronze to meet the architect's own requirements.

See our complete catalog in Sweet's—pages A1131 to A1200—for specifications. Separate copies may be obtained upon request.

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FRITTED GLAZE - A PLEDGE OF PERMANENCE

NEW fields of color composition, color harmony, are open with the advent of Natco Fritted Glaze Vitritile. The comprehensive line of structural units, suitable for interior or exterior walls and partitions, are painted with flame into beautiful luminous matt whites, striking blacks, and seven delightful and unique mottled effects, ranging through cream tans and cream browns.

Beautiful When Installed—the Beauty of this New Material Endures

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VITRITILE

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NATCO FRITTED GLAZE represents the successful culmination of a determined attempt to produce a glaze so permanent—so impervious—so immune to the destructive agencies of time, the elements, chemical attack, staining, checking, and crazing—that it will easily meet the most exacting requirements. The fritted glaze process is the most effective method science has devised of holding, crawling, peeling, blistering, cracking and pinholing to a microscopic minimum.

Tests and experiments early disclosed that the ordinary processes of raw mixing,

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Natco's frit is made of a number of various compounds, which are mixed, melted at 2300°, chilled and then ground to an impalpable powder. This powder represents a **new** and homogeneous compound, which melts at a much lower temperature. The successive coats of glaze material (sometimes as many as 7) are applied to the tile on a patented "G Mottling" machine, developed by a ceramic expert. This machine does its

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work with absolute precision, substituting for the uncertainties of makeshift methods unvarying excellence of results. When the tile is kiln-burned, the frit causes the glaze to mature at a lower temperature; form a more intimate bond with the tile; give—because the various elements have been pre-melted, instead of merely fused, together—more uniform results; and yield a silica glaze equivalent to that on the finest English glazed brick—the accepted standard of excellence.

Colors are prepared in the same painstaking, scientific way. Instead of merely mixing a dye-powder with the glaze, Natco

utilizes **calcined** colors; the various compounds required to produce the desired shade are blended, burned, wet-ground and the resulting powder screened, before it is added to the glaze. Color variation is thus reduced to a minimum.

The added care needed, the added expense, of the scientific Natco Fritted Glaze process is abundantly justified in the increased service, the assured satisfaction, the well-founded confidence that Natco's product offers to the user. Fritted glaze is a triumph of the ceramic art, a pledge of permanence to you.

In MATT FINISH BLACK AND WHITE



BLACK



WHITE

Coming! NATCO VITRIBRIK

The architects' cry for a new brick unit will soon be answered. Natco Vitribrik, shortly to be introduced, will offer a brick twice the height of the present standard. Its face will be finished in a beautiful and permanent salt glaze, which resists all agencies of destruction. Watch for the announcement, soon to come.

Natco Fritted Glaze Vitritile For Permanent Walls of Enduring Beauty

EXTERIOR USE

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Beautiful, colorful finishes, hitherto obtainable only through costly decorating, now can be built into the wall. Instead of being faced with the necessity for frequent redecoration, the owner has a wall finish that will last as long as the wall itself. Dirt will not harm it, acids will not affect it. The hard fritted glaze repels dirt, is easily cleaned and kept clean.

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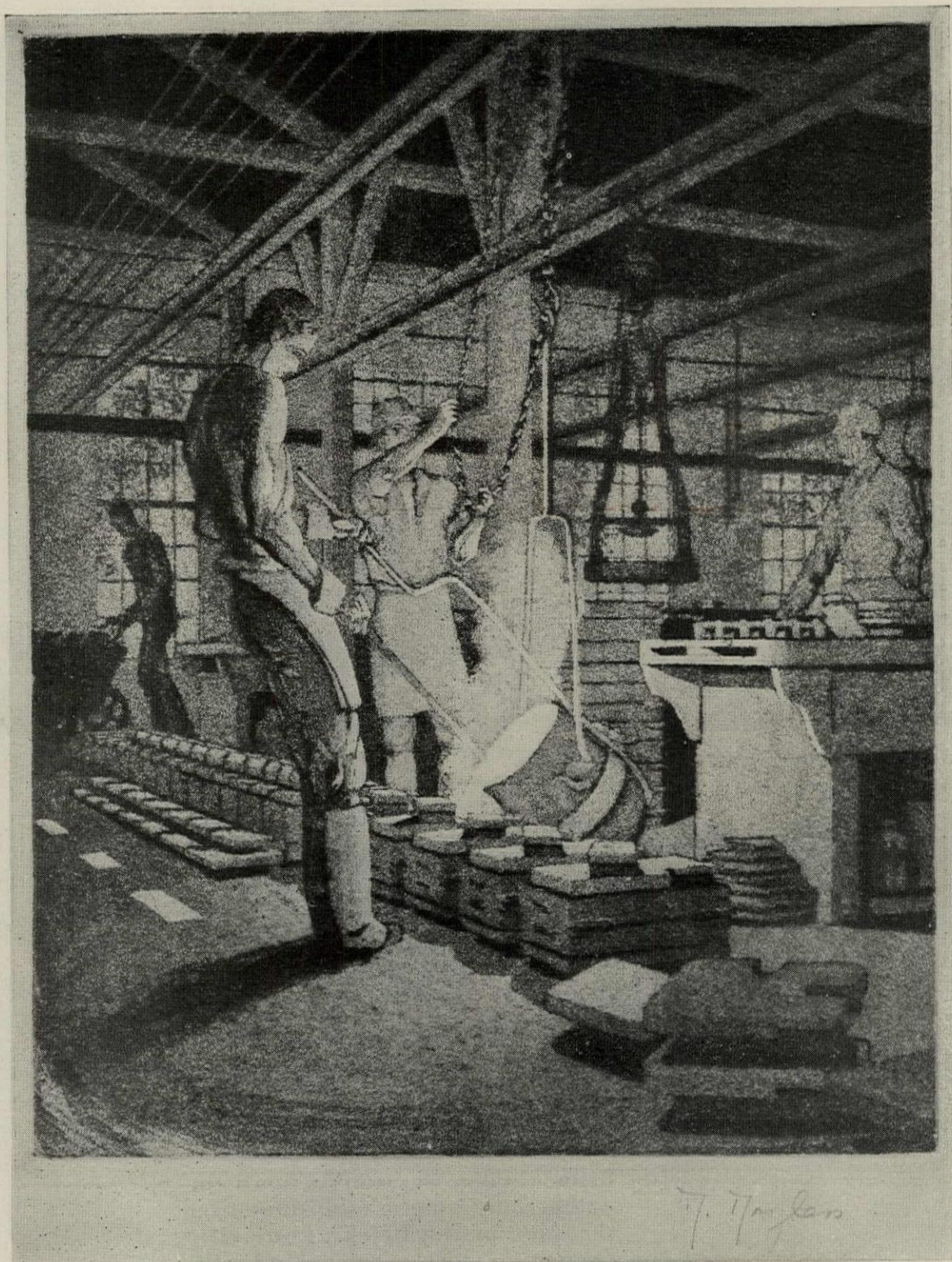
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THE modern builder has to plan bathrooms carefully. These days, home and apartment hunters look at that room first. They assume that the plumbing system is efficient. But they want to see for themselves that color, design, and style of fixtures are right—that fittings, down to the last detail, are in complete harmony. Mentally, at least, they may decide to buy or rent right then and there.

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Kohler brass fittings are superbly constructed. The metal is real red brass, with a high virgin copper content. The heavy plated chromium finish, easily cleaned, looks like fine silver; nickel and gold finishes are equally beautiful. . . . No waste material takes up space on Kohler brass-ware—no little gee-gaws that add nothing to the efficiency and ease of operation. Free passageways, ample clearances, and water-tight joints, together with advanced design, make Kohler fittings unusual for their combined utility and style.

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2. An interesting note is added to this bathroom by the graceful lavatory fittings and the distinctive bath and shower combination with engraved plate, both in Octachrome design.

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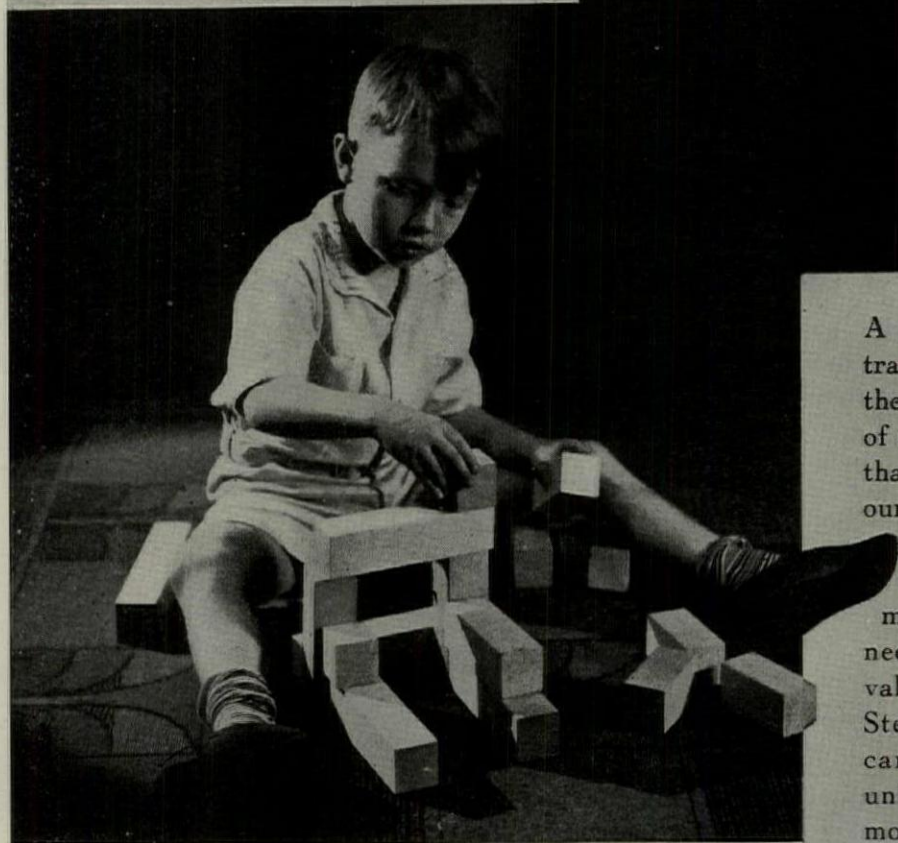
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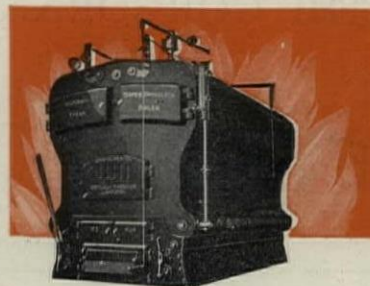
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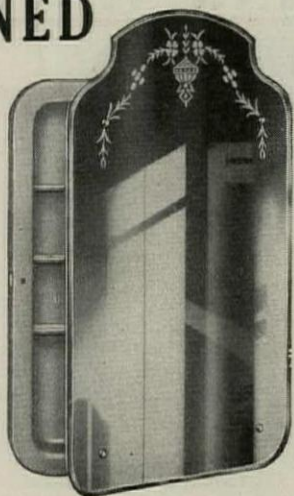


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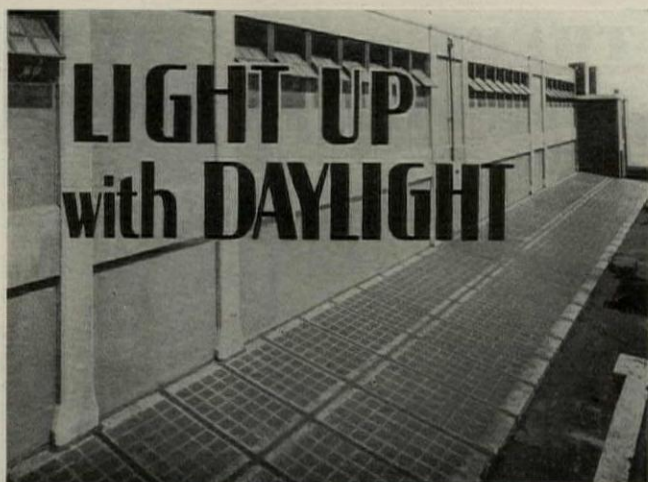
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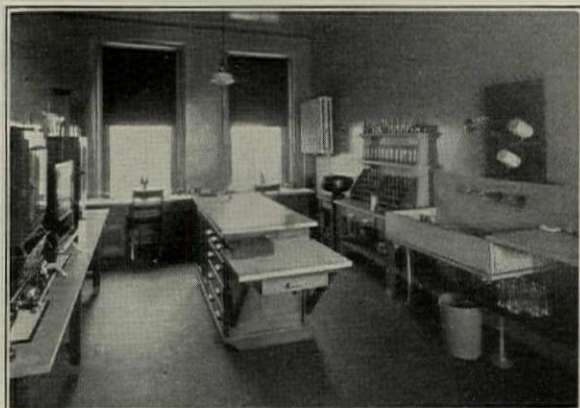
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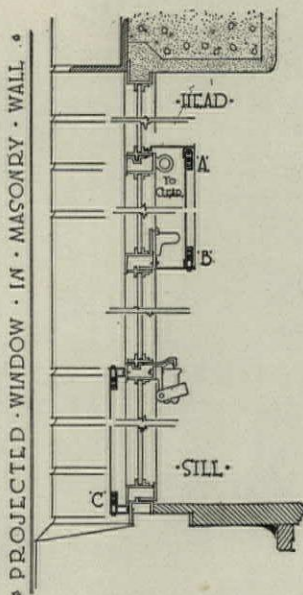
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Complete New
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FOR ALL PURPOSES



Reading 5-Point Pipe guards the Fidelity Philadelphia Trust Building, Philadelphia, from the attacks of Time. Simon & Simon, architects.

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Once you have specified rust-resisting Reading 5-Point Pipe, *make sure that it remains in your specifications.* To substitute inferior pipe on the basis of first-price alone is to strike at the arteries of your building—to make it obsolete before its time. Over and over again, Time—That Tough Old Tester has proved that inferior pipe means higher operating costs; per year of service—constant repairs—probable replacement of the entire pipe system within a relatively short time. Reading 5-Point Pipe, being made of the original Genuine Puddled Wrought Iron, repays its first price many times by insuring freedom from pipe replacement *throughout the entire life of the building.* Whatever else you cut, let this long-lasting pipe remain—the greater life-span of the building will approve your wisdom.

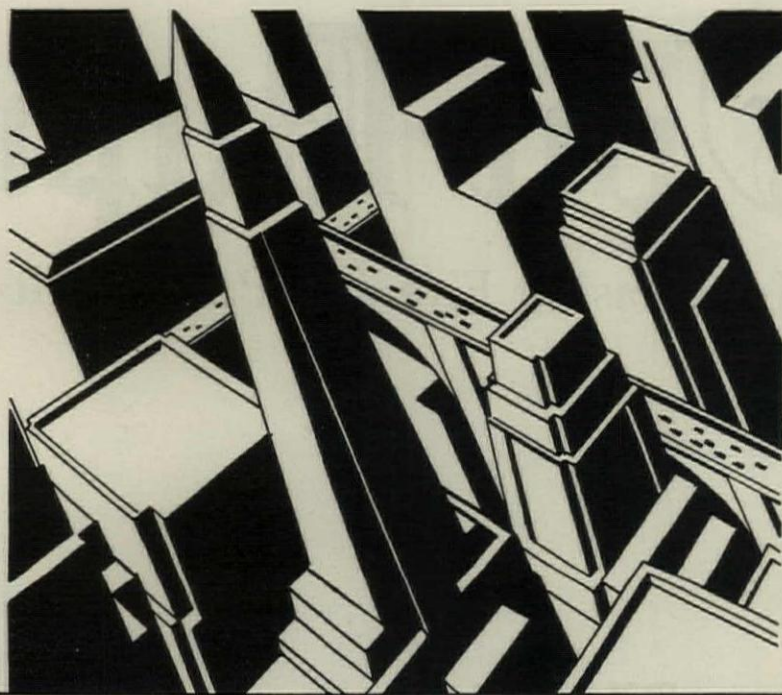
Use only Reading 5-Point Nipples with Reading 5-Point Pipe... you'll know them by the indented spiral band.

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For Your Protection,
This Indented Spiral
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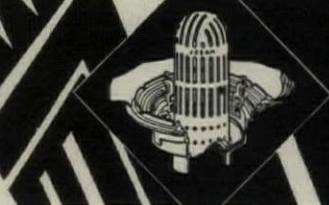
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Von Duprin

Self-Releasing Fire and Panic Exit Latches

The Economy of High Quality

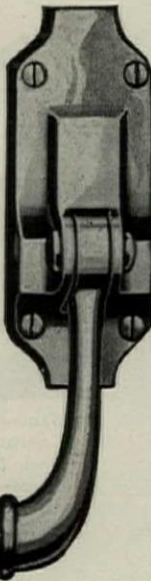
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It is with panic devices.

The new series genuine Type "B" Von Duprins, for example, cost somewhat more to buy. It is expensive to build as we build these devices—with the best materials we know and with every working part tremendously overstrength.

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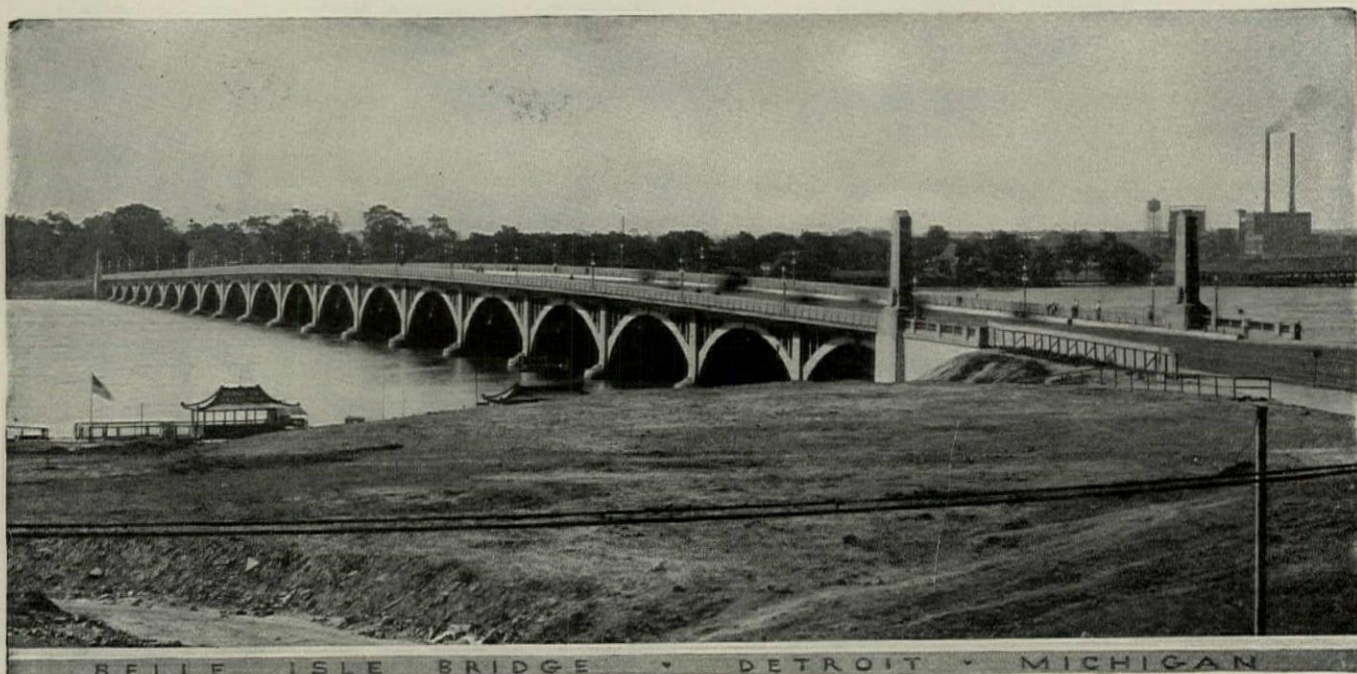
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LIME Safeguards this Bridge!

THE effect of impermeability on the permanency of concrete structures is of even greater importance today than strength and rigidity.

The problem of water-tightness is especially serious in such structures as dams, reservoirs, aqueducts, bridges, piers and abutments. Hydrated lime used as an admixture in the Belle Isle Bridge has made this concrete structure water-tight and thus assured its permanency and safety.

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By the use of five pounds of hydrated lime per sack of cement a denser, richer, more uniform concrete mix was secured, which prevented separation

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The National Lime Association has just published a booklet giving authoritative test data and practical field results with lime as an admixture in concrete.

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717 PHILLIPS BUILDING

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WASHINGTON, D.C.

ASH REMOVAL



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REG. U.S. PAT. OFF.
Telescopic Hoist
 with Automatic Gear Shifting Brake
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G&G Telescopic Hoist
in use at
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SPECIFIED FOR USE

in Many of the Nation's Prominent Buildings

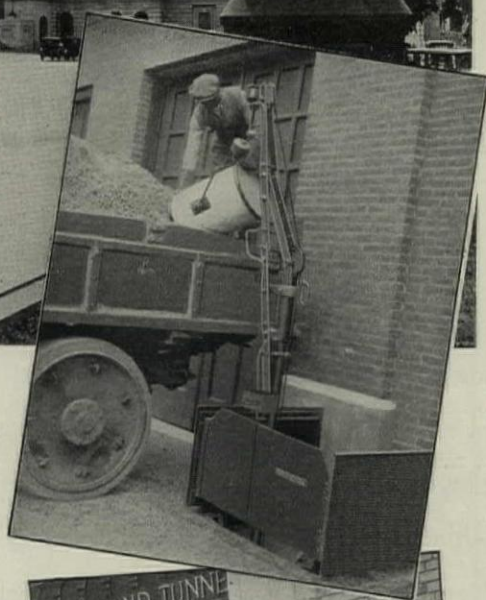
IT IS significant that G&G Ash Removal Equipment has been selected for use in many of the most important buildings in the country. Architects have through the years shown a growing preference for G&G Equipment for all types of structures where ashes must be removed from cellar to grade. Here are a few of the better known buildings served by G&G Ash Removal Equipment:

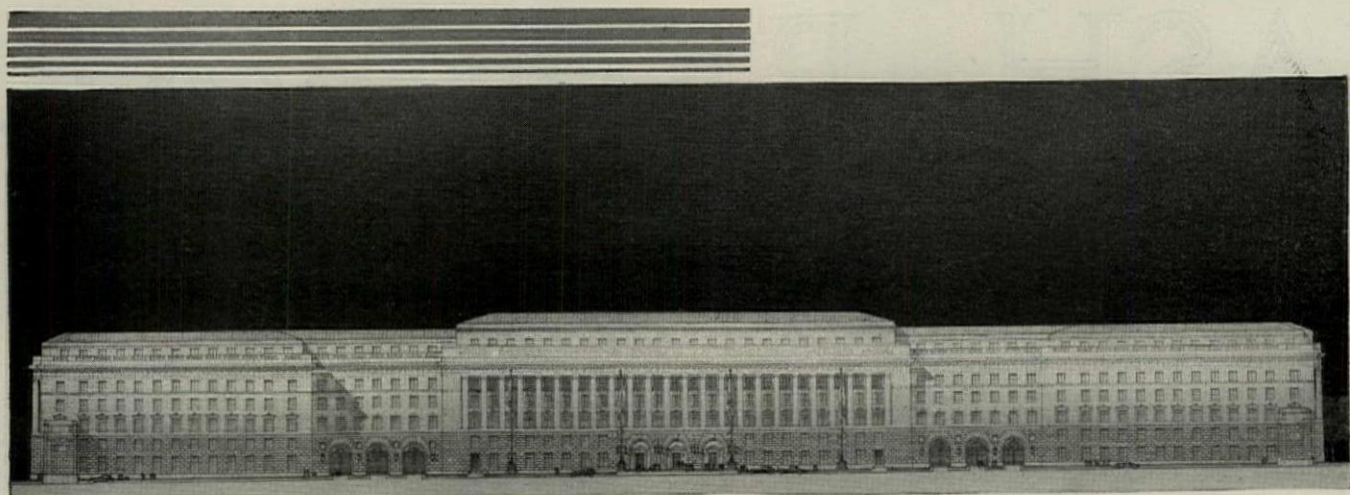
UNITED STATES CAPITOL, WASHINGTON, D. C.
 INDEPENDENCE HALL, PHILADELPHIA
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1,964 schools, 612 banks, 188 Bell Telephone Buildings, use G&G Ash Removal Equipment. The list of satisfied users covers almost every building classification. Electric and hand-power models to meet varying conditions, but all noted for their outstanding economy in operation, positive safety features and extra long life. Our Engineering Department will be glad to work with you on your next project.

Catalog in Sweet's Arch't. Cat., 1930 Ed., pp. D5116-23
 Catalog in Specification Data, 1930 Ed., pp. 230-231

GILLIS & GEOGHEGAN
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CHOSEN FOR UNCLE SAM



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Washington, D. C.
York & Sawyer, Architects
New York, N. Y.

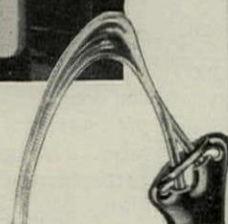
(Illustration shows Fourteenth St. Elevation)

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The Halsey W. Taylor Co., Warren, Ohio



No. 631
Semi-Recess Type



Practical, Uniform and
Sanitary Drinking Stream

HALSEY TAYLOR

Drinking Fountains

Halsey Taylor fountains are distinguished by practical, automatic stream control and two-stream projector. Water is always at uniform height regardless of pressure variation and the drinking mound is such that it is impractical for lips to touch source of supply.

No. 6 of a series illustrating: "Thoughtful decorative hints to help the architect."

He didn't mark it "Entrance Hall" *and let it go at that..*

WHERE does your job as an architect end? Is it finished when structural details are complete, or do you go further and make very definite suggestions for decoration? Many architects have decided in favor of the latter, and have won new clients and pleased old ones by so doing.

Consider the entrance hall shown here. If the architect had retired content when the walls were up, it might have suffered by inadequate decoration. By staying on the job, he made sure of a finished work that reflected nothing but credit upon his ability.

The decorative effect is based upon one of the newest Armstrong designs (Marble Inlaid No. 172). No matter what type of interior you plan, you will find some Armstrong Floor well suited to the effect you wish to create.

By specifying an Armstrong's Linoleum Floor, the architect assured himself of the client's satisfaction from a practical as well as a decorative point of view. An Armstrong Floor is easy to clean, enduring in service, and comfortable under foot.

There's a lot of usable floor information in our new file-size specification book. Sent with colorplates and samples of modern linoleum upon request. Look for us in Sweet's. Armstrong Cork Company, Floor Division, Lancaster, Pa.



Armstrong's Linoleum Floors *for every room in the house*

Armstrong's
A
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This Armstrong Floor (Marble Inlaid 173) furnishes the keynote for the whole decorative scheme. The floor in the outer hall is plain linoleum with a special star Linoset of contrasting color.

PLAIN ··· INLAID ··· EMBOSSED ··· JASPÉ ··· PRINTED ··· LINOTILE ··· and ARMSTRONG'S CORK TILE



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flat drawn SHEET GLASS FOR WINDOWS

**THE
HIGHEST
WINDOWS
IN THE
WORLD**



IN THE Tower Dome of the Chrysler Building are 78 Lupton Steel Windows — especially designed for this unique architectural masterpiece. Here is a practical example of Lupton's ability and facilities for handling special window-work. Perhaps we may be of help to you, as well. Write to David Lupton's Sons Co., 2229 E. Allegheny Ave., Phila., Pa.

L U P T O N

where steel is fused with sincerity

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OHIO BANK BUILDING AT TOLEDO
Mills, Rhines, Ballman and Nordhoff, Architects

Architects Adopt This Positive Method of Insuring Great Facades

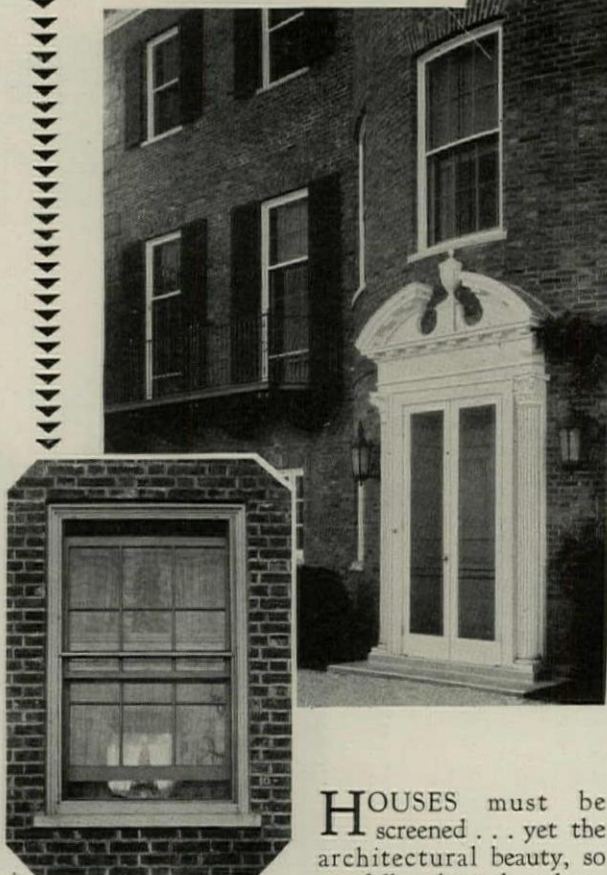
THE Cowing Joint is installed in the columns and weight carrying mullions at a mortar course. Its purpose is to relieve pressure thrown on the facing material by compression of steel, temperature changes, vibration and wind stresses. Experience has proved that these severe stresses, unless relieved, will crush and break the stone, terra cotta or marble.

Where the Cowing Joint is installed at each story height the building is completely insured against cracks and spalls, the mortar joints are protected from crushing and the maintenance cost of tuck-pointing is eliminated. The facade is in no manner weakened because the Cowing Joint carries the normal weight of the facing material and compresses only enough to relieve the stress.

See "SWEETS" Catalogue

Cowing Pressure Relieving Joint Co.
226 WEST SUPERIOR STREET CHICAGO, ILLINOIS

The finishing .. touch... Screens by HIGGIN



HOUSES must be screened... yet the architectural beauty, so carefully planned and executed is often marred with screens.

And so unnecessarily, for Higgin Screens can scarcely be seen. They're visible only as an accentuation of the harmonies you have planned into the building. Their narrow metal frames and invisible bronze mesh admits the maximum light and air... yet not an insect can get in!

Every opening: windows, doors, porches... are given individual study by the Higgin Experts. Let the Higgin representative in your locality work with you... he knows screens as you know architecture.

THE HIGGIN MANUFACTURING COMPANY

Screen Specialists since 1893

514 Washington Avenue, Newport, Ky.

Address Architectural Advisory Department for complete screen details—A.I.A. File No. 35 Pl.

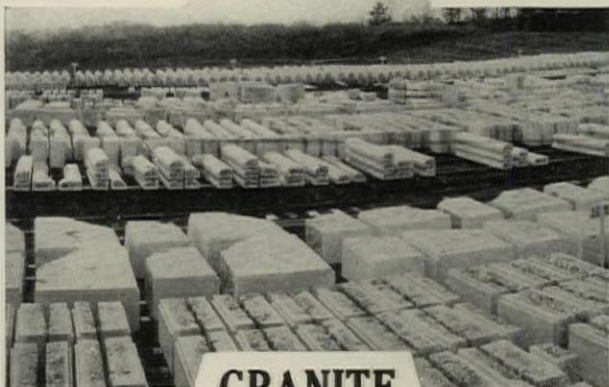
Refer to Sweet's for complete data on Higgin All-Metal Frame and Rolling Screens, All-Metal Weather-Strips and Access Panels. Folder on Venetian Blinds.

HIGGIN

ALL METAL
SCREENS

MOUNT

AIRY



GRANITE

Mount Airy Granite for the Arlington Memorial Bridge stored at the bridge site. This bridge crosses the Potomac between Lincoln Memorial and Arlington Cemetery, Washington, D. C. McKim, Mead & White are the architects.

THERE ARE

300,000 CUBIC FEET

OF CUT AND CARVED

MOUNT AIRY GRANITE

IN THE

ARLINGTON MEMORIAL BRIDGE

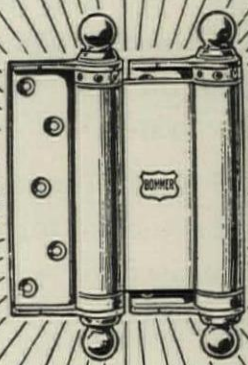
Information about our facilities may be secured by writing to one of our offices listed below.

J. D. SARGENT GRANITE COMPANY
MOUNT AIRY, NORTH CAROLINA

615 Witherspoon Building, Philadelphia
127 N. Dearborn St., Chicago. 207 Fulton Bldg., Pittsburgh.

50 years on a DOOR
good for fifty years more

They
are the
best



By
rigorous
test

Notabene

The solid bronze Bommer Spring Hinges swinging the big front doors of the old Bank of Manhattan at 40 Wall St., New York, since 1880 were still in excellent condition when that building was demolished in 1929 to be replaced by the new Bank of Manhattan skyscraper of 73 stories which is also equipped with Bommer Spring Hinges—truly an astounding record.

These Historic Hinges can be seen at our factory

TRADE  MARK

Millions and Millions of People
are Pushing Bommer Spring Hinges
when opening doors

Factory at Brooklyn, N. Y.

Keeps Food and Dishes Hot... Dries Towels

If you wish to give clients the "last word" in modern pantry design, specify the Prometheus Electric Plate Warmer.

The Prometheus keeps food hot at a minimum cost as it is thoroughly insulated. Doors are of double construction, filled with asbestos. Space between the walls is thoroughly insulated. That also keeps the exterior cool.

Has a three-heat switch. Cannot overheat. A thermostatic cut-off can be furnished to disconnect current automatically if left on accidentally. Pilot light shows whether current is on or off.

Has a beautiful finish. Trim is heavily chromium plated and polished. Doors are vitreous porcelain when white finish is desired. Will not crack or turn yellow. Shelves are removable for cleaning.

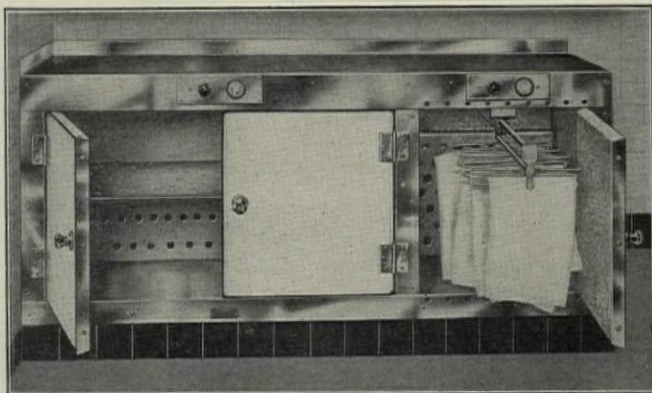
Heating elements last indefinitely, but if accidentally damaged they can be easily and inexpensively replaced. Built in many models.

Approved by National Board of Fire Underwriters.

Write for catalog, or mail the convenient coupon.

PROMETHEUS

Electric Plate Warmer



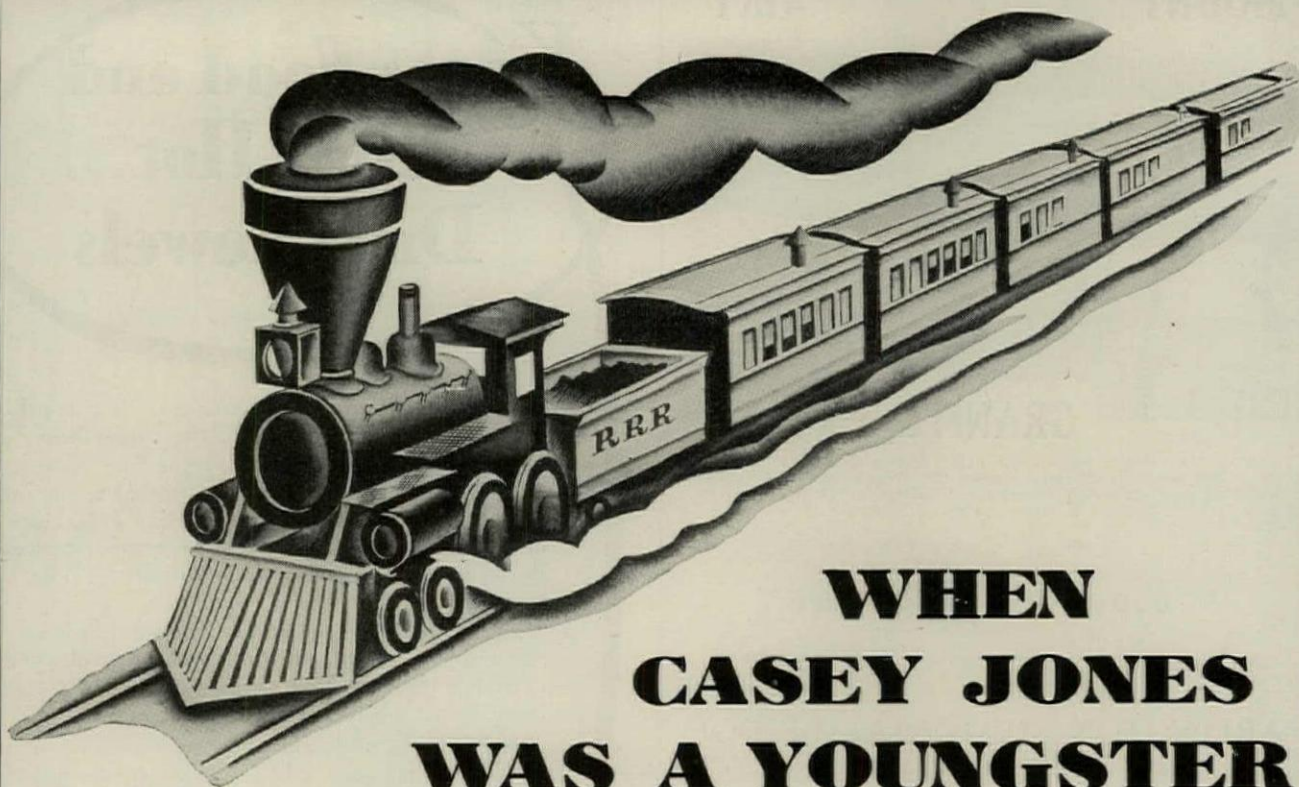
PROMETHEUS ELECTRIC CORP.,
16 Ninth Ave., New York

Without any obligation on our part, please send a copy of your Plate Warmer Catalog.

Name

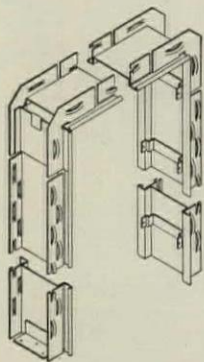
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Town State



WHEN CASEY JONES WAS A YOUNGSTER

Many things have changed since Mr. Jones' youth. Even Doorways are not what they used to be—for Standing Trim is now no longer necessary. A comparatively new method eliminates the need—a method new in principle, but proven on countless important installations.



Ask for photographs showing hotels, apartment buildings, hospitals, or private homes equipped with Kalman Steel Door Frames

The Kalman Steel Buck (with or without integral Jamb) permits the clean, simple lines of marble slab construction without thickening the plaster for returns. A perfect bond is provided with the other elements of the wall structure, resulting in unity of action, and eliminating plaster cracks. A definite ground and termination for plaster is obtained.

If interested in this new and attractive method of constructing doorways, we shall be pleased to send our file folder on the subject.

KALMAN STEEL COMPANY

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METAL LATH • FURRING and LATHING PRODUCTS • HOME BUILDING PRODUCTS • STEEL DOOR FRAMES • STEEL JOISTS
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THE GUARANTEED WAY TO HARDEN CEMENT FLOORS

We Guarantee Every Sonneborn Job

If our inspection shows a floor is not so greatly deteriorated that a good hardening job is still possible—If Lapidolith, the original concrete floor hardener, is used—If a Sonneborn Service Crew applies Lapidolith—We guarantee such floors to remain wearproof and dust-proof for a period of years, dependent on specific conditions of use.

IN your client's behalf you are interested in getting a concrete floor hardening job that will give long and satisfactory service. A Sonneborn job will give you such service.

But unless you insist on Sonneborn doing the hardening the chances are that low price will win the order, and at the prices that concrete floor hardening material can now be bought, there can only be one result—quick and lasting dissatisfaction.

Architects who are interested in jobs that will stand up, will realize the ultimate economy and service of intrusting hardening work to Sonneborn, who guarantee every job, and stand behind their guarantee, and always make good.

The Sonneborn Method calls for the use of Lapidolith, the original concrete floor hardener, and for the correct application of Lapidolith by a Sonneborn Service Crew trained to apply Lapidolith in the right way and in the proper amount.

We are prepared to quote a price in advance direct to the architect so there can be no misunderstanding between architect and contractor about the cost of the work. We can compete on price but do so reluctantly, because we cannot give at a low price as fine a job as that which is possible to supply at a fair price.

To get a job that will reflect credit on the architect and contractor by lasting for years, specify Lapidolith to be applied by Sonneborn under guarantee.

Some Other SONNEBORN PRODUCTS

Hydrocide No. 633

—Plaster Bond — For damp-proofing interior of exterior walls above ground.

Lignophol

For preserving and wearproofing wood floors.

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—For waterproofing exterior of exposed walls.

Fermo

—For accelerating the setting of concrete and densifying the mass.

Hydrocide No. 648

—Mastic and semi-mastic—For waterproofing foundation walls and footings.

Hydrocide Integral

—For waterproofing mass concrete, stucco and mortars.

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SONNEBORN APPLIES

LAPIDOLITH
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SONNEBORN INSPECTS THE JOB

SONNEBORN GUARANTEES THE WORK

L. SONNEBORN SONS, INC.

Dept. 9, 114 Fifth Avenue, New York

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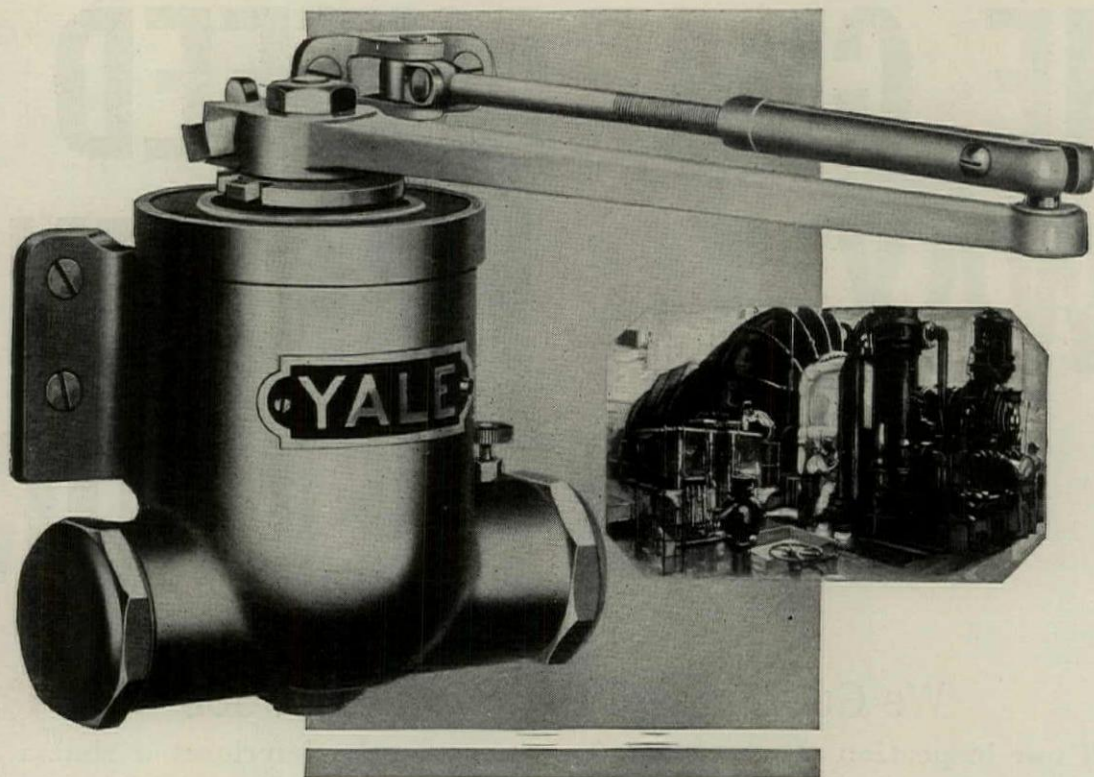
Please send me, without cost or obligation, demonstration samples and literature on:
Lignophol....; Lapidolith....; Hydrocide Colorless....;
Fermo....; Hydrocide No. 633....; Hydrocide No. 648....;
Hydrocide Integral....; (Check products that interest you.)

Name.....

Address.....

Company.....

Position.....



TRADE **YALE** MARK

DOOR CLOSERS

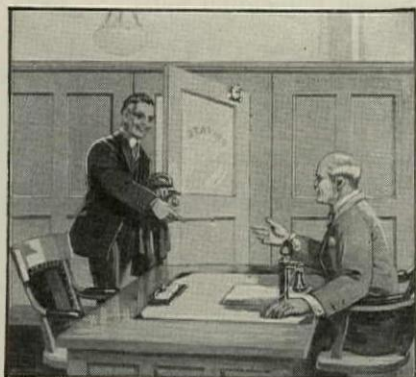
generate their own power

The Yale Door Closer is made with the closest precision ... generates the greatest power ... is the easiest to apply.

The Yale Door Closer is simple in construction ... no complicated valves ... nothing to get out of order ... slight wearing friction ... long life.

THE YALE & TOWNE MFG. CO.
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Canadian Works at St. Catharines, Ontario



YALE DOOR CLOSER
on the Office Door



YALE DOOR CLOSER
on the Entrance Door
of the Home



YALE DOOR CLOSER
on the Store Door

"Burning daylight"



IT may now almost be said that man is "burning daylight." Darkness — feared by primeval man has today been completely conquered. The torch, the candle, the oil lamp, the gas burner, the electric bulb, the ordinary lighting globe, and now Celestialite have each marked successive stages in man's struggle to con-

quer darkness. Another great stride forward has been taken in man's efforts to imitate the absolutely perfect light of the Sun.

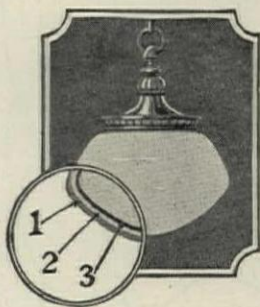
Celestialite is made to transmit a light which is a very pleasing imitation of daylight.

Celestialite gives a soft, but powerfully revealing light, pure white, and restful to the eyes. Under it your eyes see better, your mind and body both work more effectively because—perfect lighting stimulates both physical and mental activity.

Architects Everywhere

are recognizing the advantages of Celestialite and are recommending it for houses, office buildings, schools, hospitals, chain and department stores. For further information mail the coupon.

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CELESTIALITE DIVISION
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CELESTIALITE's Three Layers:

- [1] Of crystal clear transparency—for body and strength.
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CELESTIALITE

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NEXT TO DAYLIGHT

MAIL the coupon below for complete information and specifications and a sample of glass showing the three-layer construction of Celestialite

Gleason-Tiebout Glass Co. (Celestialite Division)
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Kindly send me free copy of your booklet "Out of the Darkness", and fragments of CELESTIALITE showing its three-layer construction.

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P.P.-9

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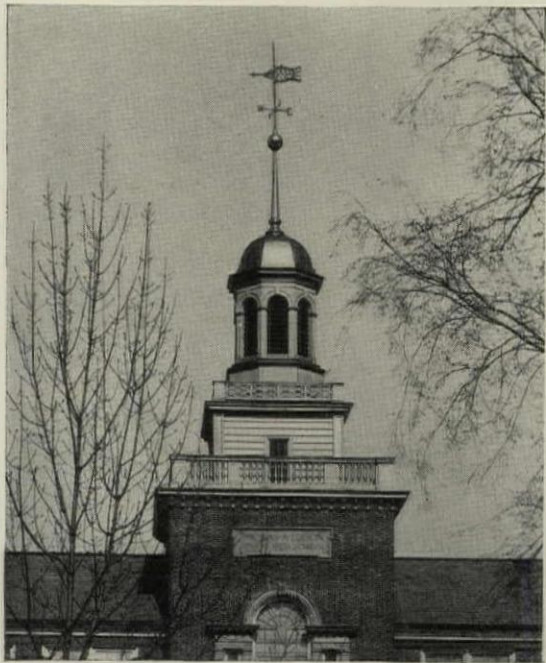
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West Orange, N. J.
Guilbert & Betelle, Architects*



*East Orange, N. J., City Hall
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*Reconditioned Cupola on
The Morris County Court House, Morristown, N. J.
George A. Mills & Campbell Voorhees, Architects*

Weather vanes — by FISKE

DECORATIVE RAILINGS; ENTRANCE GATES; GARDEN AND TERRACE FURNITURE; ORNAMENTAL FENCING (for every purpose, country estate or industrial usage); FOUNTAINS; SUNDIALS; LAMP BRACKETS; LANTERNS; SPIRAL STAIRS; STABLE FITTINGS; BRONZE TABLETS; ARCHITECTURAL BRONZE; ETC.

See Our Page in Sweet's

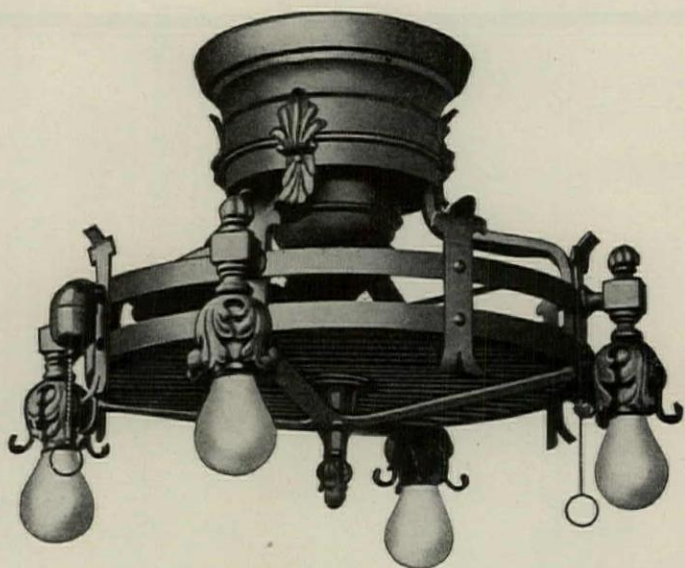
THE weathervane came into its own when Andronicus of Cyrrus placed his brazen Triton on the lofty summit of his Grecian "tower of the winds" to point the way of wind and weather.

FISKE is the oldest and most extensive manufacturer of weathervanes in existence, having equipped many of the outstanding private and municipal buildings in America.

Architects interested in such work will find FISKE consultory service, with its multitude of designs from which to choose, a valuable aid in attaining the highest possible degree of decorative beauty.

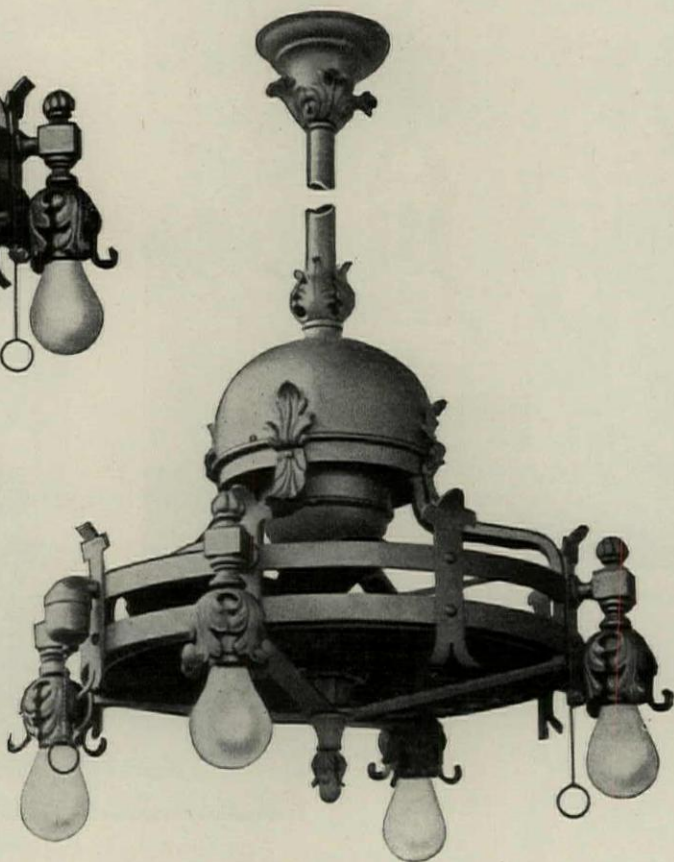
J.W. Fiske IRON WORKS
80 Park Place ~ New York
ESTABLISHED 1858

SPECIALISTS IN ORNAMENTAL METAL WORK



The Fandolier

cools without annoyance. There is no danger from drafts. One person doesn't suffer from too strong blasts while another person close by suffers from lack of air. The variable speeds make it possible to temper the air movement to meet all conditions. We have yet to find a situation of "inactive air movement" that a Fandolier has not overcome.



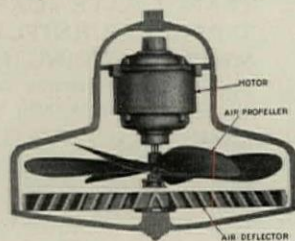
For years the dining and club cars on the finest railroad equipment have found the Fandolier to have solved their problem of "moving air."

All models are finished in statuary bronze, but other finishes can be had on order, to match your surrounding fixtures or color schemes.

To meet immediate demands for combination fixtures, we can supply the models illustrated. The drop will be supplied to meet any height of ceiling.

This fixture will fit existing outlets where now only lighting fixtures are in place, and without adding more outlets. It also saves the expense of additional fan fixtures.

Write for Form No. 2946-A.



THE SAFETY CAR HEATING & LIGHTING COMPANY

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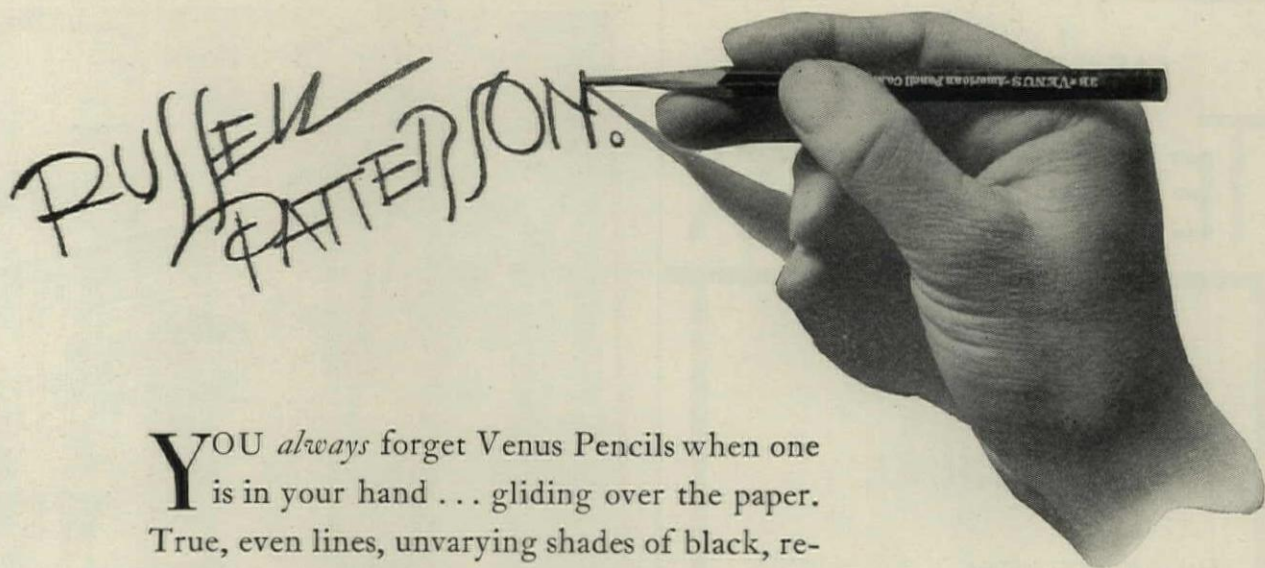
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There's one time when you *can* forget Venus Pencils



YOU *always* forget Venus Pencils when one is in your hand . . . gliding over the paper. True, even lines, unvarying shades of black, record your ideas just as you conceive them. Like any good instrument, Venus Pencils do not disturb your attention when you use them.

Down to the final stub, Venus Pencils are perfect—strong, and true to degree. They are made with the precision the professional man *requires* in his work.

If you wish to compare a Venus with the pencil you are now using, indicate on the coupon below the degree you wish. We'll send you the pencil free. Give the Venus a test by using it in your own most exacting work. If it meets your needs, buy it anywhere and you will find it always the same.

The hand in the photograph is that of RUSSELL PATTERSON, famous artist, whose delightfully human drawings are so well known.



Trademark
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VENUS

the pencil of 17 shades of black

(Of course you know about Unique Thin Lead Colored Pencils . . . and Venus Erasers . . . made by the makers of Venus)

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Without obligation, please send me a Venus Pencil of the following degree.....

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For small structures as well as
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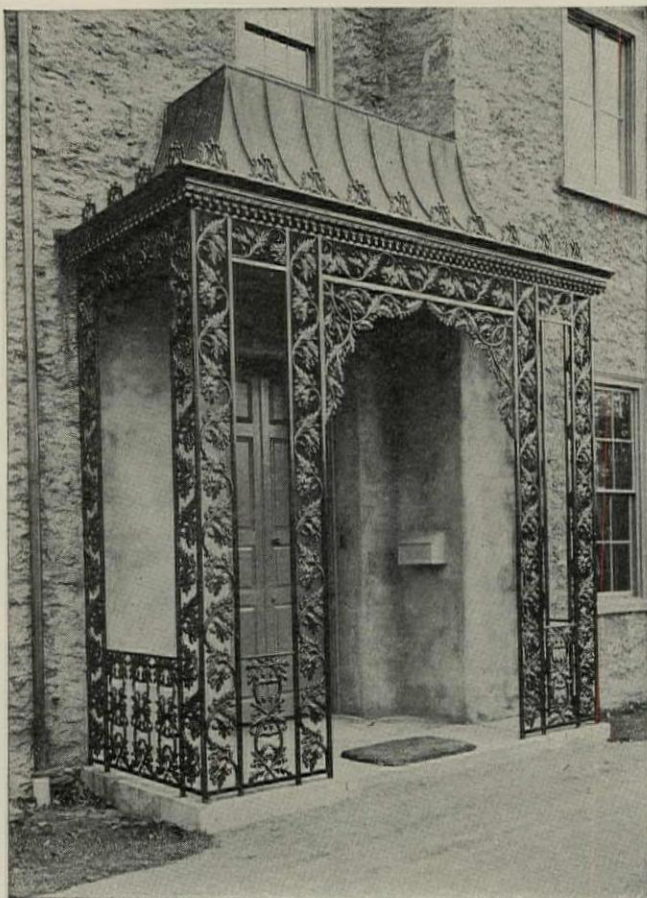
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meets every architectural need
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Cast Iron Verandas
 by
Smyser-Royer



Enchanting Colonial Designs

THE enchanting atmosphere of colonial days is being revived in many modern homes with cast iron verandas as charming and as quaint as the originals themselves.

Almost a century's experience in producing ornamental iron work insures the authenticity of the designs by Smyser-Royer Company. Some of these designs are almost a century old. Architects and builders who are contemplating the use of cast iron verandas are cordially invited to consult Smyser-Royer Company about any phase of design or execution.

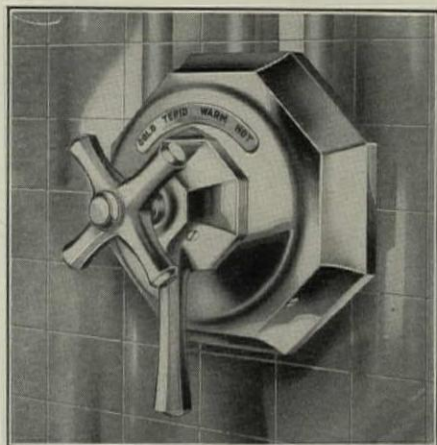
A booklet showing many veranda designs in detail will be gladly sent at your request.

Smyser-Royer Company

Main Office and Works: YORK, PA.

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LEONARD Thermostatic Water Mixing Valves

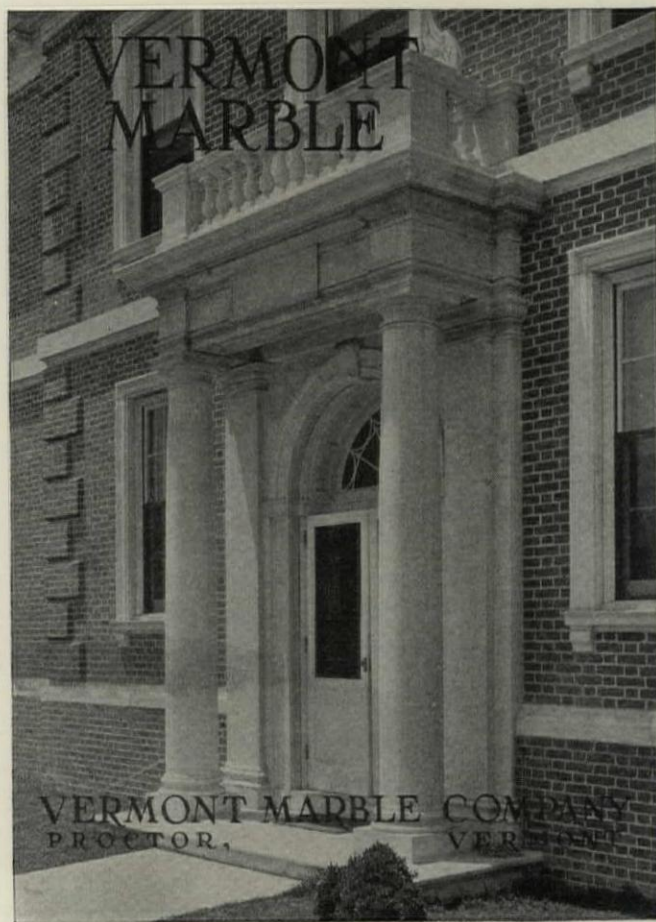


TYPE L-9 OCTAGON DESIGN

Catalog C of Leonard Valves, showing Type L-9 Octagon Design and Colors to match bathroom fixtures, is now ready.

Write for your copy

LEONARD-ROOKE COMPANY
Elmwood Station, Providence, R. I.



Martin Maloney Clinic*,
University of Pennsylvania,
Philadelphia.

Tilden, Register and Pepper,
Architects.

Day and Zimmerman,
Builders.

"A GOOD JOB"

FROM the architect to the lowliest laborer, every man that works on a building construction job knows and feels the spirit in which it was conceived. A fish-eyed foreman can take a couple of pulls at a wicked pipe and say a few words of contempt that tell the whole story. Or a stubby mason may squint appraisingly at the lines of a building and grunt, "Good Job", and no further conversation is necessary.

This million-dollar clinic started out to be a masterpiece. Donor, architect, builder, everybody concerned aimed at perfection. Calking—*effective* calking—just naturally had to be done as a guarantee of permanent worth. Pecora Calking Compound was installed by the Ev-Air-Tight Pneumatic method.

Pecora Calking Compound is made by the manufacturers of Pecora Mortar Stains—the *pulp* mortar colors.

*All window and door frames, all horizontal and vertical joints, and all exterior stone work calked with Pecora Calking Compound installed by the Ev-Air-Tight Calking Co.



PECORA PAINT COMPANY,

Sedgley Avenue and Venango Street, Philadelphia.

Please tell me why a building isn't completed until it is calked. And give me full information on Pecora Calking Compound.

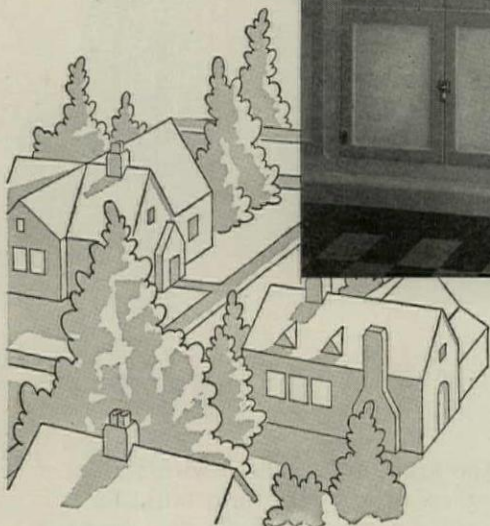
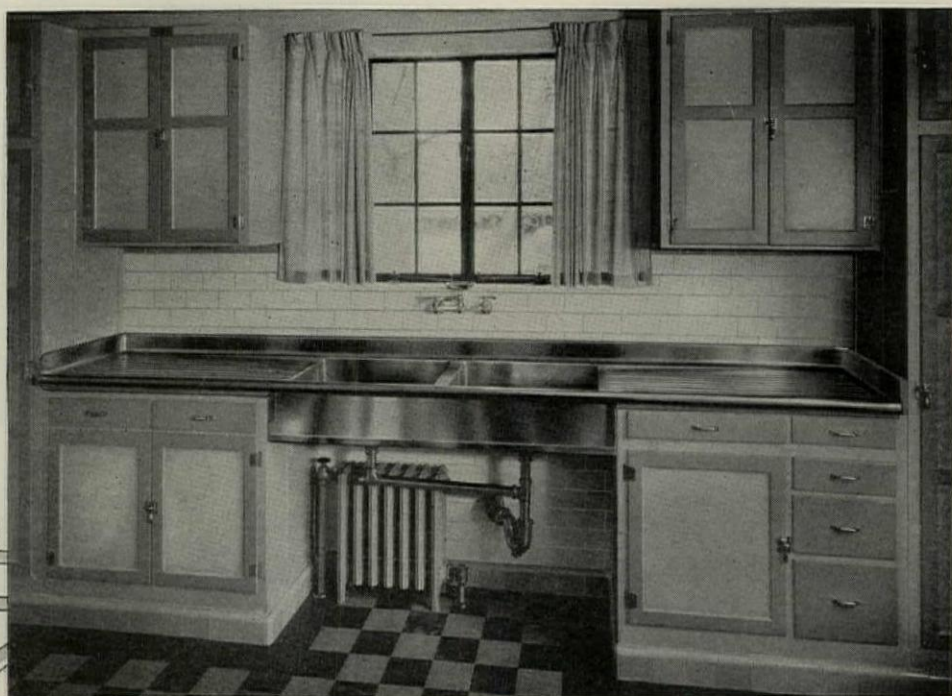
Name

Firm Name

Street and No.

City and State

Kitchen sink of heavy gauge Monel Metal manufactured by Smith & Mossi Corp., New York and installed in a Douglaston, L.I. residence.



Built for kitchen duty ... *this lifetime sink* of MONEL METAL

THE custom-made Monel Metal sink illustrated is a splendid example of the advantages of this silvery Nickel alloy in kitchen sink construction. With its washing and rinsing bowls, its corrugated drain-boards, all of satin finish, heavy gauge Monel Metal, it represents the utmost in sink attractiveness, convenience and durability.

Heavy gauge Monel Metal is customarily specified for kitchen sinks because it combines modern beauty and ready cleanability with rugged wear-resistance. Strong as steel, with no coating to chip or wear off, it resists the denting and abrasion encountered in hard kitchen service. It can never rust—and it defies the corrosive attacks of food juices and cleaning compounds. A Monel Metal sink can be kept spick and span with minimum cleaning effort.

Because its crisp, silvery beauty is so perfectly in keeping with modern trends in kitchen design and appointment, leading architects are now specifying heavy gauge, satin finish Monel Metal kitchen sinks for many of the finest residences they plan. Let us send you complete information on household uses for Monel Metal.

Write for New Booklet, "Planning the Modern Kitchen".



Monel Metal is a registered trade mark applied to a technically controlled nickel-copper alloy of high nickel content. Monel Metal is mined, smelted, refined, rolled and marketed solely by International Nickel.

MONEL METAL

THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL STREET, NEW YORK, N. Y.



Thirteen telephone outlets, including one in the servants' quarters over the garage, provide for complete telephone convenience in the home of Dr. LeRoy Childs, Tuxedo Road, Atlanta, Georgia. Conduit for the telephone wiring is built into the walls and floors. HENTZ, ADLER & SCHUTZ, Architects, Atlanta.

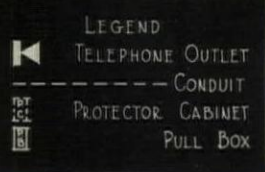
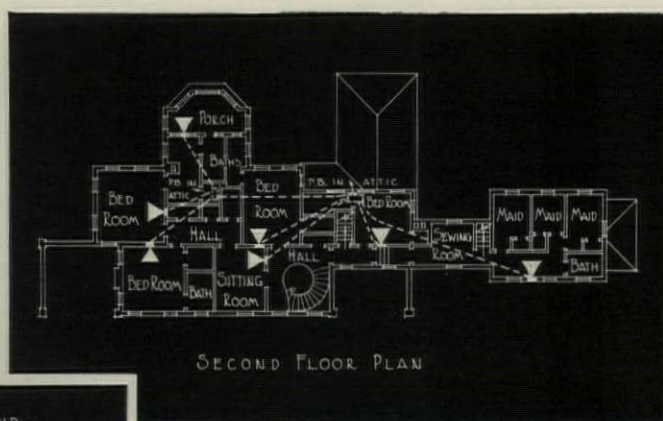
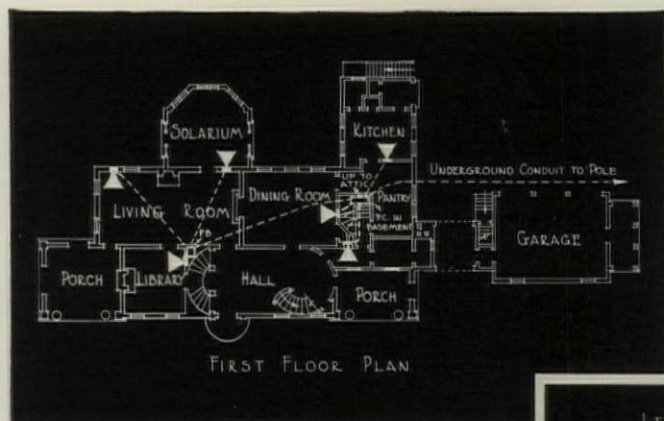
A mark of a well-planned home

AMONG the important features of a home which contribute to the ease and comfort of the occupants is *telephone convenience* . . . that modern note which should be considered in the early stages of planning for a new home or remodeling an old one.

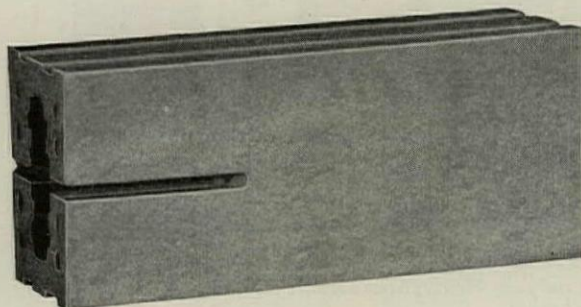
Planning in advance the provision for telephone convenience in a house makes possible the placing of conduit within the walls and floors during construction. This improves the interior appearance by concealing the telephone wiring;

insures against certain kinds of interruptions in the telephone service; and provides for complete convenience by making telephone outlets available in all the important rooms. The occupants can use whichever outlets they wish, and can easily expand or rearrange the telephone service to meet their changing needs.

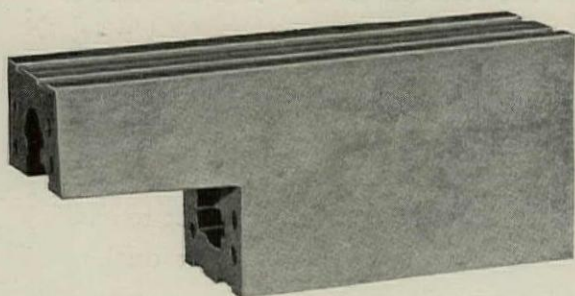
Your local Bell Company will gladly help you plan the telephone arrangements for new and remodeled residences. There is no charge. Just call the Business Office.



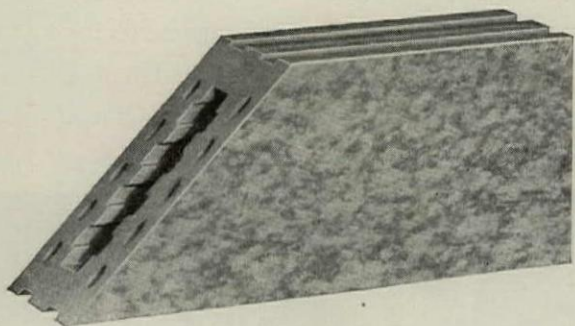
• AR-KE-TEX TILE IS EASILY ADAPTED TO INTRICATE PLANS



Horizontal Cut



Mortise for Switch Box



Mitre Cut

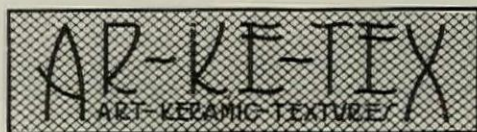
WALL plans calling for unusual window openings of varied height or with irregular and broken areas, present no difficult problem for the application of AR-KE-TEX Tile. A conference between the architect, the contractor and an AR-KE-TEX Tile representative in advance of the starting of construction, will often speed up work and save labor and material.

AR-KE-TEX Tile is hard burned, otherwise it would not be impervious to moisture, acids, alkalis or grease. But it is not too hard to cut easily with proper tools. In fact, any type of cut which it is possible to make with a saw in any other material, can be made in AR-KE-TEX Tile right on the job.

Horizontal or vertical cuts, mitres and mortises can be made easily and quickly. Some of the cuts which are used frequently in construction work with AR-KE-TEX Tile are shown here.

AR-KE-TEX Tile representatives are prepared to advise any contractor where to secure one of several types of portable saws adapted to do satisfactory work.

THE STANDARD OF TEXTURED TILE



CLAY PRODUCTS COMPANY, INC., OF INDIANA >< BRAZIL, INDIANA

WATERPROOFINGS

HORN
PRODUCT

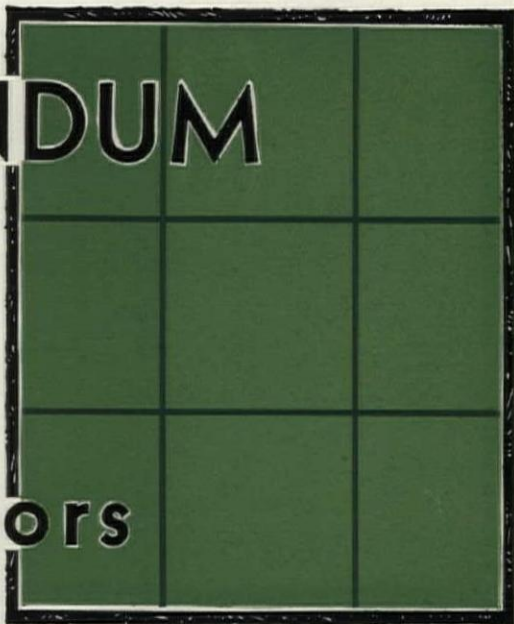
FLOOR-TREATMENTS

COLORUNDUM

For Coloring
and
Armor Plating

Cement Floors

When the Floor Is Laid



JOINTER

Horn's rubber-carborundum wheel on a power hand saw will quickly score a cement floor to give a tile joint effect.



NON-SLIP

The finished surface looks glass-smooth. But try and slide on it and see how you are brought up short.

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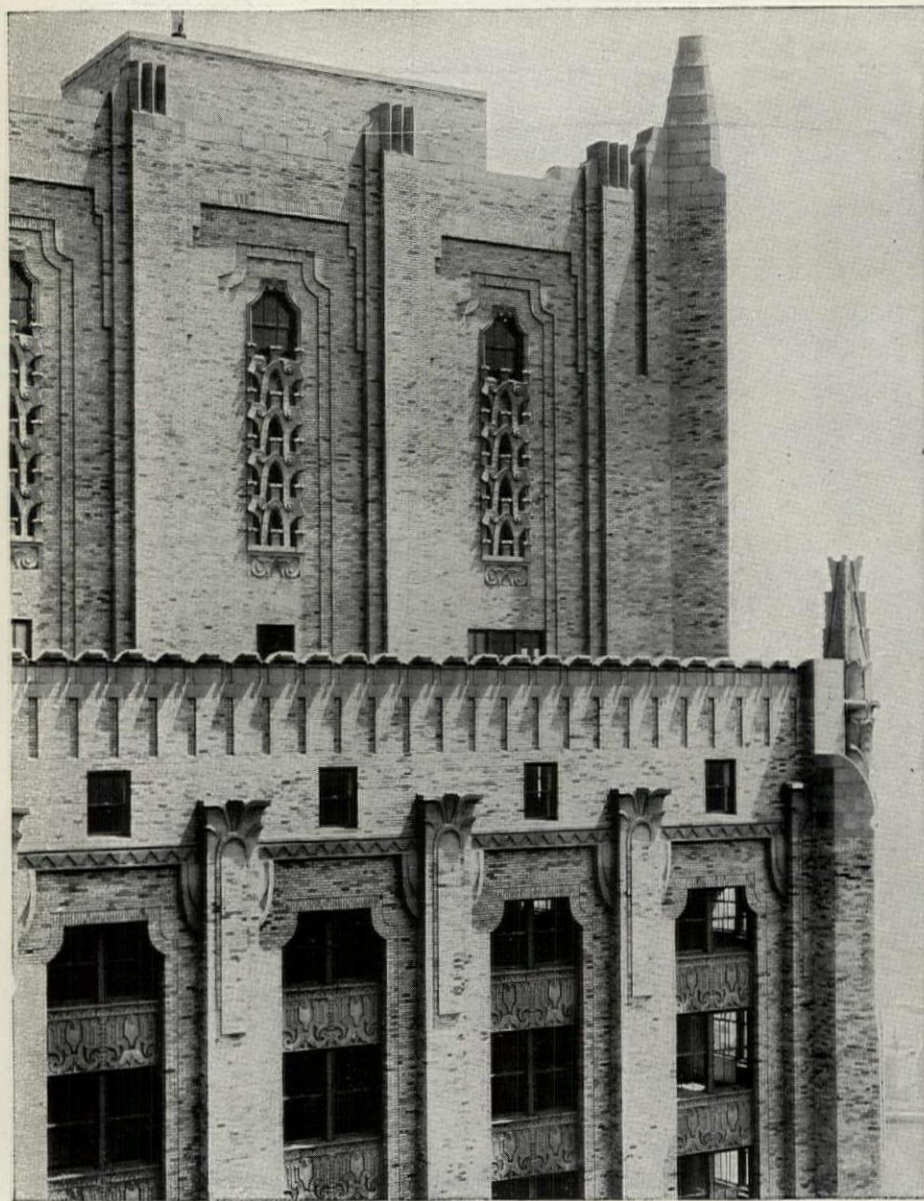
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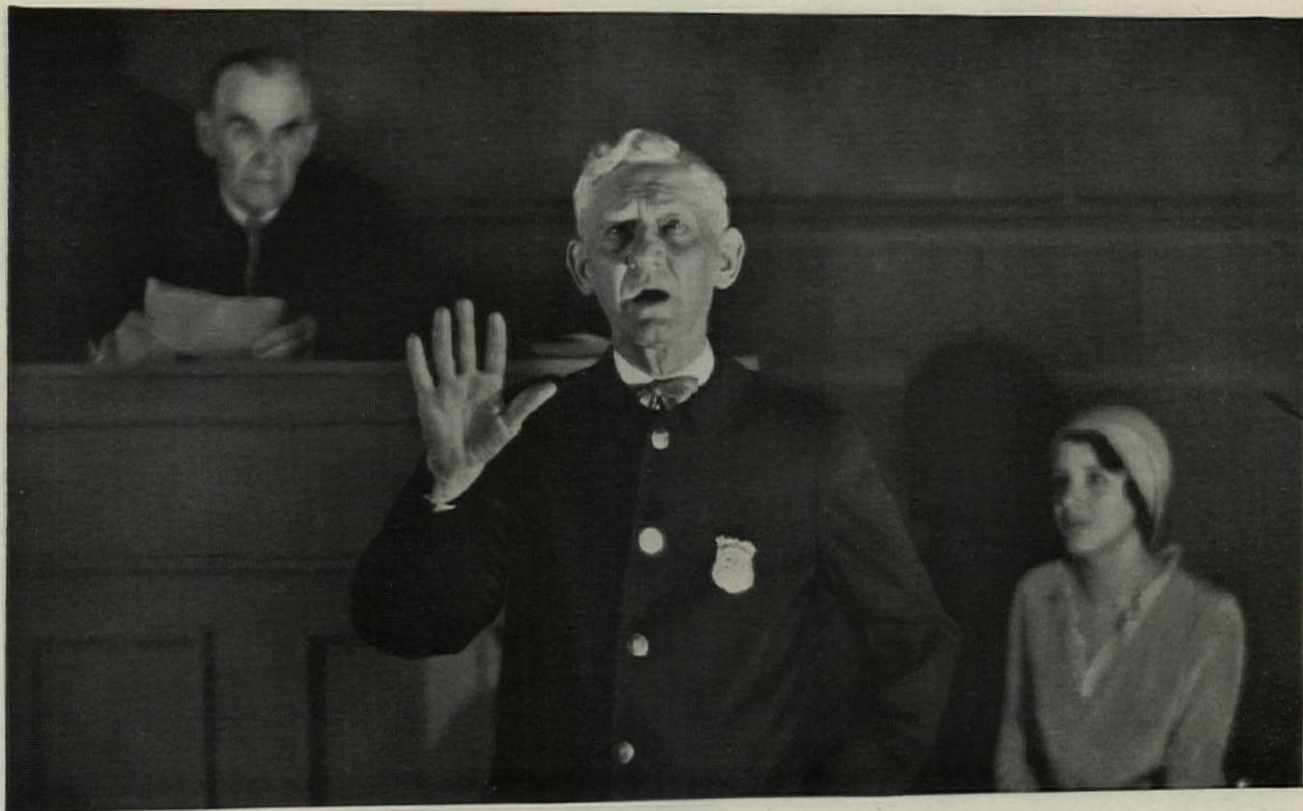
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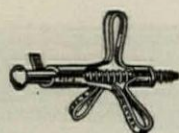
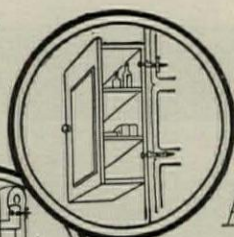
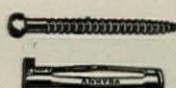
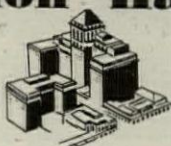
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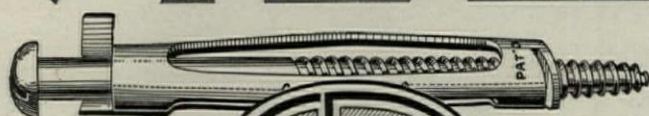
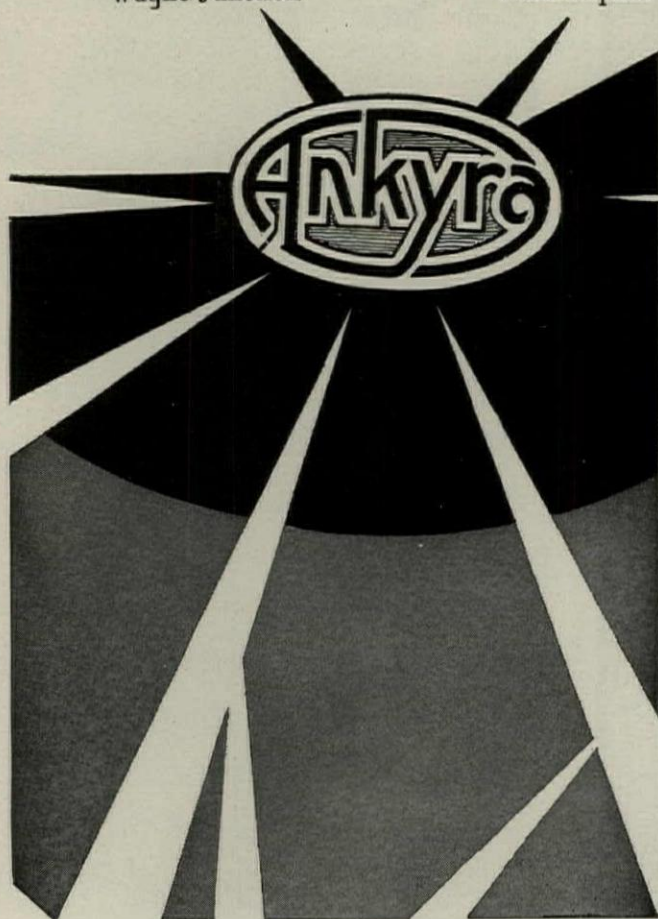
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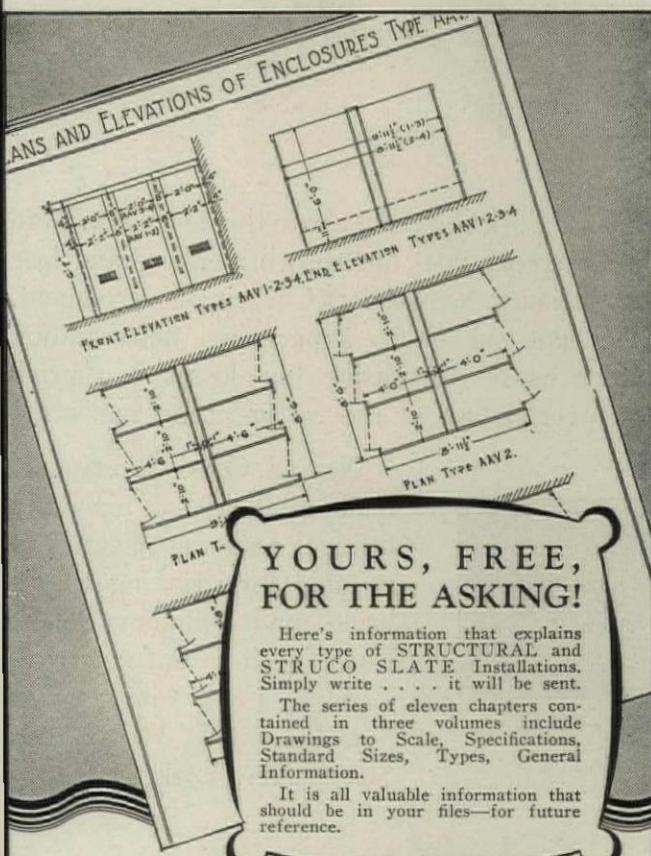
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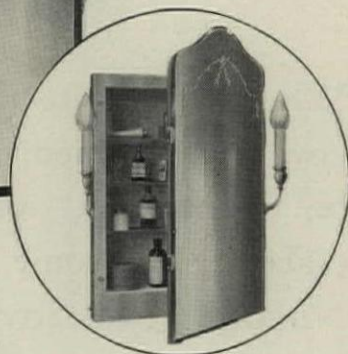
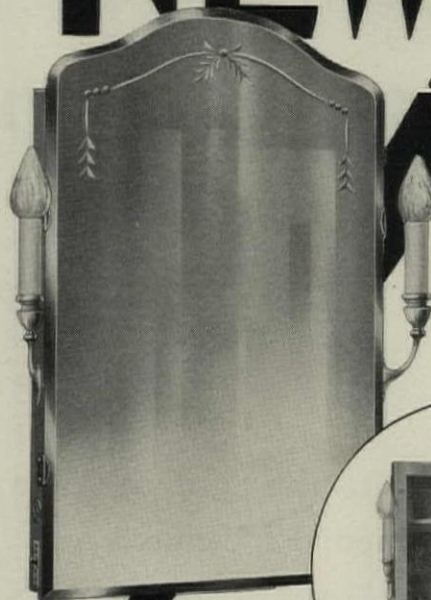
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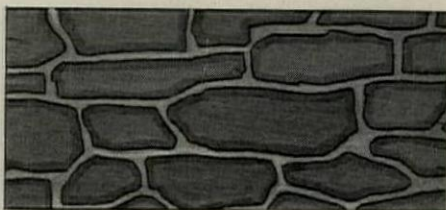
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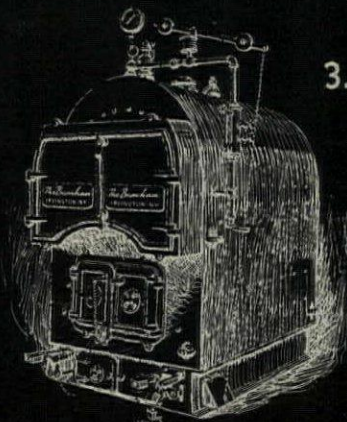
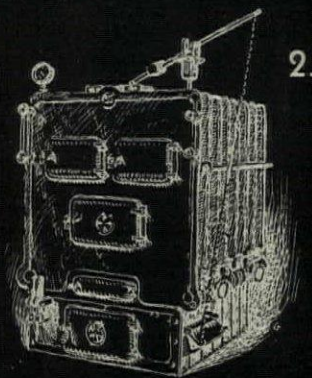
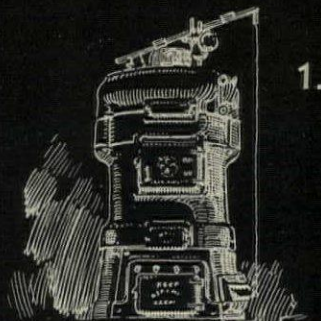
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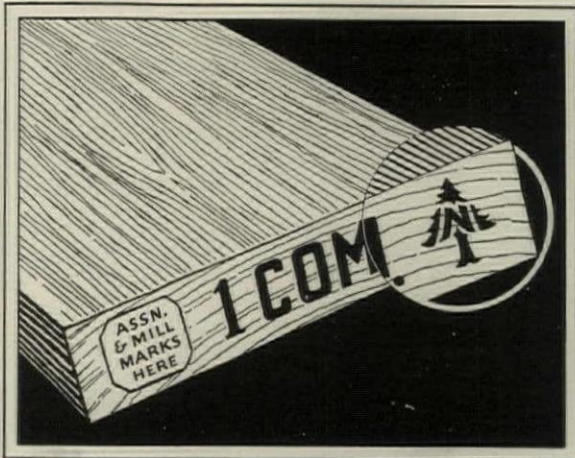
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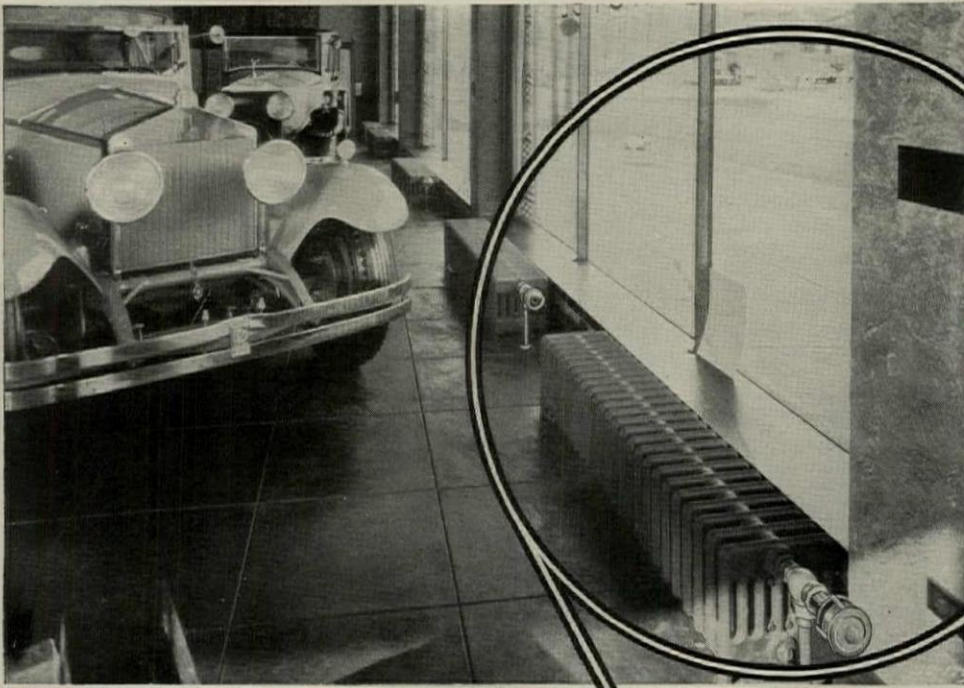
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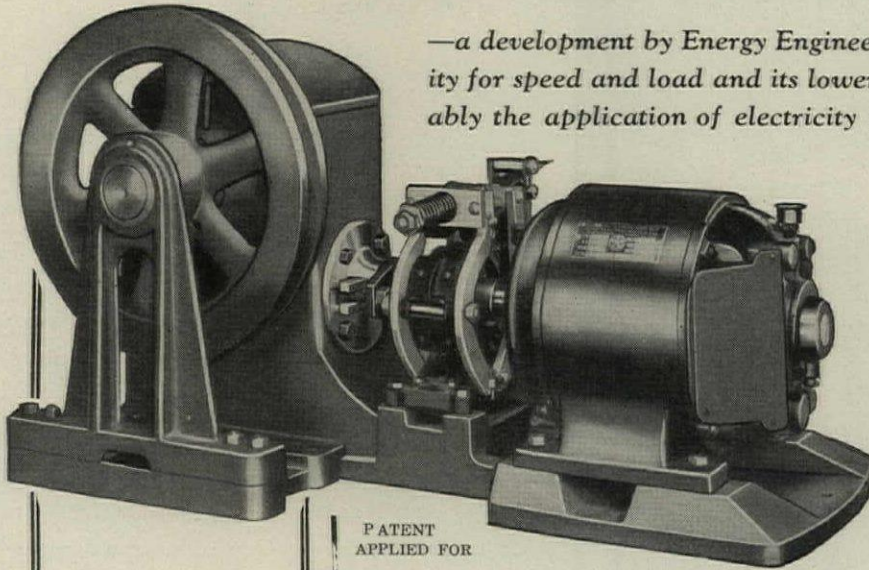
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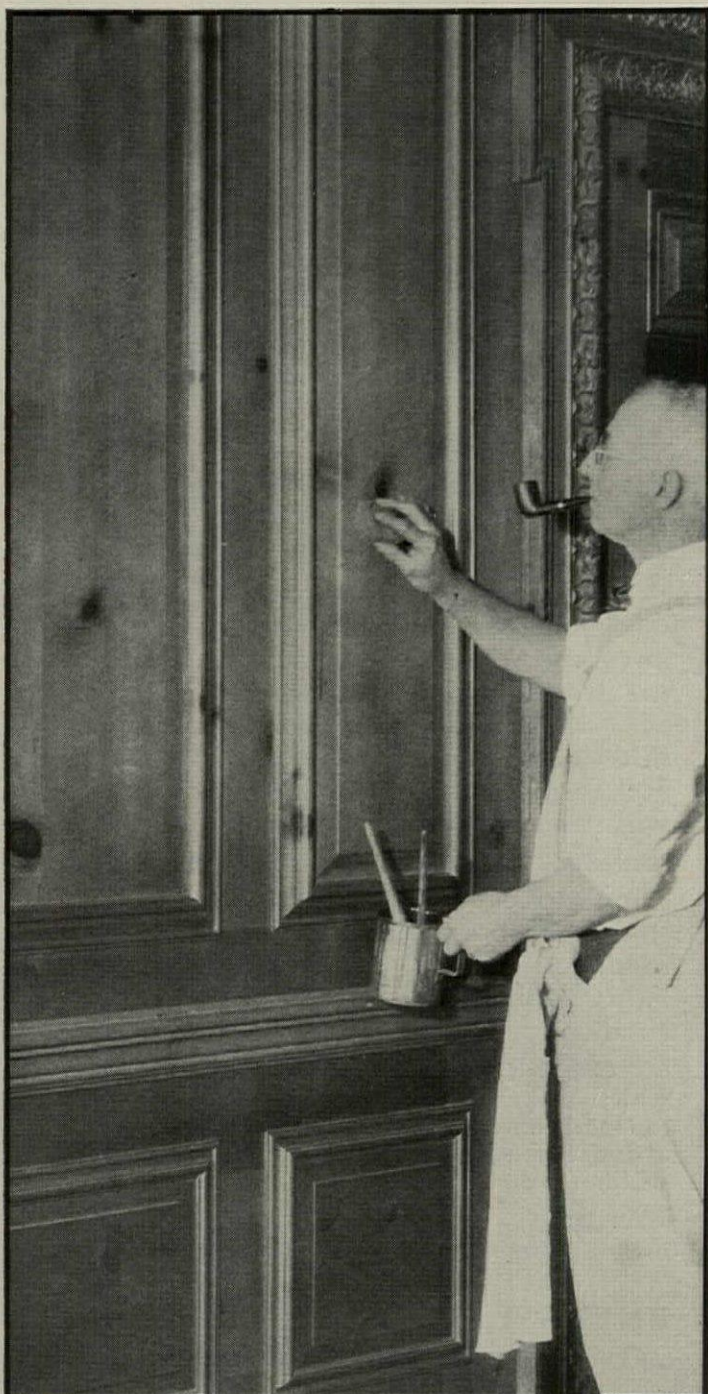
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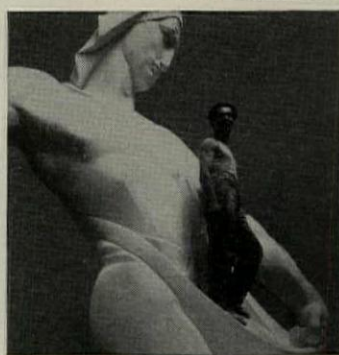
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In the memorial volume "BERTRAM GROSVENOR GOODHUE—ARCHITECT AND MASTER OF MANY ARTS," Lee Lawrie, Sculptor of "The Sower," says of Mr. Goodhue "—Enthusiastic, he always was, but while the Nebraska drawings were getting into shape, he was ablaze. For this Capitol, style is the wrong word—Creation it must be—a full, new expression at one bound. ✕ ✕ Sculpture here is not sculpture, but a branch grafted onto the architectural trunk." ✕ ✕ Hartley Burr Alexander adds "—impressions brought from many sources, enabled him when the flash came, to strike just the monumental note that is to make of the Nebraska State Capitol not only one of the most impressive structures in the world, but one of the most germane. ✕ ✕ The whole structure is like a gnomon of the plainsman's hours; it is simple as sun time and free as sun's space and is topped by the great image of 'The Sower'."



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OUR "DOCUMENT" IS CRITICISED

WHEN WE published, in our July issue, our proposed educational document, "The Value of the Architect's Services," we did so in the full realization that as it stood it was imperfect. In fact, our object in printing it in the magazine was to place it before the entire architectural profession for criticism, hoping that we would get the benefit of the advice of many leading practitioners. We are pleased to say that many of them responded to our invitation and that the helpful comments they have sent us will be of inestimable value in revising the document.

On pages 753 to 756 of this issue we have printed a selection of the letters we received. We regret that space did not permit that they should all be included for they represent much serious thought on the part of architects who realize the vital necessity of educating the public to an understanding of the value of good architecture and of the architect as the instrument by which it is produced.

Curiously enough, some architects found the document in its published form to be a clear statement of the things to which they could subscribe and were willing to have it sent out to the building public without change. Others, however, felt that it should be considerably modified before it could be used. A number stated that it seemed too long and voiced a disbelief in the layman's willingness to read it through to the end. Some of these suggested that

it be shortened by condensing it while others proposed that it be divided up into parts which could be mailed separately to prospective clients. Several men found that the tone adopted was a bit too pleading, as if we were trying too hard to justify the architect's existence.

All of the points brought up are reasonable criticisms and with them as a basis we will proceed to make a thorough revision of the document. We suggest that architects and draftsmen take the trouble to read what has been said on pages 753 to 756, for the

letters themselves contain a number of thoughts which are pertinent not only to the general problem confronting the whole profession but to the individual problems of every architectural office. Every architect should be well posted on all the available arguments he can employ in "selling" himself and his profession to a public which is lamentably indifferent to good architecture. As a slogan, for example, we cannot better the suggestion of Mr. Pierre of Indianapolis who says, "GOOD ARCHITECTURE IS THE PRODUCT OF A GOOD ARCHITECT, A GOOD CONTRACTOR, GOOD CRAFTSMEN, USING GOOD MATERIALS."

Work on the revision of the document is now being done. The next time you see it, it will, we hope, come nearer to being satisfactory to a reasonably large proportion of the architectural profession for whose benefit it is being undertaken.

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IN OUR OCTOBER ISSUE

IN AUGUST we inaugurated the practice of letting our readers know what was scheduled for publication in the following issue. It worked out pretty well, though we were hard put to it to get everything into this issue as announced and came very near having to leave some of it out to make room for news matter. We did, however, make it, and so we are going to be rash enough to give you a set-up for October. If we don't live up to it, what with editorial vacations and such, please do not take it too hard. Remember, we're doing our best.

FOR OUR leading article next month we have turned to the past and gone to one of the early masters of lithography for our subject. It will be remembered that several years ago we presented articles on the lithographs of David Roberts and Thomas Shotter Boys, both of whom have few peers as delineators of architecture. Now we have turned to the work of Eugene Isabey, one of the greatest artist lithographers of all time, for inspiration to present-day draftsmen. A number of his prints will be reproduced, and, since they speak eloquently for themselves, the text will be brief. We are sure that these examples of superb draftsmanship and composition will surprise many of our readers who are not acquainted with Isabey's work.

SINCE AT this time building is slack it behooves us all to consider ways and means of improving conditions and relations in the building industry which may make for economy. The slump cannot go on forever. When it does end, close cooperation between the various elements of the industry will be needed as never before to keep things going and to guard against further dull times. With this in mind we have asked John C. Hegeman, president of the Hegeman-Harris Co., one of the leading firms of builders in this country, to give you, in October, his views on the relationship that should exist between Architect and Builder. What he has to say is well worth considering, for he bases it on many years of experience working with architects on important nationally-known projects and has found that the best results are obtained for the client when architect and builder cooperate to the fullest extent.

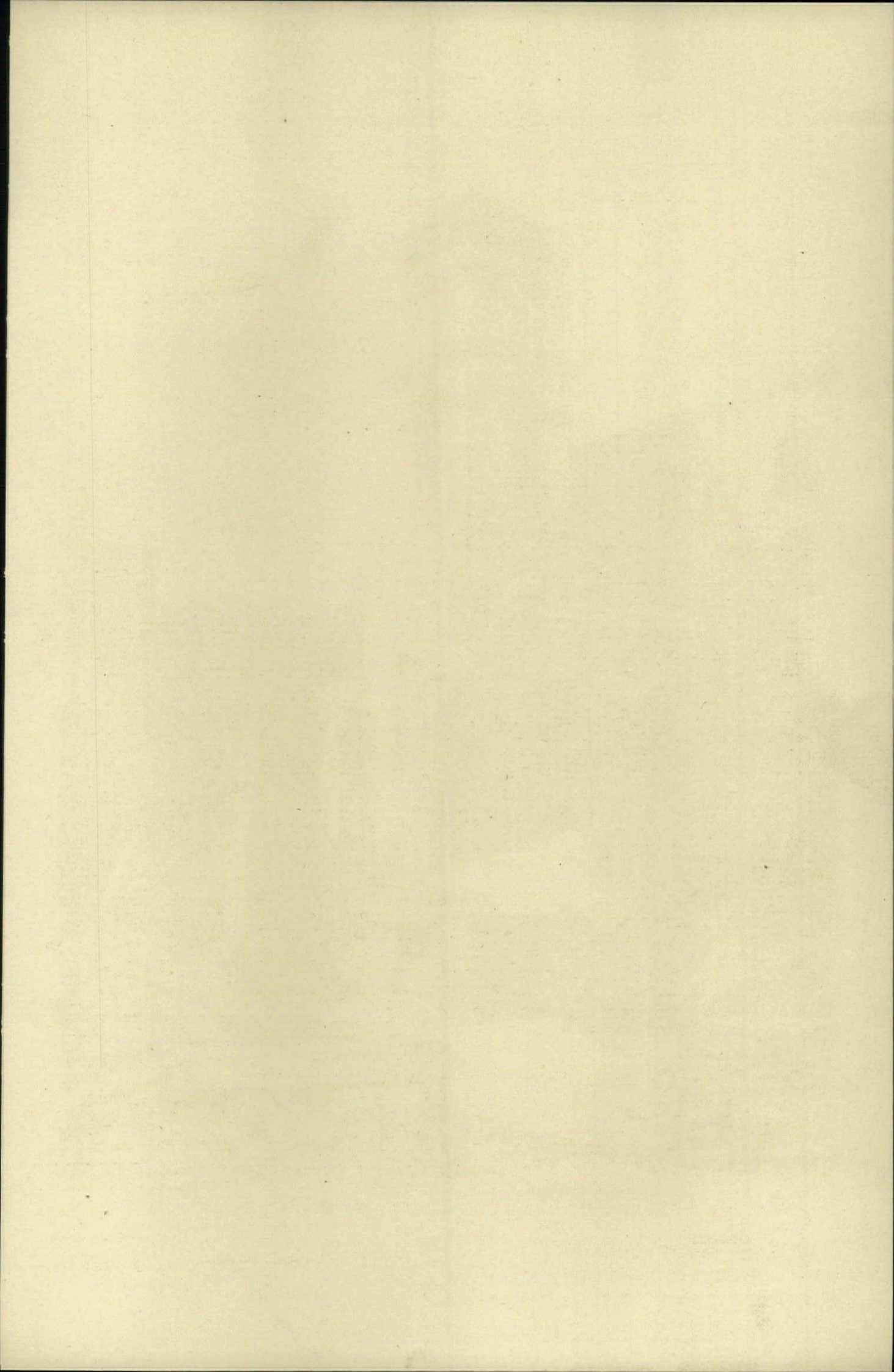
PROFESSOR John Harbeson's series of articles on Design in Modern Architecture has, if we are to judge from letters received from our readers, succeeded in helping to clarify in the minds of many draftsmen, designers, and students what is going on at the present day in the architectural world and what it really means. We discover from what he has to say that modern work, to be really good, must be based on the same principles of good design that underlie the good work of the past. Part 8 of his series will appear in October and will concern itself with architectural metalwork.

WITH THE October issue we bring to an end the series of delightful little stories by Rossel E. Mitchell of Washington which have been running under the general heading "Adventures of an Architect." They have been full of the application of a simple homely straightforward philosophy to the everyday occurrences of architectural practice. Those who have read them all have not only been entertained, we venture to say, but have found therein nuggets of wisdom and common sense which could well be applied to their own practices. Those who have missed reading them might with profit go over their back issues and smile for a while with Mr. Mitchell.

MARTIN LEWIS, who has "arrived" as a painter-etcher of the contemporary scene, is represented on next issue's frontispiece by a reproduction of one of his recent drypoints, "Building a Babylon." This plate is a striking study in black and white of a building excavation in the heart of New York City as seen at night. By the way, we hope you have been liking this series of special frontispieces. If you grow vociferous enough about it the editors may be able to secure an appropriation sufficient to extend this feature for another year. If we don't hear from you we will have to assume that something else had better be substituted.

OUR COLOR plates for next month include a rendering in black and colored pencil of a moderately large residence and a water color painting of the interior courtyard of Santa Maria Novella, in Florence. The rendering is by O. L. Schoeffler, a New York man, and is of interest as showing how effectively the delineator can make use of tinted or colored paper. The water color is the work of J. Olaf Olson, a painter who has achieved considerable recognition through his able handling of the medium. From the painter, who makes a much more thorough and intense study of color than the architectural delineator, the average draftsman and student can learn a great deal which will help him to improve his work.

THOSE INTERESTED in perspective will be glad to know that Ernest Irving Freese's long awaited textbook on "Perspective Projection" is now printed, bound, and ready to be of aid to the draftsman who is striving to perfect himself in his art. By taking the vanishing point out of this difficult subject and by reducing the making of a perspective to a matter of straight projection from plan and elevation Mr. Freese has done a service which will be appreciated by many. The author states in the beginning of the volume, "It has taken two thousand years to produce this book." We, as publishers, hope that it will be good for another two thousand! The material as it originally appeared in PENCIL POINTS was thoroughly revised and amplified before it was made into the book.





ST. OLAVES, TOOLEY STREET
FROM A DRYPOINT BY HENRY RUSHBURY
Reproduced by courtesy of the Schwartz Galleries

PENCIL POINTS

September, 1930

PENCIL POINTS

Volume XI

September, 1930

Number 9

FRANCIS S. SWALES—AN APPRECIATION

By Harry Sternfeld

Architect and Professor of Design at the University of Pennsylvania, School of Architecture

ALMOST A SCORE of years ago, in those good old days when the average designer leisurely and confidently located a "crib" in Letarouilly, Mauch, or Meyer's Handbook of Ornament—instead of frantically floundering through the latest flood of periodic cosmopolitan publications in a state of baffled bewilderment and high blood pressure—the placid small-town course of a young draftsman was abruptly and forever turned aside by that yellow peril—a telegram. With others, obedient to the kindly recommendation of Dr. Warren P. Laird, he had submitted examples of his work to a firm of architects in Montreal with the feeling and subconscious hope that it would not meet with favor. Instead came the command, "Come at once—if not sooner," signed Francis S. Swales. This challenge, bringing about a contact for which the writer has ever been grateful, proved typical of the man.

The first impressions which that diffident newcomer to Montreal gained of Francis Swales still remain vivid. The tall, gaunt figure; the fine head, with determined jaw, softened by an "atelier" beard; and the keenly intelligent eyes, commanded instant respect. The kindly welcoming gleam from those eyes, the manly soothing voice, the frank unaffected manner restored self-confidence and inspired an affection shared by the whole office staff.

The staff that was housed in the fine old three-story stone building, which looked like a clubhouse, at 12 Beaver Hall Square, was a most interesting British-American group, made up mostly of men who had spent years with Francis Swales in Europe or the United States to which nucleus new men were being added. It recalls to mind many personalities to each of which I should like to devote a paragraph if space permitted. Eric Temple, Grosvenor, Arthur Carman, Mercil, John Taylor, "Jack" Lehti, Harry Wilkinson, Derrick, and young "Sam" Swales, brother to the power that was, are some of the names that linger vividly in the memory as belonging to outstanding individuals. Eric Temple, a grand and glorious Briton, —saw just a bit farther than the rest of us—as far as 1914, to be exact. Delightful Arthur Carman, with

his ubiquitous umbrella, proved not only that the English know their steel but that structural engineers can be quite human. It was more like one of the glorious guilds of the Renaissance or a Paris atelier than like an office. A squad of men would arrive from Europe or New York. A half dozen would be dispatched to a job on the Pacific Coast or elsewhere. Everything was bustling with activity.



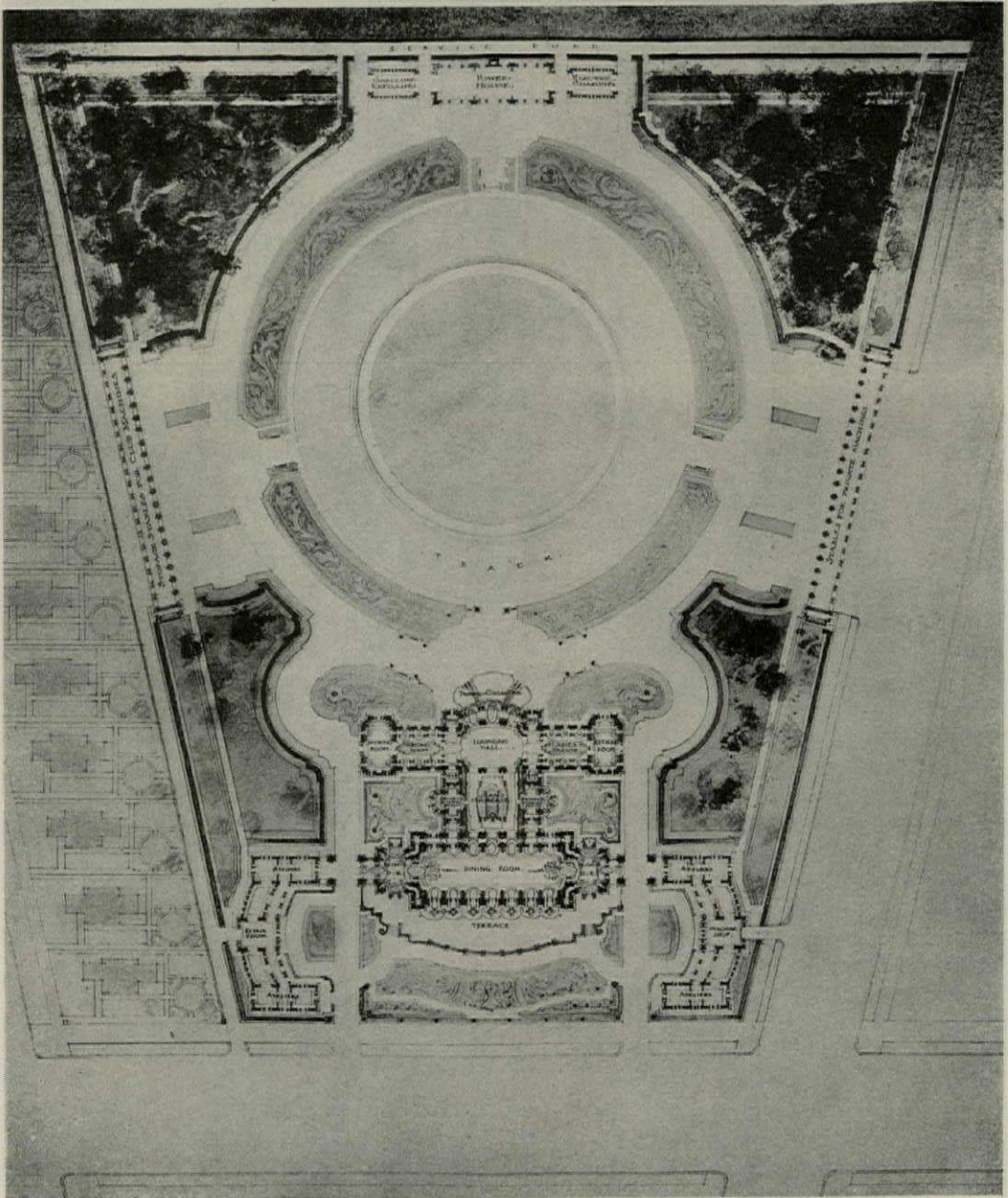
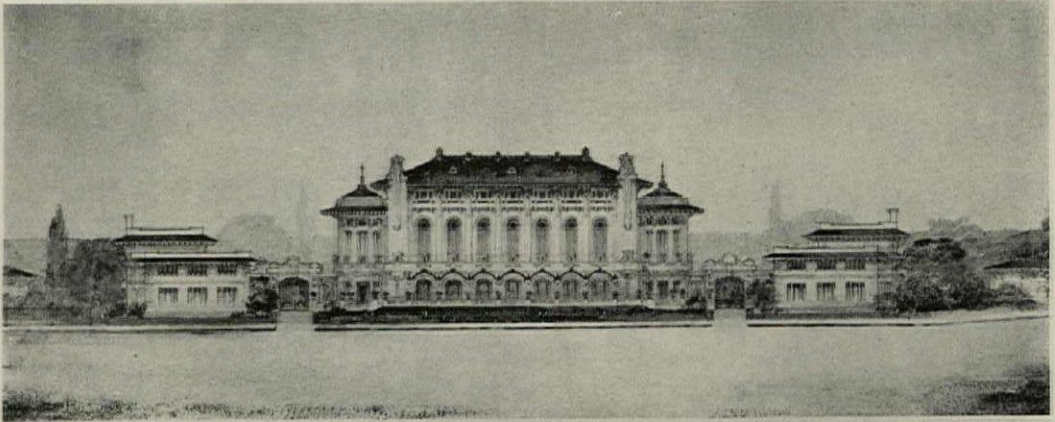
FRANCIS S. SWALES

Of the new men from the United States the writer and last, but not least, Ralph Walker finally joined the remaining numerous group. We were immediately made aware of his presence and of an institution referred to as M.I.T. The writer being a loyal Pennsylvanian, discussion naturally took place for the edification of the whole group. Even then, Walker had ideas—no matter whose. For instance, he claimed to have boiled down all known architectural plans into three parent types of which all others were variants; viz. the H plan, the U plan, and the T plan. With this formula he claimed to be able to solve all programs and planned an immediate onslaught in the major architectural competitions. Although we pointed out that, as far as architecture went, the three letters spelled "hut," he was not deterred.

The writer claims the privilege of exemption from discussing his own foibles at this time. All of this made for a very happy group, with none happier than its patron, F. S. Swales.

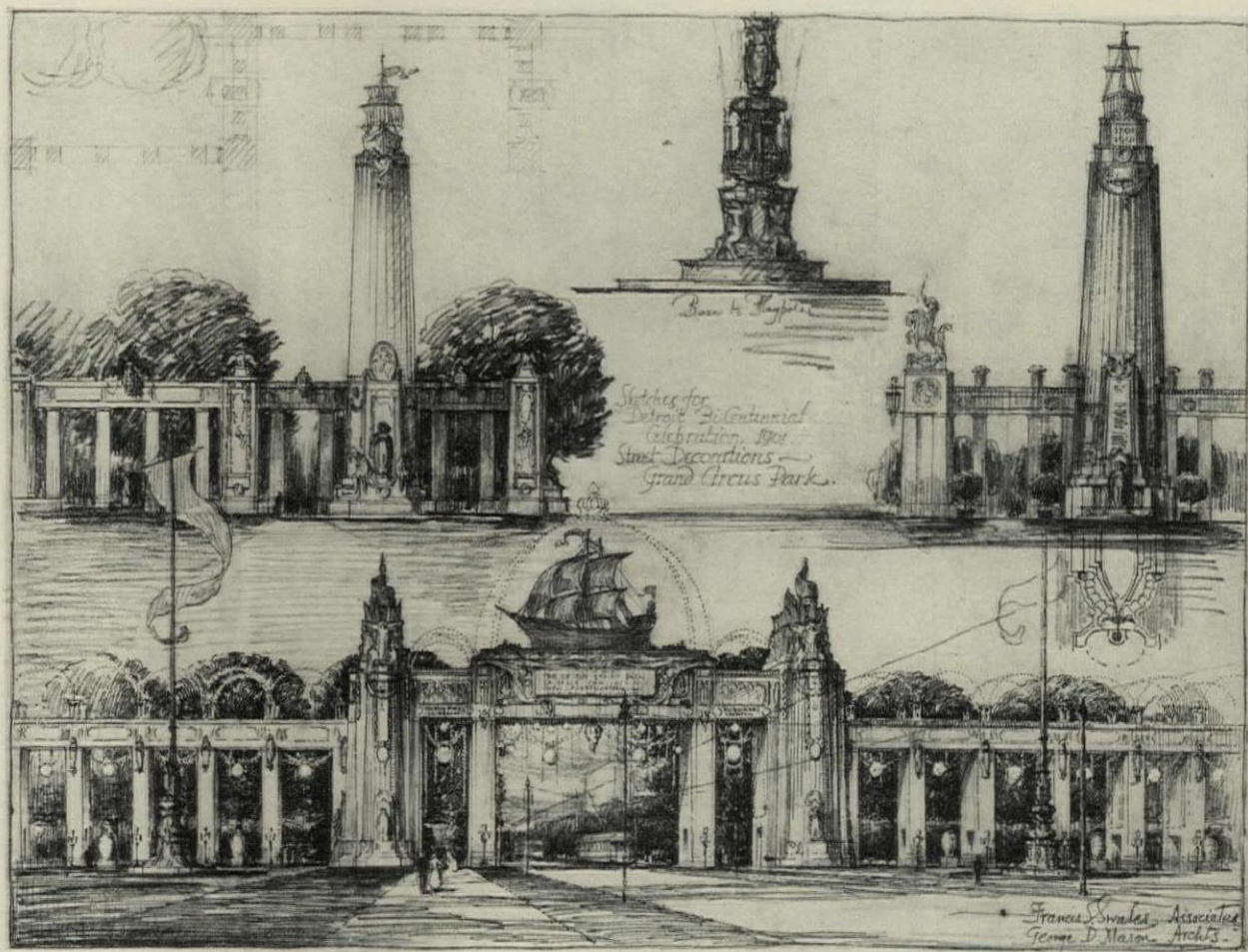
At this time the office buzzed with the preparation of drawings for the millions of dollars worth of building that were to be constructed for the Canadian Pacific Railway, the Dominion Government and municipalities of Canada, and projects of Sir William Van Horne in Cuba. Amid this activity, ceaselessly moved the presence of F. S. S., day and night. He was equally interested in construction, engineering, design, or mechanical equipment, and showed the faculty of a true genius in following out a conception to the last detail, no matter how large the original idea, no matter how small the detail involved. He was equally at home with the engineering staff or the design staff and his ability was respected by both.

The writer—graduate of a great architectural school



AN AUTOMOBILE CLUB—WINNING DESIGN FOR FIRST WASHINGTON UNIVERSITY
TRAVELING SCHOLARSHIP IN ARCHITECTURE

WON BY FRANCIS S. SWALES IN 1903



SKETCH STUDIES FOR STREET DECORATIONS, DETROIT BICENTENNIAL CELEBRATION, 1901

DESIGNED BY FRANCIS S. SWALES IN ASSOCIATION WITH GEORGE D. MASON

and fresh from worshipful contact with that great teacher of design, Paul Cret—felt he had experienced the ultimate in design criticism. Upon graduation, the architectural career seemed to promise nothing beyond slavishly pleasing the varied whims of architectural plutocrats, whose taste seemed vulgar and debased beside the master's, or else practicing on an uninitiated public a few imitations and tricks of architectural sleight-of-hand such as the tyro uses to cover up a lack of sufficient knowledge or training.

We noted with a shock of the keenest pleasurable surprise that Francis Swales sought the same distinguished white surfaces, relieved by chastely rich grays, the same simple, firm silhouettes, and the same high-tension curves which our great teacher had taught us to appreciate. The same logical analysis of a program was observed, the same regard for circulation and the importance of position of the various elements was emphasized. Such similarity of taste seemed a marvelous coincidence. Swales displayed such a mastery of composition in design that, without sacrificing one iota of our loyalty, we fiercely determined to be worthy of one who was putting into practice those principles we had been taught. We were to learn later that this similarity of taste was no mere coincidence but the result of the happy influence of a renowned French patron, Pascal, in whose atelier at

Paris both Francis Swales and Paul Cret had studied.

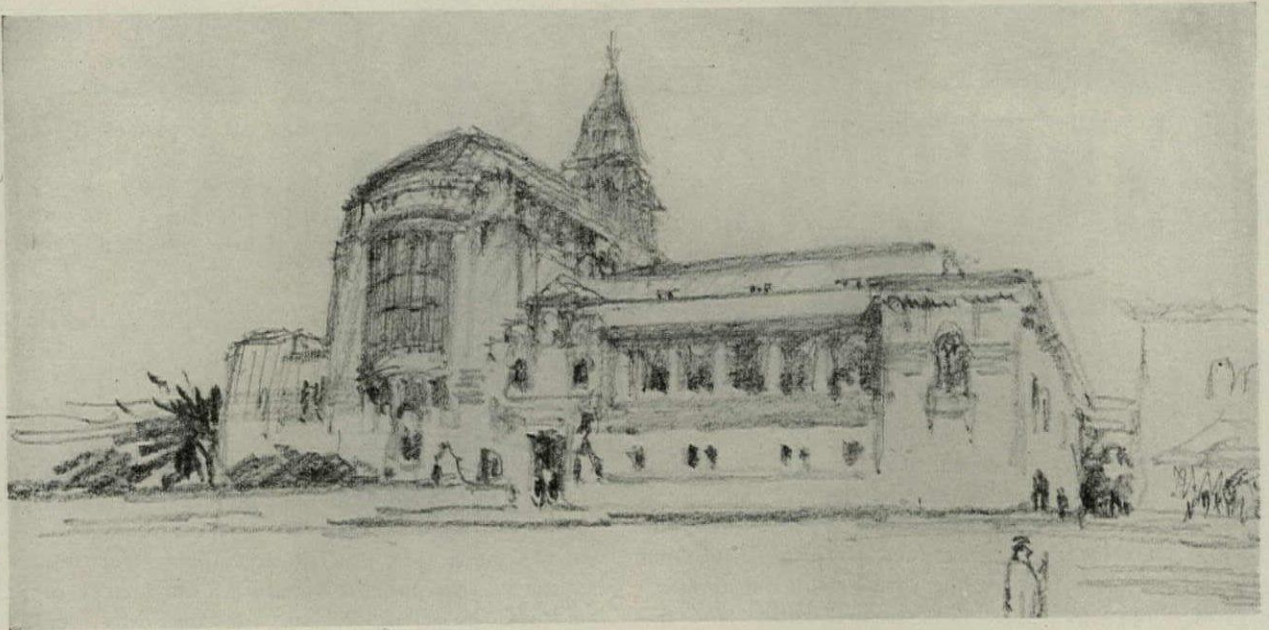
To Francis Swales, leisure and social success in the commercial sense meant nothing; he loved his profession too much. In practice no human effort and no expense was too much to produce a satisfactory result. No study, no set of working drawings was ever too far advanced for him to sacrifice if he discovered an idea later that would improve the solution—structurally, aesthetically, or to the economic advantage of his client. The quality of the work produced was high and the training of his assistants profited because of the research and intensive study required.

Besides his comprehensive professional knowledge, his technique in draftsmanship and water color rendering were at once the envy and despair of those about him. Rapid and sure with pen, pencil, or brush, his lines or strokes were full of fine feeling.

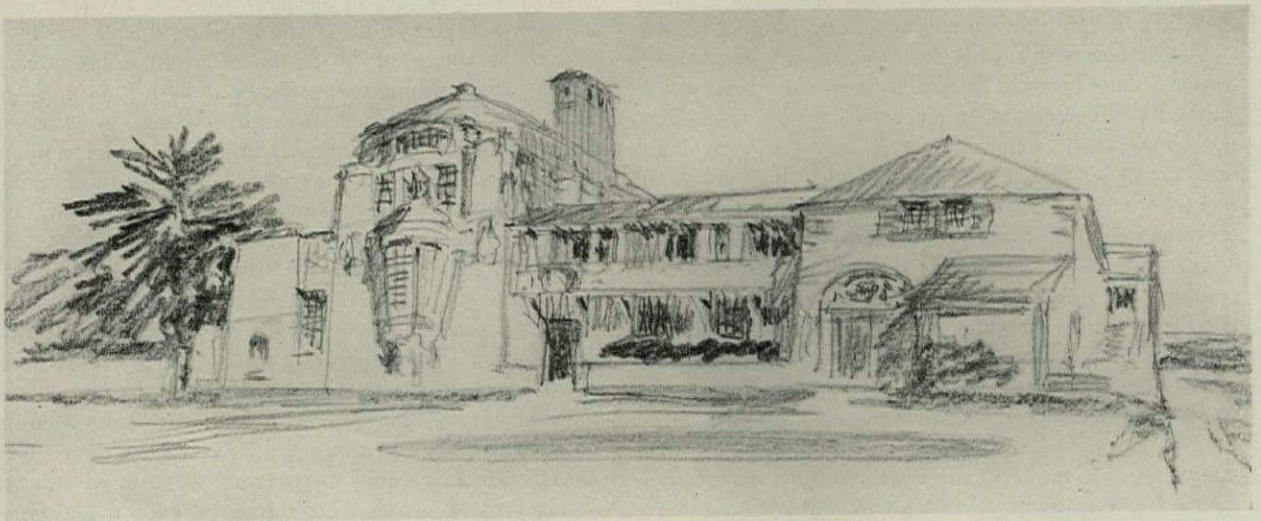
Spontaneous preliminary freehand sketch perspectives which fall somewhere between a thumb-nail sketch and a finished rendering were his most characteristic drawings. They presented the complete composition in all its essential elements but showed no more detail than an artist like Joseph Pennell or Jules Guerin would draw in picturing a completed building. He used a 4B lead pencil in making sketches of smaller buildings and details and usually drew on sheets of ordinary writing paper. Large buildings or groups



SKETCH DESIGN FOR MORTUARY CHAPEL AND CEMETERY ENTRANCE, COLUMBUS, OHIO, 1901



SKETCH DESIGN FOR CASINO AT ALGIERS, 1904



SKETCH DESIGN FOR A RESIDENCE AT PALM BEACH, FLORIDA, 1918

FRANCIS S. SWALES—AN APPRECIATION

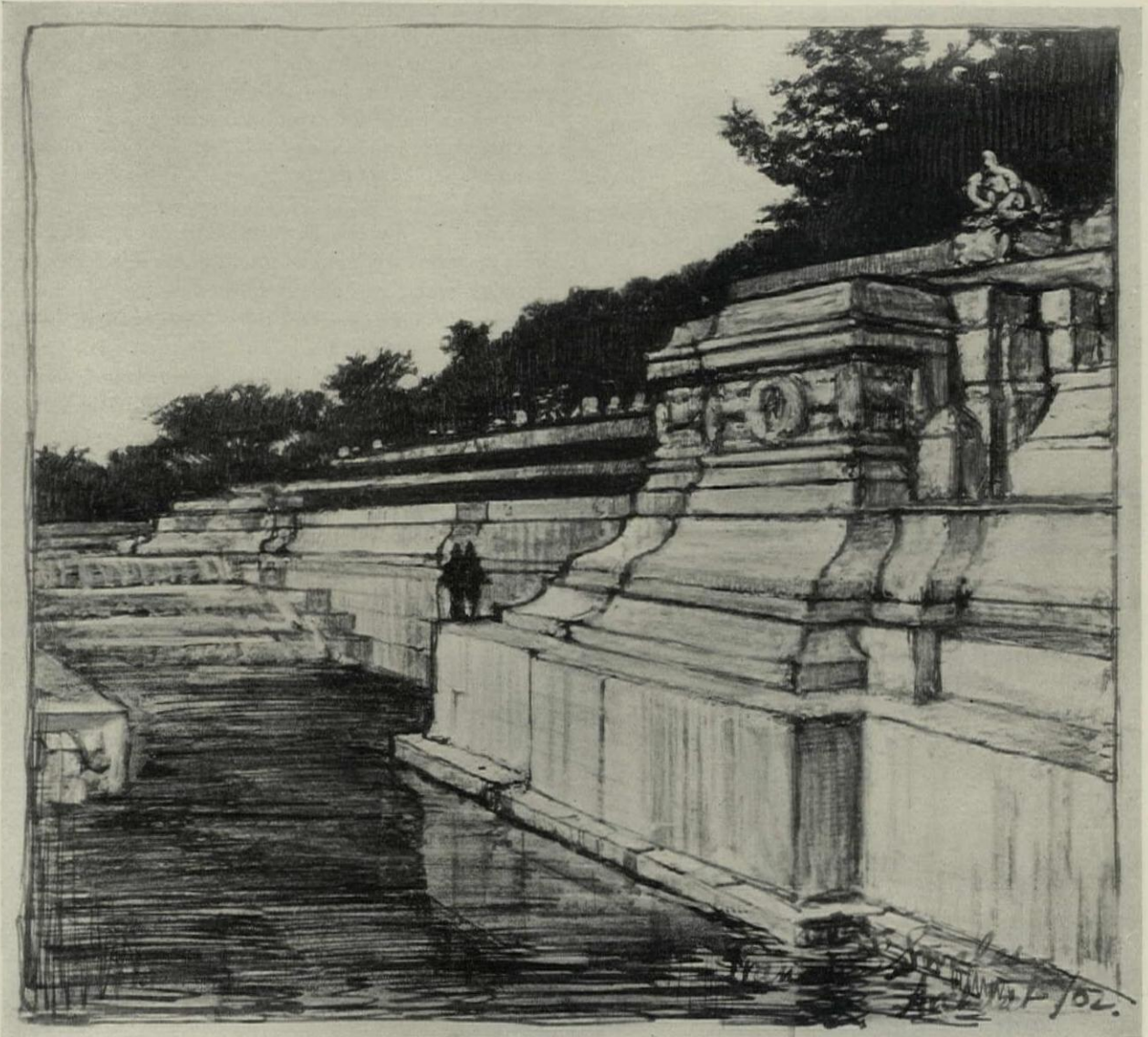
were drawn on large sheets in charcoal, pencil, and water color. Mr. Swales dislikes fixatif and since unfixed drawings in soft pencil and charcoal were sure to smudge he smudged them in the first place, with his finger, as he drew. He preferred then, and still prefers, an impression to any semblance of the photographic in representation.

The poetic quality and fiery surety of his sketch criticisms showed that he possessed the quality of a real critic—the ability to analyze and synthesize, and to express the synthesis graphically in a representation filled with the promise of efficiency and beauty. Just a few days ago, with fascination as of old, we watched his clever fingers trying to keep up with his busy, fertile mind, evolving dozens of miniature sketches of plans, elevations, sections, and perspectives possessing that elusive quality “scale” and beauty of composition.

He encouraged his office to organize an atelier in which he unselfishly devoted much of his time to criticism, placing his own valuable library at the disposal of the students. He proved his quality as a

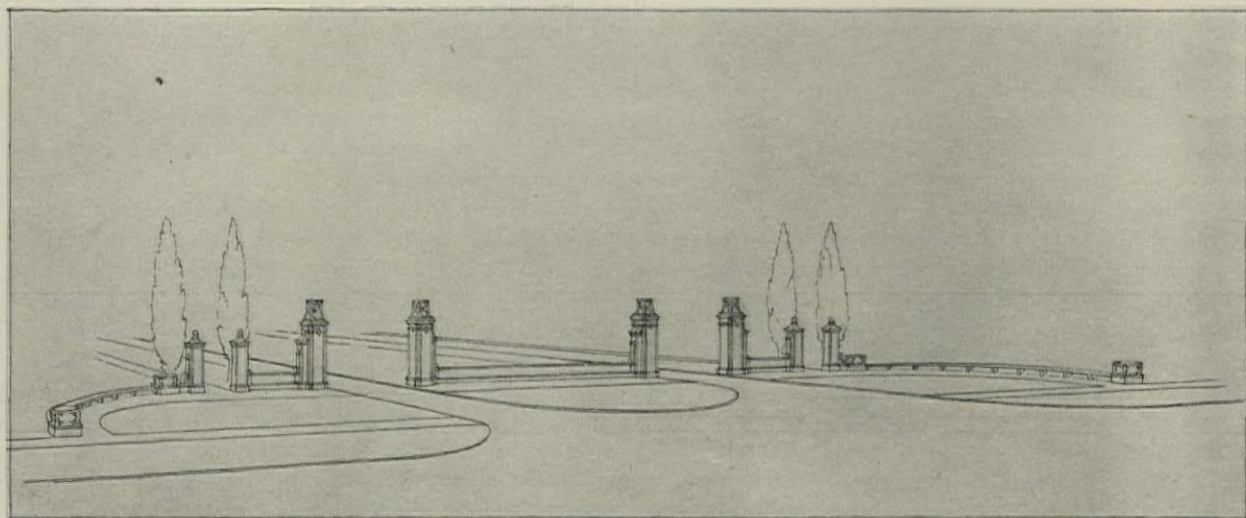
teacher since the work of his students met with success in the B.A.I.D. judgments and the spirit of the Atelier Swales ran high.

Not only were we inspired by him to study in the atelier, but he opened up undreamed-of vistas for our future development. He fired our imaginations by recounting his own experiences as a student in architecture in the United States and abroad. His life was so brimful of architectural experience, his contact with members of the profession so wide and varied, that we gained from him an intimate knowledge of those great ones who had hitherto been only names to us. He wiped away our snobbish, academic provincialism. Through him we learned that truth in art may be sought and found in many different ways; that the self-made, atelier-trained man and the college-trained man could succeed equally well in the profession, depending on their determination to equip themselves properly. Through the modest presentation of his own experiences as a scholarship winner, he evoked and nourished in us a determination to compete until



CASCADES AND BATHING POOL IN A PARK IN ARKANSAS—SKETCH DESIGN BY FRANCIS S. SWALES

TO BE EXECUTED BY SLIGHTLY ALTERING AN OLD STONE QUARRY



LINE PERSPECTIVE, ENTRANCE TO "GOLFSIDE"—ESTATE DEVELOPMENT AT SAGINAW, MICHIGAN

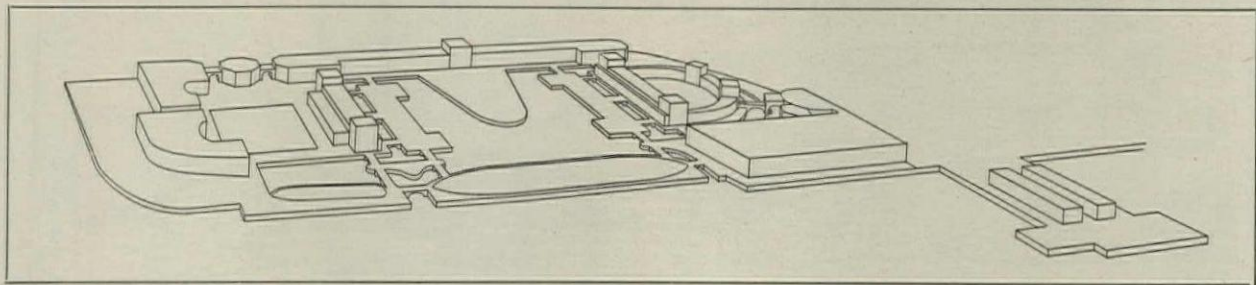
denied the privilege. His accounts of the life and the brilliant achievements of the students of the *École des Beaux Arts* made us feel that we must enjoy this training.

It had been a great joy to work thus for an artist—but there was a penalty attached. Gradually there dawned a feeling of complete inadequacy and a sense of the foolishness of trying to design for one so far advanced—though one who never complained at the crudities committed. At times it would have been a relief if Francis Swales *had* complained, but he could not bring himself to chide one who was trying. His patient, helpful criticism, never given in a peevish way or spirit of contrariness, gradually made it clear that it was necessary to start again with a new point of view—to go back to school, to regard the criticisms of the master with a new insight, to acquire if possible that supertraining felt to be so necessary.

The parting was mutually reluctant—but there was also understanding. Patient saving and the award of a scholarship made a return to school possible. The germ planted by Francis Swales, the work done in his atelier, the added training at Pennsylvania brought about the realization of a dream—training abroad. His advice and experience never ceased to be an inspiration and it is a privilege to place before the readers of *PENCIL POINTS* an account of his career. Two large scrapbooks containing reams of data and reproductions of drawings, published photographs of exe-

cuted work, etc., provide sufficient data upon which to construct a more complete story than can be given here of a lifetime full of study, travel, work, and adventure. Nearly everything that life can offer, whether in its refinements or on the battlefield of engineering, he has been able to enjoy. Many of the items of an immense experience have appeared in the anecdotes given in his articles upon the work of other architects and artists in *PENCIL POINTS*—but we digress.

Francis S. Swales, born in Canada of American parents, was reared and educated in the United States. Heredity and environment formed a uniquely favorable background for the rapid development of his natural talents in the field of architecture. His father, a building contractor of the old school, kept a joinery shop in the rear of the Swales home in Buffalo. Here old white-bearded English craftsmen and artists executed fine interior woodwork from architects' drawings and details. Constant contact with these activities from infancy made the keen young Swales so familiar with the various phases of the craft that, at the age of eight years, he was quite capable of reading and interpreting all types of drawings of carpentry, joinery, and building construction. Steel was just beginning to supplant wrought iron structurally and Mr. Swales can still recall how the various members had to be colored for identification—red for wrought iron and blue for steel. As far back as he can remem-



PRELIMINARY BLOCK PERSPECTIVE FOR A NAVAL EXHIBITION AT WALLESEY, ENGLAND

THIS DRAWING, MADE IN 1908, HAS AN EXTREMELY "MODERN" FLAVOR

ber, architectural magazines came to his home and he followed the usual bent of children by copying their illustrations. Probably by reason of environment his interest did not wane; his efforts were continuous and his ability to draw grew apace.

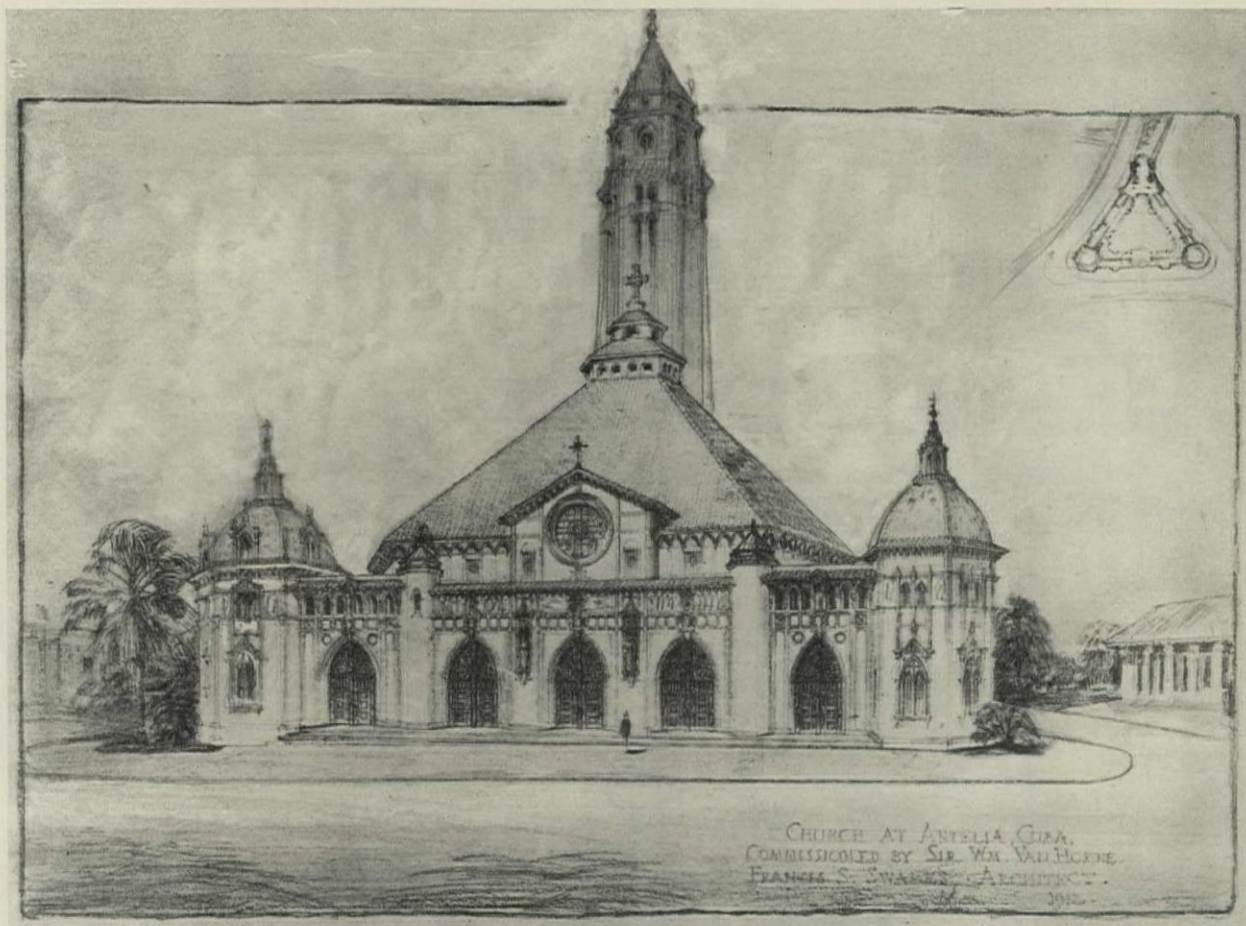
In addition, his mother's father was a consulting engineer who, because his work took him wherever railways were built, had traveled a great deal in Europe and Asia and had resided several years in Paris. His descriptions of the cities and buildings he had seen, together with his accounts of the progress of Alfred Gilbert, an uncle of Swales, in his work as a sculptor at Paris and Rome, stirred the lad's imagination. Contact with architects who visited the shop enabled him to understand that an architect was an important person and he learned that Richard M. Hunt and Richard Upjohn were "great architects." After a chance acquaintance, Mr. Hunt, by reason of his genial and impressive personality, became such a hero to the boy Swales that, in his first years as an architectural student, he became furiously jealous of the rising and overshadowing reputation of the firm of McKim, Mead, and White.

From time to time later on, he was taken out to visit buildings in course of erection and material supply yards. He was sent as a messenger to architects' offices and soon made contacts with such men as D. H. Burnham, Louis Sullivan, and Bruce Price.

He thus became familiar with the various phases of the building industry.

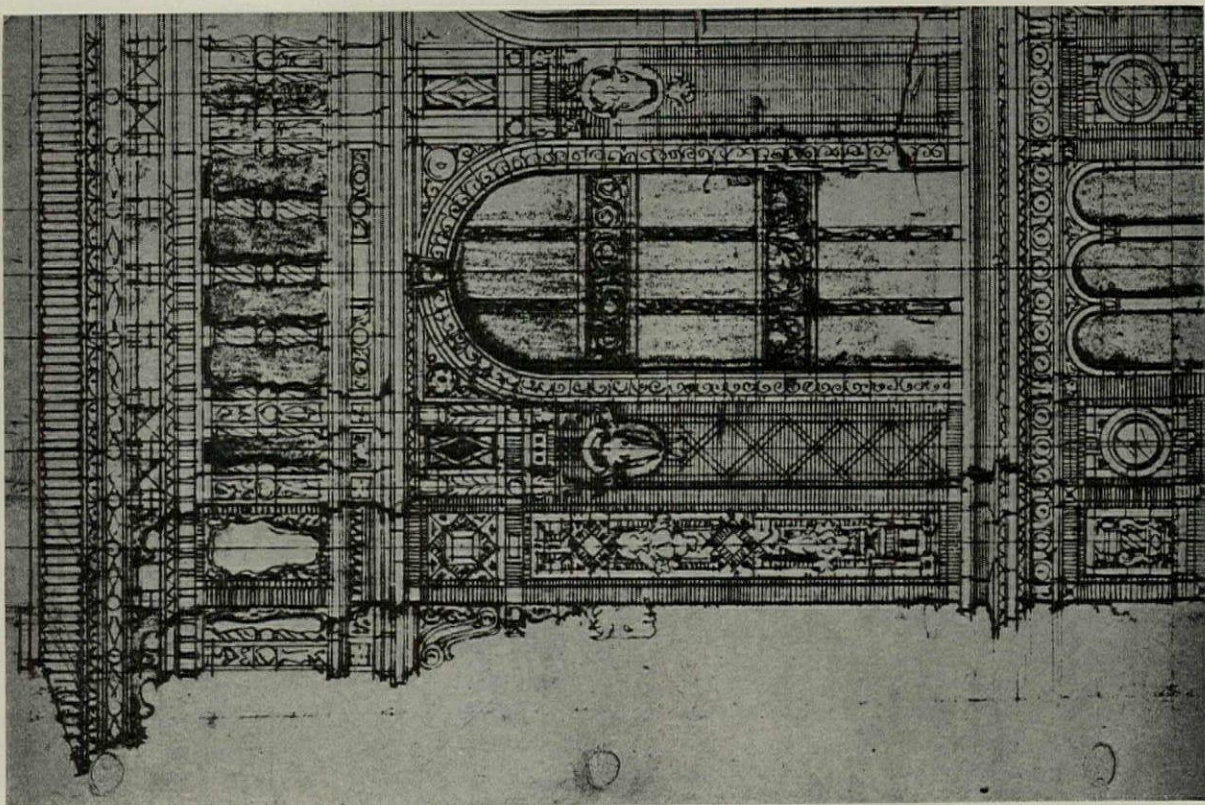
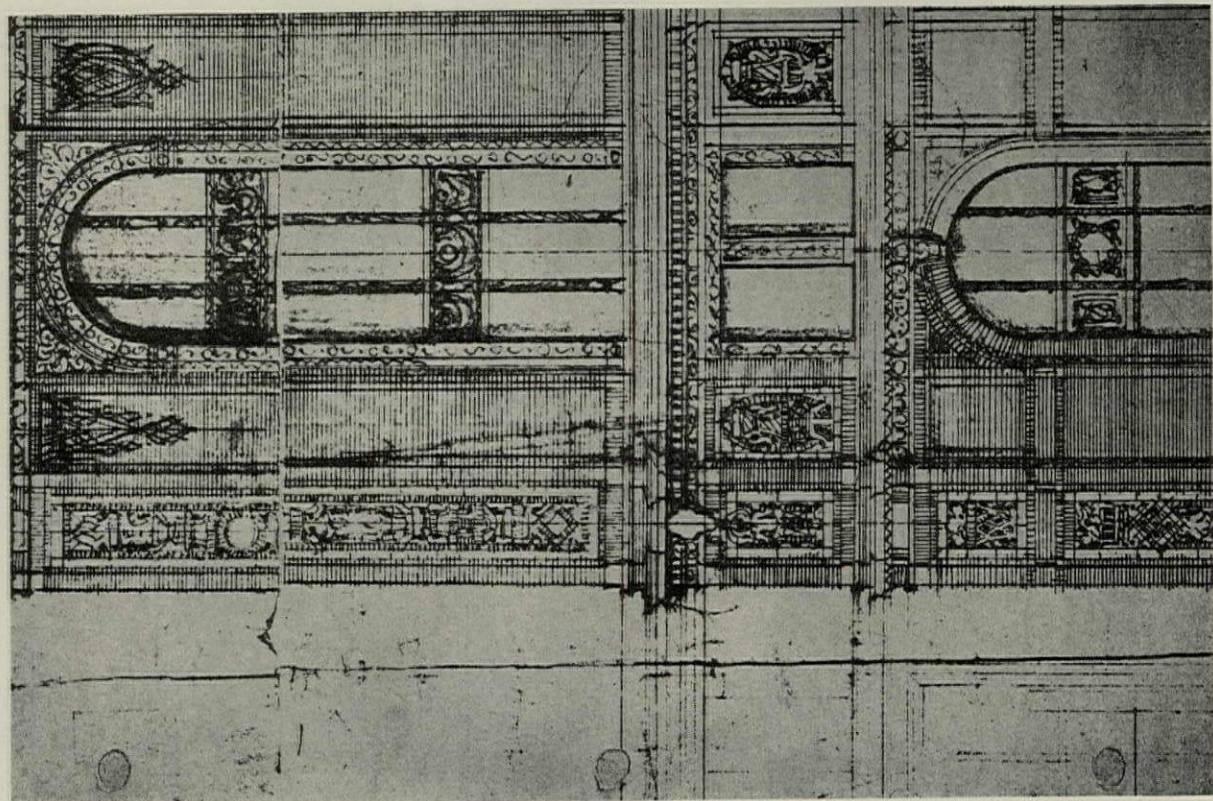
At the ripe age of eleven, a summer vacation spent as assistant to a timekeeper and clerk of the works of a theatre building brought a job of "inking in" a drawing for an architect. This resulted in a strong disinclination to continue at school and a desire to "see America first," which he gratified. About two years later, a visit to the office of Claude Bragdon at Rochester resulted in young Swales' determination to enter upon the formal study of architecture. He took up the courses available at the Rochester Athenæum, where his first instructor was Edwin S. Gordon, working in his free time in architects' offices. The architectural course, scheduled to require four years, was completed by Swales in less than two, by no great effort, although he did lose some sleep. He received his diploma and two first prizes at the age of fifteen.

Then followed a year of further preparation through the University of Rochester's extension courses in literature, civil law, electricity, and drawing from life under the tutelage of Harvey Ellis. Meanwhile he endeavored to "put over" a project for an exposition on the islands above Niagara Falls—an idea which finally led to the Pan-American Exposition at Buffalo. Shortly after this, a commission to design some houses brought Swales to Philadelphia. He



FREEHAND PERSPECTIVE SKETCH BY F. S. SWALES FOR AN UNUSUAL CHURCH IN CUBA

THE THIRD SIDE OF THE CHURCH IS ON A STEEP HILL.



REPRODUCED FROM $\frac{1}{8}$ -INCH SCALE SKETCH STUDIES FOR THE HOTEL VANCOUVER, VANCOUVER, B. C.
FROM THESE AND OTHER SIMILAR STUDIES BY MR. SWALES THE FINAL WORKING DRAWINGS AND PERSPECTIVES WERE PRODUCED



PORTION OF RENDERING OF HOTEL VANCOUVER, VANCOUVER, B.C.—FRANCIS S. SWALES, ARCHITECT
PRELIMINARY PERSPECTIVE DRAWING BY H. C. WILKINSON, RETOUCHEE BY FRANCIS S. SWALES

PENCIL POINTS
(September, 1930)

PENCIL POINTS SERIES
of
COLOR PLATES

This plate reproduces a portion of a carefully rendered drawing of the Hotel Vancouver, interesting particularly as being the earliest modern set back building, designed in 1911. The drawing was done in pencil on mounted Steimbach paper and rendered with water color. The portion reproduced measured $8\frac{3}{4}$ " x 11" on the original while the whole drawing measured 34" x 26". It is seldom that we see today such care expended in drawing the detail on a building.

joined the T-Square Club—that notable group of talented men destined to furnish the profession with so many distinguished practitioners—in the year of its incorporation. He was probably its youngest member at that time, and for his initiation submitted a rendered drawing of an elaborate Gothic screen in the Church of St. Ouen, Rouen, that was remembered for many years after.

That his talents were diversified is proven by the fact that at this time he won the prize offered by the Women's Educational and Industrial Union for an essay on civic improvement. He won the Third Annual Redesigning Competition of the T-Square Club with his design

for a group of banks and office buildings which was awarded a Gold Medal at the Pennsylvania Academy of Fine Arts.

During the next five or six years Swales became known throughout the country by reason of continuous prize winning in competitions.

He became known in business and railway circles by reason of his energetic efforts to induce the cities of Philadelphia and New York to plan their waterfronts and civic centers and the railways to replan their terminals. He gained increasing professional prestige because he "had the luck to be with" firms of architects who won important competitions, as their designer.

During this time he had returned to New York and had entered the atelier of Masqueray, a highly reputed French architect and critic.

The comment of Mr. Swales, on his work and experience in Masqueray's atelier, is worth recording. He states:

"I worked out and rendered only two projects and three or four sketches and I experimented with the French student fashion of design upon some successful competition work during the next three or four years. Masqueray was strong in getting his students to comprehend relationships between plan and elevation, but the popular fashions in architectural motives among



THE HOTEL VANCOUVER, VANCOUVER, B. C.

THE FIRST MODERN "SET-BACK" BUILDING—DESIGNED 1911-12

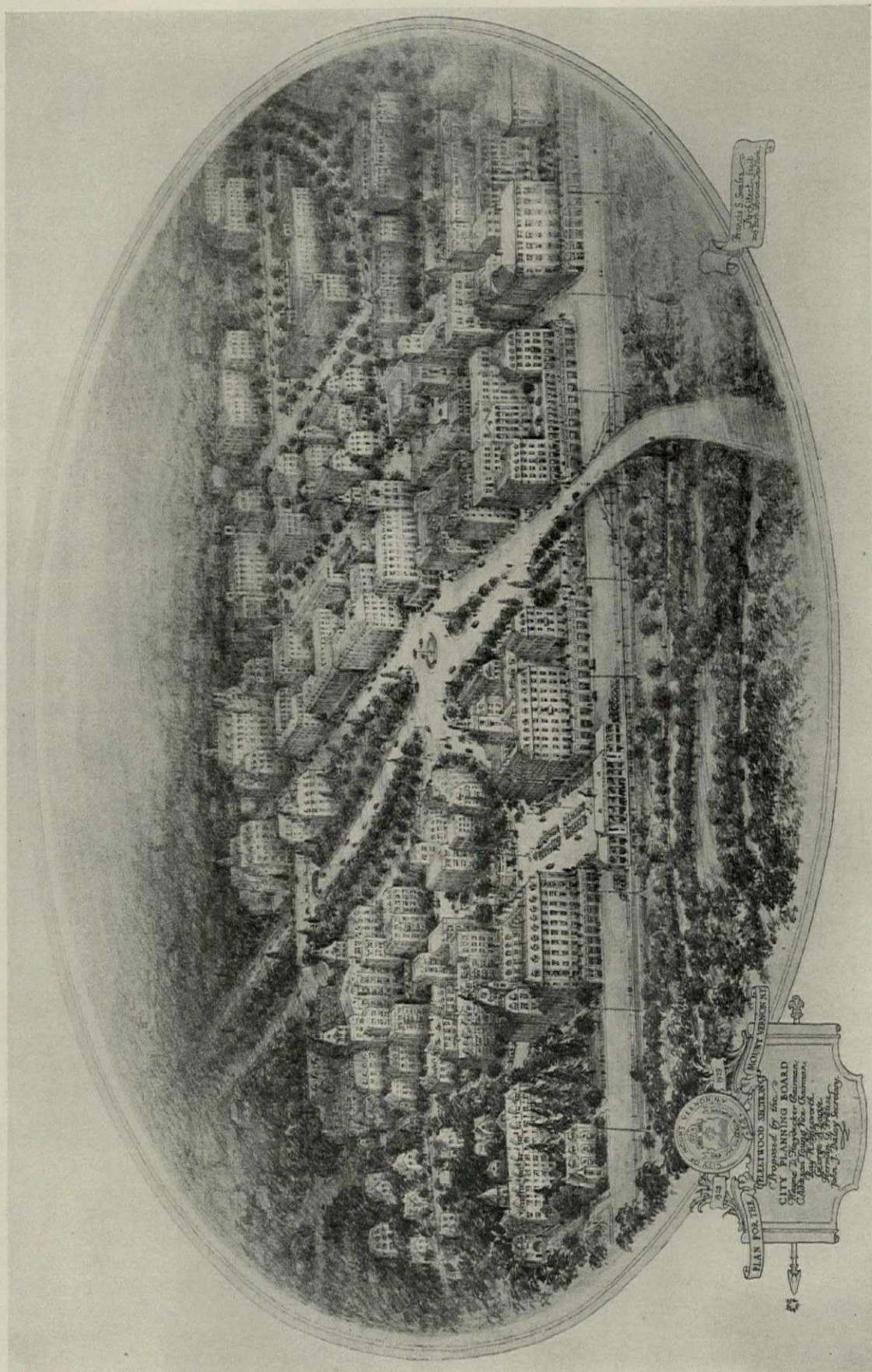
This design was not required by zoning laws. The purpose of the designer was to obtain greater distance from the buildings on the opposite side of the street and to avoid interior courts.

students did not appeal to my preferences. Nevertheless, I was able to use all I learned in the atelier to my own advantage, particularly the ideas enunciated by Masqueray upon space necessary in planning for proper circulation outside as well as inside the buildings, of the accessories of landscape design, and of relations of heights to areas—in other words to think of the building as determining its entourage, and in terms of solid geometry rather than in two planes. I believe every man who came in contact with Masqueray gained a great deal from his happy humor. He was sincere in his work and had an honest and admirable hatred of pose and hypocrisy. Hence his

dislike of registrationists, certificates, diplomas, etc.—in short, of anything by which an architect hoisted himself without real accomplishment. When I told him that I was going to Paris, he advised me against taking the school course. "Study the art—you can get the rest here, and too much of it!" he said."

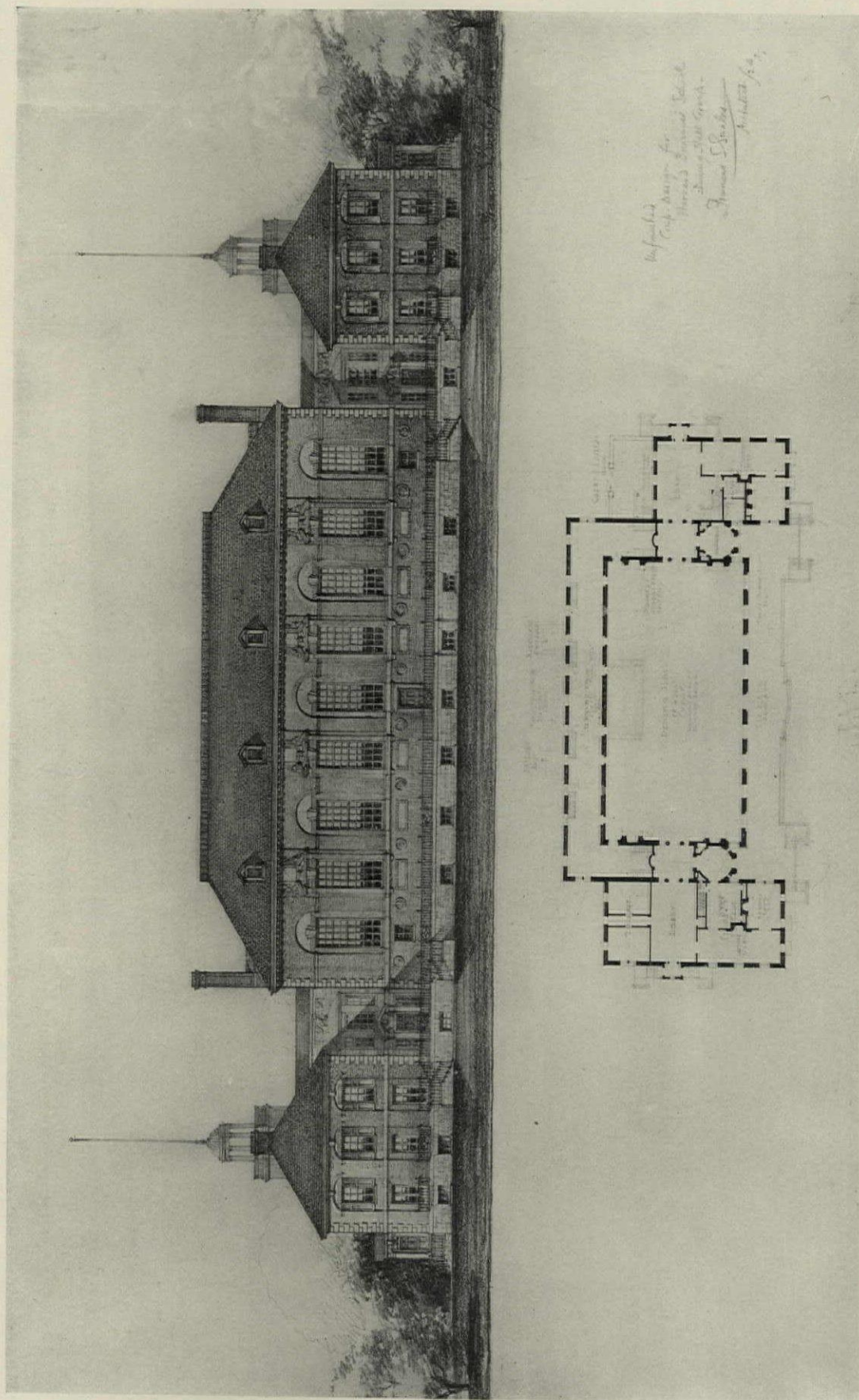
Success in competitions brought recognition. At the age of twenty-one, Swales became chief assistant to the firm of George D. Mason and J. M. Wood, at Detroit, and a year later he was admitted to partnership with Colonel Wood who specialized in theatres. Here he designed and supervised the construction of the Temple Theatre, the first of the modern type of American theatre, with the sides of the auditorium curved and carried over in the form of an elliptical ceiling to form a deep and low proscenium in which the step-down boxes were placed. He also made a design for the Majestic Theatre in Boston, proposing a plan without steps or stairs, with the balcony and parquet entrance from ramps leading from the street to the middle of the theatre. These ideas are today regarded as the most up-to-date features of theatre planning. The following year, through the influence of Mr. George D. Mason, then President of the Michigan Chapter of the American Institute of Architects, Swales was appointed by Mayor Maybury of Detroit to design the decorations of the City Hall and streets for

PENCIL POINTS FOR SEPTEMBER, 1930



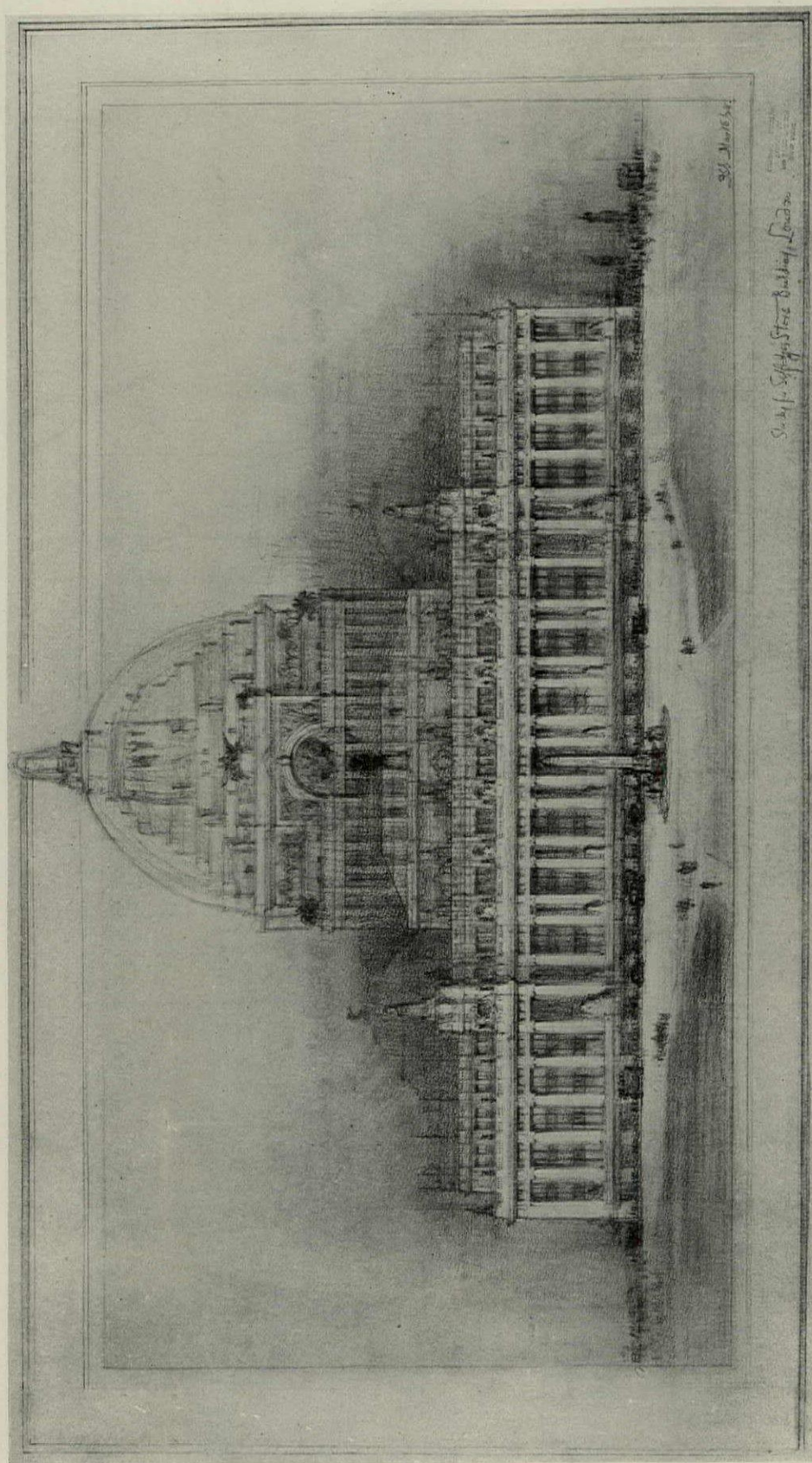
FLEETWOOD, MOUNT VERNON, NEW YORK—THE FIRST STEP ADOPTED BY THE CITY PLANNING BOARD—FRANCIS S. SWALES, CONSULTING ARCHITECT

It is interesting to note that this drawing was made by Mr. Seales freehand in soft lead pencil without the use of vanishing points.



UNFINISHED COMPETITION DESIGN FOR HARVARD BUSINESS SCHOOL—DINING HALL GROUP—DESIGNED AND DRAWN BY FRANCIS S. SWALES

PENCIL POINTS FOR SEPTEMBER, 1930



SKETCH STUDY FOR SELFRIDGE'S STORE BUILDING, LONDON, ENGLAND—FRANCIS S. SWALES, CONSULTING ARCHITECT

the celebration of the Bicentennial of the founding of the city. These designs, for execution in "staff" on wood framing, showed a new note in the architecture of that time by introducing piers and plain surfaces, breaking the horizontal lines of the entablature and omitting the classical orders. Together with their freshness and daring, these designs show the power and restraint of an able designer.

On a leave of absence (during which Colonel Wood died) Swales went to St. Louis to become Assistant to the Chief of Design of the Louisiana Purchase Exposition, who was none other than his former patron, E. L. Masqueray. His services were engaged on the design of the Transportation Building, Colonnade of States, Restaurant Pavilions, Gardens, Bridges, and Monuments.

After a busy year spent in working for Masqueray on the Exposition he left this office and became chief designer to Messrs. Eames & Young, a prominent firm of architects in St. Louis. With this firm, and in his own student work, Swales was successful in placing first in nine competitions over a period of nine months. Such pronounced success by his pupil reconciled Masqueray to losing him. As chief designer for this firm, Mr. Swales designed the changes to the services of the St. Louis Terminal Station and also the Parkview Realty Developing Project, evolved the competitive design for the West Point Military Academy, which placed second, and created the successful competitive design for the Custom House in San Francisco.

The Parkview Realty Development had almost the extent of a city, and Swales' plan of the total scheme presented the first idea of garden apartments projected for city development, and planned with all rooms outside and overlooking gardens and boulevards.

The winning design for the San Francisco Custom House again suppressed the orders and made use of plain piers or vertical surfaces separating richly bordered openings. This was the first design in an American Government competition to be successful without the application of a classical order.

Not content with the success that was crowning his efforts, Swales pursued architectural studies at night at Washington University, St. Louis. That year, for the first time, the University offered a traveling scholarship in architecture on the same terms as the Rotch Scholarship of Boston. Six problems were required and Swales made the remarkable record of placing first in each closely contested competition. An amusing incident, serving also as a sidelight on Swales' character, took place on the final competition. The head of the department informed Swales when he turned in his problem that his competitors could not possibly finish on time. Swales suggested that the necessary time extension be given. *They finished several weeks later!* A debate might be held as to whether this showed supreme unselfishness or the acme of confidence. Nevertheless, the extension was given—and Swales won! Albert D. Millar, who later made the great series of drawings for the monograph on "The Work of McKim, Mead, and White," was his "runner-up." They became great friends and afterwards worked

together in San Francisco and at London, England.

As holder of the Washington University Traveling Scholarship in Architecture, Swales went abroad in 1903, traveled in northern Europe, and became a pupil of Pascal. At the *École Nationale des Beaux Arts* he gained second place in architecture in the admission examinations among several hundred competitors without the usual advance preparations of making many twelve-hour sketches to get the pace. That he was only topped by the inimitable Hirons showed what a technique he possessed.

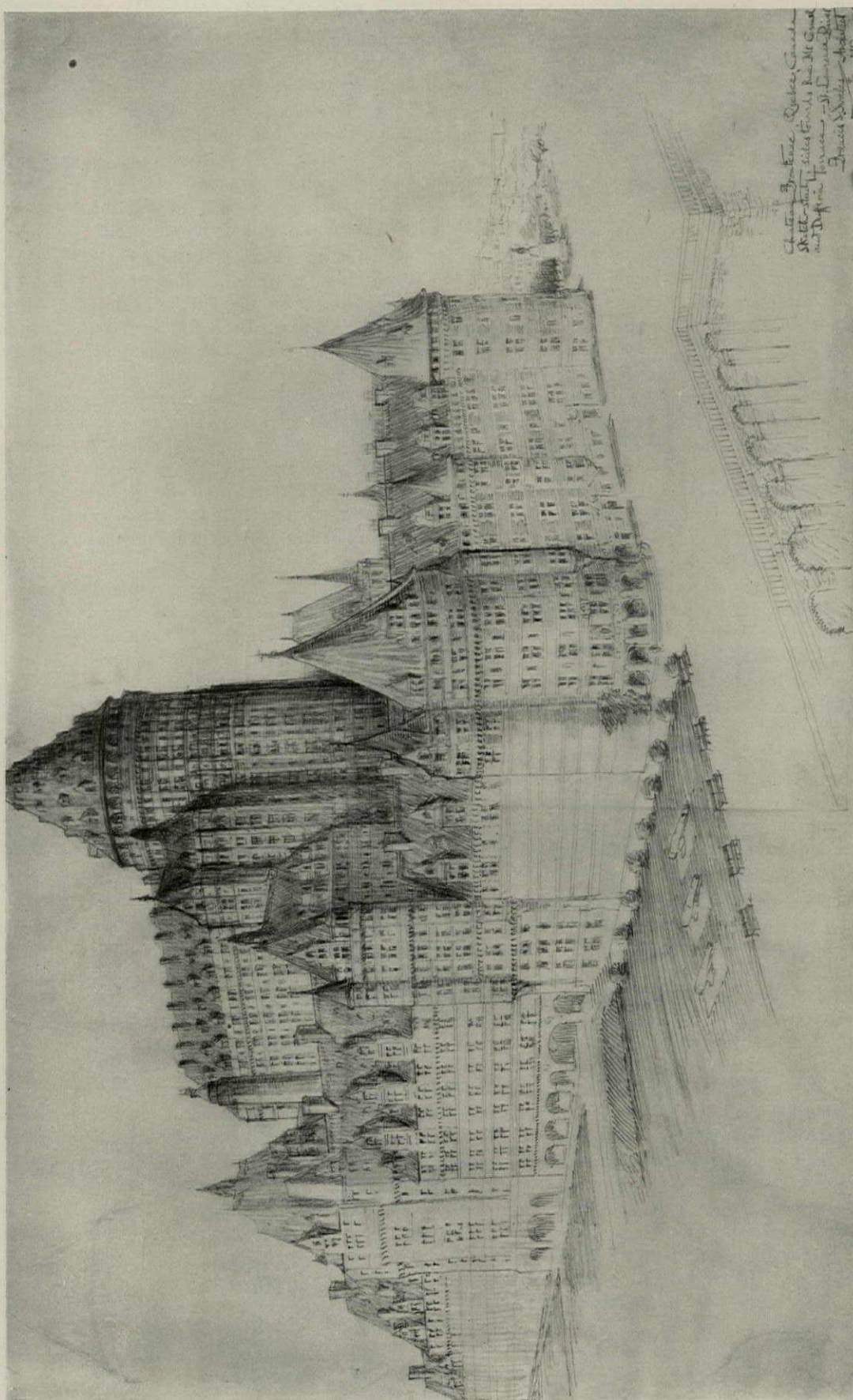
Although he remained abroad for nearly nine years, it is with a tinge of regret that one discovers that he did not receive his diploma. Taking the advice of Masqueray and his patron Pascal seriously, he did not try for one. In view of the work Swales had already done in America before arriving in Paris, Pascal advised him not to consider taking the course leading to the diploma. He suggested that it would be more to Swales' advantage to make studies for the *Prix de Rome* problems and assist the men in the Atelier who were working for the *Prix de Rome* and the *Prix Chenavard*. Swales followed this suggestion, thereby gaining immediate contact with advanced architectural problems.

In England he was at first employed by the J. G. White Building Company as the executive assistant of the Managing Director in London and later as Consulting Architect for the same company. Meanwhile, he carried on special studies at Paris concurrently, spending his week-ends over there. He thus obtained practical building and engineering experience while carrying on advanced study of the theory of design as a pupil of Pascal and Duquesne.

In addition to receiving criticisms from the French masters, on the studies that he carried periodically to Paris, he discussed them with Mewes and Davis, for whom he was erecting buildings in England as a contractor. During eight or nine years, by this method, he covered about the equivalent of four years of first-class student's work in design at the *École*. It included more study of the philosophy of design, but far less mechanical drawing and rendering than if he had been a regular student at the *École* during such a length of time.

Among his duties with the Building Company was the systematizing of construction work in England and on the Continent so that it could be carried out by expeditious American methods; also the purchasing of vast quantities of materials and the obtaining of new contracts for his firm. He thus gained a varied and widespread practical experience and came in contact with many of the most distinguished architects and engineers in Europe.

In 1905, he opened an office of his own in Paris and in 1906 another one in London; three years later he added offices in Brussels and in New York. He was engaged largely at this period in designing exposition buildings, seasonal hotels, and country clubs. His work took him to nearly every country in Europe and his commissions extended to Africa, China, and South America. He collaborated with D. H. Burn-



CHÂTEAU FRONTENAC, QUEBEC, CANADA—SKETCH STUDY, SIDES TOWARD RUE MT. CARMEL AND DUFFERIN TERRACE, ST. LAWRENCE RIVER
FRANCIS S. SWALES, ARCHITECT

ham & Company of Chicago on the design of Selfridge's department store in London, for which he later designed, in association with his old friend Albert D. Millar, great future extensions for Mr. Selfridge while again abroad in 1928.

An interesting sidelight on Mr. Swales' influence upon the development of the Burnham Plan of Chicago appears from some letters contained in his scrapbook, written in the large, strong handwriting of D. H. Burnham. The letters refer to some critical magazine articles written by Swales and published in London at a time when the Plan of Chicago seemed likely to die of neglect. Swales so cogently urged its value to Chicago that it was again taken up by prominent citizens and the whole lake-front plan has since either been executed or its actual completion assured.

Mr. Burnham, upon having read Swales' articles, expressed his appreciation by writing, "What you say is entirely satisfactory and confirms the impression I have formed of your own manly fairness. I did not realize that what you have to say would affect me so much as it does. It gives one a new hold on things when he finds another man sees the ends he has in view. If I deserve your praise, there is reason for renewed effort." Letters written in Mr. Burnham's own hand-

writing and with familiar salutations to another man half his age are, one ventures to suppose, rather rare.

Swales also collaborated with Edwin O. Sachs of London on Lord Cromer's project for a new Grand Opera House in Cairo, Egypt, which it was intended should surpass anything in the world for magnificence.

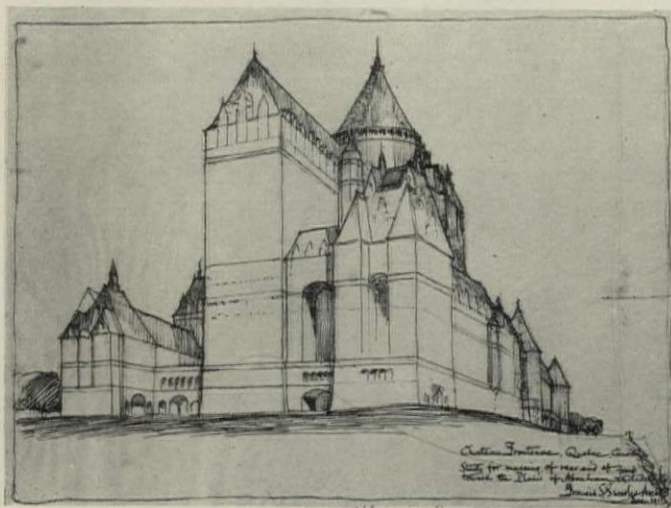
Among Swales' clients in London was the Canadian Pacific Railway, for which he designed several exposition pavilions. These beautiful examples of his work received favorable world-wide publicity. They were awarded *Grands Prix* and many gold medals. In this way, the company's officials at Montreal came to know the name of Swales. The official architect of the company employed him as consultant and, during a visit to Canada in 1911, the president of the company appointed him to design the scheme of ultimate development of the Château Frontenac at Quebec, as well as a projected hotel at Glacier, B. C., and the Hotel Vancouver at Vancouver, B. C.

The Vancouver Hotel is notable as the first modern "set-back" design to be constructed and for the definite way it was designed. The scheme of grouping geometrical solids to obtain effective form is similar to Swales' design in 1903 for an Automobile Club,

but, apart from that, it had no precedent in architecture. Containing the same ideas, the Hotel Vancouver was designed in 1911, five years before the Zoning Law was passed in New York which now requires new buildings of similar size to adopt the same general plan with all the courts turned towards the streets and the higher parts of the buildings set back in planes from the street lines.

Associated with W. S. Painter—who seldom visited the office—Swales was engaged upon a number of huge projects including hotels, railroad stations, ocean terminals, Government buildings, office buildings, and city plans. The World War checked the execution of several of these projects. When the United States entered the war Swales was invited to take charge of the reconstruction work in France by the Military Division of the

American Red Cross. He closed his offices in Canada, returned to New York, and prepared to go, but the Russian defection which occurred soon afterwards caused a temporary abandonment of the project and its transfer to other organizations resulted. While "marking time" at New York, Swales projected the development of East 42nd Street, New York, on the big scale that has actually resulted only during the last three or four years. He also designed, during this war-



STUDY FOR MASSING OF CHÂTEAU FRONTENAC, QUEBEC

REAR END OF GROUP TOWARD THE PLAINS OF ABRAHAM

Francis S. Swales, Architect

time, shipyards at Quebec and on the Pacific coast. After the war, he resumed contact with some of the projects left unfinished in Europe at the outbreak of the war. Shortly after this he established his office at Park Hill, Yonkers, and took up consulting practice. He spent a year on public work for the city of Cleveland in conjunction with the City Architect and on the plans for the Civic Center and new Water Works with the Director of Law.

Since 1922 Swales has been occupied chiefly with city and harbor planning. As Consulting Architect to the Regional Plan of New York of the Russell Sage Foundation, he designed a comprehensive projected development of New York, including the architectural city planning of four specific and strategic areas of Manhattan, each of which covers several square miles.

In 1928, while at London, besides designing the future extension to the store for Mr. Selfridge, he developed city plans for areas of London. During the present year, many of his studies made for the Regional Plan have appeared in the New York newspapers. Hence, we have come to realize once more the influence of his ideas as an architect and city planner.

Not the least important of Francis Swales' activities have been his writings. While abroad, from 1905 to 1911, he wrote critical articles for the old *American Architect* entitled "Notes from Europe." These were eagerly read by many of those engaged in the profession at that time. Many of his articles have been published in the foremost architectural journals of Europe and America. By special invitation of the President and Council of the Royal Institute of British Architects, he read a paper on American Architecture before one of its meetings which aroused lively interest in England and caused the usually conservative *London Times* to discuss it in a column of news and a column of editorial comment. He took an active part in the first International Town-Planning Conference at London in 1910 where he insisted that City Planning is the province of the architect and that it will not be improved until architects are consulted before engineering work is undertaken by public authorities.

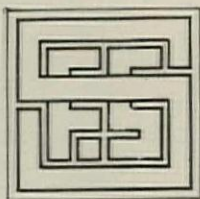
This sketchily brings up to date the record of this outstanding and tireless member of our profession. One might quote tritely on his behalf:

"Something attempted, something done,
Has earned a night's repose"—

except for the fact that he seemingly forgoes such repose. He has crammed into his life the experience of a dozen good architects and is still as young as when he started to blaze his trail of prizes. He is the exponent of a vigorous age that produced a restless, searching group of American pioneers and independents in Architecture. In the galaxy of such names as Louis Sullivan, Frank Lloyd Wright, Henry Hornbostel, Bertram Goodhue, Charles F. McKim, Harvey Wiley Corbett, Egerton Swartwout, Wilson Eyre, Louis Mullgardt, William L. Price, and others that compel admiration, the name of Francis S. Swales, is not least.

The enduring enthusiasm with which he pursued his preparation and practice, and the independence of mossy precedent and stilted convention he has ever displayed, his sound philosophy, to apply mere knowledge with reason and understanding to the varied problems of architecture, thus assuring freedom from changes in mode or taste—in short, his career—should make a healthy, inspiring example for the student and the practitioner.

To paraphrase an Eastern benediction, so that it applies professionally as well as personally—"May his shadows never grow less!"



Monogram contributed for this article by Thomas H. Liang of Tientsin.



FREEHAND SKETCH STUDY—REGIONAL CENTER AT CITY HALL PARK, NEW YORK
DESIGNED AND DRAWN FOR THE CITY HALL COMMITTEE OF ARCHITECTS BY FRANCIS S. SWALES, ARCHITECT

THE GEOMETRY OF ARCHITECTURAL DRAFTING

12—LINES AKIMBO

By Ernest Irving Freese

EDITOR'S NOTE:—This article, which is copyrighted, 1930, by the author, continues the series begun in August, 1929.

SHADES OF THE IMMORTALS! A Historical Romance appears upon the "boards." Geometrizing philosophers and philosophizing mathematicians climb down off their eternal pedestals in the Hall of Fame to tell us "how." The curtain rises. Entertainment becomes abruptly precipitated:

ACT 1: (Figure 108) *Pythagoras-of-Samos and Euclid-of-Alexandria cut the "pi."* With BA as radius, describe a circle. From A as center, revolve B to C . Then ABC forms an angle of 60 degrees, and AC becomes one inscribed side of a regular hexagon. From C as center, revolve B to D . Then ABD forms an angle of 120 degrees, and AD becomes one inscribed side of a regular trigon, or equilateral triangle. From C and D as centers, any radius, cross arcs at E . Then ABE forms an angle of 90 degrees, and AF becomes one inscribed side of a regular tetragon, or square. Prolong EB to G , and bisect BG at H . From H as center, revolve A to J , and from A as center, revolve J to K . Then ABK forms an angle of 72 degrees, and AK becomes one inscribed side of a regular pentagon. From C as center, radius JB , cross the circle at L . Then ABL forms an angle of 24 degrees, and AL becomes one inscribed side of a regular pentadecagon. Now, LBC forms an angle of 36 degrees, and LC becomes one inscribed side of a regular decagon; CBK forms an angle of 12 degrees, and CK becomes one inscribed side of a regular polygon of 30 sides; KBF forms an angle of 18 degrees, and KF becomes one inscribed side of a regular bisdecagon; while FBD forms an angle of 30 degrees, and FD becomes one inscribed side of a regular dodecagon.

ACT 2: *Euclid stages the "Great Divide."* From the vertex N , describe an arc crossing the sides of the angle at M and P . From these points as centers, any suitable radius, cross arcs at Q . Then QRN bisects the angle MNP . From M and R as centers, any suitable radius, cross arcs at S . Then the angle MNT becomes a quarter of the angle MNP . Now, if MP were the side of a regular polygon, then MR would become one side of a polygon of twice the original number of sides, and MT would become one side of a polygon of four times the original number of sides. *Et cetera ad infinitum.*

ACT 3: *Nicomedes takes a famous "part."* Let ABC be a given angle no greater than a right angle. Assume any point D , on BC . Through D draw V ,

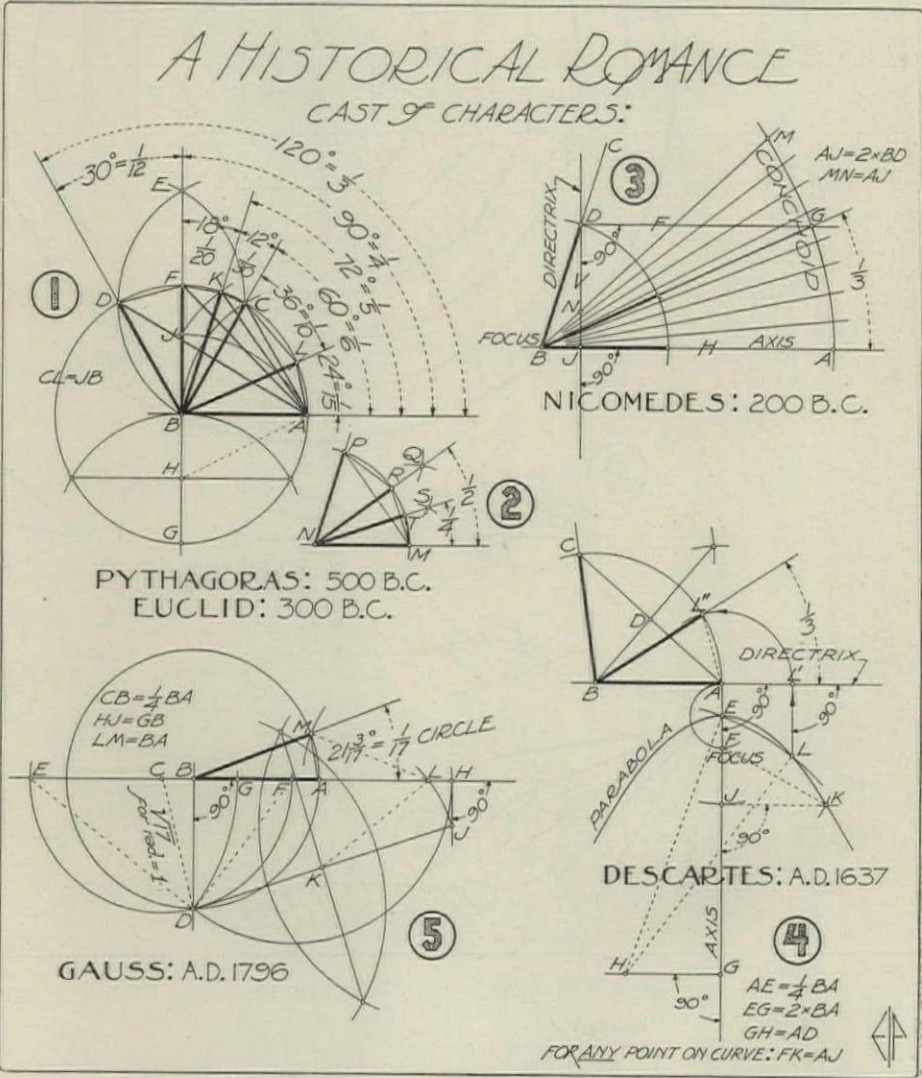


FIGURE 108

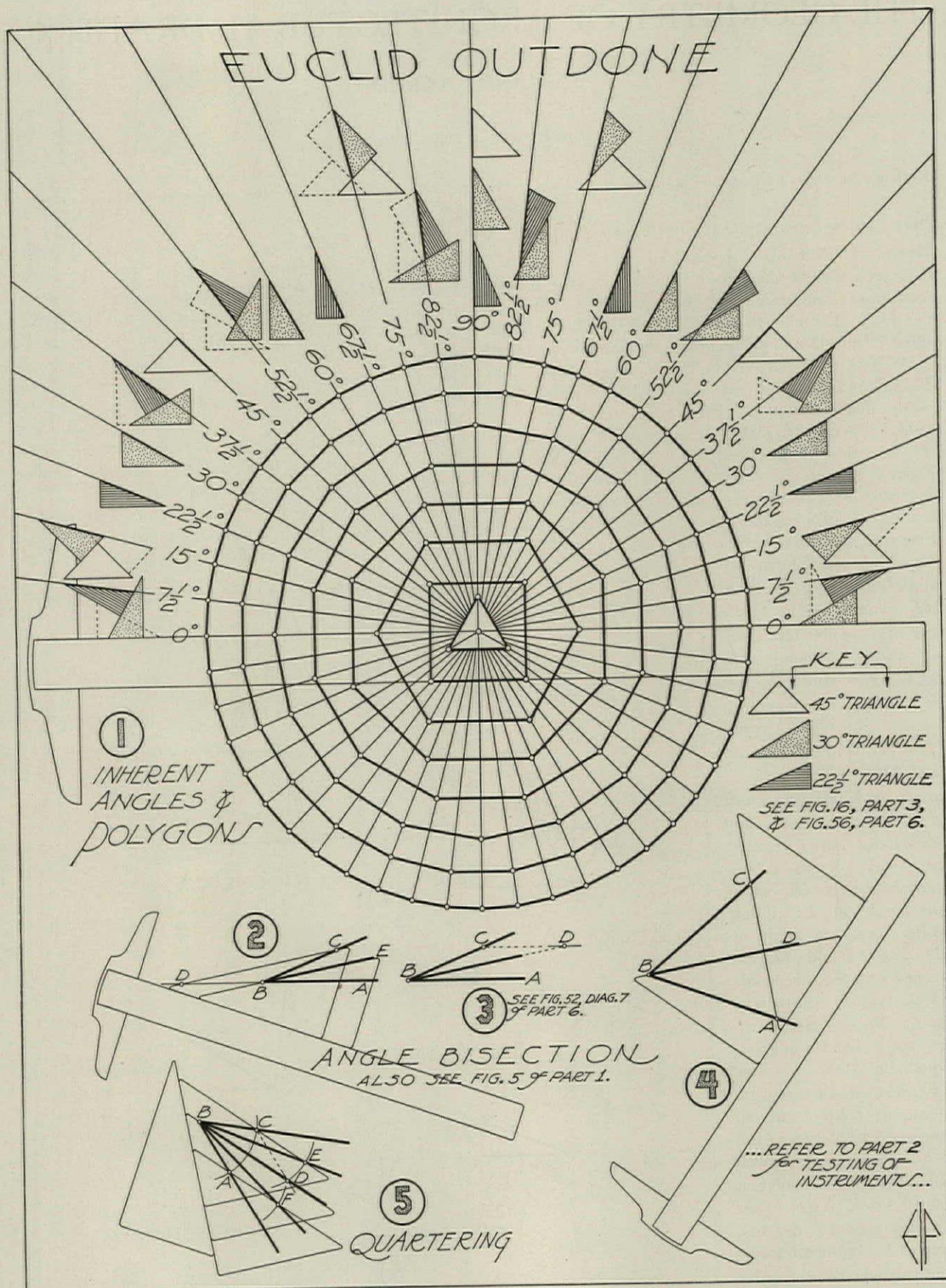


FIGURE 109

crossing H at J . Make JA twice BD . From B , draw a series of radials, and on each of these mark off a distance from the line V equal to the distance JA . Draw the conchoid, AM , through the resultant points. From D draw F , crossing the conchoid at G . Then the angle ABG is one third the angle ABC .

ACT 4: *Descartes extracts an algebraic "root."* Let ABC be a given angle. From vertex B draw any arc, and bisect its chord at D . Make AE and EF each equal to one quarter of AB . Locate any number of points, K , such that FK equals AJ . Draw the parabola through the resultant points. Make EG twice AB , and make GH equal to AD . From H as center, radius HE , cross the parabola at L . Project L to L' , and, from A as center, revolve L' to L'' on the arc of the angle. Then the angle ABL'' is one third the angle ABC .

ACT 5: *Gauss inscribes the inscrutable.* With BA as radius, describe a circle. Prolong BA in both directions, and draw BD . Make BC equal one quarter of BA , and, from C as center, revolve D to E and F . From E as center, revolve D to G , and, from F as center, revolve D to H . Make HJ equal GB . Bisect JD at K , and, from K as center, revolve J to L . From L as center, radius BA , cross the circle at M . Then the angle ABM is $1/17$ th of 360 degrees, and AM becomes one inscribed side of a regular polygon of 17 sides. . . . Curtain!!!!

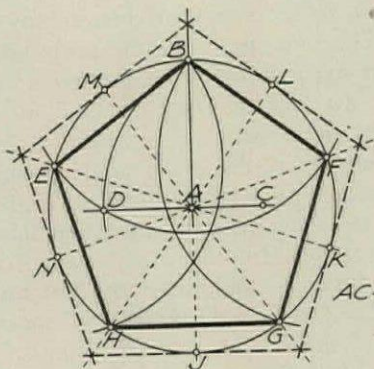
The show's over! The sum total of the geometric knowledge of the ages, relative to the construction of angles and polygons has been displayed. That's all of it—all that the geometrizing philosophers and the philosophizing mathematicians have to offer. And, aside from the basic Pythagorean angle of 72 degrees, by means of which the pentagon and allied polygons are readily constructed, none of it is of any practical use in the drafting-room. The Nicomedean principle of trisection can, however, be made practical. The famous construction by Gauss, and the analytic trisection by Descartes, are less exact in execution than pure guesswork: they are merely pictures of the mathematical solutions of highly involved quadratic and cubic equations. Moreover, all of the so-called "Euclidean" angles and polygons are directly constructible with the T-square and the triangles—by mere manipulation of the instruments. Figures 109 to 112, inclusive, present a modernized sequel to the historical romance just staged.

Figure 109, Diagram "1," shows the full range of angles and polygons inherent in the sliding instruments when referred to the T-square as a base. Furthermore, by means of this Diagram, you can see at once the set-up required to yield any angle relative to any other angle. Say you need a line making an angle of $37\frac{1}{2}$ degrees with the vertical. Just look for the combination pictured at that number of degrees from ninety. This is easy, since all inherent angles are integral multiples of $7\frac{1}{2}$ degrees, and since the $7\frac{1}{2}$ -degree interval is the unit division of the Diagram. In this case, then, the required line occurs 5 intervals from the vertical, and it is there seen to be a $52\frac{1}{2}$ -degree oblique. Again, if a line is required to make an angle

of 45 degrees with a $67\frac{1}{2}$ -degree oblique, simply pick the combination removed that number of degrees, which is 6 spaces, from the $67\frac{1}{2}$ -degree angle, and it is seen to be producible merely by a shift of the original triangle. Finally, to get a perpendicular to any given oblique of the Diagram, just shift the projecting triangle so that its hypotenuse crosses the given line at right angles. Now look at Diagram "2," in which ABC is a given angle—any angle, inherent or extraneous. Of course, if the given angle is an "inherent" one containing a whole number of degrees, it can at once be bisected by the instrumental combination yielding half the angle. In other cases, make BC and BD any equal distances, and draw the bisector BE parallel with DC . Or, as at Diagram "3," make BC any distance, and make CD , parallel with BA , the same distance. Then BD bisects the angle. Or, for wide angles, the method shown at Diagram "4" can't be beat. Make BA and BC any equal distances, and project the bisector, BD , perpendicular to AC , as shown. At Diagram "5," an angle is quickly divided into 4 equal parts as follows: From vertex B , draw an arc AC , and, from A and C as centers, same radius, draw two other arcs as shown—but don't cross them. Project C to D , parallel with BA . Project C to E , and A to F , parallel with BD . Lines from B , through E , D and F , quarter the angle.

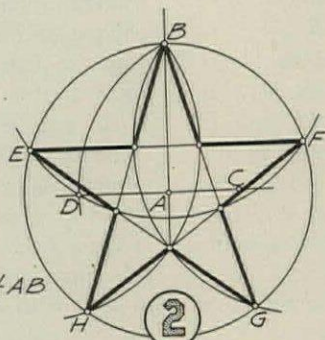
At Figure 110, the Pythagorean principles of Euclidean geometry have been put to work in various simple and practical ways. The constructions presented in the first six Diagrams avoid the cumulative error always resultant upon the more common method of "stepping off" a given distance successively around a circumference. At Diagram "1," let AB be the radius of the given circle. Draw a perpendicular to this through A , and make AC equal half of AB . From C as center, revolve B to D , and, from B as center, revolve D to the points E and F . From the latter points as centers, same radius, cross the circle at H and G , respectively. Lines connecting the five points will form an inscribed pentagon. To form the circumscribed one, project the five found points through A to the opposite portions of the circle and, through these other five points, draw tangents paralleling the chords formed by the first set of points, as shown. The regular five-pointed star, shown at Diagram "2," is formed by connecting alternate points of the five divisions instead of successive ones. At Diagram "3," the line AB represents one given side of a required pentagon. Draw an extraneous line through B at a slope of 1:2 relative to AB , and cross this at C with a perpendicular from A . Make CD equal CA , and, from B and A as centers, radius BD , draw the arcs crossing at E . From the same centers, A and B , but with radius AB , cross the first arcs at F and G , respectively. Incidentally, the length AD is the radius of the circumscribing circle. Next, Diagram "4": Make AC equal half the radius, and, from C as center, revolve B to E . From B and D as centers, respectively, revolve E to the points F , G ; H , and J . With these four points as centers, same radius, cross the circle at the four remaining points

PYTHAGORAS "STARRED"



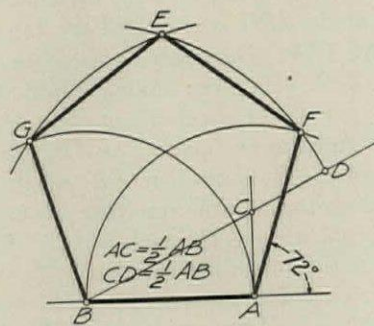
INSCRIBED & CIRCUMSCRIBED PENTAGON

①



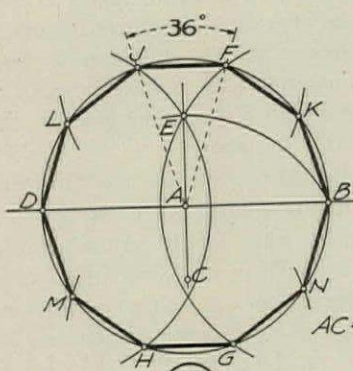
The "BADGE" of the
PYTHAGOREAN BROTHERHOOD
NOW WORN BY THE
SHERIFF!

②



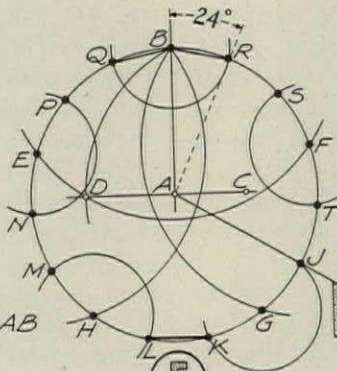
TO CONSTRUCT A
PENTAGON:
ONE SIDE GIVEN

③



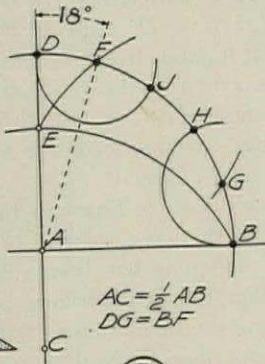
THE DECAGON
10 SIDES

④



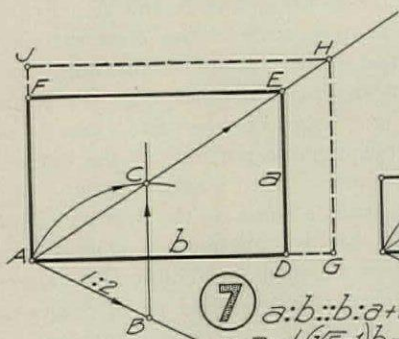
PENTADECAGON
15 SIDES

⑤



TO DIVIDE A QUADRANT
INTO FIVE EQUAL PARTS

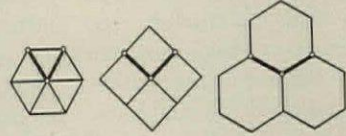
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The "GOLDEN RECTANGLE"

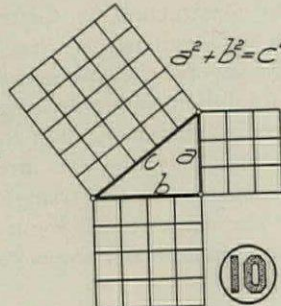
⑦

⑧



The JUXTAPOSABLES:
6 TRIGONS
4 TETRAGONS
3 HEXAGONS

⑨

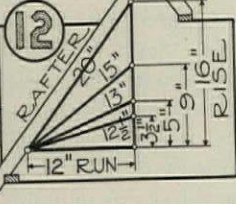


The "PRINCESS"
of PERSIA

⑩

III PYTHAGOREAN TRIADS

a	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
b	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
c	5	13	17	25	29	37	41	49	53	61	65	73	77	85	89	97	101	109	113	121



⑫

FIGURE 110

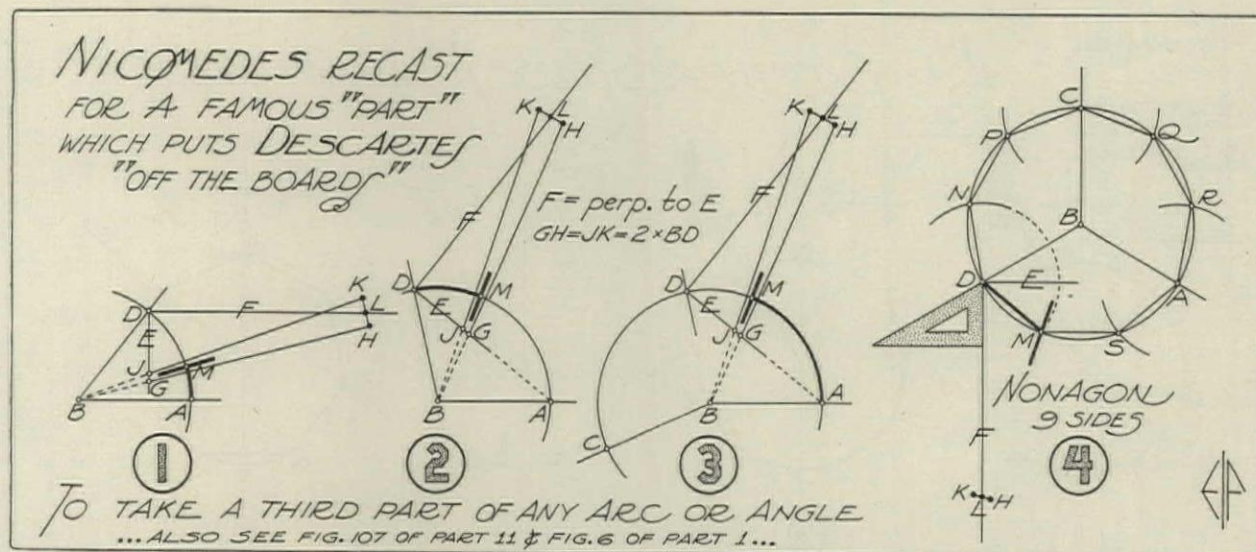
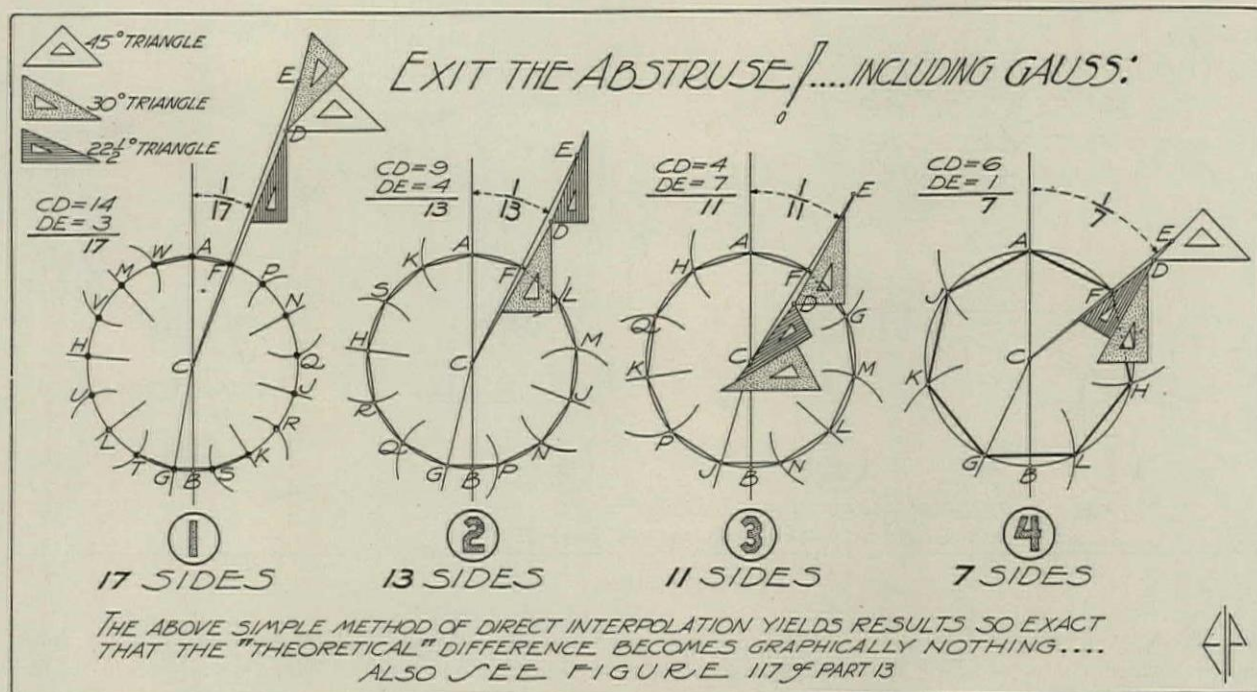


FIGURE 111

L, M, N, and K. At Diagram "5," the fifteen equally-spaced points of a regular pentadecagon are located in this wise: As before, make AC half the radius, and, from C as center, revolve B to D . From B as center, radius BD , cross the circle at E and F , and, from these points as centers, same radius, again cross the circle at G and H . Now project a 30-degree oblique from A to J . Then, with radius GJ , and from the already-found points as centers, cross the circle at the remaining required points K ; L and M ; N and P ; Q and R ; S and T . At Diagram "6," a right angle becomes divided into 5 equal parts in the following simple manner: From the vertex, A , as center, draw an arc of any radius, say AB , and make AC half of this radius. From C as center, revolve B to E , and, from B and D as centers, radius BE , cross the arc at F and G , respectively. From these points as centers, radius GB or FD , locate the other two points H and J , as shown. At Diagram "7," geometry once again becomes the handmaid of aesthetics. The "divine" proportions of the "golden rectangle" are established as follows: Draw AB at a slope of 1:2 relative to the given direction of the longer side, and, from any point thereon, say B , as a center, draw an arc of radius BA , as shown. Project B to C , perpendicular to AD . Then AC , prolonged as far as you like, is the diagonal of *any* golden rectangle that your heart desires! Diagram "8" is merely the author's mathematical analysis of the geometrical aesthetics of Diagram "7." It shows that the short side of this particular rectangle "figgers out" to be 618/1000ths of the long side, and that the angle formed between the diagonal and the long side is practically 31 degrees and 43 minutes—who said mathematics "never did nobody no good"? Now shift to Diagram "9" and you will re-discover the fact—which was originally discovered only about 2500 years ago—that there are but three regular polygons capable of being individually grouped about a point in a plane so as to completely fill, or "pave," the adjacent space about said point—triangles, squares and hexagons. At Diagram "10" the familiar figure repre-

senting the "Pythagorean proposition" appears under the seductive title of the "Princess of Persia." The particular triad shown—the old *three-four-five* combination—was, however, known and used by the "rope stretching" surveyors of Egypt to lay off right-angular lines about 1500 years before Pythagoras proved conclusively that the square on the hypotenuse of *any* right-angled triangle is equal to the sum of the squares on the remaining sides. Wherefor, any three commensurate numbers, such as 3, 4, 5, that represent the three sides of a right-angled triangle are called Pythagorean triads. A usable few of an infinite number of these triads are tabulated at Diagram "11," while Diagram "12" shows a similar series of roof pitches wherein the length of rafter is commensurate with the rise and run. The 5-12-13 triad also makes a good stair.

At Figure 111, the historically famous Nicomedean trisection has been revamped to such an extent as to result in a thoroughly practical, speedy, and accurate method of taking a third part of any angle whatsoever. For angles up to 90 degrees, proceed as in Diagram "1": Make BD any definite distance. Draw E perpendicular to BA , and draw F parallel with BA . Now align your scale with B so that GH reads twice the distance BD , and so that H comes almost, *but not quite*, on the line F . Indent H . In the same manner, locate and indent another point, K , on the *opposite* side of the line F . Then mark L , on the line, where HK crosses F . Then LB is the trisector of the given angle ABD , and the point M , where this trisector crosses any corresponding arc drawn from vertex B , will cut off a third part of such arc, as shown. Obviously, if the chord AM is now laid off from point D , the other third-division point will be located. Also, if the angle ABM now be trisected in the same manner as was ABD , then the resultant division will be one *ninth* of the given angle ABD . Or, by bisecting the angle ABM , a *sixth* part of the given angle is yielded. *Thirds, sixths, and ninths of an angle are impossible to produce by any method identified with Euclidean geometry.* If the given angle lies between 90 degrees and 180 degrees, it is trisected as shown at Diagram



"2." As before, make BD any definite measure. But, in this case, make BA equal the same measure. Then draw E between D and A , and draw F perpendicular to E . The process then becomes the same as at Diagram "1." If the given angle should exceed 180 degrees, the same simple method applies in the manner shown at Diagram "3." Make BA any definite radius, and draw the arc ADC upon which locate D by a perpendicular to AC through B . Then proceed exactly as in Diagram "2"—the same reference letters being used in all cases. Ten minutes practice with the scale will make you an expert at angle trisection. And once you "get the idea" you'll attempt no more "stepping off" by trial and tribulation. Now let's lay out a *nonagon*—a polygon of *nine* sides—another thing unheard of in Euclid's hallowed curriculum. For the first time in *all* time, the construction shown at Diagram "4" goes "on the boards." With the 30-degree triangle, divide the given circumscribing circle into three equal parts at the points A , C and D . Draw E as a portion of the chord DA , and draw F perpendicular to E , which, in the case shown, is merely the process of drawing a horizontal and a vertical from D . Then take a third part of the angle ABD in exactly the same manner as depicted at Diagram "2," thus fixing point M on the circle. So, from D , C and A as centers, radius DM , cross the circle at the other required points N ; P and Q ; R and S . The nine required points of the nonagon have been found with accuracy and dispatch, and no accumulation of error has been made possible. Now then, in all the Diagrams of Figure 111, the conchoidal points H and K have, for clarity, been shown farther from the line F than should actually be the case: they should be fixed as close to this line as possible, but yet not *on* it unless, as has heretofore been shown in Part 11 at Diagram "6" of Figure 107, the slant of the scale

where it crosses the line F is relatively great enough to locate the required trisection-point *directly* and *definitely* on the line F in one placement. The whole object of locating the *two* points, H and K of Figure 111, slightly *off* the line, is to *definitely* locate L precisely *on* the line. Note that the point L , the trisection point of the Diagrams of Figure 111, corresponds to the point G of the Diagram just referred to in Part 11.

In Part 13, following, you will find a full explanation of the author's method of graphical interpolation whereby any extraneous angle whatsoever can be laid out *with the triangles* to such a degree of accuracy in actual execution as to render a more involved "theoretical" construction utterly inexact in comparison. For the present, I shall show you how it applies to the construction of the several "odd-agons" shown in Figure 112, herewith. The simplicity and accuracy of this method are particularly striking in Diagram "1," since the practical manner there shown of laying off the central angle subtended by one side of a heptadecagon, or polygon of 17 sides, may readily be compared with the mathematically-entertaining but wholly impractical construction arrived at by Gauss. The suggested comparison, however, smacks not of odium. I am making no reservations for a pedestal in the Corridor of Fame: I am merely showing you how to do the "impossible" with three celluloid triangles, a T-square and a drafting-scale. Now let's locate not only *two* points, but *all seventeen*—of the "heptadecagon" that made Gauss famous as a maker of history and that disqualified Webster as a maker of dictionaries. Here's "how": Draw a vertical diameter across the given circle and indent the extremities A and B , as indicated at Diagram "1" of Figure 112. Along the inherent lines of the indicated triangles, lay off any 14 units from C to D , and 3 of the same units from D

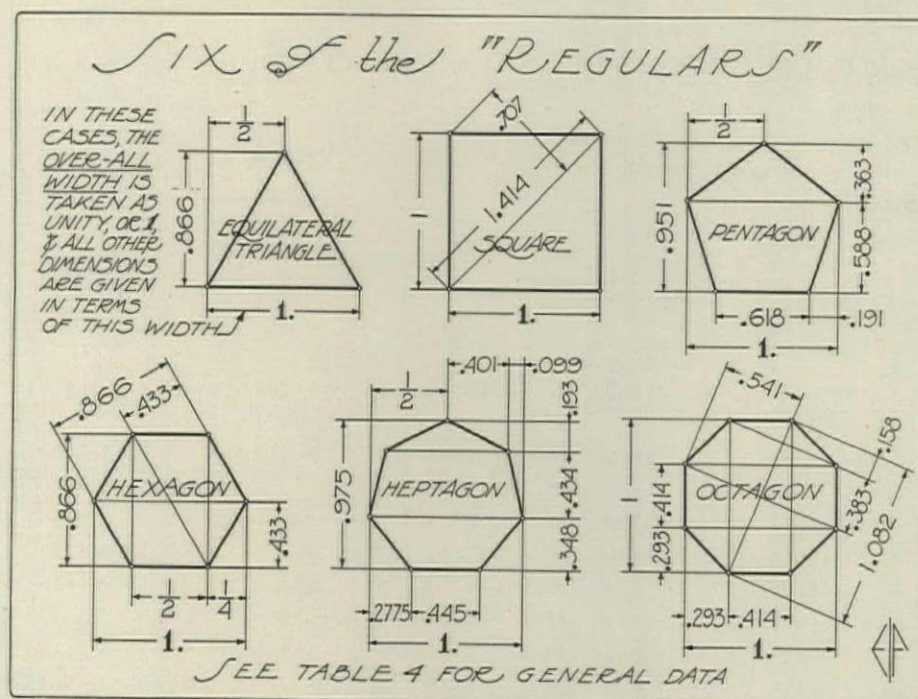


FIGURE 113

to *E*. Now then, I claim that this has outdone theory from at least *one* angle: the line *CE*, crossing the circle at *F*, slices off a *seventeenth* part of said circle and makes the chord *AF* one inscribed side of one of the polygons that disqualified Webster as a maker of dictionaries! Now you shall see how to locate the other fifteen points in a way that will disqualify *nobody* as a maker of *polygons*. You merely have to divide the rest of the circle into sixteen parts—an even number—which is easy, and done mainly by manipulative bisection in one or another of the ways shown hereinbefore at Figure 109. With variations to suit any particular case, the process of subdivision is of general application, and entirely does away with the possibility of cumulative errors. In fact, even if a slight initial error has been made in laying off the one central angle, the same becomes distributive rather than cumulative. We're on our way—back to Diagram "1" of Figure 112—again in high gear:—Using a two-triangle sliding combination, hypotenuse to hypotenuse, and drawing no lines but merely indenting the projected points on the circle, project

- C* to *G*, parallel with *FB*,
- C* to *H*, perpendicular to *GA*,
- C* to *J*, perpendicular to *GF*,
- C* to *K*, perpendicular to *GJ*,
- C* to *L*, perpendicular to *GH*,
- C* to *M*, perpendicular to *AH*,
- C* to *N*, perpendicular to *FJ*.

Then, with *AF* as radius, and from centers *N*, *K*, *L*, and *M*, locate, in pairs, the remaining required points *P*, *Q*; and *R*, *S*; and *T*, *U*; and *V*, *W*; as shown. That beats "walking around with the dividers," for, in the stepping-off process alluded to, even a hair-breadth variation in getting the chord *AF* into the dividers, and even the slightest possible deviation from the circular pathway, will result in a surprising and

disheartening accumulation of error which shows up "all of a sudden" when you reach the *closing* division, which latter either does *not* close or it *overlaps*. The breadth of *one* hair is nothing: multiply it 'steen times, more or less, and it's *something*. Now try the tridecagon at Diagram "2." In the manner indicated, make *CD* equal to 9 units at any convenient scale, and make *DE* equal 4 of the same units. Then—project

- C* to *F*, collinear with *E*,
- C* to *G*, parallel with *FB*,
- C* to *H*, perpendicular to *GA*,
- C* to *J*, perpendicular to *GF*.

Then, with *AF* as radius, and from centers *A*, *F*, *J*, *G* and *H*, fix the remaining required points, *K* and *L*; and *M*, *N*; and *P*, *Q*; and *R*, *S*; as shown. Now you can undertake the undecagon of Diagram "3," with the following "help": Indent *D*, four units from *C*, and fix *E*, in the same precise manner, seven units from *D*. Likewise fix *F*, collinear with *CE*. With *FA* as radius, and *F* and *A* as centers, fix *G* and *H*, and leave the instrument set to this radius. Then, project *C* to *J*, parallel with *FB*; and *C* to *K*, perpendicular to *JH*; and *C* to *L*, perpendicular to *JG*. Now, with the original radius, *FA*, and from centers *L* and *K*, locate the final points as shown, thus completing the layout for the required eleven sides. No doubt, with what you now know, you will have little difficulty in getting "hep" to the heptagon of Diagram "4." I leave it up to you—it's so terribly easy!

Figure 113, along with TABLE 4, herewith, are exceedingly valuable reference documents, furnishing ready data, heretofore only partially available, for laying out, dimensioning, or determining the areas of, these figures. Incidentally, you'll probably wonder how I procured the *names* of the last twelve polygons listed in Table 4. Well, I *guessed* at the final four—but the others are "authentic." I'll admit, however, that it's much more comprehensive to say "24 sides" than it is to warble "tetradecagon." Maybe I'm wrong!

Example 1: Sixteen columns occur in a circular colonnade. The radius of the circle that passes through the center of the columns is 20'-0". What is the spacing of the columns, center to center, in a straight line? This amounts to determining the side of a hexadecagon that can be inscribed in a circle of 20'-0" radius. In other words, *R* is given as 20'-0" and it is required to determine *S* for a polygon of 16 sides. Table 4 gives $S = R \times .39018$,

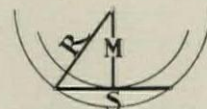
TABLE 4
DATA ON REGULAR POLYGONS UP TO 24 SIDES, INCLUSIVE

R = Radius of circumscribing circle.

M = Radius of inscribed circle, or the distance from the Middle of one side to the center of the polygon.

S = Length of one Side.

A = Area of the polygon.



Name of Polygon	How many sides	R	M	S		A
Trigon or Equilateral Triangle	3	$S \times .57735$	$S \times .28867$	$M \times 3.46410$	$R \times 1.73205$	$S \times S \times .43301$
Tetragon or Square	4	$S \times .70710$	$S \times .5$	$M \times 2$	$R \times 1.41421$	$S \times S$
Pentagon	5	$S \times .85065$	$S \times .68819$	$M \times 1.55308$	$R \times 1.17557$	$S \times S \times 1.72047$
Hexagon	6	$S \times 1$	$S \times .86602$	$M \times 1.15470$	$R \times 1$	$S \times S \times 2.59807$
Heptagon	7	$S \times 1.15238$	$S \times 1.03826$	$M \times .96314$	$R \times .86776$	$S \times S \times 3.63391$
Octagon	8	$S \times 1.30656$	$S \times 1.20710$	$M \times .82842$	$R \times .76536$	$S \times S \times 4.82842$
Nonagon	9	$S \times 1.46190$	$S \times 1.37373$	$M \times .72794$	$R \times .68404$	$S \times S \times 6.18182$
Decagon	10	$S \times 1.61803$	$S \times 1.53884$	$M \times .64983$	$R \times .61803$	$S \times S \times 7.69420$
Undecagon	11	$S \times 1.77473$	$S \times 1.70284$	$M \times .58725$	$R \times .56346$	$S \times S \times 9.36564$
Dodecagon	12	$S \times 1.93185$	$S \times 1.86602$	$M \times .53589$	$R \times .51763$	$S \times S \times 11.19615^*$
Tridecagon	13	$S \times 2.08929$	$S \times 2.02858$	$M \times .49295$	$R \times .47863$	$S \times S \times 13.18577$
Tetradecagon	14	$S \times 2.24698$	$S \times 2.18728$	$M \times .45648$	$R \times .44504$	$S \times S \times 15.31101$
Pentadecagon	15	$S \times 2.40486$	$S \times 2.35231$	$M \times .42511$	$R \times .41582$	$S \times S \times 17.64236$
Hexadecagon	16	$S \times 2.56291$	$S \times 2.51366$	$M \times .39782$	$R \times .39018$	$S \times S \times 20.10935$
Heptadecagon	17	$S \times 2.72116$	$S \times 2.67476$	$M \times .37386$	$R \times .36749$	$S \times S \times 22.73550$
Octadecagon	18	$S \times 2.87938$	$S \times 2.83564$	$M \times .35265$	$R \times .34729$	$S \times S \times 25.52076$
Nonadecagon	19	$S \times 3.03785$	$S \times 2.99630$	$M \times .33373$	$R \times .32918$	$S \times S \times 28.46485$
Bisdecagon	20	$S \times 3.19622$	$S \times 3.15687$	$M \times .31676$	$R \times .31286$	$S \times S \times 31.56875$
Unbisdecagon	21	$S \times 3.35480$	$S \times 3.31728$	$M \times .30145$	$R \times .29808$	$S \times S \times 34.83150$
Dobisdecagon	22	$S \times 3.51345$	$S \times 3.47757$	$M \times .28755$	$R \times .28462$	$S \times S \times 38.25335$
Tribisdecagon	23	$S \times 3.67201$	$S \times 3.63777$	$M \times .27489$	$R \times .27233$	$S \times S \times 41.83440$
Tettabisdecagon	24	$S \times 3.83065$	$S \times 3.79787$	$M \times .26330$	$R \times .26105$	$S \times S \times 45.57452$

By means of the above table, if S is known, then R , or M , or A , can be determined; if R , or M , or A , is known, then S can be determined. See Figure 113 for additional data on the commonly-used polygons. Also see worked out examples, in text.

*For a dodecagon, only, the area also equals $R \times R \times 3$.

which makes S equal $20' \times .39018$, or $7.8036'$. Now, by multiplying the decimal portion of this dimension by 12, we change $.8036'$ to $9.6432''$. Then, by consulting the conversion scale given at Figure 88 of Part 9, it immediately becomes evident that the decimal $.6432$ is practically the fraction $41/64$ ths. Hence, the required dimension is $7'-9-41/64''$. Expressed in still another way, this is the length of a chord that subtends an angle of $22\frac{1}{2}$ degrees, the radius of its arc being 20 feet.

Example 2: You have laid out an octagonal room, or tower, or dome, or an octagonal what-not, to an over-all width, say of $14'-0''$. What other dimensions would you mark on the plan so that a builder could lay out this octagon? Builders do not lay out polygons by inscribing them in, or circumscribing them about, circles. This works all right on the drafting-board but not on the job. Now refer to Figure 113, where six of the "regulars" are reduced to rectangular coordinates. The pictured octagon immediately informs you that the length of one of its sides is .414

of the over-all width. In this example, the length of a side thus becomes $.414 \times 14'$, which is $5.796'$. But $.796'$ is $9.55''$. And .55, by reference to the conversion scale mentioned, is seen to lie between $35/64$ ths and $9/16$ ths. Wherefore, if you decided that a 64th of an inch would be cutting it too fine—and in most cases it most certainly would be—you might mark $5'-9-9/16''$ on the plan as the dimension of the sides lying at right angles to each other. This would make the diagonal sides slightly less than this, but the difference would be absolutely inappreciable in framing, and would be taken care of by the rectangular system of dimensioning indicated in Figure 113. In other words, the distance which, in the octagon, is indicated as .293 would, in the case instanced, become $\frac{1}{2}$ of the difference between $14'-0''$ and $5'-9-9/16''$, or $4'-1-7/32''$ —which, also, is cutting it finer than practical conditions usually call for. Maybe, after all, you'd better dimension the rectangular sides as $5'-9\frac{1}{2}''$, which would make the other dimension, just discussed, $4'-1\frac{1}{4}''$. Take note,

however, that this adjustment to the *lucid intervals* on a “white man’s rule” does not affect the accuracy of the *dimensioning*—it merely changes the polygon from a “regular” to an irregular one, but the irregularity is so very slight as to be practically inconsequential. As a matter of fact, a builder would be compelled to guess at or “estimate” anything finer than a sixteenth of an inch, so you might just as well put a dimension on the plans that he can lay off by *measurement*. Again, a crooked two-by-four, or a slack chalk-line, will make more difference in a dimension of this kind than you could ever make by dropping a few insignificant decimal places from your calculations and then converting the result to the nearest sixteenth, eighth, quarter, or half inch. Your *geometry* should most assuredly be as exact as you can make it: but your *dimensioning* should be in terms associated with a *foot rule*. The *difference* is graphically non-existent in a scale drawing, and practically negligible on the job. In certain obvious cases, of course, a dimension *must* be put down as an exact fractional or aliquot part of a total, regardless of what the fraction may be, but, ordinarily, any dimension that “splits a sixteenth” creates vociferous and ridiculing amusement among the building “fraternity.” Which is as it should be!

Example 3: In the dodecagon bay at Diagram “1” of Figure 114, the dimension *M* is fixed at 7’—6”, and it is required to determine *S*, the length of a side, as well as the other dimensions, *A* and *B*, for the purpose of *dimensioning the working plans*. The dodecagon, however, is not shown at Figure 113: but, looking in Table 4, you will speedily find that *S*, for a polygon of 12 sides, is equal to *M* multiplied by .53589. Hence, since *M*, which corresponds to the radius of the *inscribed circle*, is here fixed at 7’—6”, or 7.5’, the indicated calculation gives *S* as 7.5’ × .53589, which is 4.019175’. By conversion, in the manner already indicated by foregoing examples, this dimension becomes 4’—15/64”, but since, in this case, a sixty-fourth of an inch is practically insignificant, the dimension, *S*, is taken at 4’—1/4”. Now, in general for *all* regular dodecagons, the distances marked as *A*, in Diagram “1,” Figure 114, are each 1/2 of *S*; and *B*, therefore, becomes *M* minus *S*, as there formulated. Hence, in the case here exemplified, the required *plan dimensions* are: *A* = 2’—1/8”, and *B* = 3’—5 3/4”, the over-all, *M*, being 7’—6”.

Example 4: What is the area of the dodecagon bay of Example 3? You have already found the length *S*, of one side, to be 4.019175’ or, practically,

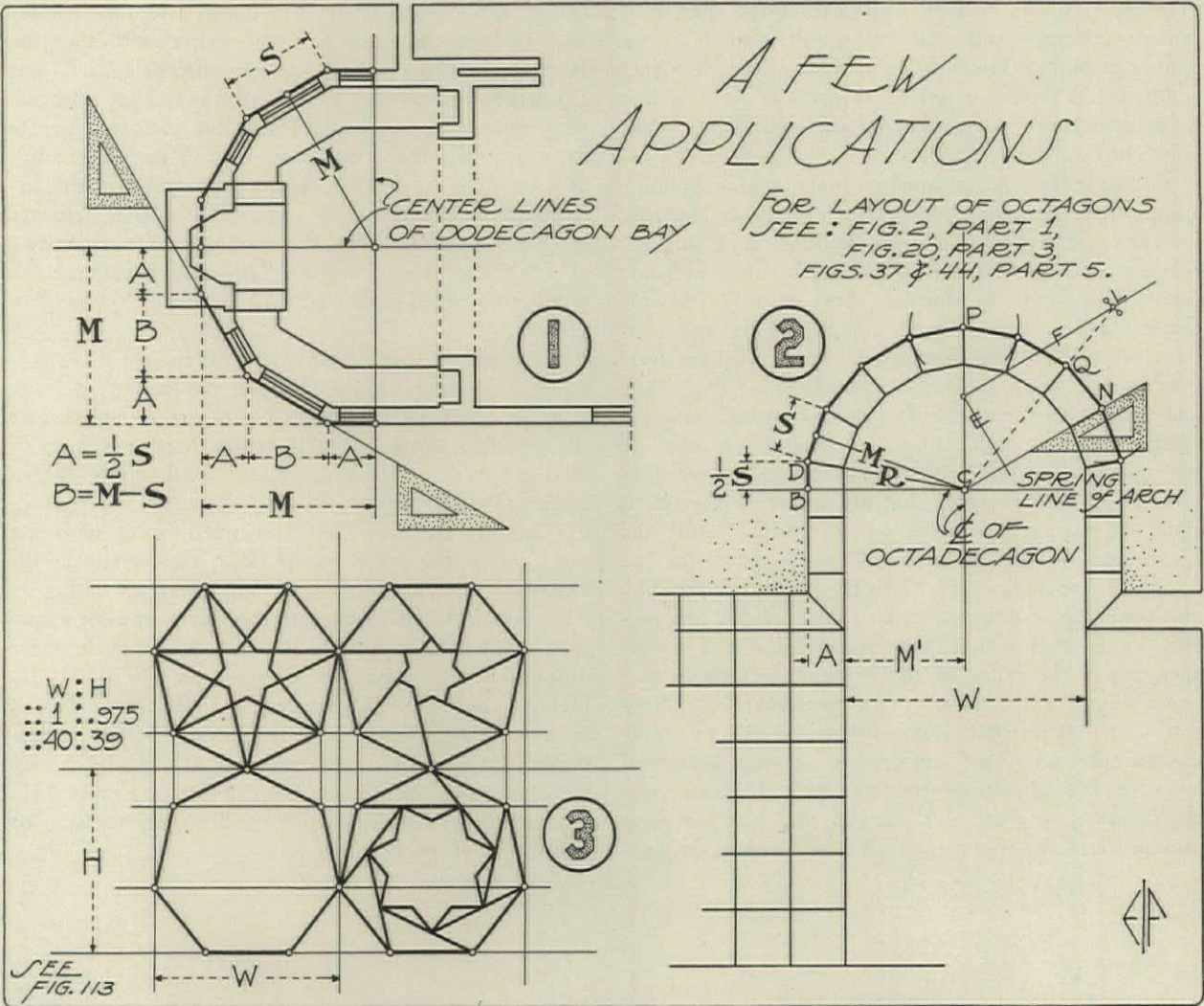


FIGURE 114

4.019'. From Table 4, you then find, in the *A*-column, that the area of a polygon of 12 sides is $S \times S \times 11.19615$ or, to all intents and purposes, the square of the side multiplied by 11.2. Hence, substituting the known value of S , the calculated area of the full polygon becomes $4.019' \times 4.019' \times 11.2$ or 180.9 square feet. But, since the bay in calculation is but *half* a polygon, its area would be half of this value, or 90.45 square feet. You have noticed that the decimal values of Table 4 are given to five places: you can use as many as you please, dependent upon the *degree* of approximation permissible in the result. Aside from the square, the areas of regular polygons, for a given length of side, can never be calculated to theoretical exactness—the arithmetical result always contains an interminable decimal. In the case just given, if the six-place value of S is used rather than the curtailed value of 4.019, you'd produce a decimal reading to 12 places for the square of S . And if this 12-place decimal were multiplied by the 5-place decimal multiplier given in the table, namely 11.19615, the final calculation giving the required area would read to 17 decimal places: 180.86000601742959375! And this terrifying-looking result would merely be *another* approximation. In fact the decimal digits could march entirely off this page, strike out across the great open spaces, and become lost in the dim decimated distance—and *still* the result would be an approximation! However, by using the 17-place result, you'd get closer to the "theoretical" area of that dodecagon bay by about $2\frac{7}{8}$ square INCHES. Take your choice.

Example 5: Now suppose that regular genuine antique heptadecagons were selling at the remarkably low price of a dollar per square foot; and suppose, further, that you were willing to invest a couple of hard-earned simoleons in one of these curios—just for Gauss' sake. How long would one of its seventeen sides be? Well—its *area* would be two square feet: that's easy. Now look in the catalogue—Table 4—and you'll discover in the *A*-column that the area of a regular heptadecagon, antique or modern, is equal to the square of one side *multiplied* by 22.7355. Wherefore, it is incontrovertible that the square of one side is equal to the area *divided* by 22.7355. And the *square root* of this quotient will consequently be the *length of one side*. And, from the length of one side, you could easily determine the radius of the one and only circle *that would just circumscribe said heptadecagon*, or the radius of the one and only circle *that said heptadecagon would just circumscribe*. Now you do it. After that, you will then be able to prestidigitate the unknown dimensions of that octagonal lobby in the high-brow country-club club-house you are planning, so that said octagon will just use up a hundred and eighty-six square feet of no-more-procur-

able imported Tunisian tile paving—and you will thereby qualify for the cherished cognomen of drafting-room "wizard."

Example 6: At Diagram "2" of Figure 114, a decorative tile wainscot cap has been carried over an arched opening in the shape of a half octadecagon—the regular cap tile being mitred to form the arch as shown. What width, W , of opening is required if the size of the tile used is 6" by 9" and a half-inch joint is allowed for? Here, S is known, and it is first necessary to determine M . Inspecting Table 4, you find that M , for a polygon of 18 sides, is $S \times 2.83564$. Hence, since S is here $9\frac{1}{2}"$, M becomes $9.5" \times 2.83564$, or 26.93" which, containing the allowance for the joints, can certainly be made 27". So, deducting 6", the width, A , of the tile architrave, leaves 21" as the radius M' of the circle inscribed within the polygonal intrados of the arch. Wherefore, twice M' , which is twice 21", or 3'—6", is the required width, W , of the opening to accommodate the given size of tile and the desired shape of the arch. To lay out the arch, now proceed as follows: Make CB , on the spring line, equal 27" as above determined, to any scale. Make BD equal half of S , or $4\frac{3}{4}"$, at the scale adopted. Then CD equals R , the radius of the *circumscribing* circle of the extrados. The points of the arch will then lie on this circle, and the required arch-division can then be done either with the protractor—marking off 20-degree intervals each way from the crown point P —or, just as quickly and possibly more precisely, in the manner indicated by the drawing. In the latter case, the 30-degree triangle at once fixes N , a point on the arch lying on the circumscribing circle. The angle NCP is then trisected at Q in accordance with the method heretofore shown at Diagram "1" of Figure 111, and the remaining points then fixed with radius NQ , from N and P as centers.

Example 7: Diagram "3," of Figure 114, is a mere suggestion of the limitless possibilities of polygons as elements of decorative design. Suppose, in the example shown, that a double heptagon is to be used either as a repeating unit of fixed width, W , or as an individual panel. In either case, the corresponding height, H , must be determined, since it is not the same as the given width W . This is always the case with the "odd-agons." So, referring to Figure 113, you forthwith find that the *width* of a heptagon is to the *height* as 1 is to .975, or, which is the same proportion expressed in integers, as 40 is to 39. Hence, knowing this, the required dimension H can be directly established, and, moreover, the entire heptagonal motif can be directly laid off by the system of rectangular coordinates worked out in Figure 113, without the necessity of either drawing a circle or knowing its center.

ADVENTURES OF AN ARCHITECT

11—BOOM, BOOM! CITY PLANNING IN REVERSE GEAR

By Rossel E. Mitchell

SHE WAS LARGE and smiling, of the pouter pigeon type, and Jewish. Her husband was a Jew-eler, and a fine chap too. She wished to erect a moderate-sized apartment building on her own property. "What's mine is mine, and what's his is ours!" We planned it for her, secured bids and let the contract. The builder "went busted" during the construction, and there was some delay. She admonished us that we ought to have known better than start the work on Friday! After completion, it filled rapidly and she was a satisfied client. Her husband's jewelry business appeared to prosper, although she had remarked that there was "only a living" in it.

Several years later an "Exposition" was being promoted and everybody assumed the event to be an Aladdin's lamp which only needed gentle rubbing to bring forth a magic genie, loaded with riches and prosperity. Nearly everybody fell for some get-rich-quick scheme. People who had labored a lifetime to accumulate a competence, invested their hard-earned savings in fly-by-night enterprises that never had a chance to pay.

Our amiable client showed up again. She wanted to build an "outside" hotel. Apartment houses "only" paid ten or twelve per cent. at best, and she could double her money there in a year!

I ventured to proffer some observations: "Apartments are here to stay; expositions come and go. Eight or ten per cent. is a good investment, even in cheap apartments." But my youth discounted this sage advice, besides, the speculating fever was in the air.

We planned and she built a cheap temporary hotel. To save money she omitted architect's supervision. I never saw the place, but she said later she never got 25% of her investment back. She borrowed a large sum of money and I think her husband endorsed for her. Soon after the collapse of the Exposition boom her husband lost his business and became a salesman.

Following this debacle, came the opening of the Panama Canal. Many Eastern cities looked forward to this event as another boom-producer. One day a bald and elderly gentleman with rather wild eyes and a deadly seriousness of demeanor secured an interview with me. He wanted to sell me some vacant lots, beautifully located—on his colored map—in a wonderful new section "right in the path of the inevitable development to be brought about by the completion of the Canal."

I knew the territory, but was not sure just where, in the center of which farm, these corner lots were located. Keenly observing my diffidence, not to say disinterest (they had not then learned to call it sales-resistance), he grew oratorical.

"Sir, if a man should go up over this section in a balloon, and drop greenbacks over every acre, it would not increase in value more surely than it must because of this great industrial development."

When I informed him that I, personally, had no greenbacks to drop into vacant lots, he departed for more fertile fields. At least he sold lots of lots. The last I knew the victims had either been foreclosed or still held them for re-sale. "Three moves," 'tis said, "equal a fire." A town may recover from one boom, recuperate in time from two, but three in a row spell disaster.

To architects and draftsmen, an Exposition is great fun. To most investors looking for returns, they have proved great fakes. The Chicago Exposition of 1893 was an educational event of first importance to the American people. Most of the other shows, under-financed and sometimes over-sized for the community, have not only been disappointments to their promoters but actual calamities to the local citizenry.

Vast sums of money have been wasted building ephemeral exposition palaces. These funds, if expended in permanently re-vamping the public buildings of the city backing the show, would produce civic centers rivalling the best in Europe. Streets could be widened, eyesores turned into parks, beauty spots created.

A striking example of this misdirected energy and misapplied expenditure was seen in our city. This town possessed many beautiful and historic features which could have been developed and made to pay big dividends in civic character and interest to the world outside the bounds of the municipality.

One of the most interesting streets to be found in America might once have been seen here. Here was Colonial architecture at its best. Delicate and graceful porticos, approached by broad winding marble steps, each riser with a moulded nosing. Chaste wrought iron railings, windows with wide exterior trim contrasting with the deep color of the handmade brick. Brickwork of large units, laid Flemish bond, softened by time and English Ivy or Virginia Creeper. Inside were to be found the most charming mantels, reflecting the refinement of owners and builders who demanded and could produce such tasteful work. Room cornices with fine, light mouldings, broad flooring that did not tire the eye with infinite lines, raised panel doors in scale with the surroundings, ingenious hand-wrought hardware. Some of these homes possessed the original furniture of the first owners.

To recount all the beautiful detail to be seen on that street would be almost to catalogue Colonial architecture. Some mansions dated back well into the Eighteenth Century, others the early Nineteenth, and some arrested you with delightfully dignified porticos and façades of the Greek Revival.

Sad to relate, this wealth of beautiful things was lightly held by most natives, and apparently so by the local architectural lights. Rarely did a new mansion in the growing sections evidence any feeling for the abundant local tradition. When a public library was built, it was in a crude style of French Renaissance. And when the construction of an Art Gallery came up, the most complete and beautiful Colonial mansion in the city was available, furniture and all. Was it secured? By no means! The art gallery had to be new, and grandiose, and mediocre!

As in many cities having no such fine architectural traditions, new buildings were designed in the most bizarre styles extant—but if some old treasure of Colonial days was destroyed, few lamented.

Parvenue apartments began to elbow out the old aristocracy and no one said them nay. Some years after the Exposition fever and subsequent financial chills had done their work, I visited again this old town where once were found so many charming spots. "Progress" and speculation had done their worst. Ugly

shops jutted their gaping glass to the street lines. A huge bare office building in the residential section destroyed all the ancient character. Many old places had been destroyed and not one beautiful thing substituted. Uptown, the Exposition palaces had nearly all disappeared, but downtown the hideous public buildings of the era of Victorian eclipse still survived!

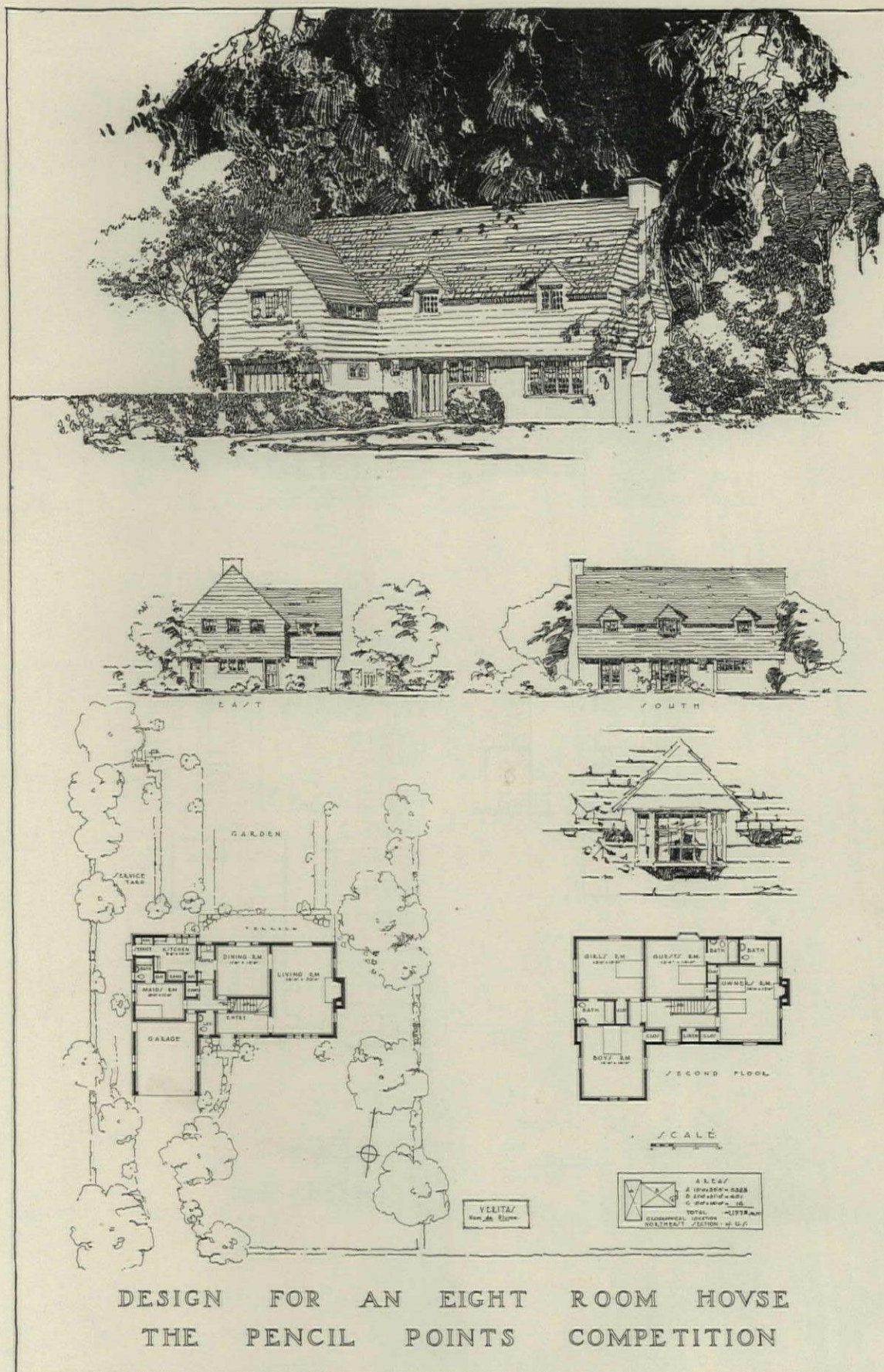
Change and replacement are inevitable, but why ruthlessly destroy what the past has bequeathed, in beauty that has stood the test of generations? Numberless architects today have caught up the spirit of Eighteenth Century refinement as evidenced in Colonial architecture, and are carrying it on to even greater perfection. But many a city and town has lost all individual character, and with it an invaluable asset, by failing to perpetuate its heritage of beauty and interest, left to it from an age of cultural enlightenment. Such priceless heirlooms are not replaced by erection of rectangular brick boxes of hideous height, sans form, sans beauty, sans color, sans everything but mortgages; frequently also, sans dividends!



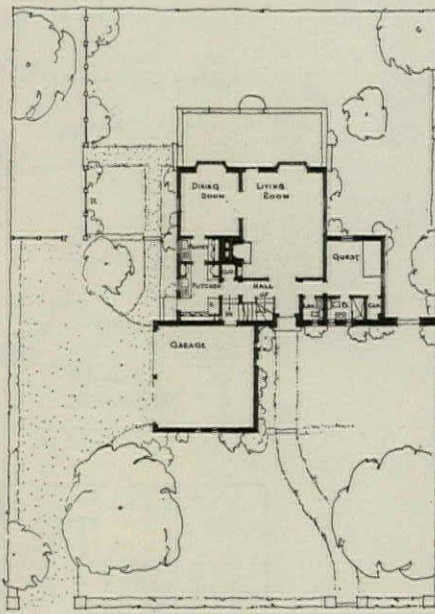
FROM A LITHOGRAPH BY OTHO McCrackin

MANOR HOUSE, ROMAINMOTIER

ADDITIONAL PENCIL POINTS COMPETITION DESIGNS



SUBMITTED BY ANDREW P. COOLIDGE, HELENA, ARKANSAS
PENCIL POINTS COMPETITION FOR AN EIGHT ROOM HOUSE

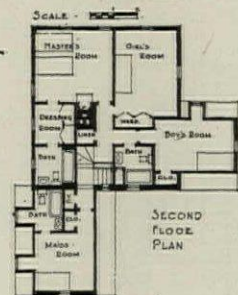
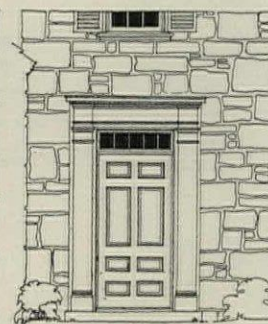


FIRST FLOOR PLAN

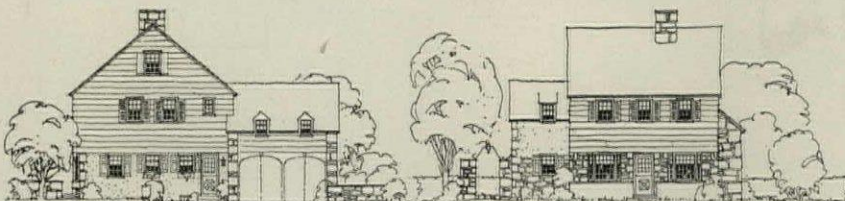
DESIGN
FOR AN
EIGHT
ROOM
HOUSE
PENCIL
POINTS
COMPETITION

SUBMITTED BY
- MAIN HOUSE - 15'-17" x 70'-2"
- GUEST WING - 10'-15" x 10'-0"
- GARAGE - 10'-0" x 18'-0" x 30'-0"
- DAY WINDOW - 12'-0" x 10'-0"
- TOTAL CUBIC FEET - 1192
- SUGGESTED LOCATION IS IN -
- THE HAVEN APT. 3/2/2/2

SCALE - 1/4" = 1'-0"



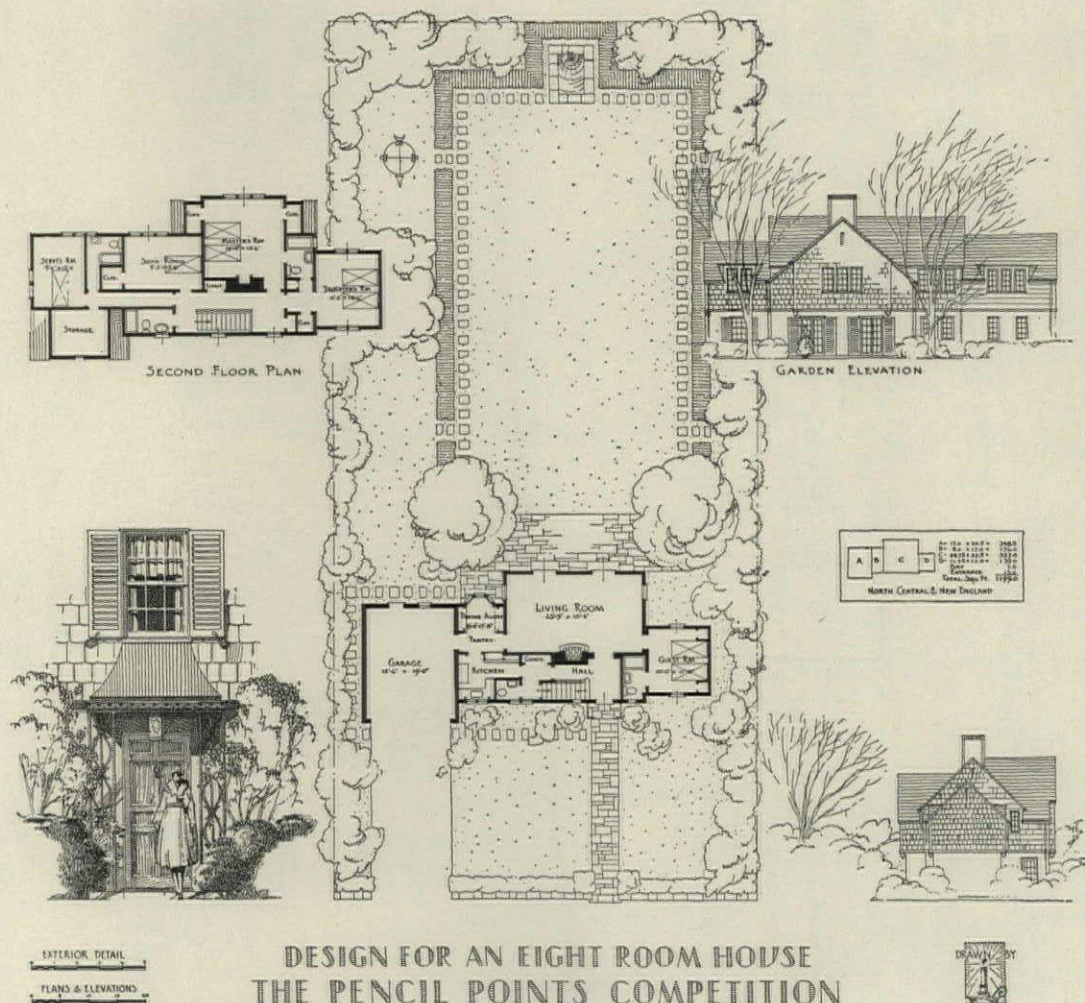
SECOND FLOOR PLAN



SUBMITTED BY L. H. ELDER, NEW YORK, N. Y.

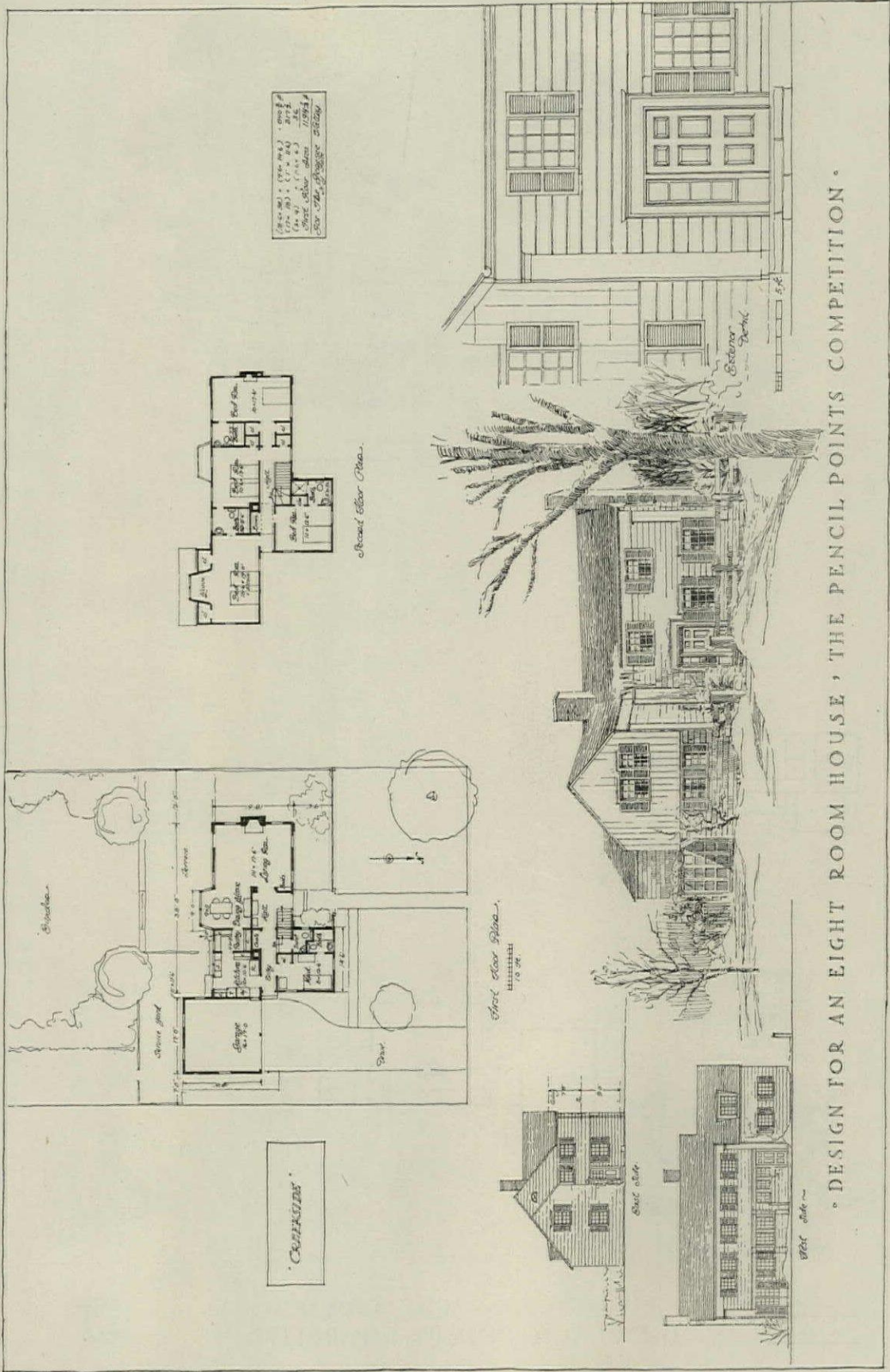
PENCIL POINTS COMPETITION FOR AN EIGHT ROOM HOUSE

ADDITIONAL PENCIL POINTS COMPETITION DESIGNS



DESIGN FOR AN EIGHT ROOM HOUSE THE PENCIL POINTS COMPETITION

SUBMITTED BY J. BYERS HAYS, CLEVELAND, OHIO
PENCIL POINTS COMPETITION FOR AN EIGHT ROOM HOUSE

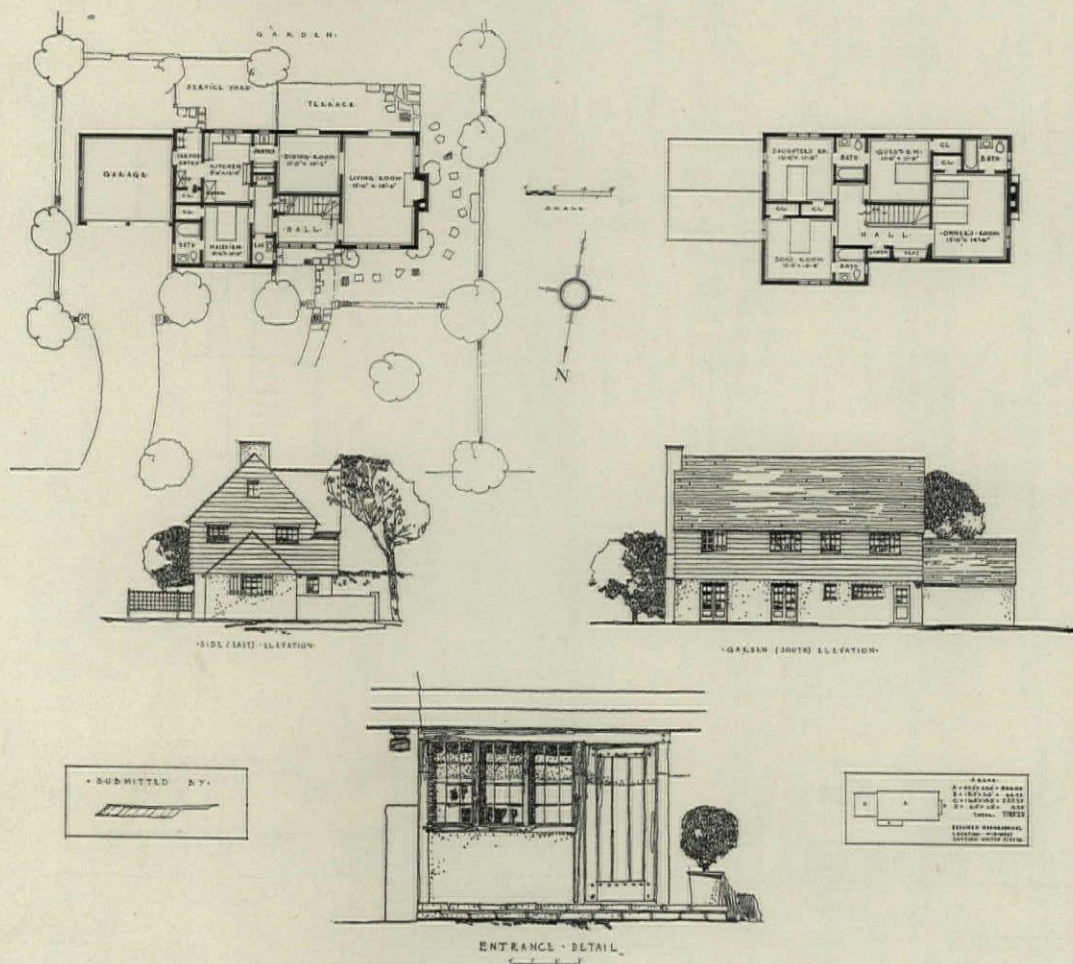
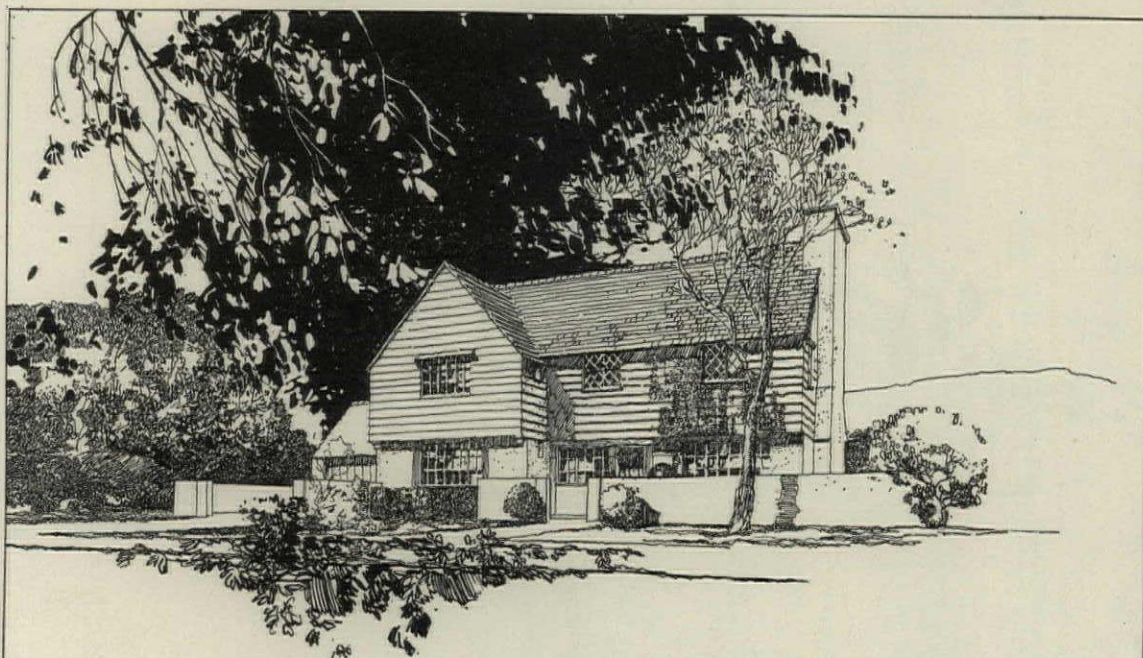


DESIGN FOR AN EIGHT ROOM HOUSE, THE PENCIL POINTS COMPETITION.

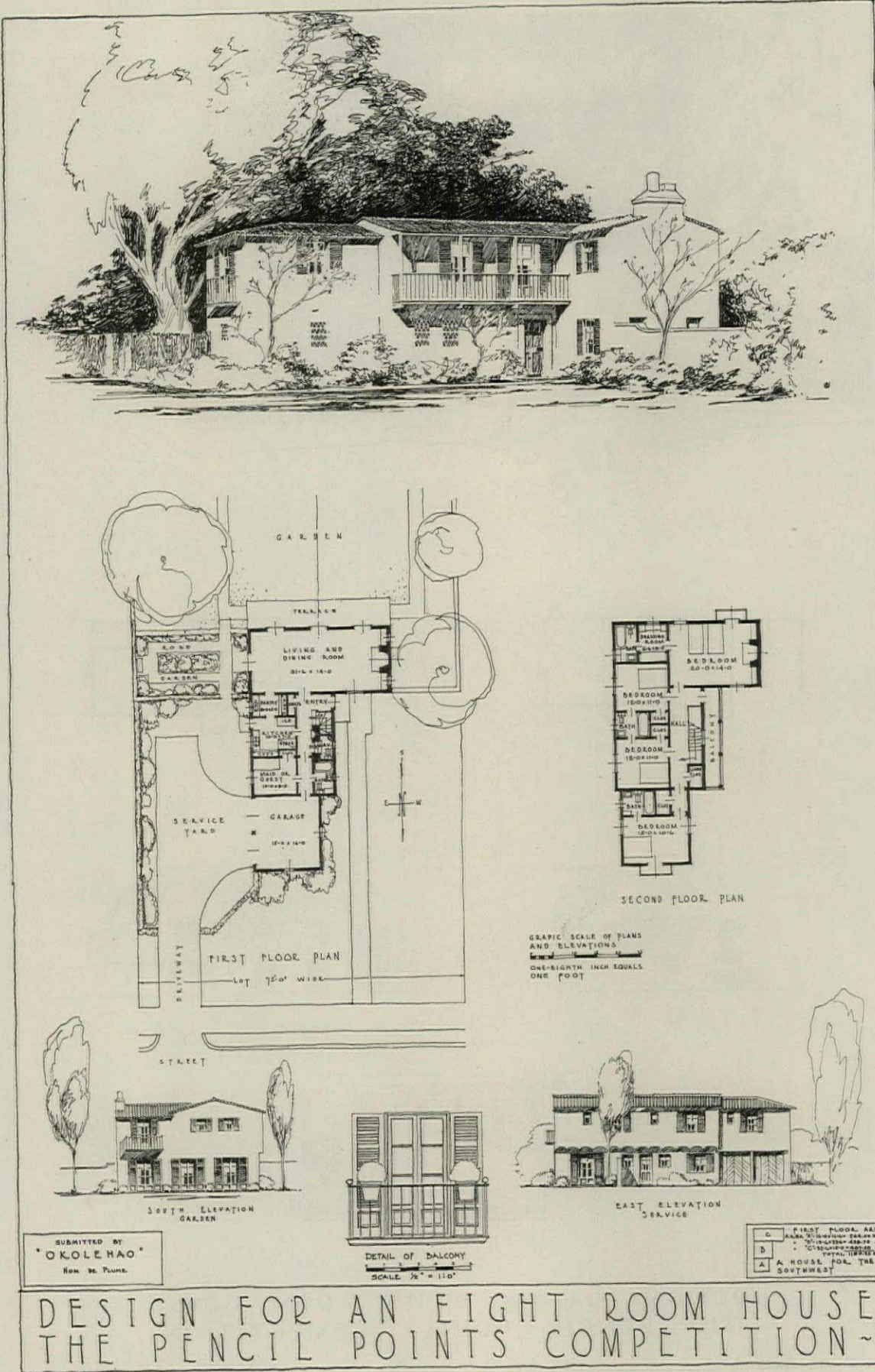
SUBMITTED BY NORTH AND SHELGREN, BUFFALO, NEW YORK

PENCIL POINTS COMPETITION FOR AN EIGHT ROOM HOUSE

ADDITIONAL PENCIL POINTS COMPETITION DESIGNS

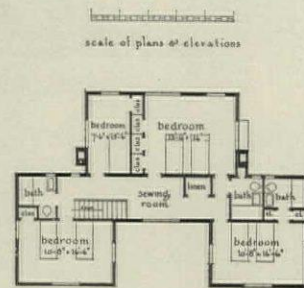
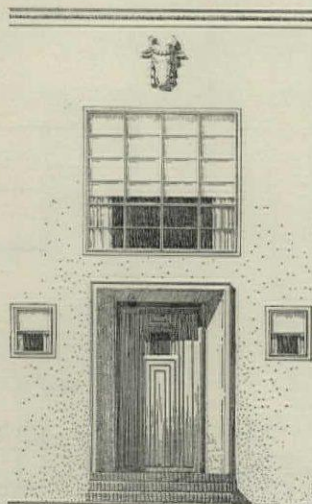
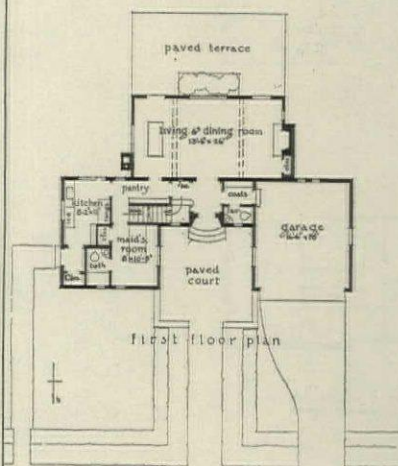


PENCIL POINTS FOR SEPTEMBER, 1930



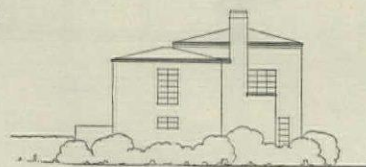
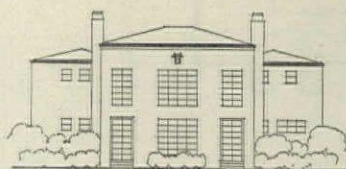
SUBMITTED BY JAMES C. SIMMS AND CYRIL W. LEMMON, HONOLULU, T. H.
PENCIL POINTS COMPETITION FOR AN EIGHT ROOM HOUSE

ADDITIONAL PENCIL POINTS COMPETITION DESIGNS



to be built on Long Island

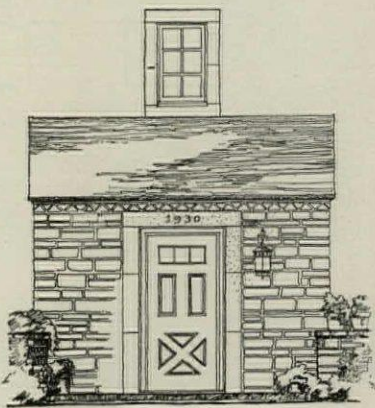
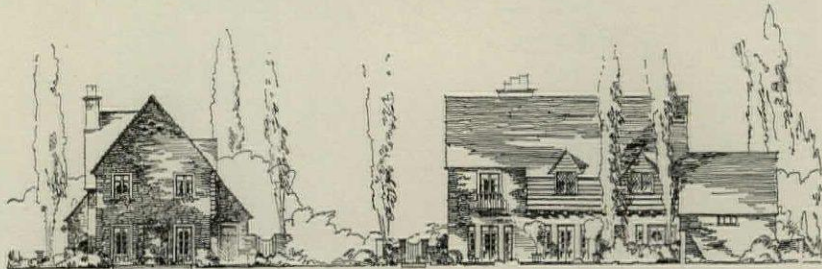
A	14' x 17'	238 sq. ft.
B	14' x 10'	140 sq. ft.
C	14' x 10'	140 sq. ft.
D	14' x 10'	140 sq. ft.
E	14' x 10'	140 sq. ft.
F	14' x 10'	140 sq. ft.
G	14' x 10'	140 sq. ft.
H	14' x 10'	140 sq. ft.
I	14' x 10'	140 sq. ft.
J	14' x 10'	140 sq. ft.
K	14' x 10'	140 sq. ft.
L	14' x 10'	140 sq. ft.
M	14' x 10'	140 sq. ft.
N	14' x 10'	140 sq. ft.
O	14' x 10'	140 sq. ft.
P	14' x 10'	140 sq. ft.
Q	14' x 10'	140 sq. ft.
R	14' x 10'	140 sq. ft.
S	14' x 10'	140 sq. ft.
T	14' x 10'	140 sq. ft.
U	14' x 10'	140 sq. ft.
V	14' x 10'	140 sq. ft.
W	14' x 10'	140 sq. ft.
X	14' x 10'	140 sq. ft.
Y	14' x 10'	140 sq. ft.
Z	14' x 10'	140 sq. ft.
Total		1150 sq. ft.



DESIGN FOR AN EIGHT ROOM HOUSE THE PENCIL POINTS COMPETITION

SUBMITTED BY RICHARD HAVILAND SMYTHE, NEW YORK, N. Y.

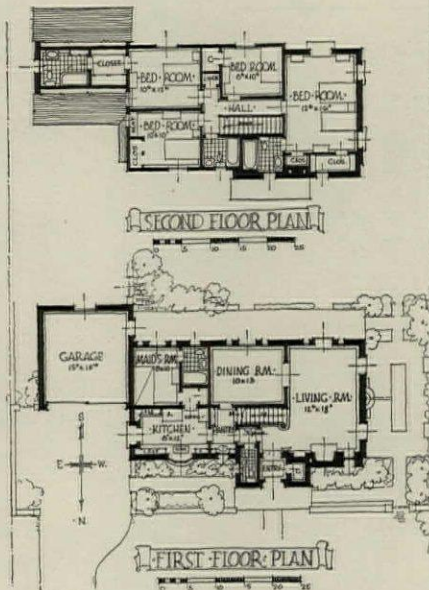
PENCIL POINTS COMPETITION FOR AN EIGHT ROOM HOUSE



ENTRANCE - DETAIL

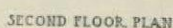
AREA	house	44'x'54'x'4" = 2300
	garage	15'x'18'x'4" = 270
	total	46'x'54'x'4" = 2570
LOCATION	Central, on Eastern Street	

Designed by
JOHN

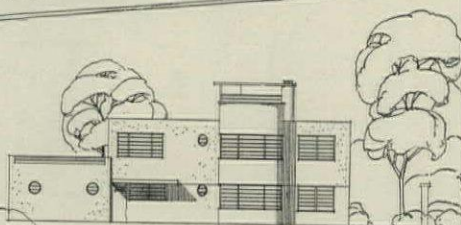


DESIGN FOR AN EIGHT-ROOM HOUSE - THE PENCIL POINTS COMPETITION

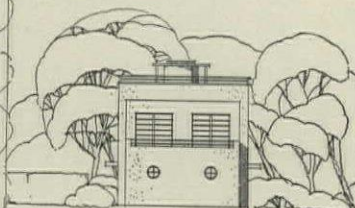
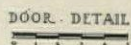
SUBMITTED BY C. RODERICK SPENCER AND JOHN JAMES LANDON, LOS ANGELES, CALIFORNIA
PENCIL POINTS COMPETITION FOR AN EIGHT ROOM HOUSE



PERSPECTIVE
~~OR~~
 SCALE AT NEAREST CORNER.

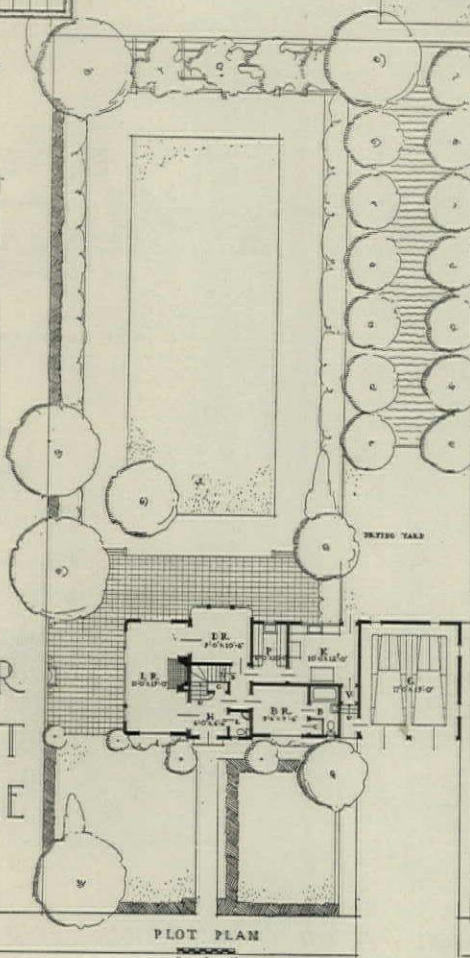


CARDEN ELEVATION

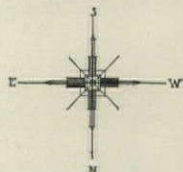


SIDE ELEVATION

DESIGN FOR AN EIGHT ROOM HOUSE



THE PENCIL POINTS COM- PETITION



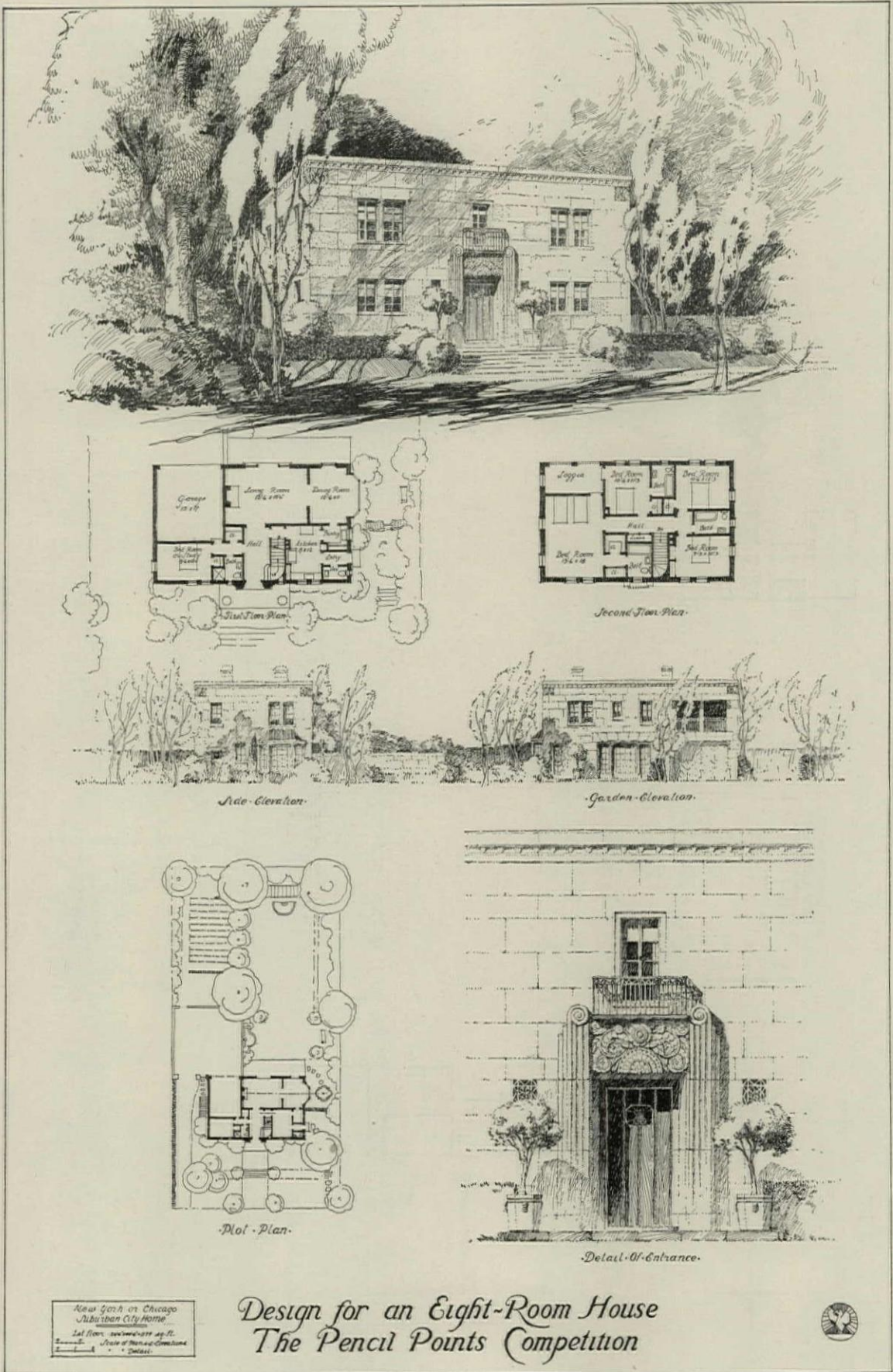
PLOT PLAN

CONTRIBUTOR OF AREA				
A	B	C	D	A= 210.9
				B= 255.6
				C= 371.4
				D= 366.0
				TOTAL= 1203.9

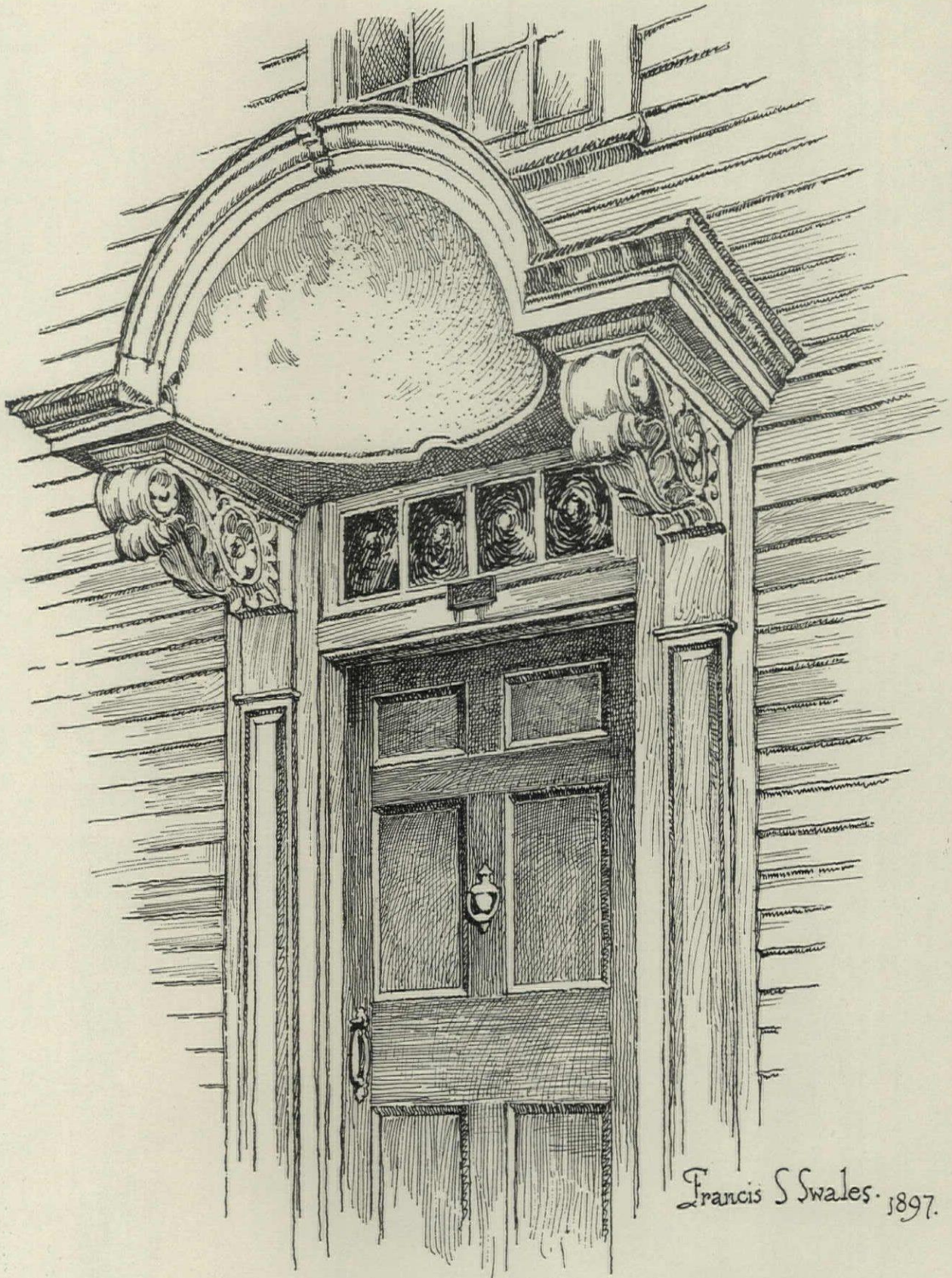
MATERIALS: STEEL, FRAMES, JOINTS, WELDING, COATING
 LABOR: WELDERS, MILLERS

005447748 2 7

[731]



SUBMITTED BY HAROLD H. WEEKS AND EDWARD W. KRESS, SAN FRANCISCO, CALIFORNIA
 PENCIL POINTS COMPETITION FOR AN EIGHT ROOM HOUSE



FROM A PEN AND INK DRAWING BY FRANCIS S. SWALES
DOORHEAD—AYRAULT HOUSE, NEWPORT, RHODE ISLAND

PENCIL POINTS FOR SEPTEMBER, 1930

VOLUME XI

NUMBER 9

This drawing, reproduced at the actual size of the original, is a good example of pen technique. It was done many years ago as part of a series Mr. Swales worked up on Colonial details.



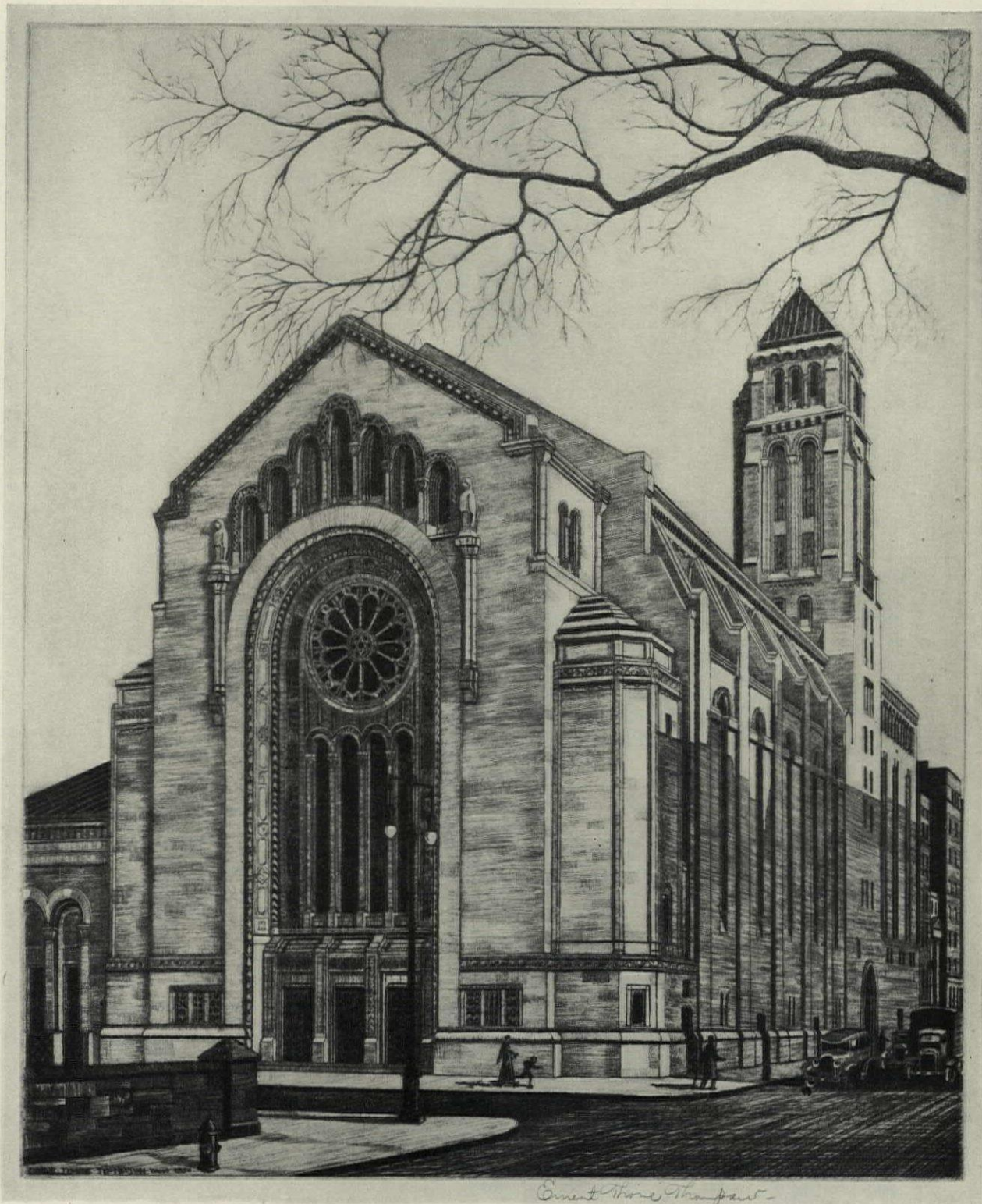
DINAN, FRANCE

FROM A WATER COLOR SKETCH BY JOHN N. RICHARDS

PENCIL POINTS
(September, 1930)

PENCIL POINTS SERIES
of
COLOR PLATES

The water color sketch shown on this plate was made by Mr. Richards during his travels as holder of the Stewardson Memorial Scholarship of the University of Pennsylvania for 1928-1929. It measured 13" x 19" and was done on rather rough Fabriano paper. The artist makes it a practice to use as few colors as possible and his palette included, for this sketch, Cerulean Blue, French Blue, Alizarin, Burnt Sienna, Raw Sienna, and Emerald Green. The color was applied very wet with the object of producing a clear, bright effect.



Courtesy Kleemann Thorman Galleries

FROM A DRYPOINT BY ERNEST THORNE THOMPSON
TEMPLE EMMANUEL, NEW YORK

PENCIL POINTS

PENCIL POINTS FOR SEPTEMBER, 1930

VOLUME XI

NUMBER 9

This drypoint by Ernest Thorne Thompson shows one of New York's most recently completed ecclesiastical buildings, designed by Robert D. Kohn, Charles Butler, and Clarence Stein, Architects, with Mayers, Murray, and Phillip as Consulting Architects. The original print measures 10" x 12".



BRONZE PANEL OVER MAIN ENTRANCE OF GENESEE VALLEY TRUST COMPANY BUILDING, ROCHESTER, NEW YORK
DESIGNED AND EXECUTED BY LEO FRIEDLANDER, SCULPTOR—VOORHEES, GRELIN, AND WALKER, ARCHITECTS

PENCIL POINTS FOR SEPTEMBER, 1930



"Security"



"Trust"

VOLUME XI

NUMBER 9

"The Dawn of a New Era," the panel shown on the other side of this sheet depicts the departure of the Red Men from the Genesee Valley and the entrance of the White Men, following the enactment of a treaty between the two parties, affirmed by the two figures behind the oxen. The size of the original panel is 7' x 15'.

The two smaller panels shown above were designed by Mr. Friedlander to be executed in limestone, to be placed on the main façade over windows at the left and right, respectively, of the large panel. These smaller panels each measure 4' x 4'.

ARC WELDED WIND BRACING OFFERS SAVINGS

By A. F. Davis

Vice-President, The Lincoln Electric Company, Cleveland, Ohio

BUILDING CODES require tall buildings to be so constructed as to resist a given wind pressure. These requirements generally make special bracing system necessary, but the proportions of the building

and the arrangement and strength of the walls determine the extent to which special bracing must be used.

In the past, because of the prevalence of riveted construction, it has been customary to construct the wind bracing by this traditional method. Since the advent of electric arc welding, however, and because of the

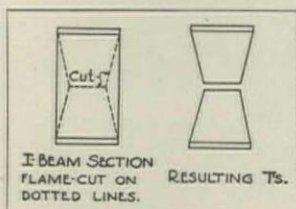


FIGURE 1

in Figure 1. These large T's are riveted at the shop to the columns by a suitable number of rivets and field riveted to the beam flanges as shown in Figures 2 and 3.

It is often possible to replace advantageously the riveted T-type wind-brace by the arc welded knee brace type shown in Figure 4. The knee braces are

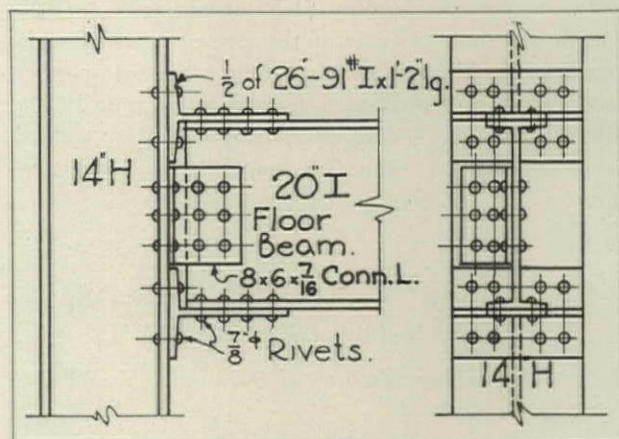


FIGURE 2

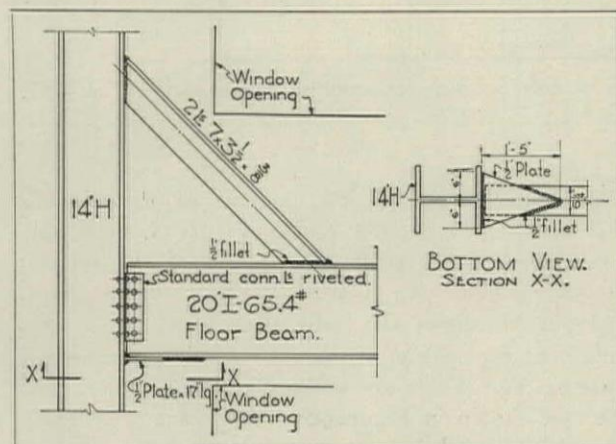


FIGURE 4

placed only at the intersection of the spandrel beams and wall columns, the floors being usually well able to transfer the lateral strains to the wall bracing systems.

To illustrate the point, consider the floor plan, Figure 5, of a recently built 40-story structure. The position of the riveted T-braces, detailed in Figure 1, are indicated by the crosses shown on the floor plan.

expense connected with field riveting, it has been a question as to whether it is good engineering practice to continue fabricating wind bracing by riveting. A comparison of the designs for these two methods of construction reveals many interesting facts.

The prevailing style of riveted wind-bracing connection is the T-type. It consists of large T's formed from I-beam sections split in two lengthwise as shown

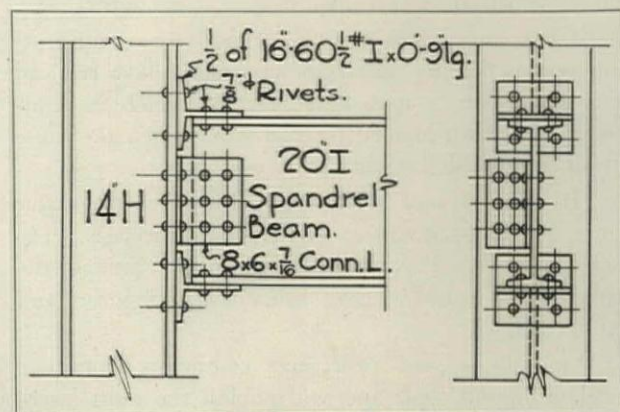


FIGURE 3

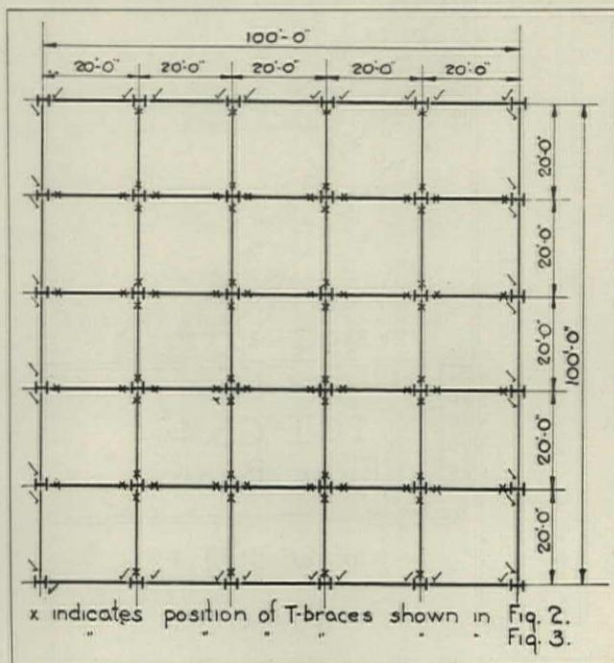


FIGURE 5

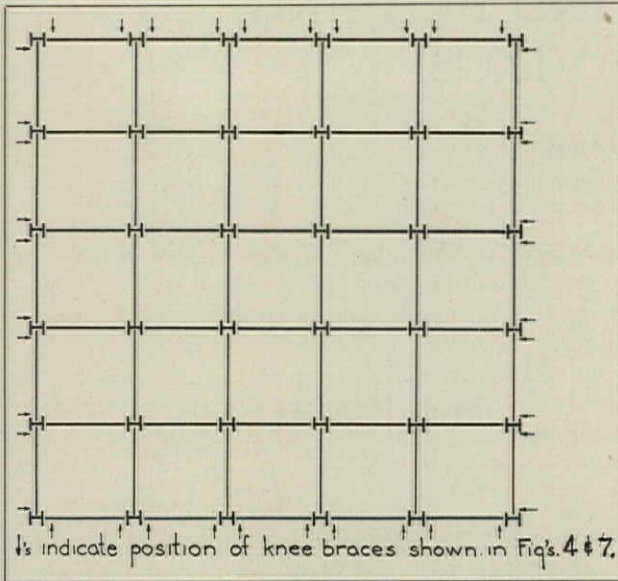


FIGURE 6

Check marks indicate the position of the exterior T-braces. The exterior braces, Figure 3, need only have one-half the strength required of the interior braces. There are, in all, 120 T-braces per floor.

Figure 6 shows the same floor plan, the arrows indicating the position of the corresponding arc welded knee braces. There are 40 knee braces per floor. For the case shown in Figures 5 and 6, each knee brace must have, and has, two and a half times the strength of each interior T-type connection and five times the strength of each exterior T-connection.

It is to be observed that the use of the arc welded knee brace does not in any way change the usual erection procedure; the steel is raised, set, bolted up temporarily and plumbed in the ordinary fashion and

then riveted together by means of the beam connection angles. Only when this has been done are the knee braces placed and welded in position.

Evidently such a procedure is bound to speed up the job, not to delay it, since the riveters have less rivets to drive to obtain a well squared and plumb structure. The welder operators follow the riveters without interfering with them, and without getting in the way of the masons back of them. For purposes of comparison, Figure 7 shows a riveted knee brace connection corresponding to the arc welded connection shown in Figure 4, and of exactly the same strength.

Shop rivets cost about 4¢ each; field rivets 22¢ each and the large T's and fabricated connections about 6¢ per pound. Plain knee brace material and plates cost about 5¢ per pound, and welding, in the positions indicated, averages about \$1.25 per lineal foot. On this basis, the cost of the 120 riveted T-brace connections per floor is \$1,334; that of the corresponding 40 riveted knee braces \$1,164. The cost of the 40 arc welded knee braces, including the riveted standard connection angles, is only \$826 or one-third to one-fourth less than the cost of the riveted types of wind bracing. In all cases the cost of the standard or other load carrying connection is figured in the total. On tall structures the saving effected by use of arc welded wind bracing represents an amount that cannot be ignored.

A CALL FOR INFORMATION ON WATERPROOFING PRACTICE

A letter from Hugo Zichner of Buchanan, New York, reads as follows:—

“EXPERIENCE shows me that a common waterproofing practice prevails in New York of leaving weep holes after the waterproofing operation is finished in concrete construction to carry off excess water and I should like to ask through your columns whether this practice is not thoroughly unsound? Does not the water flowing through the weep pipes carry off the lime of the cement and consistently weaken the construction by removing from it the particular elements which are relied upon to give it strength?

“I have run across several instances where infiltrating waters flowing out from weep pipes have reduced the concrete to a mass of rubble for which the contractor has been blamed for bad work when the cause of all the trouble lay with the weep holes.

“If some of your readers would analyze the water coming out of concrete construction through weep pipes, and give the benefit of their observations, the information would be most valuable to Engineers and Architects.”

We will be glad to receive comments from our readers on this topic and will publish the most interesting observations for the benefit of all.

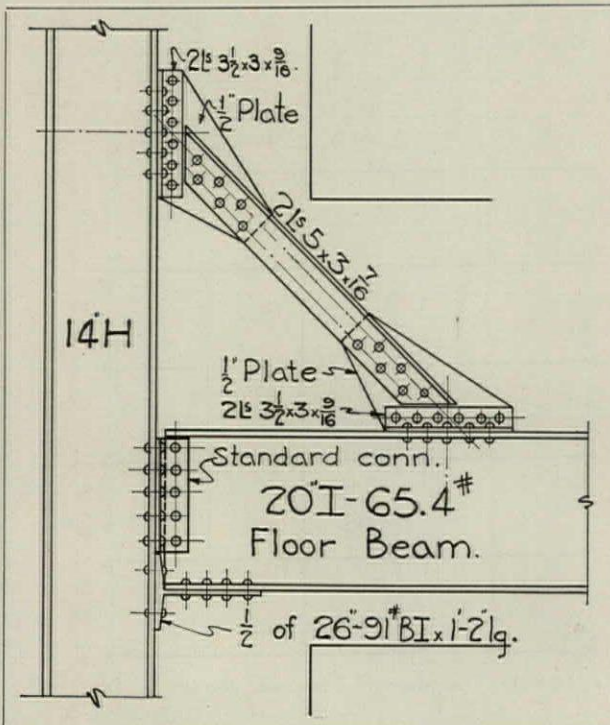
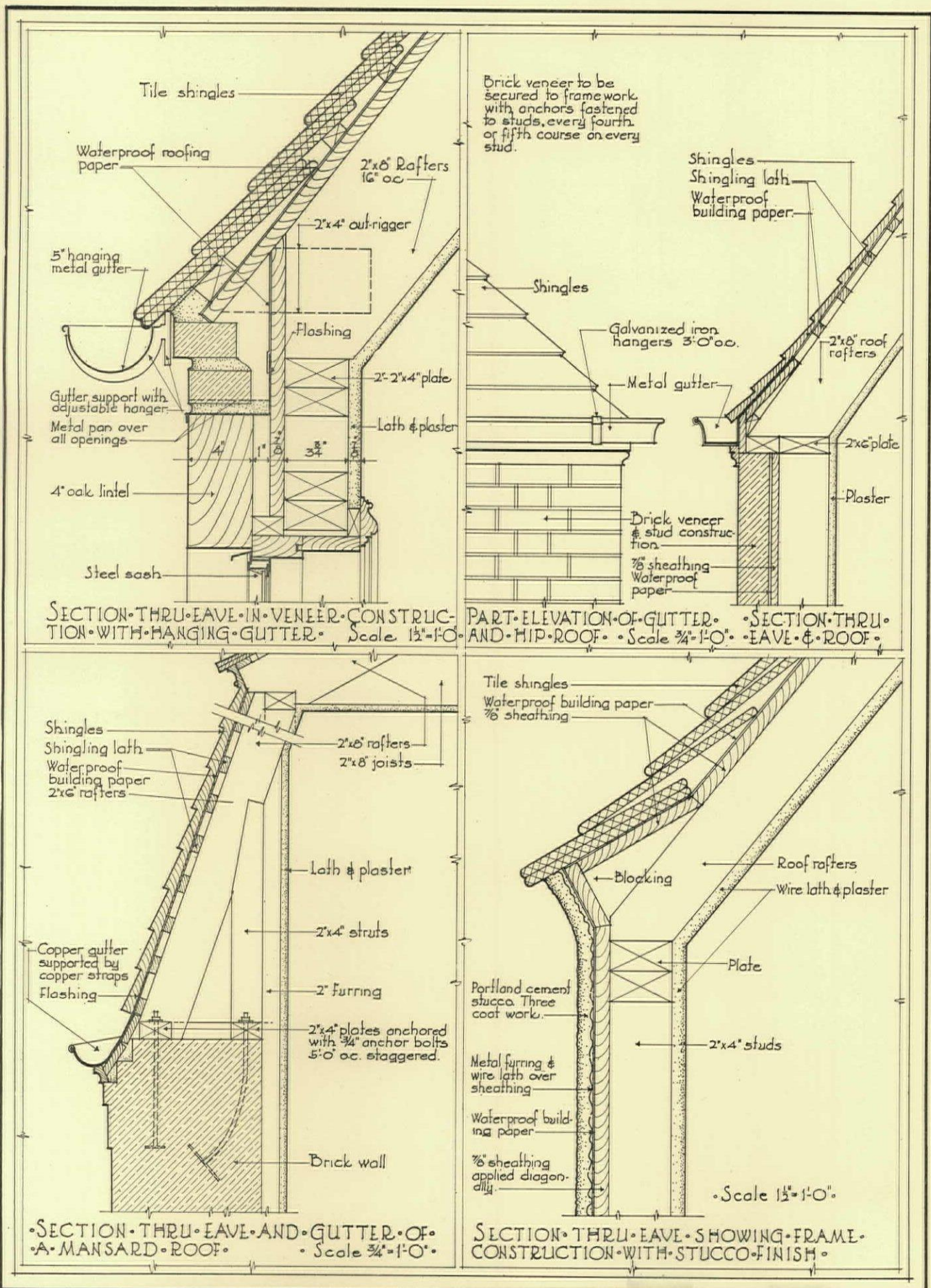


FIGURE 7



Shingles

Wood shingles

Roofing paper

Roof sheathing

Metal gutter

Flashing

3"x6" wall plate

3/4" dia. anchors
5'-0" o.c.

Stone wall

2" furring

Wire lath
& plaster

PART ELEVATION OF CORNICE
AND EAVE
Scale 1 1/2" = 1'-0"

SECTION THRU CORNICE EAVE
AND ROOF
Scale 1 1/2" = 1'-0"

Shingle, slate or tile
2"x3" nailing strip

3/8" sheathing

Stone wall

SECTION THRU
RAKE OF GABLE
Scale 3/4" = 1'-0"

Cant strip

Blocking

Insulation

Oak rafters
showing in
room

Furring
Plaster

Stone wall

3/4" dia. an-
chor bolt

SECTION THRU EAVE OF GABLE
Scale 1 1/2" = 1'-0"

Slate or tile

Spruce, hemlock or
pine sheathing

Blocking

Flashing

Brick courses

Leaded cop-
per gutter

1/4"x1" W.I. brackets
3'-0" o.c.

Stone wall

SECTION THRU EAVE PLATE
AND GUTTER
Scale 3/4" = 1'-0"

Waterproof
paper

Wire lath and
plaster

3"x6" wall plate

2" furring

3/4" dia. anchor
bolts

Shingles

Waterproof paper
over sheathing

3/8" T.&G. sheathing

Roof rafter

Blocking

Wire lath and
plaster

3"x6" wall plate

3/4" dia. anchor
bolts 5'-0" o.c.

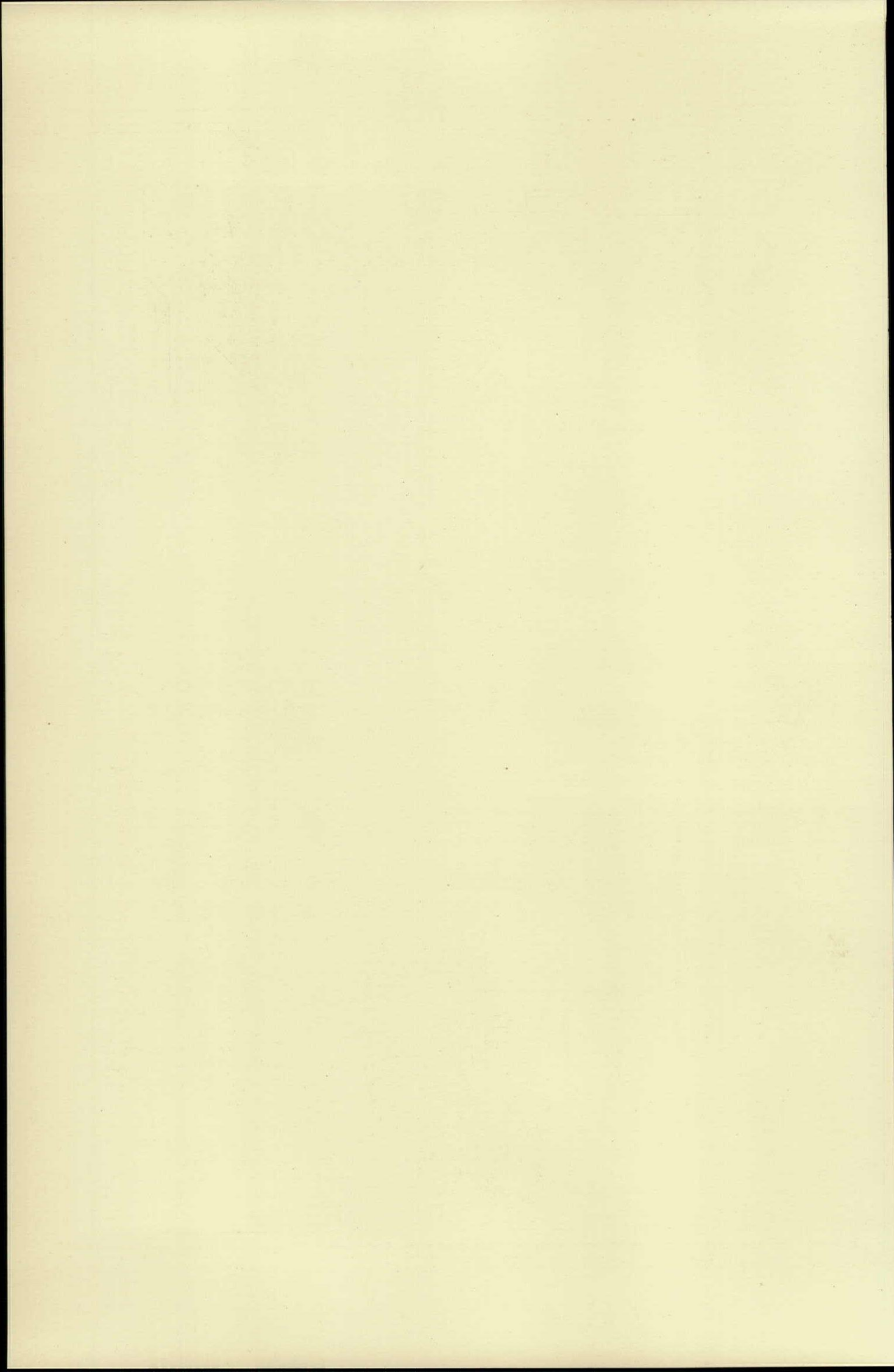
Furring

Hanging
gutter

Brick courses

Stone wall

SECTION THRU
EAVE & GUTTER
Scale 3/4" = 1'-0"





FUNERAL WREATHS, LOCKS AND BOLTS, AND BOOTS AND SHOES ARE ADVERTISED BY THEIR SYMBOLS

TRADESMEN'S SIGNS IN FRANCE

By Samuel E. Gideon of the University of Texas

With Illustrations by Paul E. Pressler

IN THE early days, in this country, tradesmen had their characteristic signs over their shops—history and old illustrations bear this out. Some still exist in the towns of old New England and the painted wooden Indian can still occasionally be seen in front of cigar stores, in the older settlements, throughout the United States, though he is rapidly becoming obsolete.

In France, these tradesmen's signs are much in evidence in the villages and smaller towns, but in the tourist thoroughfares of the larger cities they, also, are fast disappearing.

Long ago, comparatively few people could read, and it must also have been the crowded towns, winding streets, and narrow shops with overhanging upper stories that made the signs of the butcher, the baker, the candlestick maker necessary. To the uninitiated they are not always self explanatory, because some of them are only symbols. We, on this side of the Atlantic, can usually, at a glance, recognize the nature of a shop from its window display, but in France—and Italy, too, for that matter—it is difficult to distinguish between the apothecary, the perfumer, and, except for its accompanying odors, the saloon.

Several years ago I made some purchases of old pewter. Among the pieces was a queer shaped dish whose crown hallmark interested me more than the piece itself. Frankly, I did not know the purpose of the dish and the dealer was

equally ignorant, but recently in France, I learned that it was used in shaving, the place in the rim being hollowed out to fit the neck. Two of these suspended plates, bright and shiny, one on either side of the door, are the sign of the barber and hair dresser—used by barbers who shaved men's beards and curled milady's hair long before women entered the barber shops over here. A more common barber's emblem is the gilded ball with dangling horsehair tassel. Usually there are two of these, although sometimes only one is displayed. In Paris, however, I saw a whole façade dotted with them. The latter place handled barbers' supplies, as I discovered upon inquiry.

The butcher's shop is unmistakable—a gilded cow's head hangs over the entrance or forms part of an elaborate decorative scheme in the upright supports at either side of the shop. The law requires that a horse-meat butcher must advertise the fact with a horse head over the doorway, in addition to his sign "Boucherie Chevaline." Then there are numbers and numbers of the more commonplace signs, though frequently these are ornamental. The boot for the shoemaker who sometimes displays a shoe with fantastic toe; the key for the locksmith; miniature, gay striped parasols, sometimes crossed, for the umbrella mender; the watch or clock for the clocksmith or jeweler; scissors for the cutlery shop; a plug for the hatter; a glove for the glove shop; a



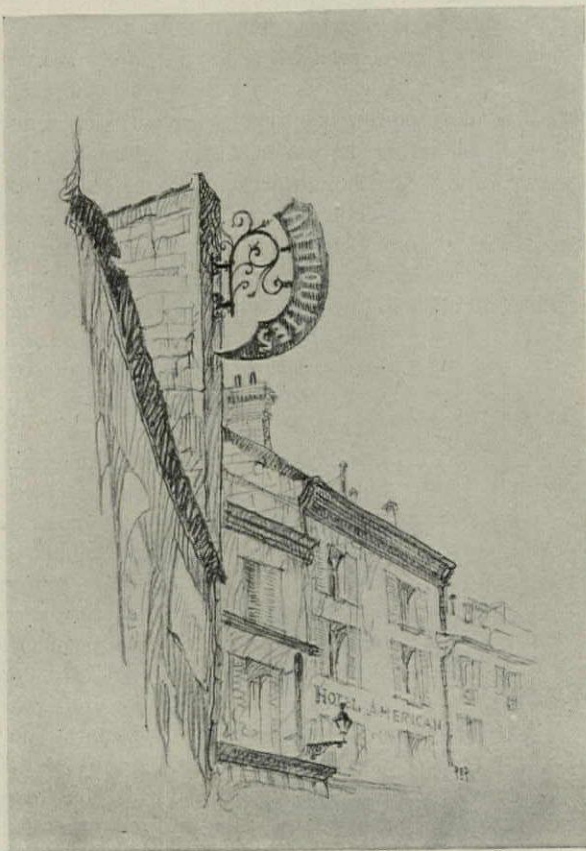
THE TOBACCONIST'S SHOP



THE BARBER'S BALL AND TASSEL



THE OLD SHAVING DISH INSIGNIA



ONE VERSION OF THE ANTIQUE SHOP SIGN



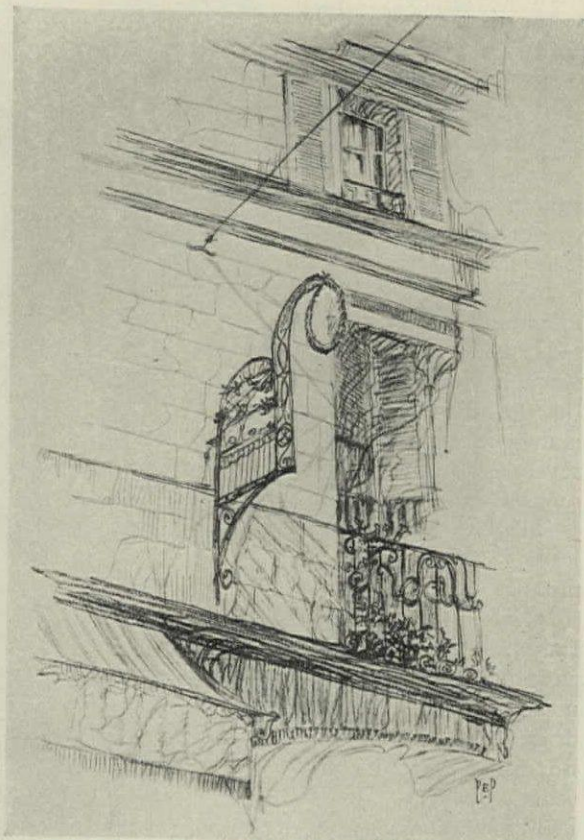
AN UMBRELLA MENDER DOWN THE STREET

SOME OF THE MANY INTERESTING TRADESMEN'S MARKS IN FRANCE

TRADESMEN'S SIGNS IN FRANCE



AN ANTIQUE SHOP HOLDS FORTH



ANOTHER ANTIQUE DEALER'S SIGN



AN ORNAMENTAL HABERDASHER'S SHOP



THE ANCIENT MARK OF THE CUTLER

VARIETY IN THEIR INSIGNIA LENDS ZEST TO THE SEARCH FOR THEIR SHOPS

wheelbarrow for the hardware man; a horse-shoe for the blacksmith and a palette for paints and artists' supplies. The cigar store shows a pipe and often, in addition, a conventional shaped cigar. The most ornate of all is the sign of the dealer in antiques. His shop is indicated usually by a wrought iron design in the form of a bracket, arabesque, or panel. The several shown are from shops in Fontainebleau.

There are some misleading signs too—for instance, "CONFEC-TIONS" though naturally suggesting bonbons and good things to eat, means nothing but the driest of dry goods and notions. My French being limited, "TEINTURE NETTOYAGE," with its accompanying display of dainty robes and



AN ANTIQUE SHOP'S INSIGNIA

laces, conveyed to my mind a woman's ready to wear shop—you would never guess it to be a cleaning and dyeing establishment. Its mark of recognition is a narrow strip of red cloth suspended from a bracket at the top and tied back to the wall near the ground. There is one of these at either side of the store in most cases.

There are many half timber houses in France whose elaborately carved shop fronts bear the emblem of the original shop keeper, either in the beam overhead or in the upright posts, the design and execution of which is most interesting, but this little article attempts only to present the naive, toy-like, hanging signs which have for years been directing business to the shops of French tradesmen.



THE HORSEMEAT BUTCHER IS UNMISTAKABLE

IN DISCUSSION OF "THE VALUE OF THE ARCHITECT'S SERVICES"

EDITOR'S NOTE:—A number of architects have, during the past month or so, expressed their opinions and offered their criticisms of our document, "The Value of the Architect's Services," which was published in the July, 1930, issue of PENCIL POINTS. We have not room here to present more than a few of these responses but the ones we have selected for publication will, we believe, be of interest. The criticisms received will serve as a basis for revising the document, which we propose to do, so that its eventual publication and distribution will be of benefit to the profession as a whole.

From EDWARD D. PIERRE of Indianapolis

"Architects at large have been asked to express their opinion of PENCIL POINTS' efforts on Educational Publicity, and the writer respectfully submits the following thoughts with a prayer that P. P. will not become disgusted and give up the ship. It is natural to expect that a highly individualistic group such as makes up the Architectural profession should have as many varied ideas on publicity as they have on the new octagon at Washington.

"May I submit this thought, that when we buy an automobile, we are not forced to listen to a sales talk on the 'value of the Automotive Engineers' services.' When we buy a dining room suite we are not bored with a discourse on the 'value of the Furniture Designers' services.' About all we are interested in is the result, not how that result was obtained. In other words, the Building Industry has a product the same as the automotive industry. This product is 'Architecture.' If we will convey to the public the value of 'Good Architecture' over 'Bad Architecture' or 'Indifferent Architecture' we will talk in terms they will understand. A technical explanation or apology for the architect's many years of training or the number of pounds of lead or tons of paper he uses is of no interest to them.

"This Educational campaign can be put in terms of Results by showing them the value and advantages of *Good Architecture*. Do not forget to tell them, however, that *Good Architecture* is the product of a Good Architect, a Good Contractor, Good Craftsmen using Good Materials.

"I think we lose a great point if our efforts appear to be selling the Individual rather than selling his product. Subtlety in Publicity grows as the intelligence of the public makes new advances. Let us not be apologetic to the public about the Architect and make them read a lot of stuff about his training, his ethics, his ability, his knowledge and skill, his business capacity, his consideration for the æsthetic, his knowledge of law. Let's not talk about working drawings and pictures. *Let's talk about buildings.*

"The man who builds a bungalow is not going to employ an architect because an architect was necessary to create Rheims Cathedral. The hard-headed Chairman of the Board of the American Folding Can Company is not influenced one bit by a sales talk on the Architect's training at the Beaux Arts.

"He wants to know 'why should I have an architect for a factory?' He would be impatient with all the steps necessary to get 500 pounds of Blue Prints. He is concerned about the Building, and if it should be good architecture or indifferent architecture. If it is good architecture will it pay dividends? In other words, let's talk his language. If we are convinced that his factory should be good architecture let's itemize the advantages and tell them to him—he will understand—but don't make him read six pages about cathedrals before he gets to the part he is interested in.

"We can convince the most practical and mercenary jury in the world that the Good Architecture pays and that it is not a luxury but a necessity.

"Now then, one of the mechanics in the Can Factory might be influenced by the atmosphere to desire a little of his own. He also wishes to know if it is practical for him to have 'Good Architecture' of his own. We can tell him about the pleasure of living in an organized house—about the resale value of his home when he comes to sell it, about the satisfaction of living in a thoroughbred home, one that will attract the admiration and respect of his friends—we can show him that a well-planned house (a piece of good architecture) costs no more than poor architecture, that it is an economy. We can impress on him the environment will reflect itself on his children. He doesn't care about the architect's problems. He is concerned about his house—whether it shall be Good Architecture or ordinary architecture without character. When he finds out that the only place to buy good architecture is from a good architect, he will find one. The Public sense of discrimination is developed in other fields, why not in Architecture.

"Manufacturers of good products increase their opportunities for selling their goods when a good architect is employed. Why then should they not inject into their advertising a line for good architecture.

"Finally to me our problem seems to be this:

1. Attract the attention of the Public to Good Architecture by building Good Architecture.
2. Arouse their interest in Good Architecture by telling them about Good Architecture.
3. Create a desire for Good Architecture by raising their standard of appreciation and power of discrimination.
4. Make the sale—by impressing on them that GOOD ARCHITECTURE IS THE PRODUCT OF A GOOD ARCHITECT, A GOOD CONTRACTOR, GOOD CRAFTSMEN, USING GOOD MATERIALS.

"Leave it to the American Institute of Architects to show them how to get a good Architect."

From CHARLES CRANE of New York
Office of Henry C. Pelton

"We have studied your proposed document 'The Value of the Architect's Services' published in the July, 1930, number and while we feel that it is somewhat lengthy, still we realize that the subject cannot be covered too briefly.

"On the whole we believe that the document as proposed will be very useful, and as soon as published we will be glad to receive copies for distribution to prospective clients."

From JONATHAN RING of Los Angeles

"So far as possible I have been keeping posted on this matter of advertising the architect, and am therefore aware of what PENCIL POINTS has been doing (my subscription dates back 6 or 8 years). I have favored the movement, but have been simply unable to support it by any money subscription. Also, probably like many others, I have

been 'watchfully waiting' instead of hopping into the ring.

"But while taking no action as a member of a group, I certainly have been active as an individual in distributing what published literature I could secure, putting it in the hands of any one even remotely contemplating building.

"Always aware—vaguely, perhaps—that the architect was an unknown quantity to the majority of people, I have become increasingly aware of it, and convinced that the architects should do something about it. When the architect wouldn't tell anyone what he did, and the manufacturer didn't, and the newspapers seemed not to understand his function, is it any wonder that the public scarcely heard of this man? In the past two weeks I have had three cases where prospective builders—a church, a fraternity, and an individual—contemplated having architects 'submit sketches' for the job or use a builder (contractor). To all of these I sent copies of the PENCIL POINTS article, and other printed matter, to acquaint them with facts of which they were ignorant.

"To inform the general public about the architect is a huge task and will require huge expenditures and considerable time, I am afraid, unless direct advertising methods are followed, such as continued notices in the newspapers and the common magazines. But as so many architects and the A.I.A. are not in sympathy with such publicity, and seemingly cannot be gotten to pull together, I decided some time back that the individual would have to do what the group would not. I therefore secured copies of the A.I.A. 'Functions of the Architect' and, later, Scribner's 'This Man the Architect' and, lastly, copies of July PENCIL POINTS article, sending these to any one contemplating building. As this matter went to people who were thinking of building, it doubtless accomplished something, but it is a slow method and may not reach the patient in time, and has the disadvantage of going out from a positively interested party.

"I have no suggestion to make in regard to the article in PENCIL POINTS other than that it be condensed. My observation is that the people who need to be told are unlikely to read a long presentation of the facts. There is practically nothing I would want omitted from your article, but think the matter should be put into fewer words—but don't ask me to do it! Your article can be assumed as authoritative, so there seems no reason why you can not make plain statements of fact, and omit explanations or proofs.

"How you will broadcast this article I can not guess, but I will be glad to buy 100 copies to distribute personally where I know they will do the most good. I fail to see how it can harm the architect. While I believe the architect can not have too high a code of ethics as concerns the discharge of his duties, I can see no good reason why he should be so reserved that it is a crime to tell people what work he does. The public is informed about the lawyer and physician as the result of years of mouth to mouth advertising, but this is another day and other methods are entirely in order."

From CHAS W. STEINBAUGH of Omaha, Neb.

"I have finished reading, with much interest, pages 537 to 588, inclusive, of the July, 1930, issue PENCIL POINTS.

"As to pages 563 to 588 I find it difficult to suggest improvement in their substance. I think it is all wonderfully done but I wish I could suggest how it could be shortened. Had you thought of dividing the matter into two or perhaps three pamphlets? Who should get it? Would it be good to send it to Architects first, with a

statement of cost per hundred for additional copies they might use on their mailing list? It seems to me Manufacturers, Distributors, Building Managers, and Owner Associations, Real Estate Boards, Libraries, School Boards, Loan Associations, etc., should have it; yet one issue would be like dropping a hail stone in a blast furnace to reduce the heat. That is the reason I think of dividing the matter, so as to get the value of repeated 'percussion.'

"I hope you will find it advisable to proceed with the widest distribution of this work possible. I am glad you did not let any one in on it with a lot of 'drivel' about Beauty, Ethics, and indicated repulsion to manlike responsibility; expressed in terms that go over the heads of even most of the architects and mean nothing, when you trace them out in the dictionary, that could not have been expressed in one or two syllable words. Pardon if I seem hard-boiled or sarcastic, or even discourteous. I think you know what I mean. PLEASE keep away from it.

"There certainly is nothing in your effort, to which this letter refers, that makes me in the least ashamed to admit I am trying to be an Architect. Thanks for all your interest, and success to you."

From EDGAR I. WILLIAMS of New York

"I have read your article on the importance of employing an Architect, and it makes a very bad impression on me. It is too long and has a begging tone, almost as though the Architect were justifying his existence.

"As one of the Architectural profession, I wish to say that I feel we owe you our deepest appreciation and our help, and I trust you will not feel that this harsh criticism is not well meant.

"My suggestion is that the first part, on Page 567, should be retained. I should then proceed with a few paragraphs, somewhat as follows:

"Any building project has two important aims—

1. The creation of an efficient, good-looking, well-built building.
2. The spending of money so that good value is received for the amount dispersed.

"There are two ways in which a building project can be accomplished. The first is between two parties, call them the Owner and the Builder. The second is between three parties, the Owner, the Architect and the Builder. In each case the operation is the same. Plans are made, estimates are procured, contracts let and work is done. In each case the Owner pays for the work that is done. In one case he may think he does not pay for all of it, but he does.

"Plans cost money. They are necessary in order that an Owner may know what he is to spend, just as much as to show him how his building will work, and how it will look. No Builder can give this service free to an Owner—none does.

"If the Owner puts himself in the hands of a Builder he goes on trial in a court in which, as plaintiff, he is opposed by a defendant who is both defendant and judge. This is no reflection upon the integrity of Builders, it is a reflection upon the judgment of Owners.

"Plans are best drawn by those who make a business of planning—Architects. Those who do so are men trained in mind to catch an Owner's ideas, put them in form on paper and to give to this form reason, efficiency, order, and good looks. The plans are then described by careful specifications. When the Owner sees on paper what he will get, he will also know approximately what it will cost, and it is then time to seek a Builder.

"The Architect submits his plans and specifications to

IN DISCUSSION OF "THE VALUE OF THE ARCHITECT'S SERVICES"

various Builders and, by the practice of competitive figuring, he tests the purchase of value of the Owner's dollars. The cost to the Owner for the plans is not added to this building figure. The Owner is actually better assured of his value and he has had the services of the trained planner. Now, when it comes to the building operation, he avails himself of the Architect's organization for checking costs, dispersing of his funds, etc.

"The article could elaborate much more briefly the Architect's function than is done in your chapter on 'What does the Architect do for you.'"

"I hope these suggestions may prove constructive—it is their honest intention."

From WILSON C. ELY of Newark, New Jersey

"I want to congratulate you on our part for the wonderful contribution you made in your July issue to help the practice of Architecture. Articles such as these are certainly very beneficial to the profession and most instructive to the public.

"I think the profession owes you a vote of thanks for the stand you have taken in our behalf and for your generosity. As I wrote you before I regret that the profession has not realized the importance of helping financially with this project. Perhaps one of these days they may awaken to the necessity of doing something and if they do you can count on us for a substantial amount to help along this work."

From C. B. F. BRILL of New York

"I have looked over your articles appearing on pages 563 to 588, inclusive, of your July issue, and have certain suggestions.

"They are grouped in more or less two classes. In making them I have in mind one premise, that your advertising or booklet, whatever it be, if it is to bring results, must appeal to the persons who contemplate building without an Architect. It cannot possibly do direct good with any other group. Therefore in preparing it, there should constantly be held in mind the mental attitude of these people. This entire group should be separated into classes according to the reasons why they decide to eliminate the Architect and various points presented should be aimed directly to meet the resistance of each of these classifications.

"It is my opinion that the rather aggressive way in which you constantly pound the word 'Architect' in your present draft, would distinctly irritate the largest part of this group and that they would never read through to the finish. It would become so evident to them that the matter was written from a biased point of view, that they would discount everything said.

"It seems that in many cases you perhaps overestimate the things an Architect can, and does do best. For example, under Heading No. 2, Page 571. Most competent Builders are better purchasing agents than most Architects and on this point the Owner would do well to pay his attention to the Builder. Also, no Architect can guarantee that the foundations will be solid, the cellar dry, the roof tight, that the floors will not warp and the ceiling be free from cracks. These matters are up to the Builder, for no matter how well designed, improper materials and workmanship can result in the defects mentioned and no Architect can prevent a Builder from using defective materials and workmanship if the Builder is the sort of person who intends to do so. It is a physical impossibility to check the proportions of every batch of concrete or the quality of

every board which may go into a floor, etc. The Architect can force the Builder to remedy such defects after they develop, but he, himself, cannot prevent them occurring.

"For the Owner to secure the best value and result from any building project, it seems to me two things are important, first: select the proper Architect. Second: select the proper Builder. It seems to me that in your articles you should stress these two facts and prove that both are essential.

"I believe that to make your series effective you must lose sight of the fact that your main effort is to advance the interest of the Architect and concentrate upon solving the problem of the person who is going to build. *Let the interests of the Architect come as a logical development of the solution of the problem facing anyone who plans to build anything.*

"As to specific suggestions regarding certain points mentioned, I would note that on page 579, second column, you state that all bids are opened at the same time by the Architect, in the Owner's presence. This is seldom done, except in public work, as far as my experience goes. On page 581, the reference to large scale and full-size drawings. I would suggest that my experience has been that the best millwork concerns will not proceed without such drawings, which should be sufficient answer as to their necessity.

"In regard to reference to the cost of the Architect's services, I believe it would be a serious mistake to mention any definite percentages as you do on page 583. The percentage varies so much in different localities and with different Architects, that any such reference would probably be embarrassing to someone.

"I also believe that it would be well to put greater emphasis and to repeat the theme, from other angles, which you present in your last sentence on page 570. 'No Owner, however gifted in other ways, no Contractor, however skilled, can design and build the simplest house equal in beauty, utility, and economy to one completed under the guidance of a trained Architect.'"

From W. H. Cook of Youngstown, Ohio

"I read your proposed publicity document published in the July issue and am very much pleased with it. It should have the widest possible distribution. If funds will not permit its going any other place, it should at least be distributed to the various lumber companies who have been so active in promoting stock plans. It might help some of them to see the light of reasoning.

"I would also like to see copies available so that an architect could have them imprinted with his own name and distribute them as occasion warrants."

From WILLIAM E. FRENAYE, JR., of New York

"The July, 1930, issue of PENCIL POINTS has just come to my attention. I wish to compliment you on the straightforward, clear-thinking, fine piece of work you have done from pages 565 to 588. I want this thing to be of benefit to my firm."

From ALEXANDER B. TROWBRIDGE of Washington

"I have been much interested in your effort to place before the public the information which you believe the public should possess with regard to the value of an architect's service. I was one of your early contributors and sent my check quite promptly, as I wish to stand behind

a sincere effort even though I was not wholly convinced with regard to the merits of your plan.

"I now note in the July number an elaborate literary effort, very fine from a reader's point of view but quite useless if it is not going to be read. The true test of your plan, therefore, is whether your document will be read by the public or whether it will find its way into waste baskets or dead files. I do not think the public would read a document of that kind even if you could claim that the best writing talent in the English speaking world had been engaged in its compilation. The article or 'document,' as I have labeled it, is much too long and it is not educational. It merely states things in the assumption that every one will accept such statements as facts. An article to be educational must present more than your editorial dictum.

"To the average reader of your document it would seem as if the selection of any architect, who is privileged to call himself by that title, could secure to the owner all of the wonderful qualities which you state can be obtained through an architectural service. In my experience as a consulting architect I have had contact with many types, and I do not hesitate to say that sometimes an architectural firm of considerable standing in its own community can do a thing so asinine as to injure not only the firm's reputation, but the profession of architecture as well. I do not believe there is any architect that can supply all of the wonderful things that you more or less promise through the pages of your proposed booklet. While it is true that men learn through long experience how to interpret building laws, sanitary codes, fire laws, etc., they are by no means qualified to give legal advice. And the young men who have had very little contact with building departments and with the various hard-boiled officials who pass upon plans and specifications! Are they supposed to be so well informed that they can keep their clients out of legal difficulties? In brief I do not believe architects are in the habit of claiming for themselves all of the superior qualities you are claiming for them. It often happens that an architect will be talented in design and unpractical in matters of plan and construction. On the other hand it frequently occurs that an architect who is ingenious in matters of construction and economical in the use of space is not particularly gifted in the æsthetic side of his work. The exteriors of his buildings prove it. Why give the public the idea that an architect is a tin god when you know that he is as fallible as any other type of professional?

"What worries me particularly in a general consideration of this question is the system which has developed whereby a young man just graduated from a school of architecture and perhaps just received as a registered architect by an official registration board is privileged to ask a fee which is fully as much as the fees asked by architects who have practiced for thirty or forty years. Does the long experience of our leading firms count for nothing? I do not wish to question the right of the young men to demand a fee of the minimum grade recommended by the Institute. I do question, however, a system which seems effectually to prevent the men of long experience from securing a larger fee than the minimum referred to. Our profession is underpaid and nothing effective is being done to better this condition.

"For a long time I have been opposed to the percentage system of determining charges. At times it is ridiculous, and frequently it is at least illogical. When circumstances require that I should be paid a percentage of the

cost, I find myself laughing at myself for accepting such an absurd system for I spend my life trying to help my clients reduce the costs of their projects. I am aware that this subject has many times been aired in print, but I do not recall that I have seen enough said about one feature of it. I claim that the percentage system injures the professional standing of architects in the minds of the public. If the public assumes that a boy just out of college can receive the same fee that is paid McKim, Mead & White, the public is perhaps inclined to look upon the product of those two offices as more or less equal, or, to put it differently, the public gets the idea that the work of an architect is mechanical and that one man can do it about as well as another. Obviously, the public is ignorant on that point.

"I would like to suggest an entirely different approach. I believe that the public is justified in its idea that the architects as a class are not practical when it comes to the question of costs. It is altogether too common for an owner to say, 'My building cost me a great deal more than I was told it was going to cost when the sketches were made.' This is sometimes partially offset in the owner's mind by a realization that the work that he has secured from his architect is beautiful and perhaps worth the extra cost. But there is no question whatever that the architects have allowed a condition to develop which is exceedingly bad for the reputation of the profession as a whole.

"I should like to see your money and my money devoted to a plan for assisting the architects in the matter of preliminary estimates. Why would it not be just as well to state at the outset that the present system of arriving at a preliminary estimate is frequently only guesswork? It is true that an experienced office may hit it off quite accurately, especially when it is carrying out a project which is similar in many respects to something already constructed. But by and large I would hold that all architects would be greatly benefited if there existed a bureau or an organization whose business it would be to take a set of preliminary sketches and determine the cost very much as such matters are worked out by the quantity survey method. It is my recollection that the men who organized the quantity survey system in New York used to state that their estimates came within three or four per cent. of the final cost. If a bureau of that kind gets under way with many problems it is very likely that it would in time learn how to perform a remarkably valuable service for the architect. The architects in the meanwhile would be spoken of in a more complimentary tone than they are at present in matters connected with costs.

"I believe there is something wrong in a situation that admits of caustic, drastic criticism of books, plays, paintings and sculpture, but stops short of printed adverse criticisms of architecture. I would be glad to subscribe to a fund which would be used to defend a magazine or a newspaper in lawsuits which might crop up as a result of open criticisms of buildings. If we could find some way of publishing in the great newspapers, critical articles which would be instructive, we might accomplish just what you are aiming at.

"If my frank comments do not meet with your approval and you decide to go ahead with the issuance of your leaflet, I beg of you to put the soft pedal on those portions of the document which appear to state to laymen that if they will employ an architect all their troubles can be packed into an old kit bag. The smile, however, would be on the face of the architect."

COMPETITION FOR IMPROVED DESIGN FOR ELEVATED STEEL WATER TANKS AND THEIR SUPPORTING STRUCTURES

THE OFFICERS of the Chicago Bridge & Iron Works, builders of elevated steel water tanks, are of the opinion that a considerable improvement could be made in the appearance of elevated steel tanks and their supporting structures. In their opinion no serious thought nor effort is being given to the æsthetic possibilities of these very necessary parts of our civil and industrial water supply.

They believe that there are attractive architectural possibilities to be found in the natural characteristics of these structures. They have, therefore, undertaken to sponsor a competition in the hope of securing designs for a typical tank and tower from which may be developed types which will express pleasing æsthetic qualities. They offer the following prizes for the eight most interesting solutions:

1st prize	\$2,000.00
2nd prize	1,000.00
3rd prize	500.00
and five honorable mention prizes of \$100.00 each.	

Program: The form and method of procedure of this competition has been approved by the Chicago Chapter of the American Institute of Architects.

Architectural Adviser: The Chicago Bridge & Iron Works has appointed as its professional adviser in the competition, Mr. Albert M. Saxe, Architect, 430 No. Michigan Avenue, Chicago, Illinois, to prepare this program and to act as adviser in the conduct of the competition.

Competitors: Participation in the competition is open to such architects, engineers and draftsmen of the United States and Canada, as shall have made application to the Professional Adviser, by mail, on or before December 1, 1930. A list of the names of all those admitted to the competition will be mailed to each of the competitors on or before January 1, 1931. No competitor shall submit more than one design.

Jury of Award: The sponsor has appointed a Jury of Award consisting of Mr. Howard Cheney, President of the Chicago Chapter of the A.I.A., Mr. R. W. Zimmerman, Architect, of Chicago, and Mr. George T. Horton of the Chicago Bridge & Iron Works.

Authority of the Jury: The sponsor agrees that the Jury above named shall have authority to award the prizes in whatever order the Jury may consider to be the order of their merit, and that the Jury's decision in the matter shall be final.

Examination of Design and Award: The sponsor agrees to hang the designs in some suitable room and in an impartial manner as to arrangement and position, in order that they may be fairly judged.

The Professional Adviser will examine the designs to ascertain whether they comply with the requirements (mandatory) of this program and will report to the Jury any instance of failure to comply with same.

The Jury will carefully study the program and any modifications thereof which may have been made through communications, and will then consider all of the designs which have complied with the mandatory requirements and make the award and the classification of prize winners by secret ballot before opening the envelopes which contain the names of the competitors.

The opening of the envelopes, in what the Jury may consider the order of merit in the designs, will automatically award the prizes as heretofore enumerated.

Ownership and Use of Submitted Designs: All competitors agree, by the act of making application for participation, that their designs and drawings shall become the property of the sponsor and may be used by it without further obligation upon its part, in any way and for any purpose that it may desire in the accomplishment of the object of this competition.

Report of the Jury: The Jury will make a full report, which will state its reason for the selection of the designs and its reason for the classification of the designs placed next in order of merit, and a copy of this report, accompanied by the names of the prize winners, will be sent by the Professional Adviser to each competitor.

If, in the estimation of the Jury, no drawings have been submitted which fulfill the mandatory requirements of the program or no drawing has been submitted which contributes constructively or æsthetically to the object of this competition, the Jury may refuse to make an award of any of the eight prizes, or if no drawing has sufficient merit to be entitled to the first prize, the Jury may award to it the second prize, or the third prize, or an honorable mention, and it is hereby agreed that a decision to award any one or more, or no prizes, is wholly within the will and estimation of the Jury. However, in the event that no presentation, in the estimation of the Jury, has sufficient merit to be entitled to the award of any one of the first three prizes, all drawings shall be returned to the competitors at the expense of the Chicago Bridge & Iron Works, and further, in said event no use shall be made by the Chicago Bridge & Iron Works of any drawing or any original idea presented by such drawings.

Distribution of Prizes: The sponsor agrees to distribute its checks to the successful competitors within ten days of the judgment.

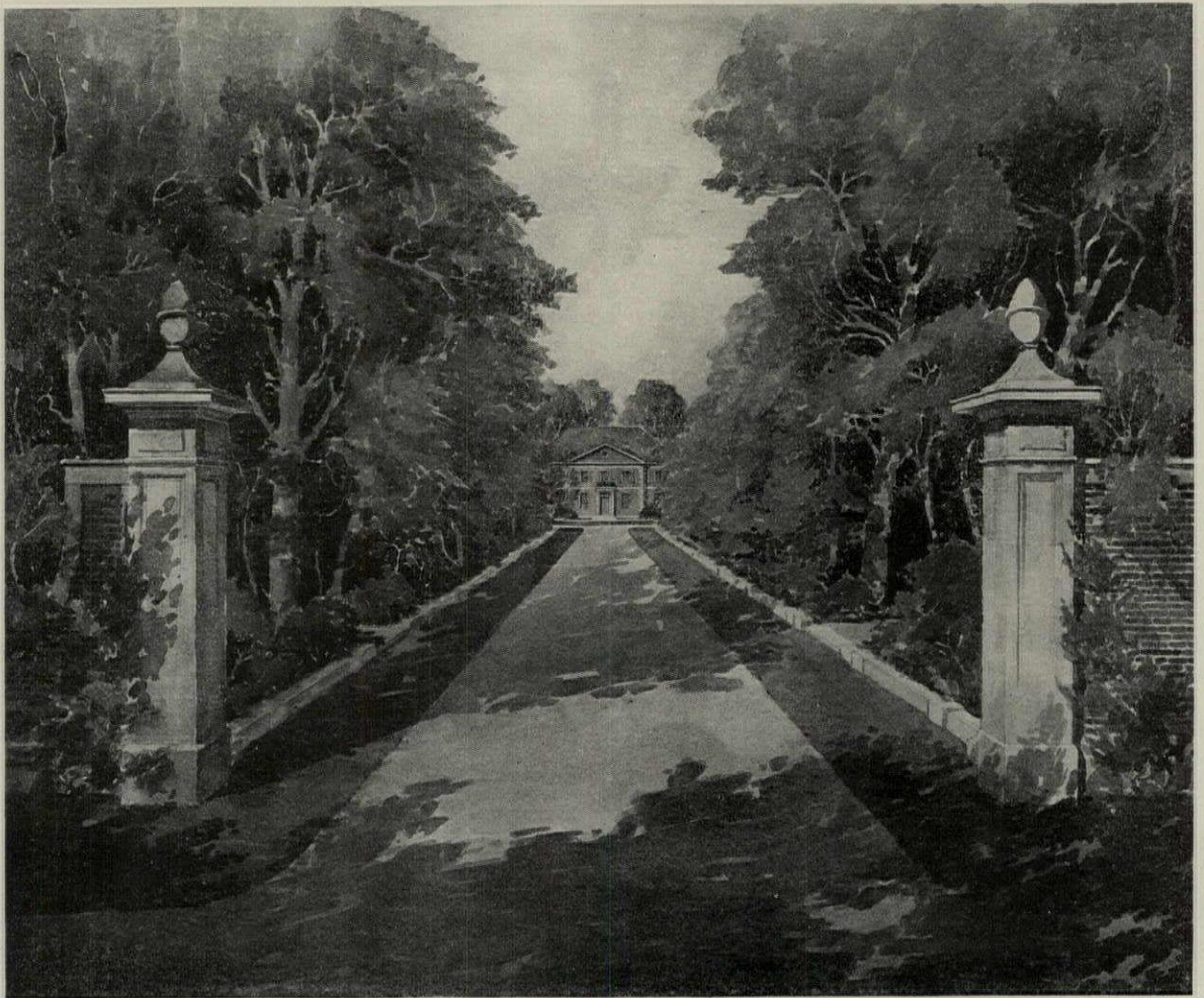
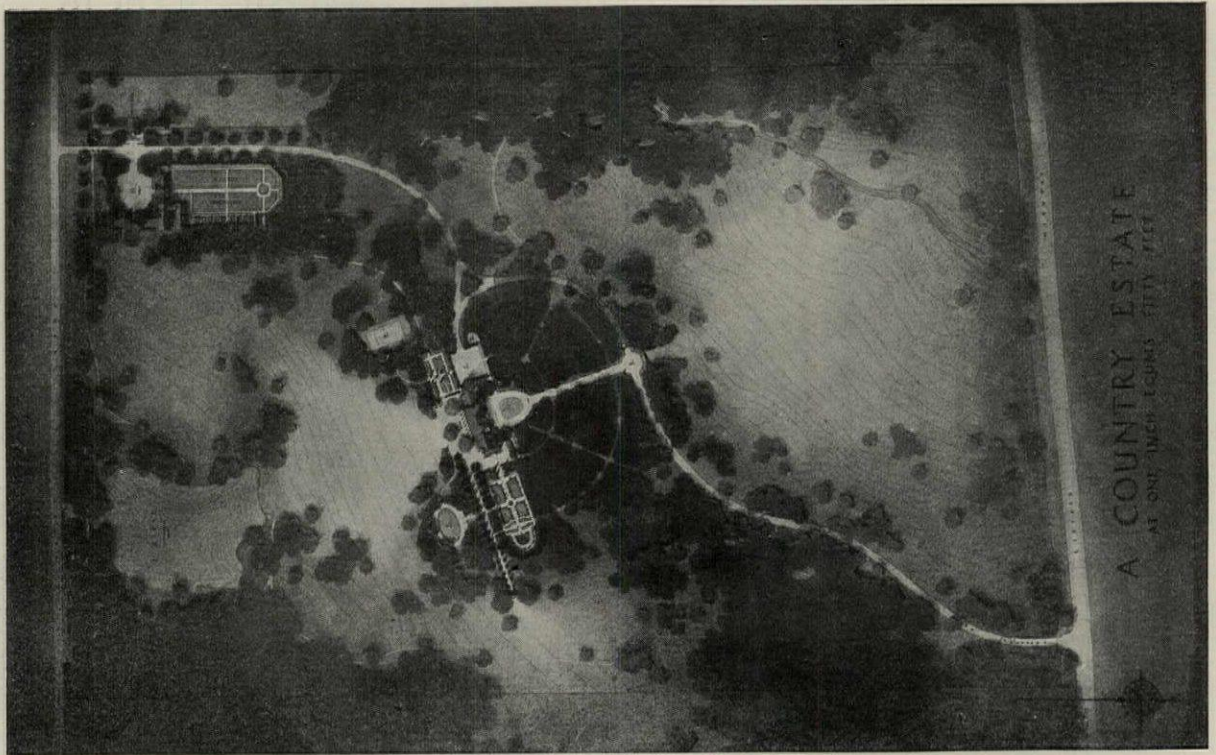
Exhibition of Drawings: No drawings will be exhibited or made public until after the award of the Jury. There will, however, be a suitable public exhibition of all of the submitted drawings under the circumstances mentioned above under "Examination of Design and Award."

Communications (Mandatory): If any competitor desires information of any kind whatever in regard to the competition or program, he shall ask for this information by anonymous letter addressed to the Professional Adviser, and in no other way, and a copy of this letter and the answer thereto will be sent simultaneously to each competitor, but no request received after the day of January 1, 1931 will be answered.

Anonymity of Drawings (Mandatory): The drawings to be submitted shall bear no name or mark which could serve as a means of identification, nor shall any such name or mark appear upon the wrapper of the drawings, nor shall any competitor, directly or indirectly, reveal the identity of his design, or hold communication regarding the competition with the Owner, or with any member of the Jury, or with the Professional Adviser, except as provided for under the paragraph headed "Communications."

It is understood that the act of submitting the design

(Continued on page 82, Advertising Section)



WINNING DESIGN FOR "A COUNTRY ESTATE," BY RICHARD COOLIDGE MURDOCK
ROME PRIZE IN LANDSCAPE ARCHITECTURE FOR 1930
(See text opposite)

PRIZE AWARDED IN LANDSCAPE
ARCHITECTURE

THE AMERICAN ACADEMY IN ROME has announced its annual award of a fellowship in landscape architecture. The winner of the fellowship is Richard C. Murdock of Ossining, New York. Mr. Murdock is 25 years of age and was graduated from Cornell University in 1929. During the past year he has worked in the office of Noel Chamberlin in New York City.

Honorable mentions were given to Hodge J. Hanson, of Mount Carmel, Ill., a graduate of the University of Illinois and a graduate student of landscape architecture for two years at Harvard University, and to Neil H. Parl, of Parkin, Arkansas, a graduate of Cornell University.

The fellowship carries an annual allowance of \$1,550 with \$500 for passage to and from Rome. Residence and studio at the Academy are provided free of charge. The term of the fellowship is three years, beginning October 1, 1930.

There were 38 entrants in the competition, and the problem called for a design for *A Country Estate*.

The members of the Jury of Award were Ferruccio Vitale, Chairman, Arthur F. Brinckerhoff, Noel Chamberlin, Ralph E. Griswold, and Albert D. Taylor.

Mr. Murdock's winning drawings are shown opposite.



CARL E. HOWELL

1879-1930

ARCHITECTURAL STUDENTS HONOR DEAN

ON JUNE 30TH, the architectural students of John Huntington Polytechnic Institute tendered a dinner to Mr. Robert M. Wright, the retiring Dean of the Architectural Department. Mr. Wright has been the father of the architectural school since its organization some fifteen years ago. Previous to that time he was Massier of the Atelier of the Cleveland Architectural Club.

The dinner was attended by many of the former students who expressed their appreciation for the untiring efforts of Mr. Wright and what the Atelier has accomplished for them. These expressions of affection for their critic added greatly to the grief of the present students who sincerely regret his leaving them.

Mr. Wright was overwhelmed at the gathering of about fifty students, all his, and responded with a heartfelt talk to them of the pleasure he had derived in directing their efforts in the past, saying that it was with sincere regrets he was leaving the institution.

The guests of honor were Mr. Harry Hughes of Hicks, Hadlow, Hughes and Conrad, a former Cleveland who contended for the Paris Prize and who worked in ateliers in Cleveland and New York with Mr. Wright. He told of the many escapades during their association in both cities. Mr. Dana Clark, designer with Walker & Weeks, also an associate instructor with Mr. Wright at the John Huntington Polytechnic Institute, gave a very fine talk on the spirit of the architectural school and included a good story about Anthony and Cleopatra.

A toast was given to the late John Huntington who founded the Polytechnic Institute. It is a school intended to further the development of students in architecture, decoration, painting, and sculpture; it is purely a night school for students who find it necessary to work while studying. No students are accepted other than those employed in the arts.

The success of the dinner to a great extent is attributed to the efforts of Harry Sharpe, Chairman of the Committee, and E. F. Horley, Toastmaster.

CARL E. HOWELL, ARCHITECT, of the firm of Howell & Thomas, died on June 17th at Monrovia, California.

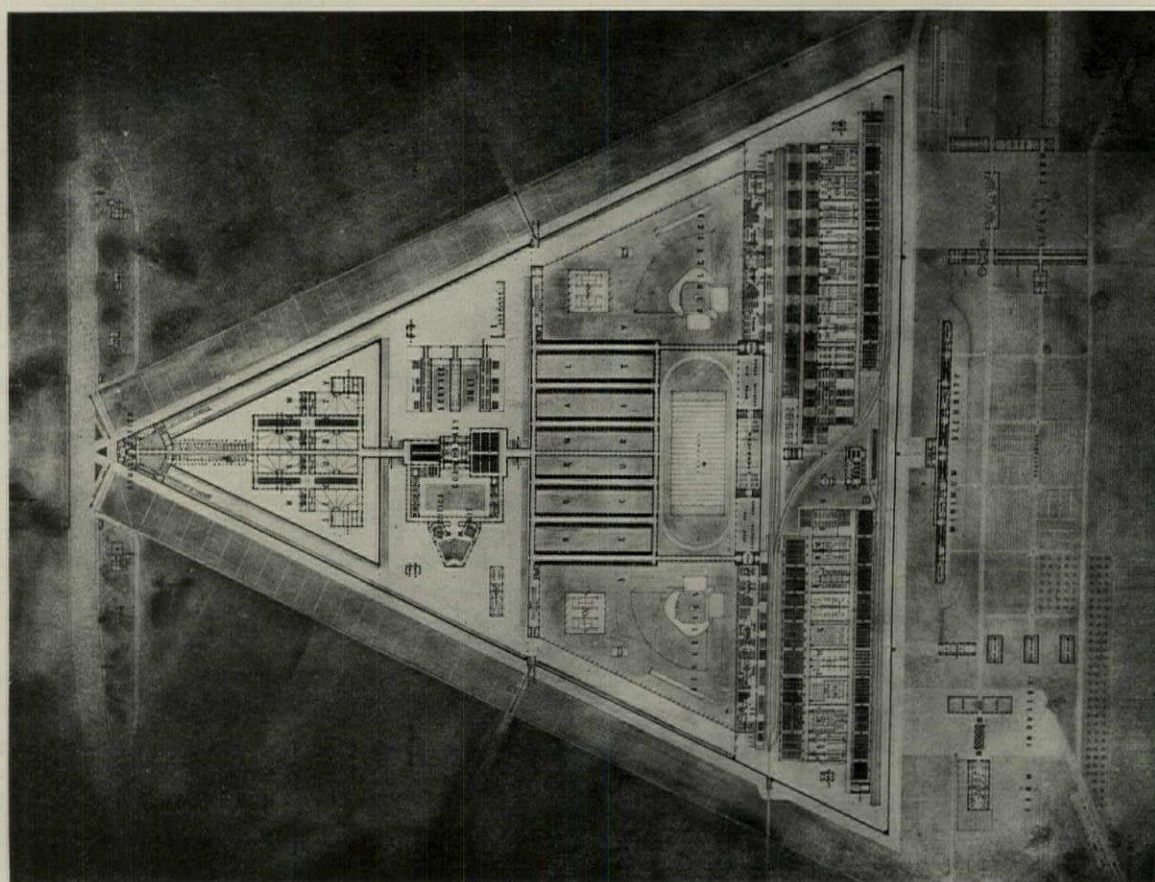
Mr. Howell had been in failing health for more than two years and had given up active work in Cleveland for the climate of New Mexico and California. He had been in California only two months.

He was a Life Member of the Museum of Art, a member of the Chamber of Commerce, the University and Midday Clubs of Cleveland, the University of Pennsylvania Club of New York, and the Athletic, Rocky Fork, and Columbus Clubs of Columbus, Ohio. He was also a member of the American Institute of Architects and the American Academy in Rome.

Mr. Howell was born in Columbus in 1879, the son of Robert and Elizabeth Howell. He was educated at Ohio State University and studied drawing at the Columbus Art School. He entered the office of Frank E. Packard at Columbus, where he obtained two or three years' office experience, followed by a course in architecture at the University of Pennsylvania. While at Pennsylvania, he won several scholarships and membership in Sigma Xi, honorary scientific fraternity. He was also awarded the John Stewardson Traveling Scholarship in Architecture and spent a year traveling in Europe. After his return, he started the practice of architecture with J. W. Thomas in Columbus, in 1908.

In addition to house architecture, outstanding examples of the work of Howell & Thomas include the Library and Auditorium Buildings for Ohio University at Athens, Ohio, East High School of Columbus, Ohio, High Schools in Lakewood and Shaker Heights, Ohio, Churches at Columbus, Canton, and Oxford, Ohio, and Y. W. C. A. Buildings at Cleveland and Zanesville.

Another branch of architecture in which the firm has received recognition is the planning and designing of newspaper buildings.



WINNER OF PRINCETON THESIS PRIZE FOR 1930

[760]

ARCHITECTURAL THESES AT PRINCETON

THE ANNUAL PRIZE OF \$500.00 for the best thesis submitted during the year in the Princeton School of Architecture was awarded for 1930 to Mr. Richard Rush Weir, Jr. The prize is offered by the Princeton Architectural Association (an organization of the alumni and friends of the School) and is given to help the winner defray the expenses of a trip to Europe for travel and study.

The Jury consisted of Messrs. Raymond Hood and George A. Licht of New York City, Monsieur George Legendre, A. D. G. F., of Paris, and Professors Sherley W. Morgan and Francis A. Comstock of the Staff of the School.

The subject of Mr. Weir's thesis was "A State Penitentiary." The Jury felt that he had not only made a comprehensive study of the problems of penology, but that his solution was a well thought-out and comprehensive scheme which presented a step forward in the architectural expression of institutions of this sort. The social, administrative and psychological implications of his program had been carefully analyzed, and expressed in an architectural scheme of great dignity, in which the forms and arrangements were derived from the implications of the problem. The other drawings submitted included such varied and interesting programs as

"A Convention Hall for the City of Havana,"

by Eugenio Batista;

"A Modern Church," by Rudolf H. Blatter;

"An Air Terminal for the City of Washington,"

by J. B. Corser, Jr.;

"A Congress of Nations," by Kenneth S. Kassler;

"An Exposition," by John T. Moss, Jr.; and

"A Municipal Health Center," by John W. Persse, Jr.

In addition to awarding the prize to Mr. Weir, the Jury "highly commended" the drawings of Messrs. Batista and Kassler, and "commended" those of Messrs. Blatter and Persse.

Mr. Weir has used his prize in continuing his study at Fontainebleau this summer. This fall he will return to Princeton as an Instructor in Design. His program, which was selected and written by himself and developed under the direction of the Staff of the School, was as follows:

"A STATE PENITENTIARY"

Thesis of Richard Rush Weir, Jr.

The serious outbreaks which have occurred in various prisons throughout the country since the summer of 1929 have awakened a widespread interest in the whole problem of prison design. Experts of various kinds—penologists, psychologists, psychiatrists, prison officials—have entered the discussion and have published many suggestions for changes.

The analysis of the problem has been particularly interesting to the architect since it presents him with a very living program and one which is the result of the study of specialists. To him is left the task of examining this mass of material, and of finding an architectural solution for the many sociological principles which have been placed before him. In achieving this solution the architect must of course find a logical and studied coordination of the elements involved, but he should go even further than usual in insisting on the expression of their composition, since thereby he is giving evidence to the inmate of the inevitable organization which constitutes prison discipline.

This projet has therefore as its subject a state peni-

tentiary which shall be an architectural answer to the suggestions which have been made within the past year. The outstanding ideas which have been expressed in this connection are:

(1) The maximum number of prisoners to be accommodated in any one prison should be 2000.

(2) All prisoners should be classified on various physical and psychological standards and the nature of their quarters and occupations determined in accordance with these classifications.

(3) Adequate industrial and recreational facilities must be provided in order to eliminate idleness.

These considerations merely pose a problem and any written discussion of how it is to be solved architecturally will accompany the drawings and will be the result of study paralleling the development of the problem, rather than a set of preconceived ideas.

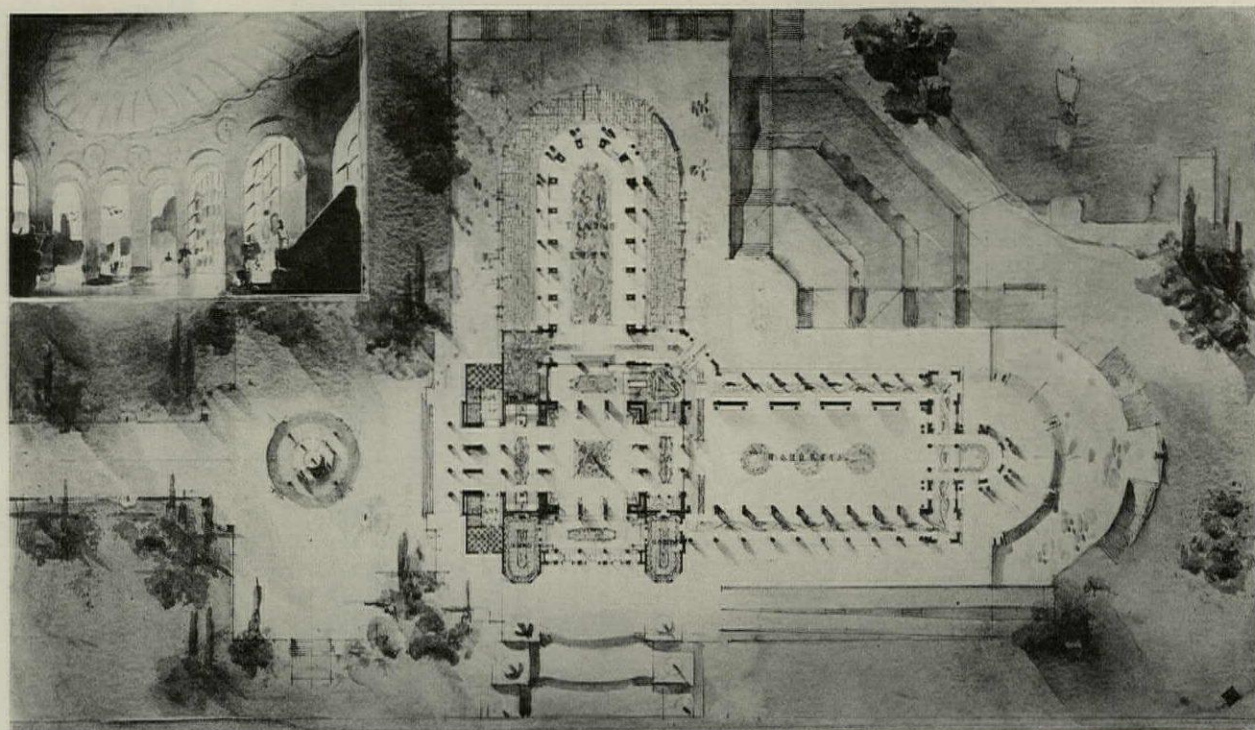
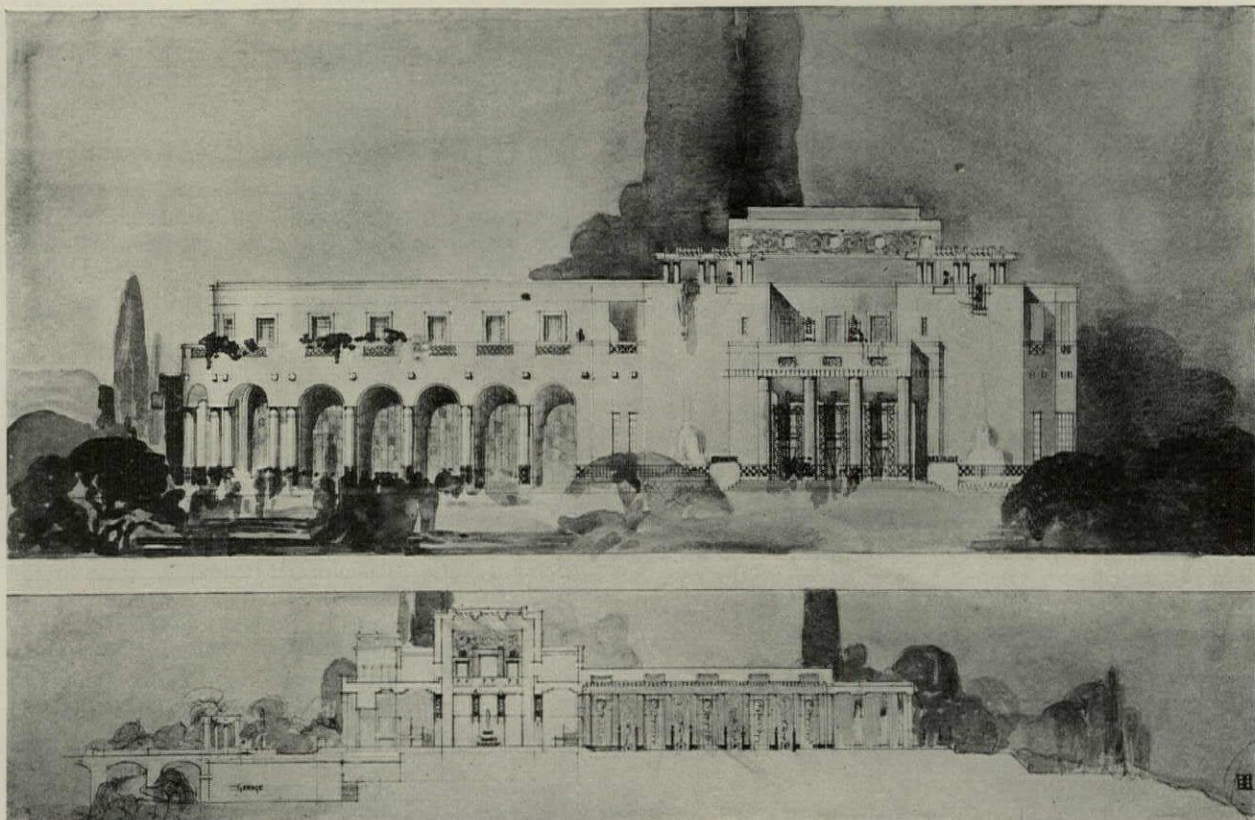
In general the elements needed will be: *Administration*, Offices of Wardens, Visitors' Rooms, Clerical Offices; *Classification*, Reception of Prisoners, Offices for Classification Staff, Group Examination Rooms, Physical Examination Rooms; *Cell Group*, Cell Buildings, Bath Houses, Mess Halls and Kitchens, Auditorium and Chapels, School and Library; *Infirmary*; *Guards' Quarters*; *Industrial Group*; *Farm Group*, Dormitories, Farm Buildings; *Services*, Laundry, Storehouses, Garage, Firehouse, Power Plant, Maintenance Buildings. The site is a large state-owned tract of which a maximum of 100 acres is available for the prison proper exclusive of the farm lands.

Mr. Weir's drawings are reproduced on the opposite page.



LITHOGRAPH BY ALEXANDER Z. KRUSE

"THE WINDOW WASHERS"



PRIZE WINNING DESIGN FOR "A SUMMER HOTEL AND RESORT ON AN ISLAND," BY GEORGE E. FISCHER
STEEDMAN MEMORIAL FELLOWSHIP COMPETITION, WASHINGTON UNIVERSITY
(See text opposite)

STEEDMAN SCHOLARSHIP COMPETITION

OWING TO CERTAIN conditions the Steedman Scholarship Competition Drawings for 1929 were not released to us for publication at the time the scholarship was awarded. Therefore we are glad to present them at this time with the announcement that Mr. Fischer, the winner, has recently left for his year of travel and study abroad.

The subject of the program of the competition was "A Summer Hotel and Resort on an Island," which required a utilitarian as well as an æsthetic solution. The Jury of Award consisted of Messrs. Henry Hornbostel, Chairman, E. J. Weber, H. A. Schwab, and Benno Janssen, Architects, of Pittsburgh. The scholarship was awarded to George Eckerson Fischer, who is the fourth Steedman Fellow. There were twelve competitors in the competition.

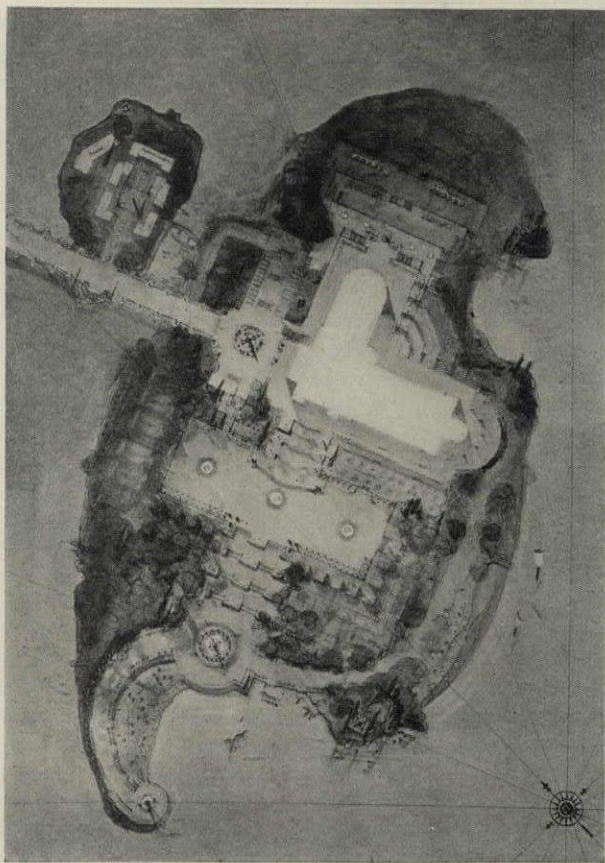
Mr. Fischer was born in Beardstown, Illinois, in 1907. He graduated from the High School of his home town in 1924, and entered the School of Architecture of Washington University in the fall of the same year. After the completion of the four-year course in Architecture, he graduated with final honors in June, 1928. Owing to the brilliance of his record in the undergraduate course, he was awarded a scholarship at the Massachusetts Institute of Technology in the fall of 1928. He completed the work required for the Master's Degree in Architecture, which he received in June, 1929.

During his year of residence at the Massachusetts Institute of Technology, he entered the 1929 Competition for the James Harrison Steedman Fellowship in Architecture, conducted by Washington University. In April he was awarded this much-coveted Traveling Fellowship, which provides for a stipend of \$1,500 for a year of study and travel abroad. He chose to remain an additional year



GEORGE ECKERSON FISCHER

in St. Louis in order to acquire practical experience in the office of Mr. Beverly Nelson, Architect. He sailed for Europe on July 21st and, in compliance with the terms of the fellowship, is not expected to return until the end of the summer of 1931. He is expected to bring with him an interesting record of his travel throughout Europe in the form of sketches or measured drawings.



WINNING PLOT PLAN BY GEORGE E. FISCHER
"A SUMMER HOTEL AND RESORT ON AN ISLAND"

TAU SIGMA DELTA HONORARY FRATERNITY

TAU SIGMA DELTA HONORARY FRATERNITY in Architecture and Allied Arts announces the establishment of the Kappa Chapter at the School of Architecture and the School of Landscape Architecture at the Iowa State College, Ames, Iowa. The Charter members are Prof. Allen Holmes Kimball, Head of Department of Architecture, George Oliver Beach, Leonard Wolf, Harold Ludwig Hunzinger, Gerald Irving Griffith, Ernest Clifford Ebert, Glenn E. Crippen, Walter E. Bedke, C. Eldon Jones, John Merton Hall, Edouard Evart Exline, Norman Arthur Morris, and LeRoy Howard Wendt. Grand Master P. H. Elwood, Jr., Head of the School of Landscape Architecture, directed the installation of the Chapter.

GEO. A. LICHT ADDED TO STAFF OF N. Y. U.

DEAN BOSSANGE, of the Department of Architecture, New York University, announces the appointment of George A. Licht as additional critic in Design for the coming year. Mr. Licht, the winner of the first Paris Prize in 1904, is one of the most successful patrons in design in this country. He has served with the faculties of Princeton and Columbia and in addition has had for many years an atelier of his own, which has won many high awards in the Beaux-Arts Institute Competitions. The design staff of New York University now includes Burnham Hoyt, George S. Koyl, Will Rice Amon, A. G. Schweizer, and E. O. Helien.

THE ARCHITECTS LEAGUE OF NORTHERN NEW JERSEY

THE ANNUAL SUMMER FROLIC will be held some time in the middle of September, exact date and place to be announced later. Same will consist of an outing during which games and sports will be indulged in, followed by a dinner in the evening. Tickets will sell at \$2.50, covering all refreshments, dinner, etc. Those affiliated with the architectural profession and building trades in Northern New Jersey are invited to join us.

A program for the granting of certificates and mentions of merit for various types of buildings erected within the last year in Bergen and Passaic Counties will be announced in the Fall and same will be open to owners and architects of such structures. The program and the final selection and awards will be announced in the public press. This is undertaken to stimulate public interest and appreciation in better architecture in this vicinity.

The regular meeting date has been changed and meetings are now held on the third Thursday of every month at the Elm Château, 285 State Street, Hackensack, New Jersey.

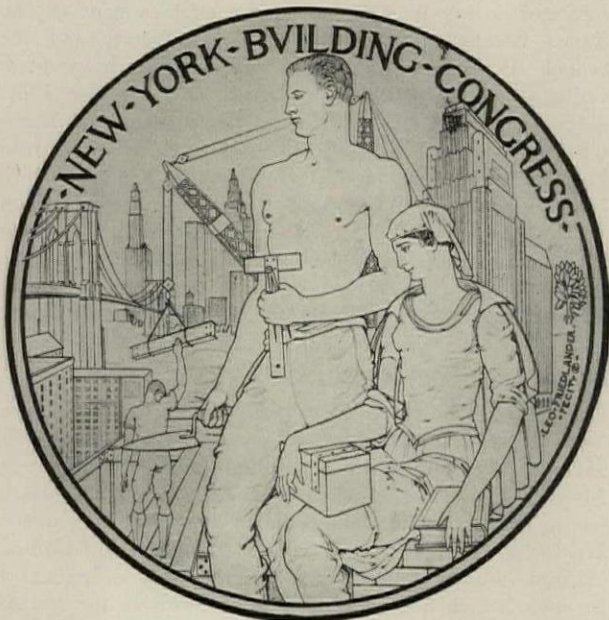
WESTCHESTER COUNTY SOCIETY OF ARCHITECTS

THE SECOND ANNUAL FIELD DAY of the Westchester County Society of Architects, which was held at the Gedney Farm Golf Club on June 18th, was attended by the following members: Bruno Amato, Jas. W. Clyde, Wm. C. Halbert, Wm. H. Jones, Louis Levine, Laurence M. Loeb, John M. Paul, Howard B. Peare, Louis M. Petry, Theodore Richards, Fred E. Winter, and Charles B. Forbes.

The prize for the low net score was won by Theodore Richards and low gross by Howard B. Peare.

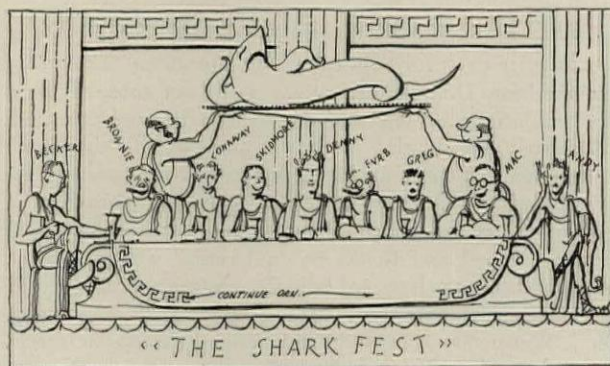
Hon. Jas. F. Bly was the guest of the day and gave a very interesting talk on legislation.

The Association is steadily growing, the following new members having been recently elected: Paul Cerrina, William Cane, Jos. Emmet Kelly and Frank Kronfeld.



DESIGN FOR THE NEW YORK BUILDING CONGRESS
SEAL AND MEDAL

LEO FRIEDLANDER, SCULPTOR



MR. E. A. DENNISON THROWS A PARTY FOR THE OFFICE OF E. A. DENNISON & ASSOCIATES

MANY OF THE hundreds of draftsmen who have daily passed through the portals of our office can remember the parties given by Mr. Dennison. Those who joined us in wrecking his house and grounds last year can well understand the reason for his inviting us to the Apawamis Club this year.

Tearing ourselves away from the unprecedented rush of work in the office, we drove to Rye and proved, at least to ourselves, that 18,000 pounds is a very mild approximation of the allowable stress of the steel in "Lady Lizzie."

Mr. I. L. Browne, who is in charge of our Hartford office, and a West Point graduate to boot, proceeded to play "the old army game" and licked all comers at tennis. Andy F. Euston, our designing department, at least brought the first sweat from Brownie.

Dinner, starting with a brew of ancient days, held a special treat. Wilfred J. Gregson, who has recently been returning from over long week-ends with stories of catching sharks off Block Island, proved his fish stories by bringing twenty pounds of shark steak for the feast. Greg instructed the chef in the cooking and the latter, who made a fine art out of teasing appetites, displayed his talents to the nth degree and shark meat was coted a dish fit for a king.

The old-fashioned game of pill pool was played after dinner, Harry L. Skidmore being the amateur champion; only joining us with considerable persuasion from the gang (after telling us he had never played before), he proceeded to pot his own ball with such accuracy that left us in doubt as to his being a natural born pool player or—well never mind.

ABOUT DESIGNS IN THE PENCIL POINTS COMPETITION

WILL MICHAEL DE RUBERTIS of Cleveland and Everett G. Nash of Chicago please communicate with the PENCIL POINTS Editorial Office at 419 Fourth Avenue, New York, giving us their new addresses in order that their designs submitted in the PENCIL POINTS COMPETITION for an Eight-room House may be returned.

Also, we should like to hear from competitors in this competition whose drawings carried the following devices: *A Deep Secret*, *Nom de Plume*, and *Pen N. Ink*, and any other competitors who have not as yet had their drawings returned. We are holding several unidentified designs here in the office.

HERE AND THERE AND THIS AND THAT



This department conducts four competitions each month. A prize of \$10.00 is awarded in each class as follows: Class 1, sketches or drawings in any medium; Class 2, poetry; Class 3, cartoons; Class 4, miscellaneous items not coming under the above headings. Everyone is eligible to enter material in any of these four divisions. Good Wrinkle Section: a prize of \$10.00 is awarded for any suggestion as to how work in the drafting room may be facilitated. No matter how simple the scheme, if you have found it of help in making your work easier, send it in. Competitions close the fifteenth of each month so that contributions for a forthcoming issue must be received by the twelfth of the month preceding the publication date in order to be eligible for that month's competitions. Material received after the closing date is entered in the following month's competition.

The publishers reserve the right to publish any of the material, other than the prize winners, at any time, unless specifically requested not to do so by the contributor.

THE PRIZES IN our regular monthly competitions have been awarded as follows:

- Class I—John Welker, New York
- Class II—Thomas Pao Ho Liang, Tientsin, China
- Class III—No Award
- Class IV—Victor Szucs, Astoria, L. I.
- Good Wrinkle—Philip S. Metcalf, Boston

THE URGE TO CONDUCT another HERE AND THERE EXTRA SPECIAL COMPETITION has come over us. We had a request from one of our subscribers for information on gin mill designing. After days of research we have had to admit defeat—there is no authentic literature available! Thus inspired we hereby announce a competition for the design of A Gin Mill—open to all architects, draftsmen, and students. Two prizes will be awarded as follows: First Prize, \$25.00; Second Prize, \$15.

All drawings must be done in black and white on a sheet that will reduce to 9" x 6½". The Competition closes Friday, November 7th, 1930, at five o'clock.

Address all entries to E. L. C., PENCIL POINTS PRESS, Inc., 419 Fourth Avenue, New York.

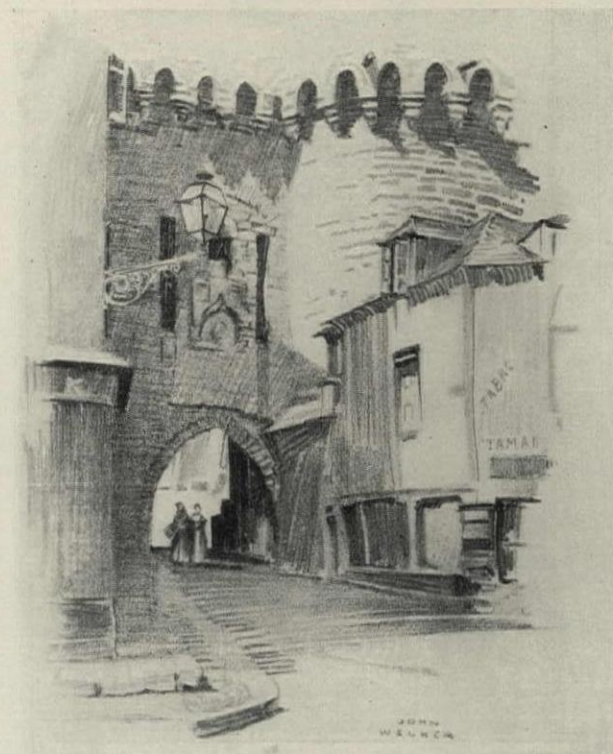
PENCIL POINTS

THROUGH THE EYES OF A CHINESE DRAFTSMAN
By Thomas Pao Ho Liang, of Tientsin, China
(PRIZE—Class Two—August Competition)

Perfectly
Entertaining;
Nobly
Consistent;
Immeasurably
Leading;

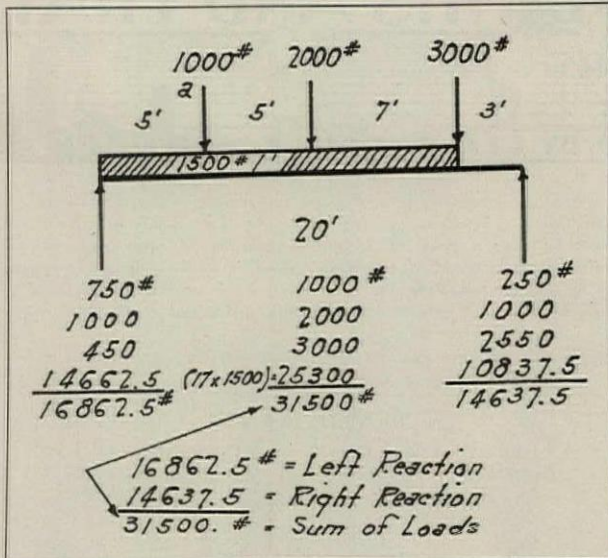
Paramountly
Original;
Indisputably
Necessary;
Triumphantly
Supreme.

Mr. Liang also sent us the following: "One day I strolled into a department store and a terrible smell filled my nostrils. I asked the first employee I met, 'What smells so bad here?' to which he replied, 'That's business; it's rotten.'"



PENCIL SKETCHES BY JOHN WELKER

(PRIZE—Class One—August Competition)



A CONVENIENT ARRANGEMENT FOR BEAM CALCULATIONS

By Philip S. Metcalf, of Boston, Mass.
(PRIZE—Good Wrinkle—August Competition)

THE FOLLOWING is a very simple and convenient method of arranging the necessary calculations involved in finding the reactions preliminary to finding the maximum bending moment in beams.

The chief advantage of this method is that the designer can see at a glance just what portion of the various loads is carried to each reaction, and each step can be automatically checked as the work proceeds. It is more foolproof than the customary method of taking moments about one end of the beam and subtracting the reaction thus found from the sum of the loads to find the other reaction.

An example is the simplest explanation. In the beam shown in the figure, multiply load "a" by its moment arm of 5 feet, divide by the span of 20 ft. and write the result of 250 lbs. under the right end of the beam as shown. Then multiply the same load by its moment arm of 15 ft., divide by the span of 20 feet and write the result of 750 lbs. under the left-hand end of the beam.

Write the load "a" which is under consideration under the middle of the beam and on the same line with the figures just previously written. The two parts of the load should total up to the original load.

Continue with the other concentrated loads in the same manner. The uniform load would of course be as follows:

For the portion carried to the left reaction:

$$\frac{(17 \times 1500) \times 11.5}{20} = 14,662.5 \text{ lbs.}$$

For the portion carried to the right reaction:

$$\frac{(17 \times 1500) \times 8.5}{20} = 10,837.5 \text{ lbs.}$$

Finally add all the loads at the left reaction together and all the loads at the right reaction together. The sum of the two reactions should equal the sum of the loads in the middle column.

ONE IS BORN EVERY DAY

Reprinted from *The Lintel* for July, 1930

THE FOLLOWING LETTER from Robert W. Snyder, Architect, San Diego, has been received and noted with much interest:

Dear Mr. Robin:

Am enclosing clip from San Diego Union Development Page.

Can you beat it? It seems pretty rare to me.

Yours,

R. W. SNYDER.

We disagree only in one point with Mr. Snyder; his use of the word *rare*. We believe *razo* would be more exact.

It is entitled "Home Building Hints by S. D. Architect." S. D. we imagine is an abbreviation for "Some Damn"—Certainly not for San Diego. The article is too long and idiotic to print in full but the following choice bits will serve to show why many persons are possessed with the belief that architects are the bunk.

"Generally speaking, a sideboard looks best when it is at one side of the dining room.

"If there is a pretty garden visible from the dining room it is well to have a wide group of three or four windows.

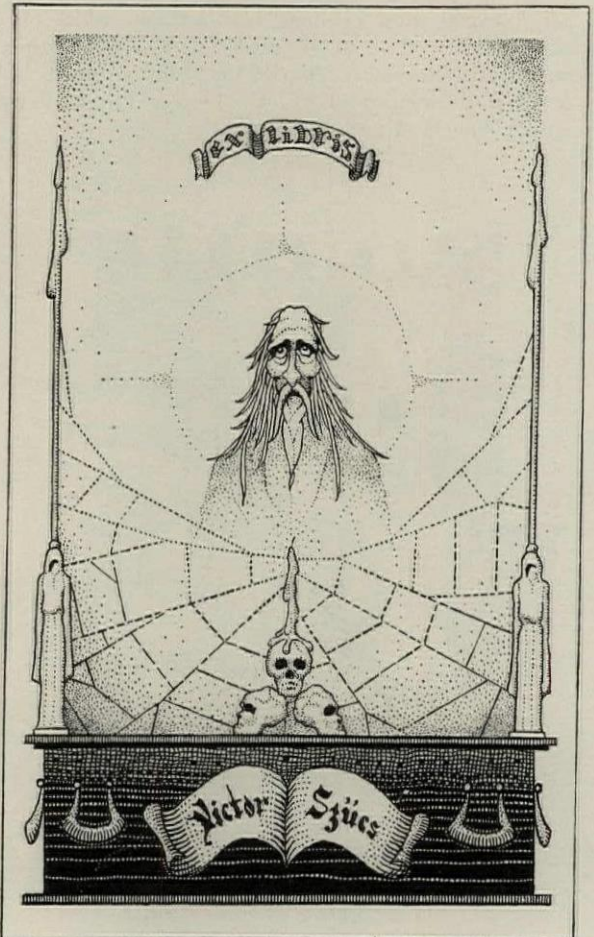
"Two doors are usually placed between the dining room and kitchen. In many cases much space can be saved by a single door.

"If the hall is 20 to 25 feet long it can be 8 to 10 feet wide in order to preserve good proportions but in small houses halls are frequently less in length in which case they may be narrower.

"Large houses should be provided with a staircase from the first to second stories.

"If there is a billiard room in the attic or basement a separate staircase is frequently desirable."

It is quite certain that such doggerel as this does more harm than good to the conscientious architect who has something worth while to contribute to his client.



BOOK PLATE BY VICTOR SZUCS, OF ASTORIA, L. I.

(PRIZE—Class Four—August Competition)



THE SPECIFICATION DESK

A Department for the Specification Writer

PAINT AND VARNISH

By David B. Emerson

ABOUT NINE YEARS AGO I wrote an article on paint and varnish, which no doubt some of my readers may remember. Since that time many new materials have been put on the market, and I have learned many things which I did not know at that time. Taking those facts into consideration, I feel that I can again write on that subject and tell much that was not included in my earlier article.

Despite all of the many changes and inventions, white lead and linseed oil paint are still more extensively used than any other painting medium. White lead is basic lead carbonate containing from twenty-five to thirty per cent. of lead hydrate. It is probably the oldest form of pigment known, having been mentioned in literature as early as 430 B.C., and the records seem to indicate that it was made by a process not widely different from the Old Dutch Process of the present day, which is the method now most widely used. It is produced either by the corrosion process (the Old Dutch Process), or by the precipitation process, and the paste white lead is ground with eight per cent. of linseed oil.

Sublimed white lead is basic lead sulphate and is practically nonpoisonous. It is produced by sublimation and oxidation from lead ore. It has good spreading power and good body, but has not the opacity or hiding power of basic lead carbonate. To the best of my knowledge this form of white lead is very little used. I have never seen it specified, nor do I remember ever seeing it used.

Linseed oil as a vehicle has been used even longer than white lead has been used as a pigment, as it was known to have been used by the Egyptians.

Next to white lead, zinc oxide is probably the most popular pigment. It is used either alone or mixed with white lead. It does not work as easily nor has it such good flowing qualities as white lead; also more care is needed in selecting the oil to be used, as all oil is naturally slightly acid, and a slightly acid oil is liked for lead. Zinc does not work well in an acid oil, and it also requires about twice as much oil as lead. Zinc oxide mixed with white lead for exterior painting retards chalking, reduces the fading of colors and is most effective in preventing the destructive action of the ultra-violet rays of the sun on the paint film.

The newest white pigment which has become commercially available is titanium oxide. Titanium is a natural metallic element possessing certain qualities which make it valuable in the preparation of a superior white pigment. This pigment is the whitest white pigment known and has very good covering capacity and bids fair to become a very popular pigment in the near future. Unfortunately I have had no personal experience with titanium oxide, never having specified it nor seen it used by others.

Another pigment which has some very excellent qualities is aluminum which is mixed with either a linseed oil or a varnish vehicle. This paint is used both on wood and metals, and makes an excellent priming coat for exterior wood work on account of its moisture resisting qualities. One use for which I have specified aluminum paint and for which I will recommend it to all others who write specifications, is for a priming coat on galvanized iron work which is to be exposed to moisture.

Writing in 1919 I recommended, "never specifying galvanized pipe and fittings for pipe railings, as galvanizing fills the pores, and paint will not adhere as well to the smooth surface and is liable to peel off." With the use of aluminum paint as a first coat, paint adheres perfectly, and I would recommend specifying that all iron work on the outside of buildings be hot galvanized, especially when near the sea, and that it be painted with one coat of aluminum paint and three coats of lead and oil paint.

Red lead when practically pure is equal to about ninety-eight per cent. tetroxide of lead, and must be wholly free from soda or nitrate salts. Good red lead can be 82.88 per cent. tetroxide of lead, plus 17.12 per cent. litharge, that is monoxide of lead. This pigment is used almost exclusively for painting iron and steel work on account of its rust inhibitive quality. It is also recommended as a primer for resinous woods like yellow pine, either used alone or mixed with white lead. I have used it myself with very good results; it makes a firm, hard foundation for the succeeding coats and also acts on the resinous matter in the nature of a drier, keeping it hard and confined.

Linseed oil is usually specified to be "raw oil," but for special uses, particularly when used as a vehicle for red lead paint for priming metal work, "boiled linseed oil" should be specified. Boiled linseed oil dries with a distinct gloss and makes a fairly hard film over night. Boiled oil should be specified to be "genuine kettle boiled linseed oil." The so-called "bung hole" oil is a mixture of raw linseed oil and driers made up from metallic oxides.

In addition to the pigment and vehicle the other two component parts of practically all paints are volatile thinners and driers. Volatile thinners are added to paint for the purpose of making it spread farther and for obtaining a film of the proper thinness. The standard thinner and practically the only one which should be used in high class work is turpentine.

Turpentine is distilled either from the resin of the Southern Pine, or from the wood. Gum spirits turpentine should always be specified, and as an extra precaution it should be specified to be distilled from the sap of living trees. Benzol and solvent naphtha, which are coal tar

distillates, are also used as thinners, and are recommended for use in the priming coat for resinous, hard, or non-absorbent wood to aid the penetration of the paint.

Driers are compounds of lead and manganese oxides heated and then dissolved in linseed oil, and are called "oil driers." If thinned with turpentine or benzine or zinc or with a combination of both, they are called "liquid driers." Japan driers, in addition to the metallic oxides, the oil, and turpentine, contain gums or gum resins. They act as carriers of oxygen between the air and the oil, and their addition to the paint makes it dry more rapidly. An excess of drier will make paint lose its durability.

Where colors are desired, tinting colors ground in oil are added to the white pigments which have been described. For black or very dark green paints the colors are mixed with the oil without the addition of white lead or other white pigment. Colors are made from various mineral and vegetable substances, generally mineral and some are coal tar derivatives.

Flat wall paints are made up of lithopone which is a combination of zinc sulphide and barium sulphate, and China wood oil, which by the way is not made from the wood, but from the nuts of the Tung tree which grows in China. China wood oil renders the paint more durable, makes it brush much easier and makes it more moisture resisting. Where color is desired, colors ground in oil are mixed with the white paint to obtain the lighter shades and for the darker colors the pigment is ground with the lithopone.

The higher grade enamels are no longer mixed with varnish, but are composed of zinc oxide and specially treated linseed oil which has been kettle bodied and bleached. The driers are reduced to a minimum to preserve the whiteness of the enamel. This is the principle reason why high grade enamels always dry slowly. Enamels may be colored by the addition of colors ground in oil. For high grade enamels only the lighter tones are used, as only about five per cent. of colored pigment should be added to the white enamel.

Enamel undercoaters are made with a lithopone pigment and specially treated oils, principally China wood oil. In the specifying of enamels, it should always be noted that all enamel undercoaters should be the same make as the enamel which is to be used, if not the painter may use a cheaper lithopone product with more or less unsatisfactory results.

Practically all "mill whites" or industrial enamels are made up of lithopone and specially treated linseed oil.

The newest development in the field of enamels is the quick drying enamels, not to be confused with the lacquers, which are a decidedly different article, although certain materials are used in the manufacture of both. These enamels under proper drying conditions dry "dust free" in a few minutes and dry hard enough to recoat in four hours, so it is perfectly easy to apply two coats in a day and have time to spare. They are made up of lithopone with a quick drying varnish as a vehicle. These enamels dry with a gloss and may be rubbed exactly the same as the regular long oil enamels.

Varnishes are generally composed of fossil resins or gums, which are the sap of prehistoric trees, drying oils which render the varnish elastic and durable, metallic driers, which are incorporated with the oils to hasten the drying of the varnish film and volatile solvents which aid the spreading of the varnish on the work. The resins are copal, kauri, and others, and are found in Africa,

New Zealand, and the East Indies. The oils are linseed oil and China wood oil. Linseed oil produces a varnish of greater elasticity, fuller body and lustre and with better flooring qualities. China wood oil is more waterproof than linseed oil, and it also causes the varnish to harden quicker than linseed oil.

Spar varnishes require linseed oil; a combination of China wood oil and linseed oil are best for floor varnishes. Varnish is produced by a cooking process. The gum is first melted, the oil which is usually preheated is added, and when the mixture is sufficiently cooled to prevent their flashing the thinners are added. This process differs very little from that described by Theophilus; a monk who wrote in the Eleventh Century. After thoroughly settling and filtering all good varnishes are allowed to age thoroughly, which is very essential for good results.

The latest development in the varnish field of which I have any knowledge is the so-called "four-hour" varnishes. These varnishes are being made by most of the leading varnish manufacturers, and under proper drying conditions will dry "dust free" in a few minutes and will dry hard in four hours. The principal difference between these varnishes and the regular slow drying varnishes, is that the four-hour varnishes are made up from synthetic or manufactured gums and China wood oil, which is both waterproof and quick drying. The synthetic gums are either the ester gum which is made by a chemical combination of rosin and glycerine (but its properties are entirely different than those of either rosin or glycerine), or the condensation products of phenol and formaldehyde. These varnishes dry with a gloss and can be rubbed the same as all gloss varnishes.

Dull drying varnishes are produced by a proper emulsification of varnish by the addition of somewhat less than one per cent. of water which has the physical effect of destroying the gloss of the varnish.

Now, while we are considering varnishes, let me inject a few words on shellac, which is not a true varnish but is often confused with varnishes. Shellac is a gum obtained from the lac insects which live upon the twigs of certain resinous trees in India and other tropical countries. These insects exude a gum-like secretion which finally covers the twig. The twigs are broken up or coarsely pulverized and then placed in hot water which melts the resinous matter and liberates the wood. This process is facilitated by kneading the melted resin. It is then taken out and dried, and afterwards washed and dried a number of times. It is then given a heat treatment, melted, and allowed to harden.

The resulting gum is in thin flakes and of a deep brownish orange color. This gum is cut with alcohol and rendered liquid in which state it is used in painting and wood finishing. Shellac should only be used for "knot stopping," that is the covering of knots and pitchy places in wood before painting, to prevent the pitch bleeding through the paint, and as a first coater over stains to prevent them from bleeding through the varnish, and on light-colored flooring, to prevent the floor varnish from darkening the wood. It should never be used as final finish, particularly on floors, as it turns permanently white when touched by water, is very brittle and easily shows dents and heel marks.

The newest and probably the most radical development in the paint and varnish industry, is the lacquers which have been introduced in the past few years. They are being very extensively advertised, and are being manufactured by most of the leading varnish manufacturers.

The present day lacquers which are manufactured in this country should not be confused with the Chinese and Japanese lacquers, which are an entirely different product, as anyone who read Miss Houcks' very interesting article in the August number of *PENCIL POINTS* will very easily understand. The basis of all present day lacquers, and the ingredient which distinguishes them from paint and varnish, is soluble nitro-cellulose. Soluble nitro-cellulose made from cotton linters (the short fibers of cotton which surround the cotton seed, which previous to about thirty-five years ago, were regarded as waste matter) treated with a mixture of nitric and sulphuric acids. Nitro-cellulose is what renders lacquers tough, elastic and durable, just as oils do in varnishes.

The next most important ingredient in lacquers is the gums and resins, which broadly speaking are much the same as those used in varnishes, and which impart the same properties to lacquers as they do to varnishes, which are body, gloss, and ease of rubbing.

The resins used are either the fossil gums or the synthetic or manufactured gums the same as used in the quick drying varnishes. In the making of lacquers the resins, like the nitro-cellulose, are used in the form of a solution. There are numerous solvents used in the manufacture of lacquers, the principal ones used to dissolve the nitro-cellulose are either of the amylacetate (banana oil) group, some of the derivatives of glycol and anhydrous or water free alcohol which is commonly used in conjunction with the other types of solvents. The solvents for the resins are either the alcohols, such as ethyl alcohol, butyl alcohol and amyl alcohol; the coal tar products such as tuluol, Xylol and solvent naphtha, and the petroleum products such as benzene. Benzol was largely used as a solvent in the past, but having been found to be poisonous, its use was discontinued by all reputable manufacturers of lacquers.

Lacquers are made clear or colorless, or in the form of lacquer enamels, which are made by incorporating pigment with a clear lacquer.

The pigment is ground in a pebble mill, stone mill, or roller mill, in a portion of clear lacquer, and the resultant paste is then thinned with additional clear lacquer and thinner. Lacquers may be applied either by spraying or brushing. The sprayed lacquer dries quicker than the brushed lacquer but as the labor unions are bitterly opposed to the use of sprayed painting materials, it is impossible to use sprayed lacquer on any new work in the larger cities. So far as I have any information on the subject, no manufacturer of lacquers has up to the present time been able to produce a lacquer that brushes as well as a good oil varnish or enamel. Lacquers as a class are harder and tougher than varnishes or oil enamels and are generally more resistant to scratching or marring or to printing from heavy weights. Most brushing lacquers never become as hard as spraying lacquers, due to the fact that they are of necessity much slower drying. As to the question of elasticity, lacquer is much inferior to varnish. A film of lacquer is very much stronger than one of varnish, but it can not be stretched nearly as far before it breaks. For this reason lacquer is not suitable for exterior work, as the expansion and contraction of the wood, due to atmospheric changes will cause it to crack, whereas paint and varnish have sufficient elasticity to follow the changes in the wood and the film remains intact. Lacquers are made in gloss or dull drying with a semi-gloss and the gloss lacquers can be rubbed to a dull finish the same as oil varnishes and enamels.

A recent product which has been developed as a direct result of a new class of materials which is on the market, is a special paint for acoustical materials—either plaster, felt, or boards. This paint is washable and it is claimed that it does impair the porosity of the acoustical materials. It is recommended by the manufacturers of acoustical materials and works very well. The process of manufacture being more or less secret, I am unable to tell anything about its composition, but I have an idea that it is a lithopone product.

After having discussed some of the various new materials, it may not be amiss to consider some of the old stand-bys. We all specify kalsomine and very few of us know anything about its composition, and if asked would either have to plead guilty to not knowing or else do a little equivocating. Kalsomine, according to the formula of one of New York City's leading painters and decorators, is made up of whiting which is pulverized chalk and glue with a fair amount of flaxseed added. To this mixture dry water color mixed with hot water is added to produce tone effects. The cold water and hot water paints contain practically the same ingredients mixed under improved methods.

Another of the old stand-bys which is still in use and which in my opinion gives a most pleasing texture when applied to brick work is whitewash. There are a number of formulae for whitewash, but the government formula which is used by the United States Lighthouse Board is undoubtedly the last in use. As several of my acquaintances have asked me for this formula recently, I do not believe it will be at all out of order to give it here so that all of my readers who wish it may have it.

Slake one-half bushel of lump lime in boiling water, keeping it covered. Strain the slaked lime and add one peck of salt, dissolved in warm water, and then boil to the consistency of a thin paste. Add one-half pound of Spanish whiting, and one pound of clear glue dissolved in warm water; mix thoroughly and allow the mixture to stand for several hours. Keep the whitewash in a kettle or a portable furnace, and apply as hot as possible using a wide brush. The whitewash is improved by the addition of three pounds of powdered rice before boiling.

After having briefly described most of the outstanding materials in the paint and varnish field, I will tell the reader that to the best of my knowledge there is no sure way to judge these materials except by experience, either your own or some one's else, the latter being the better and safer if we can only profit by it.

CONCERNING A RECENT ARTICLE BY MR. EMERSON

By L. N. WHITCRAFT

District Engineer, Portland Cement Association

EDITOR'S NOTE:—The following article sent to us by Mr. Whitcraft will be of interest to those who have read Mr. Emerson's article in the July issue of *PENCIL POINTS*. We are always glad to hear from our readers and invite a further discussion of this important subject.

MR. EMERSON'S DISCUSSION on "Waterproofing, Damp-proofing, and Floor Hardeners," appearing in the Specification Desk Department of the July issue of *PENCIL POINTS*, is indeed timely and should be of interest to most specification writers. His suggestions for the surface treatment of concrete to render it waterproof are of particular value as the methods recommended are excellent expedients in overcoming the difficulties that are often encountered in the production of watertight concrete in building con-

struction where only a small proportion of the total concrete is required to be watertight.

On the other hand, many concrete structures which are required to be watertight throughout have given entirely satisfactory results without the application of surface treatments or the addition of compounds to the concrete mixture. Thorough understanding of the basic principles of concrete making and their correct application in the field are necessary to obtain the best results. Neglect of these principles can not be compensated for by the addition of other materials and the unsatisfactory results can only be corrected by the surface treatment method at a later date.

Readers may be misled by such statements as "Integral waterproofing is accomplished by adding various substances—to the concrete to fill the pores, thereby keeping out all waters" and "This method closes all the minute voids and pores in the concrete, which is all that is required to render it absolutely waterproof." When it is realized that these minute voids and pores in concrete are formed by the evaporation and loss of the excess water above that required for the hydration of the cement it will be readily understood that these materials can not possibly fill the voids as they are added to the mixture while it is plastic and can not move into the void spaces which are not formed until after the concrete has hardened.

How, then, may watertight concrete be produced? By reducing the number and size of the voids and by distrib-



TRAVEL SKETCH BY LOUIS A. L'AMOREUX
"AVALLON, FRANCE"



SKETCH BY LOUIS A. L'AMOREUX
"OLD WEAVERS HOUSE"—CANTERBURY

uting them uniformly throughout the mass so that they can not form continuous passages for the entrance of water. A requirement of watertight concrete is the use of aggregates of low porosity each particle of which is thoroughly surrounded by cement paste which is itself watertight. Little, if any, water can pass through the particles of the silicious or calcareous materials generally used as aggregate, so that the real problem is to produce watertight paste which will actually float the aggregate particles and hold them in place until the concrete has hardened.

In the great majority of cases where unsatisfactory results are encountered, the difficulty has been confined to comparatively small areas—construction joints or fill planes being prolific sources of leakage while the porous concrete is in the area near the top of each lift. These are indications of improper bond between the layers and segregation of the materials while the concrete is still plastic. Antiquated specifications are often responsible for the latter—the 1:2:4 or leaner mixes, interpreted as field mixes, giving undersanded mixtures that are harsh and do not have proper workability. In placing such concrete, excess water is used in an attempt to overcome the harshness but with the consequent segregation indicated on so many jobs, a porous area near the top of each layer where the excess water and the fine particles of sand with dirt and other objectionable fine material have collected while the lower section of the layer is of sound, watertight concrete.



SKETCH BY LOUIS A. L'AMOREUX
"SAN GIMIGNANO"

A proper design of the mixture, using the identical materials but proportioning them to give a plastic, "sticky" concrete, without exceeding the amount of mixing water found from experience and tests to be the limit for watertight concrete, would almost invariably have given good results. For ordinary construction this is about 6 gallons per sack of cement; where the sections are thin this should be further reduced to about 5 gallons, while for extra thick sections such as gravity dams and retaining walls the quantity may be increased to as much as $7\frac{1}{2}$ gallons, depending on the thickness. These quantities include the surface water entering the mixture as moisture on the aggregates.

Limiting the amount of mixing water does not mean the use of a stiff mix. Proper plasticity is a requirement for proper placing and consolidation of the mass, but it should be obtained by adjustments in the aggregate proportions. The concrete should be placed in thin layers, keeping the top surface horizontal, and should be rodded and spaded. It should not be permitted to flow over long distances in the forms as segregation is almost certain to result. Continuous placing should be followed where possible. When placing is intermittent, care should be taken to bond the succeeding layers thoroughly. All laitance, dirt, and loose particles should be picked and swept off, presenting a rough, clean surface for the new concrete. Some engineers recommend a cement grout to be slushed on the surface just prior to placing the fresh concrete. A further precaution for a tight construction joint is to place a galvanized metal or copper strip in the joint,

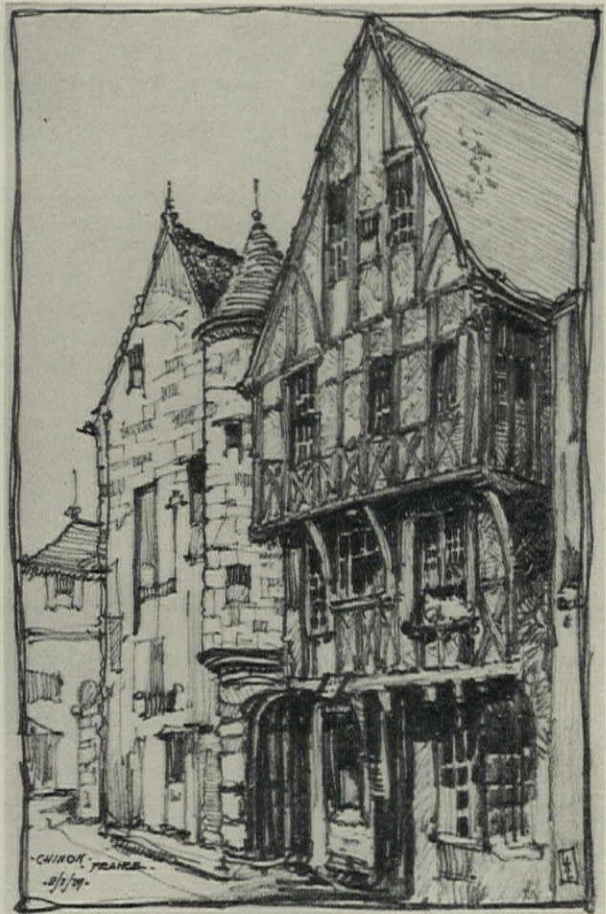
half of it extending into the lower layer and the other half into the upper layer of concrete.

Curing is an important process in the production of watertight concrete. The purpose of curing is to prevent the evaporation of water from the concrete, giving it time to unite with the cement. The products of hydration build up the internal structure of the concrete and leave less uncombined water to form pores and voids upon evaporation. Leaving the vertical forms in place is of assistance in curing. Horizontal surfaces may be covered with damp sand or burlap and kept moist by sprinkling. Covering should be placed as soon as it can be done without marring the surface. Concrete for watertight construction should be cured by keeping it moist for at least 10 days.

Failure to observe any of the above principles may result in unsatisfactory work regardless of the materials that are used. Fortunately any contractor can carry out these operations nor need they involve more expense than the slipshod method all too frequently used.

THE KNOBLOCH DETAIL SHEETS

THE TWO CONSTRUCTION detail plates by Philip G. Knobloch for this month deal with the subject of eaves. They were worked up from data kindly supplied by the office of Edmund B. Gilchrist, Architect, of Philadelphia, Pa.



ANOTHER FRENCH TRAVEL SKETCH
BY LOUIS A. L'AMOREUX
"CHINON, FRANCE"



SERVICE DEPARTMENTS

THE MART. In this department we will print, free of charge, notices from readers (dealers excepted) having for sale, or desiring to purchase books, drawing instruments and other property pertaining directly to the profession or business in which most of us are engaged. Such notices will be inserted in one issue only, but there is no limit to the number of different notices pertaining to different things which any subscriber may insert.

PERSONAL NOTICES. Announcements concerning the opening of new offices for the practice of architecture, changes in architectural firms, changes of address and items of personal interest will be printed under this heading free of charge.

QUERIES AND ANSWERS. In this department we shall undertake to answer to the best of our ability all questions from our subscribers concerning the problems of the drafting room, broadly considered. Questions of design, construction, or anything else which may arise in the daily work of an architect or a draftsman, are solicited. Where such questions are of broad interest, the answers will be published in the paper. Others will be answered promptly by letter.

FREE EMPLOYMENT SERVICE. In this department we shall continue to print, free of charge, notices from architects or others requiring designers, draftsmen, specification writers, or superintendents, as well as from those seeking similar positions. Such notices will also be posted on the job bulletin board at our main office, which is accessible to all.

SPECIAL NOTICE TO ARCHITECTS LOCATED OUTSIDE OF THE UNITED STATES: Should you be interested in any building material or equipment manufactured in America, we will gladly procure and send, without charge, any information you may desire concerning it.

Notices submitted for publication in these Service Departments must reach us before the fifth of each month if they are to be inserted in the next issue. Address all communications to 419 Fourth Avenue, New York, N. Y.

THE MART

Homer V. Geib, Box 925, Lake Wales, Florida, would like to obtain the following copies of **PENCIL POINTS**: July, October, and November, 1920; August, October, 1921; April, 1922; June, 1925. State prices.

S. Lagunas, B. de Irigoyen 171, Buenos Aires, Argentina, will pay 45¢ each for the following copies of **PENCIL POINTS**: April, and September, 1928; January, April, May, July, August, and September, 1929.

TO RENT—Unusual space to sublease in well equipped New York architect's office. Address communications to Statistical Department, **PENCIL POINTS PRESS, Inc.**, 419 Fourth Avenue, New York.

The Ferd. Wagner Co., 113 East Fifth Street, Cincinnati, Ohio, has the July, August, and September, 1929, issues of **PENCIL POINTS**; also a few 1930 copies, of which they would like to dispose.

John H. Geerling, Blackwell-Wielandy Co., 1605 Locust Street, St. Louis, Mo., would like to obtain the August, 1929, issue of **PENCIL POINTS**.

McIver & Cohagen, Billings, Montana, would like to have the December, 1922, issue of **PENCIL POINTS**.

F. Ga. Gamba, Calle 19, No. 396, Vedado, Havana, Cuba, has the following copies of **PENCIL POINTS** for sale at \$1.50 each, or \$9.00 for the lot: July, August, and September, 1921; November, 1922; November, and December, 1923; September, 1926.

J. Kendall Hanson, 14 Orchard Street, Peabody, Mass., has the following copies of **PENCIL POINTS** for sale: all of 1926, except January; 1927; 1928; and 1929.

W. E. Needham, 156 East 46th Street, New York, has for sale one K. & E. Polykhas Duplex Slide Rule No. 4088-3s with leather case, brand new, price \$6.00.

Stephen J. Ames, 859 Westgate Ave., St. Louis, Mo., will sell **PENCIL POINTS** issues of April through August, 1930.

PERSONALS

MAX SANDFIELD, ARCHITECT, has opened offices recently in the Milam Building, San Antonio, Texas.

M. LOUIS KROMAN, ARCHITECT, has moved his offices from 134 No. La Salle Street, to 180 No. Michigan Avenue, Chicago, Illinois.

FREDERICK A. MUHLENBERG, ARCHITECT, announces that S. M. Yerkes and Charles R. Muhlenberg, former associates, were admitted into full partnership and that the firm name will hereafter be Muhlenberg, Yerkes & Muhlenberg. The address will remain as before, Ganster Bldg., Reading, Penna.

A. SALMAN and M. F. ADAMSON have become associated for the practice of Architecture under the name of Salman & Adamson, with offices at 1336 Enquirer Building, Cincinnati, Ohio.

MARANI & LAWSON, ARCHITECTS, announce that R. L. Morris has become a member of the firm which will now practice under the name of Marani, Lawson & Morris, Architects, 38 Bloor Street West, Toronto, Canada.

The firm of MURPHY and LEHMANN has been dissolved. Henry V. Murphy is continuing the practice of architecture at 208 Livingston Street, Brooklyn, N. Y. Edward A. Lehmann has opened a new office for the practice of architecture at 101 Park Avenue, New York.

JAMES L. GATLING, ARCHITECT, has opened offices at 811 Bankers Bond Bldg., Birmingham, Alabama.

THE OFFICE OF JOSEPH EVANS SPERRY, 409 Calvert Bldg., Baltimore, Md., announces with regret the death of the senior member of the firm, Mr. Joseph Evans Sperry, F.A.I.A. on August 6th, 1930. The practice of architecture will be continued under the same firm name by the surviving partners, Herbert G. Crisp and James R. Edmunds, Jr.

FREE EMPLOYMENT SERVICE ITEMS WILL BE FOUND ON PAGES 86, 88, AND 89,
ADVERTISING SECTION



WATCH *Pencil Points* each month for the Eldorado Texture reproduction by Ernest W. Watson. Send for samples of Eldorado, "The Master Drawing Pencil," to Joseph Dixon Crucible Co., Pencil Dept. 167-J, Jersey City, N. J.

COMPETITION FOR IMPROVED DESIGN FOR
ELEVATED STEEL WATER TANKS AND THEIR
SUPPORTING STRUCTURES*(Continued from page 757, Editorial Section)*

shall constitute an affirmation by the competitor that he has complied with the foregoing provisions in regard to anonymity, and agrees that any violation of them invalidates his design and removes it from the competition.

With each set of drawings must be enclosed a plain, opaque, sealed envelope without any superscription or mark of any kind, same containing the name and address of the competitor. These envelopes shall be opened by the Professional Adviser after the final selection has been made, and in the presence of the Jury.

Delivery of the Drawings (Mandatory): The drawings submitted in this competition shall be securely wrapped, addressed to the Professional Adviser at 430 No. Michigan Avenue, Chicago, Illinois, in plain lettering and without any other lettering thereon, and delivered at this address not later than March 1, 1931.

The Problem: In order that the greatest possible latitude may be given to the competitors and the maximum of real public service attained, the example chosen as a basis for the designs is what may be called a typical elevated steel tank on a supporting steel structure, to serve a small city or suburban community. The physical requirements shall be as follows (Mandatory):

1. The tank shall contain 200,000 gallons, or approximately 26,700 cu. ft.
2. The top of the tank shall be not more than 110 ft. above the ground level and the low water line, or bottom of the tank shall be not less than 85 ft. above the ground level.
3. The water connection or standpipe from the tank to the ground shall be at least 5 ft. in diameter, which is the size necessary to prevent freezing.
4. All portions of the entire tank and structure must be built entirely of structural steel, but in so doing it must not contain metal work nor sheet metal, the nature of which may be perishable or short lived, either as a result of its design or the frailty of its mass.

In judging the relative merit of the designs, the Jury will be governed by the apparent permanency and commercial practicability of the structure, as well as its æsthetic qualities.

Drawings Required (Mandatory): 1. One direct elevation at $\frac{1}{4}$ " scale and two horizontal sections or plans at $\frac{1}{4}$ " scale taken at such points in the structure as the designer may consider best to illustrate same—all of the above on one sheet, 24" x 30". 2. One perspective drawing wherein the object is substantially the same height as the $\frac{1}{4}$ " scale elevation above mentioned—on one sheet, size 24" x 30".

The material of the two sheets shall be uniform of suitable cardboard, or on thinner material mounted upon cardboard.

Sheet 1 shall be done in ink and may be colored or washed at the option of the competitor. Sheet 2 shall be done in ink or pencil and water-colored, and may contain such background of landscape as the competitor may see fit to employ.

ADDRESSES WANTED

ANYONE KNOWING the correct addresses of the following will confer a favor by sending them to this office, THE PENCIL POINTS PRESS, Inc., 419 Fourth Ave., New York.

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NEBRASKA: *Lincoln*; Ben Hemphill, Robert B. Mullins, Earl Scott.

NEW JERSEY: *Newark*; Ray J. Arbour.

NEW YORK: *Brooklyn*; Wm. Caisse, Jack Glicksman, G. Lemke. *Hastings-on-Hudson*; Denis F. Dodd. *Ithaca*; Philip Kielawa. *New York City*; Henry J. Abrams, David G. Aronberg, Lewis O. Burkhardt, Martin Charles, David J. Cohan, J. J. Connors, Fermin de Goicoechea, R. Gari, Vernon H. Huges, John H. Humpstone, G. V. Russell. *Rochester*; James T. Warthen. *Syracuse*; Wm. G. McGrath, Wm. Tobin. *Woodside*; John Moore.

OHIO: *Akron*; Leland C. Mielke, B. R. Parker, LeRoy S. Stanley. *Columbus*; J. H. Jacobson, Herbert C. Meloy, J. Fogler Schaffner.

OKLAHOMA: *Norman*; C. R. Barker, Dale Hanshaw. *Stillwater*; Alfred C. Wingold.

OREGON: *Corvallis*; Melvin Haneberg, Jack Reading.

PENNSYLVANIA: *Philadelphia*; Wm. T. Ahern, Frank E. Dean, Asa Dickinson, James D. Foley, Irwin Glase, H. A. Harris, Abraham Robbins Hyman, Paul E. Jansson, Walter E. McKelvey, Chas. H. Marsh, Jr., T. T. Russell, Herbert Steiglitz, Donald E. Waite. *Pittsburgh*; Samuel Bond, F. C. Lang, Jr.

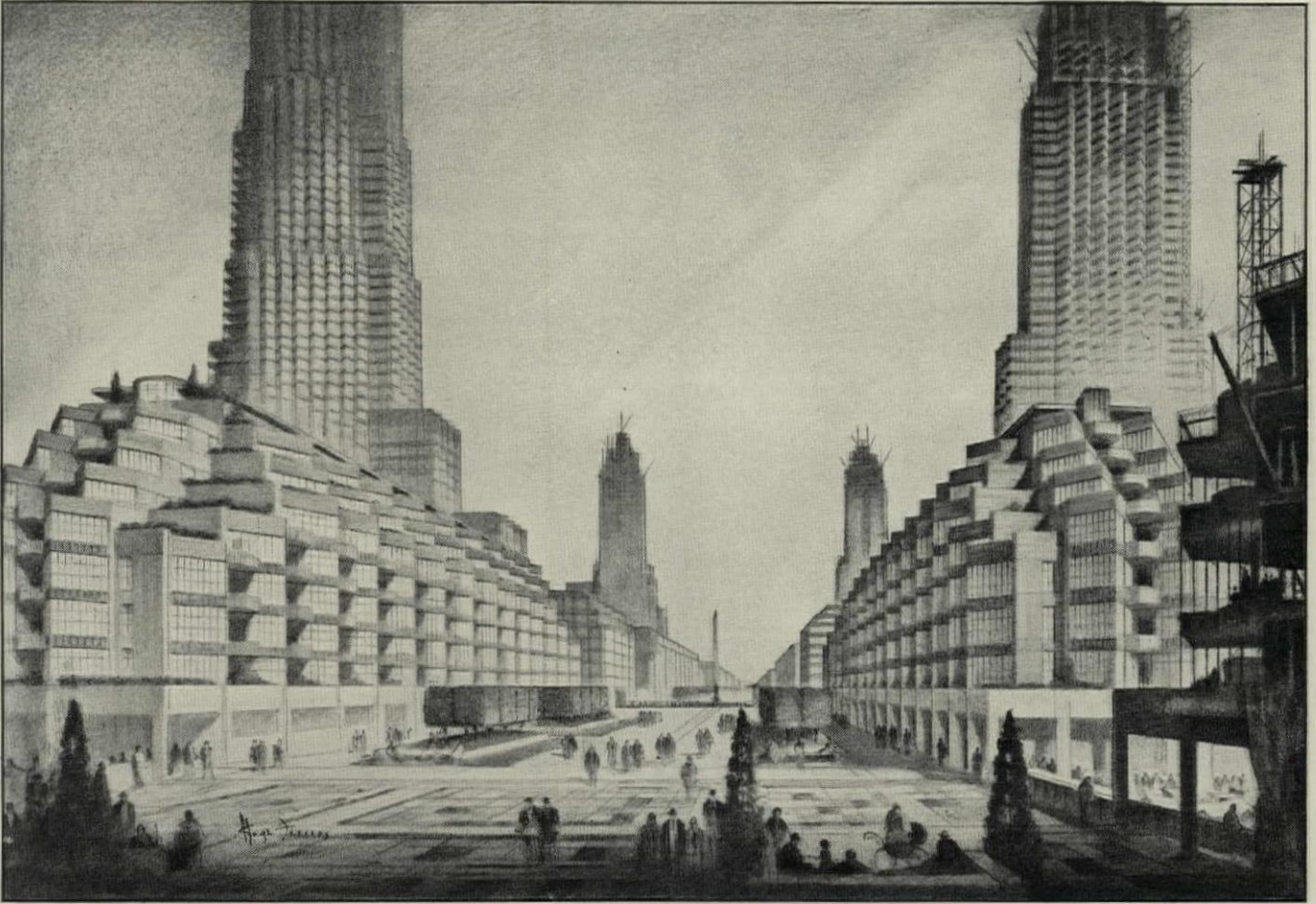
TEXAS: *Austin*; Worth F. Cottingham, Carl W. Van Wormer. *College Station*; J. W. Hunt, T. S. Roots, J. T. Thomson, R. O. Travis. *Fort Worth*; V. R. Burks.

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WASHINGTON: *Seattle*; Richard L. Pinnell.

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PUBLICATIONS OF INTEREST TO THE SPECIFICATION WRITER

Publications mentioned here will be sent free unless otherwise noted, upon request, to readers of PENCIL POINTS by the firm issuing them. When writing for these items please mention PENCIL POINTS.

Murray Radiators.—A.I.A. File No. 30-C-4. New catalog for architects and engineers gives full descriptive and engineering data on this heating unit of the complete convection type. Specifications, detail drawings, roughing-in dimensions, tables of ratings, illustrations, etc. 42 pp. Standard filing size. Murray Radiator Corporation, Division of American Radiator and Standard Sanitary Corp., 37 W. 39th St., New York, N. Y.

Bi-Flax—An Insulated Metal Lath.—A.I.A. File No. 37-b-1. New folder with descriptive data, standard specifications No. 20-a and details covering the application of this new type of insulated metal lath for frame and masonry walls, partitions, and ceiling. $8\frac{1}{2} \times 11$. Flax-li-num Insulating Co., St. Paul, Minn.

Guth-Fans and Fan Fixtures.—A.I.A. File No. 31-f-23. Catalog No. 2, just issued, gives complete detailed information concerning this type of combined lighting and air moving equipment suitable for commercial, industrial and residential uses. Numerous standard designs are illustrated. 26 pp. The Edwin F. Guth Co., Jefferson and Washington Aves., St. Louis, Mo.

Fenestra "Fencraft" Casements.—Attractive brochure on the subject of steel casement windows especially adapted for distinctive homes. Specifications, construction details, illustrations of various styles of window treatments, hardware, etc. 24 pp. Standard filing size. Detroit Steel Products Co., 2250 East Grand Boulevard, Detroit, Mich.

Bryant Wiring Devices.—Catalog No. 30 just off the press. Looseleaf document gives complete information concerning the several thousand catalog numbers listed therein. Illustrations, wiring diagrams, tables, price lists, etc. Indexed. 146 pp. Standard filing size. The Bryant Electric Co., 1421 State St., Bridgeport, Conn.

The Cryer Radiator Control Valve.—A.I.A. File No. 30-C-2. New publication describing the construction and operation of the Cryer radiator control valve for reproducing hot water effects in steam heating systems. Specifications, tests, tables of weights, etc. 12 pp. $8\frac{1}{2} \times 11$. D. G. C. Trap and Valve Co., Inc., 1 East 43rd Street, New York, N. Y.

Mesker Industrial Windows.—A.I.A. File No. 12-e-1. Valuable new reference document for architects covering this full line of Cruciform pivoted, projected and labeled heavy duty sash, continuous monitor sash and mechanical operators. General information, specifications, construction and installation details, hardware, standard sizes, capacities, roof designs, etc. 48 pp. Standard filing size. Mesker Bros. Iron Co., 424 S. Seventh Street, St. Louis, Mo.

Electro-Kabinets and Welco Medicine Cabinets.—Illustrated folder describing these types of cabinets for the modern bathroom. Welded Products Corp., 17th and Cleveland Aves., Kansas City, Mo.

International Concealed Radiators.—A.I.A. File No. 30-c-4. Catalog No. 30. Attractive new publication describing and illustrating International concealed radiators and enclosures. Complete data for architects and engineers including specifications, installation details, tables of capacities, roughing-in dimensions, etc. 18 pp. $8\frac{1}{2} \times 11$. International Radiator Corp., Port Chester, N. Y.

Shelby Checking Floor Hinges.—A.I.A. File No. 27-b-4. Catalog No. 28 covers this line of double and single acting checking floor hinges for light interior, exterior and heavy interior doors. Detail drawings, directions for installing. 24 pp. Standard filing size. The Shelby Spring Hinge Co., Shelby, Ohio.

Richmond Boilers.—A.I.A. File No. 30-c-1. New publication, No. 104, for architects and engineers covering this line of boilers for steam and hot water heating. Tables of ratings and dimensions, and other useful data on the subject. 24 pp. Richmond Radiator Co., Inc., 1480 Broadway, New York, N. Y.

Published by the same firm, "Richmond Tube and Wall Radiators." A.I.A. File No. 30-c-4. Publication No. 504 presents complete engineering data on this line of tube and wall radiators for steam and hot water heating also floor-line radiators. Typical installations, rating tables, roughing-in dimensions, etc. 40 pp.

Josam Adjustable Closet Outlet Connection.—Folder presents complete descriptive data covering the Josam adjustable water and gas-tight closet outlet connection. Specifications, installation details, tables of sizes, etc. $8\frac{1}{2} \times 11$. The Josam Manufacturing Co., 4800 Euclid Bldg., Cleveland, Ohio.

North Automatic Telephone System.—A.I.A. File No. 31-i-5. Illustrated publication on the subject of short distance telephoning with a description of equipment comprising the North automatic telephone system for use in business offices, industrial plants, schools, hospitals, apartment buildings, stores and public institutions. Specifications. 20 pp. The North Electric Manufacturing Co., Galion, Ohio.

How to Make Good Waterproofed Concrete.—A.I.A. File No. 4. New publication presents much useful information for architects and engineers on the subject of waterproofing concrete and mortar with special reference to Medusa gray portland cement waterproofed. Data and specifications cover many specific types of construction, including concrete and masonry below and above grade, swimming pools, etc. Report of tests, illustrations. Indexed. 28 pp. Standard filing size. Medusa Portland Cement Co., 1002 Engineers Bldg., Cleveland, O.

Specifications for Brickwork.—A.I.A. File No. 5. Architects' filing folder with specifications for brickwork and other essential information. Useful reference document for architects and specification writers. 10 pp. The Common Brick Manufacturers Assn., 2121 Guarantee Title Bldg., Cleveland, Ohio.

Curing and Protecting Concrete Floors with Sisalkraft.—A.I.A. File No. 4-c-4. Illustrated bulletin describing the use of this reinforced waterproof paper for curing and protecting concrete floors. $8\frac{1}{2} \times 11$. The Sisalkraft Co., 205 W. Wacker Drive, Chicago, Ill.

Goodyear Rubber Flooring Specifications.—A.I.A. File No. 23-c. Portfolio with series of sheets containing specifications and other practical data for the installation of Goodyear rubber floors, together with suggestions for color, pattern and design for numerous types of buildings. Color plates, detail drawings, illustrations. Standard filing size. The Goodyear Tire and Rubber Co., Inc., Akron, O.

Published by the same firm, "Homes with Beautiful Floors." Handsome new book printed in full colors furnishes many useful ideas on home decoration in general with particular reference to Goodyear rubber flooring. Homes of different styles of architecture are illustrated together with the types of rooms which will be found in these homes. 32 pp.

How to Specify "Permatite."—A.I.A. File No. 25-b-11. Illustrated folder with specifications and directions for applying this kind of floor sealer and finish. $8\frac{1}{2} \times 11$. The American Crayon Co., 1706 Hayes Ave., Sandusky, Ohio.

Modern Banking Equipment.—A valuable reference document for architects and draftsmen containing specifications and a collection of 18 architectural plates showing elevations and details of modern banking equipment and representing the best types of construction. Standard filing size. Jamestown Metal Equipment Co., Inc., 205 East 42nd St., New York, N. Y.

Report of Tests on Sound-Proofing of Partitions and Floors.—A.I.A. File No. 37-d. Laboratory bulletin No. 5 presents report on tests made by Prof. William R. Borss of the Massachusetts Institute of Technology for sound transmission through various types of wall and floor construction using Cabot's triple-ply quilt as an interlining. 20 pp. $8\frac{1}{2} \times 11$. Samuel Cabot, Inc., 141 Milk St., Boston, Mass.

School Ventilating Practice—Yesterday, Today and Tomorrow.—An interesting treatise for architects and engineers dealing with the ventilation of school classrooms and similar spaces where the problem of proper air conditioning arises solely through occupancy. Included are suggestions for revised codes governing the heating and ventilation of school buildings. Accompanying folder describes and illustrates the operation of a new ventilating system for such buildings. 20 pp. Standard filing size. The Herman Nelson Corporation, Moline, Ill.

Carey Built-Up Roofing and Waterproofing Specification.—A very practical reference book for architects and specification writers containing a complete set of asbestos, Feltex and combination built-up roofing specifications for application over wood, concrete, gypsum and steel decks, and waterproofing specifications for walls, floor, bridges, etc. Also includes application requirements, flashing details and descriptive of materials. Indexed. 250 pp. Standard filing size. The Philip Carey Co., Lockland, Cincinnati, Ohio.

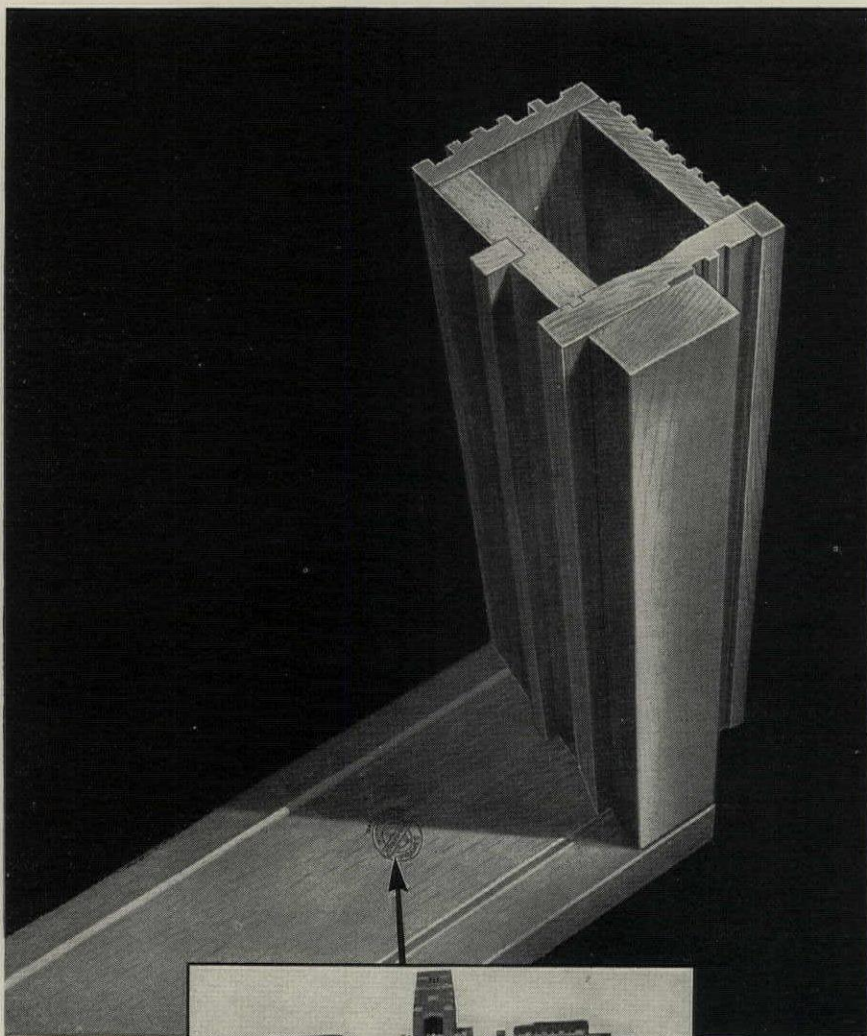
Novoid Corkboard Insulation.—A.I.A. File No. 37-b-4. Bulletin No. 293 describes the manufacture and uses of this insulating material for the walls and roofs of residential, commercial and residential buildings, for cold storage rooms, etc. Specifications. $8\frac{1}{2} \times 11$. Cork Import Corporation, 345 West 40th St., New York, N. Y.

Published by the same firm, "Novoid Cork Covering for Cold Pipes, Coolers and Tanks." A.I.A. File No. 37-b-6. Bulletin No. 292. Descriptive and specification data covering subject indicated. $8\frac{1}{2} \times 11$.

Reading Genuine Puddled Wrought Iron Pipe.—Bulletin No. 1. A new illustrated document giving a complete description of the history, manufacture and adaptabilities of genuine puddled wrought iron pipe. Specifications, representative installations. 36 pp. $8\frac{1}{2} \times 11$. Reading Iron Co., Reading, Pa.

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on their specification sheets, a remarkable tribute to this new Andersen Master Frame. Remember also—Andersen's patented noiseless pulleys are used on every frame.

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Position Wanted: Registered architect, twelve years in private practice and as office manager in New York City and the middle west, wishes to make connection with reputable architectural office as office manager or in executive capacity. University graduate and very extensively traveled in Europe and the United States. A.I.A. and past president of one of its Chapters. Broad general experience and thoroughly versed in all phases of architectural practice. Man of culture and social standing. Box No. 900, care of PENCIL POINTS.

Position Wanted: Architect experienced in educational and institutional buildings, with broad knowledge of planning and design, desires to make connection with first class office. Salary of secondary importance. Box No. 901, care of PENCIL POINTS.

Position Wanted: Architectural draftsman, 31 years of age, eight years' experience in New York City. Working drawings and plan checker in particular. Experience covers various types of buildings including theatres and schools. Will take position out of town or city. Familiar with New York City Departments. Box No. 902, care of PENCIL POINTS.

Position Wanted: Architect, 25 years of age. Designer—European training. Can show executed work of his own. Reasonable salary. Box No. 903, care of PENCIL POINTS.

Position Wanted: Young man, 23 years of age, recent graduate of accredited Middle Western University, would like position in small office. Experience limited to summer work. Will go anywhere. Salary liveable. Box No. 904, care of PENCIL POINTS.

Position Wanted: Architectural draftsman, trained at Columbia University, five years' experience on high class residential work, some hotel and school experience. Have had a great deal of experience in working up drawings from sketches showing all necessary details and interiors. Best references. Box No. 905, care of PENCIL POINTS.

Position Wanted: Architectural draftsman desires position in architect's office. Three years' experience in drafting, eight years in building. Box No. 906, care of PENCIL POINTS.

Position Wanted: With architect or builder. Gentleman, age 34, English descent, married, sixteen years' experience in drafting, designing, specification writing and interior decorating. Six years outside supervision on some of the finest homes in America. Capable of handling any work connected with architecture. No reasonable offer refused. Box No. 907, care of PENCIL POINTS.

Position Wanted: Man with practical experience in design, detail specifications, survey and full supervision. Canadian and British experience. Age 33. Single. Desires opportunity to gain experience in American architectural practice for reasonable period. Box No. 908, care of PENCIL POINTS.

Position Wanted: In builder's or general contractor's office, or field. Young man, 22 years old. Was in general contracting business for self. Salary secondary to a position assuring advancement. Box No. 909, care of PENCIL POINTS.

Position Wanted: Architectural draftsman, neat, honest and reliable worker. Graduate. Can letter well, make working drawings, isometric drawings, construction details, plans and elevations. Box No. 910, care of PENCIL POINTS.

Position Wanted: Architectural draftsman, six years' experience on apartment houses, hotels, residences and commercial buildings, desires position with architectural firm. Thoroughly capable of handling jobs from preliminary sketches to finished working drawings. Box No. 911, care of PENCIL POINTS.

Position Wanted: Young man, 22, desires position in architect's office as a beginner. Has had one year of training at New York University and is still continuing the course at night. Box No. 912, care of PENCIL POINTS.

Position Wanted: Junior architectural draftsman, four years' experience in commercial and residential work, desires place in small Texas office doing good work. Can prepare working drawings from sketches on all average work. Examples of work finished. Salary \$40.00 per week. H. Gilliam Johnson, 1007 Staples Street, Corpus Christi, Texas.

Free Lance Work Wanted: Designer, refined modern specialist. All special interior work. Sketches, renderings or completed jobs. Eugene Sartaoe, 430 West 118th Street, New York, N. Y.

Position Wanted: Thoroughly experienced architectural designer. Competent on preliminary studies and carry through working drawings to completion. First class credentials. Desire Southern location. C. Bartlett White, Lenoir City, Tenn.

Position Wanted: Registered architect in Georgia and Florida, ten years' very varied experience in general building business. Three years private practice. Capable of interviewing clients, studies, preparing sketches or renderings, working drawings, specifications, contracts, details and supervision. Would like trial position at fair salary with prospect of permanent position or partner in firm if all parties satisfied. Prefer southern states, but not essential. Age 30, with family. Christian. College graduate. Laurence S. Miller, Brunswick, Georgia.

Position Wanted: Junior draftsman, two years' experience, 4 years' technical training, Columbia student, desires position in architect's or builder's office. Ambitious and competent. Arthur N. Jacobs, 3543 89th Street, Jackson Heights, L. I., N. Y.

Position Wanted: Young man, 27, American School and Pratt Institute graduate. A-1 draftsman and letterer. Wishes position in architect's or engineer's office. Samples of work furnished. Moderate salary to start. Will go anywhere. F. S. Martinez, 1022 New York Avenue, Brooklyn, N. Y.

Position Wanted: Architectural designer and draftsman, experienced on various types of buildings, specialist in Colonial and Spanish styles, wishes position in architect's office in U. S. A. Oscar R. de Beltran, 22 A Apodaca St., Havana, Cuba.

Position Wanted: Draftsman, 12 years' experience, married, age 29, desires position as draftsman with architect. Experience varied, specifications, sketching, rendering, working drawings and details. Also have had three full years outside supervision of construction. Salary \$65.00 per week. John Bell, 215 E. Oak Street, Shenandoah, Pa.

Wood Carving Wanted: Would like to get in touch with people or firms who wish wood carving done for instructions on architectural modeling and ornamental drawing. E. H. Thieme, 5225 Loughborough Ave., St. Louis, Mo.

Salesman Wanted: A well-known New York artist requires the services of a salesman to call on churches, hotels and theatres. Commission only. Inquire after six P. M., at 200 West 57th Street, Apartment 5-A, New York, N. Y.

Wanted: Draftsman would like to get in touch with expert topographical draftsman to take lessons from. D. B., Post Office Box 195, Brooklyn, N. Y.

Position Wanted: Stenographer-secretary, thoroughly experienced, familiar with architectural office routine. Age 25. Salary \$35.00 per week. Box No. 913, care of PENCIL POINTS.

Position Wanted: Registered architect, University graduate, 15 years' experience as designer in large offices, desires position as designer. Box No. 914, care of PENCIL POINTS.

Position Wanted: Draftsman, architectural, 23 years experience and college training, with offices in Chicago and New York, smallest and largest design, rendering and working drawings. All types of buildings. Can take charge of job or office. Forty-four years of age. Permanent connection desired. Box No. 915, care of PENCIL POINTS.

Position Wanted: Architectural designer and colorist, long and varied experience in best classes of work. Gothic details, quick sketches. Out of town preferred. Box No. 916, care of PENCIL POINTS.

Position Wanted: Architectural draftsman and superintendent of construction with 12 years' practical experience on various types of structures such as commercial, industrial, residential, hospital, etc., desires position Box No. 917, care of PENCIL POINTS.

Position Wanted: Young man, 28, desires to make connection with Airport construction company. Willing to learn and can easily adapt himself to the system in use by concern employing him. Start in any capacity. Wish to specialize. Salary accordingly. Best references. George Sachs, 235 East 196th Street, New York, N. Y.

(Other items on pages 88 and 89, Advertising Section)



● A charming time-worn texture was given the walls of this and other buildings on the place of Michael Gavin, Jericho, L. I., by using cinder blocks of varying size which had been sprayed with water while still soft. These walls called for a roof that also simulated age, so Hopkins and Dentz, the architects, chose IMPERIAL Shingle Tiles. In color and texture they are amazingly faithful reproductions of tiles which have seen centuries of use.

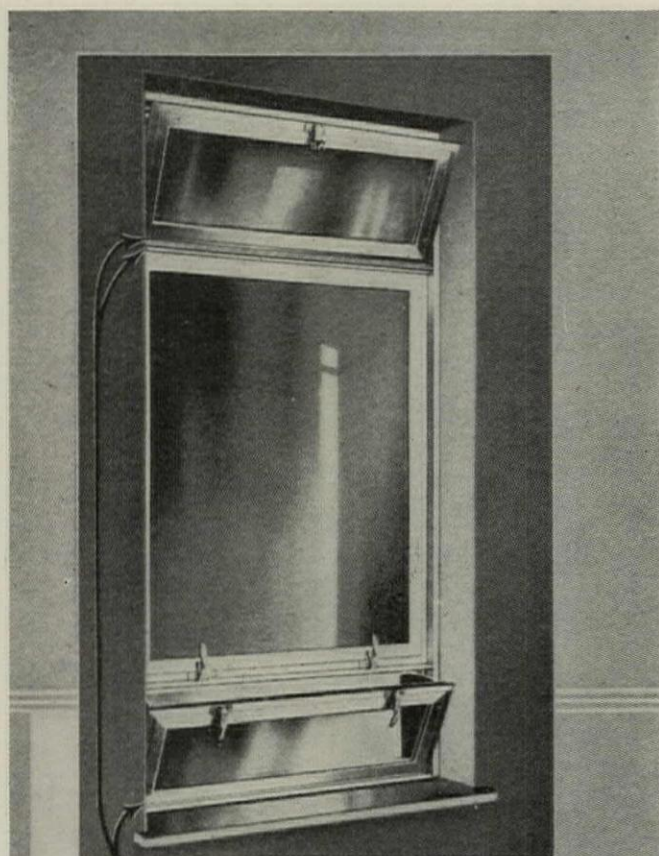
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(Other items on pages 86 and 89, Advertising Section)

Position Wanted: Ambitious young man, 19, desires to learn architecture. Neat letterer and tracer. George F. Niedelman, 1226 Sherman Avenue, New York, N. Y.

Position Wanted: Architect, graduate in architecture from leading eastern university. Registered New York State. Desires position with reputable firm in New York City. Over five years' practical experience as designer, plan-man and detailer. Also has had some supervision experience. An interview is requested. Box No. 918, care of PENCIL POINTS.

Position Wanted: Draftsman with 6 years' experience in architectural iron and bronze, architectural and technical education, desires position preferably with architectural office or allied line. Presently employed. Box No. 919, care of PENCIL POINTS.

Position Wanted: Junior draftsman. John J. Wallace, 41 Lewis Street, Toronto, Ont., Canada.

Architects: We offer a specially obtained list of positions for which you apply direct—as an inexpensive way of keeping in touch with technical opportunities—a National Service. MUTUAL REPORTS, Diehl Building, Mount Clemens, Michigan. (adv.)

Position Wanted: Architectural draftsman on building and allied lines employed in Central States open for position. \$35.00-\$40.00 per week. Samples of work on request. Edward Lechner, 1544 East 23rd Street, Cleveland, Ohio.

Position Wanted: Architect would like position. Nineteen years' architectural experience. Can take complete charge of project alone either in office or in field. Also have had building and architectural engineering experience. Would like permanent position in New York or New Jersey but will consider other sections. Box No. 920, care of PENCIL POINTS.

Position Wanted: By registered architect of New York. Energetic and efficient job manager, can take charge of project from sketches to supervision. Capable designer, specification writer. Seeks position in southwest. Box No. 921, care of PENCIL POINTS.

Position Wanted: Architectural draftsman, 8 years' experience on all types of construction. Capable of carrying job from sketches to full size details. Salary \$65.00 per week. Box No. 922, care of PENCIL POINTS.

Position Wanted: Architectural draftsman, 37 years old, college graduate, 16 years' experience in and around New York City. Ten years as squad captain handling projects from sketches to completion. Specialist in school work—capable, steady, honest, reliable worker, desires position with an architect within the Metropolitan district of New York. Box No. 923, care of PENCIL POINTS.

Position Wanted: Draftsman, 12 years' experience. Knowledge of design and construction. Has been connected with architect and builders. Worked as chief draftsman. Age 38. Box No. 924, care of PENCIL POINTS.

Position Wanted: A graduate of the School of Architecture of the University of Pennsylvania. Also two years of office experience in design, perspective, working drawings and detailing, etc. Location immaterial. Box No. 925, care of PENCIL POINTS.

Position Wanted: Designer and draftsman, University graduate, with 12 years' experience in preliminary sketches, layouts, design, details working drawings and perspectives in color or black and white. Capable of taking charge of architectural work. Box No. 926, care of PENCIL POINTS.

Position Wanted: Pratt graduate. Several years' experience at residence and apartment house work. Excellent references. William H. Leyl, 1616 Norman Street, Brooklyn, New York.

Position Wanted: Young man with four years' experience desires position as architectural draftsman in New York City or State of Connecticut. F. A. Petullo, 78 Washington Ave., New Haven, Conn.

Wanted: Experienced draftsman for making shop drawings and tickets for granite manufacturing plant, one familiar with progressive methods used in modern stone and granite plants. Must be accurate and fast worker. Give experience and references and salary expected in first letter. American Black Granite Company, Ashland, Wisconsin.

A FREE EMPLOYMENT SERVICE FOR READERS OF PENCIL POINTS

(Other items opposite and on page 86, Advertising Section)

Position Wanted: Young man, 21, single, desires position with architect or architectural products firm. Four years' training and three years' practical experience in woodwork-ing line. Some design. Will locate anywhere. Will cor-respond to all replies. W. J. Petersilka, 4716 So. Kolin Ave., Chicago, Ill.

Position Wanted: Junior architectural draftsman, or senior file clerk. Age 17. Leo Clark, 211 Maine Road, Brooklawn, N. J.

Position Wanted: Draftsman and stenographer. Ten years' experience designing houses, apartments, etc., from rough sketch to finished blue prints. Also expert stenog-rapher used to handling specifications, contracts, quantitative analysis, A.I.A. filing. Young woman, college graduate, wishes position environs New York. W. Wigginton, 324 West 107th Street, New York, N. Y.

Position Wanted: Young architectural designer and draftsman, eight years' experience on high class country residences, theatres, hospitals, office buildings, apartments, etc. Experience has involved designing and carrying plans through to completion and superintending, figuring steel and rendering. Location, Boston, Mass. Box No. 927, care of PENCIL POINTS.

Position Wanted: Registered architect and graduate civil engineer, 39 years of age, desires connection with small and growing architect as executive handling clients, contracts, specifications and inspection. Practical experience in con-struction work and in nationally known architects' offices on all types of construction. Request interview to give details. Box No. 928, care of PENCIL POINTS.

Position Wanted: Eight years' experience, good knowl-edge of design, construction and other work connected with architect's office. Age 39. Associate of the R. I. B. A. Present position chief draftsman in moderate sized office. Box No. 929, care of PENCIL POINTS.

Wanted: Young man with architectural training, and knowledge of stained glass, to represent concern publishing a stained glass magazine. Please give full particulars in first letter. Box No. 930, care of PENCIL POINTS.

Wanted: Manufacturers' representative to sell high class quality electric bathroom heaters. Box No. 931, care of PENCIL POINTS.

Position Wanted: Designer-draftsman, thoroughly fa-miliar with all styles and modern architecture. Sketching, designing, detailing, working drawings, perspectives and renderings in all mediums. Box No. 932, care of PENCIL POINTS.

Position Wanted: Architectural draftsman, college gradu-ate, 13 years' experience, drafting, specifications, supervision. Office buildings, banks, apartments (high class and tene-ments), residences. Box No. 933, care of PENCIL POINTS.

Part Time Work Wanted: Experienced architectural draftsman would like part time work. Box No. 934, care of PENCIL POINTS.

Position Wanted: Architectural draftsman 5 years' expe-rience and 4 years' architectural training at N. Y. U. Knowledge of artistic illumination. Efficient water color renderings and pencil sketches. New York City or vicinity. Box No. 935, care of PENCIL POINTS.

Position Wanted: Neat, accurate draftsman, capable of making sketches, working drawings and full size details of first class residences and other buildings, desires connec-tion with New York architect which will enable me to attend New York University at night. Box No. 936, care of PENCIL POINTS.

Position Wanted: Junior draftsman, 3 years' experience with New York architect. Can do all-round work. E. I. Winthrop, 34 Park Place, New York, N. Y.

Position Wanted: Young man, 20 years old, desires posi-tion in architectural drafting office or with contractor. Two years' study of architecture at U. of I. and four summers' experience on construction jobs. Can go anywhere. W. R. Nilson, 3031 So. 10th, Terre Haute, Indiana.

Position Wanted: Draftsman, four years on high class residential work, six years' engineering experience, includ-ing steel detailing. Familiar with business end of game, getting bids, issuing certificates, etc. Should prove valu-able to moderate-sized firm needing all-round man. Age 29. M. D. Heath, 351 Woods Ave., S. W., Roanoke, Va.

STORE FRONTS

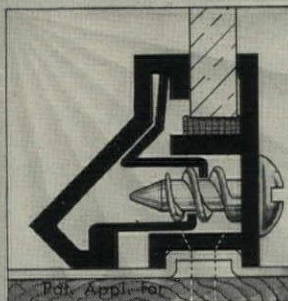


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Architect's own designs are custom-built at our factory by a corps of skilled craftsmen. Every rolled, extruded or cast unit is carefully executed and assembled by this trained staff, assuring the architect a faithful rendering, in metal, of his design. Write for new free book of modern Store Front Installations.

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EXTRUDED
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TO MATCH



SEND FOR DESCRIPTION
AND F. S. DETAILS OF "B"
CONSTRUCTION

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NILES, MICHIGAN, Subsidiary BERKELEY, CALIFORNIA
RUSTLESS METAL STORE FRONTS, WINDOWS and DOORS

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For Safety, Saving and MORE NATURAL LIGHT



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◆ Steelcrete Shops, located in every important center, specialize in the assembly of Steelcrete Partitions, Enclosures and Window Guards. They use our standard Steelcrete framing materials to insure quick, low cost fabrication to your exact specifications. *Construction is standardized—service is nationalized.* Send for your courtesy copy of the new Steelcrete Partition and Window Guard Handbook.

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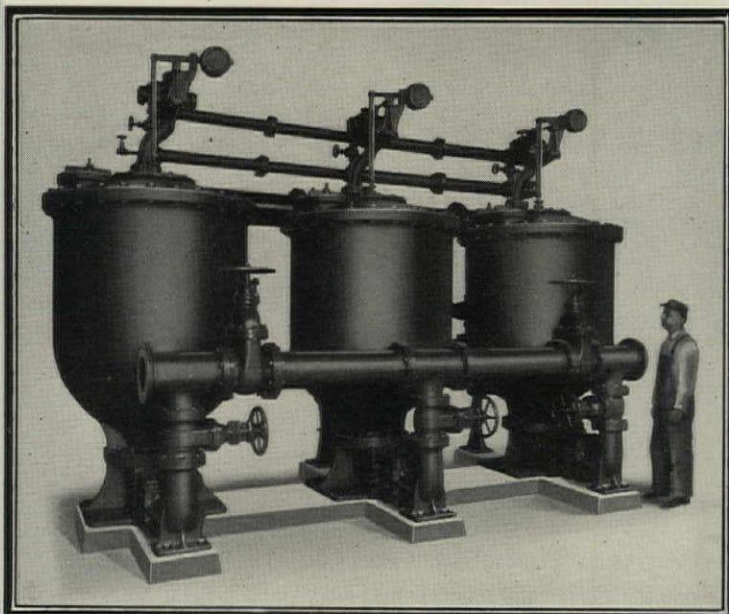
Self-Squaring Corner Assembly. Rigid, tight and mechanically efficient

This corner Assembly shows the rigidity of Frame Bar Construction for windows, panels

Steelcrete Partition Bar makes easier and quicker installation of Partitions



INDUSTRIAL PARTITIONS



Yeomans Pumps and Shone Ejectors, having a combined capacity of over 5,100,000 gallons per day, handle the entire sewage and drainage requirements of Philadelphia's new Broad Street Station. Architects and Engineers: Graham, Anderson, Probst & White. Contractor: Walter W. Muench.



YEOMANS pumps provide future protection

With their thoughts ever on the future, architects, engineers and builders continue to specify Yeomans Pumps as they have for over thirty-two years.

They think of costs—cost of maintenance; cost of depreciation. They select Yeomans Pumps because they know the advantages of better materials, experience and skillful workmanship which make them nuisance-free—trouble-free—dependable, not just today, but tomorrow.

They think of durability which is so important to the owner—the future buyer—and to the tenant.

They think of price, and realize how greatly important it is to select mechanical equipment that parallels other refinements. Better to buy that additional quality that insures dependable performance for that hour of greatest need.

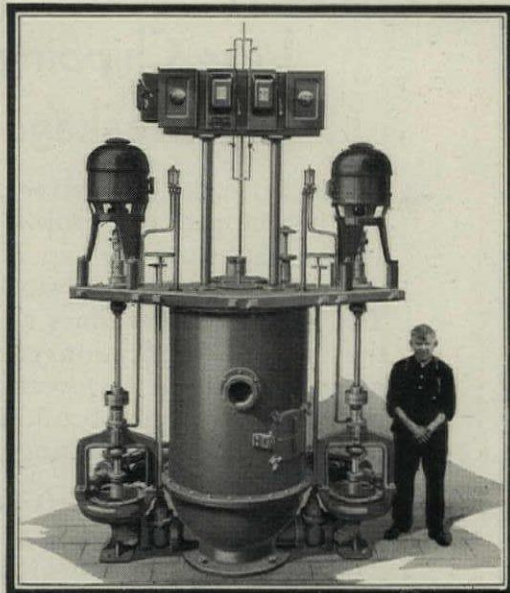
With these thoughts in mind when confronted with a problem of pumping, why not communicate with Yeomans engineers for engineering service?

Write us for the name of your nearest Yeomans representative, and for literature covering equipment in which you are interested.

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Representatives in Principal Cities

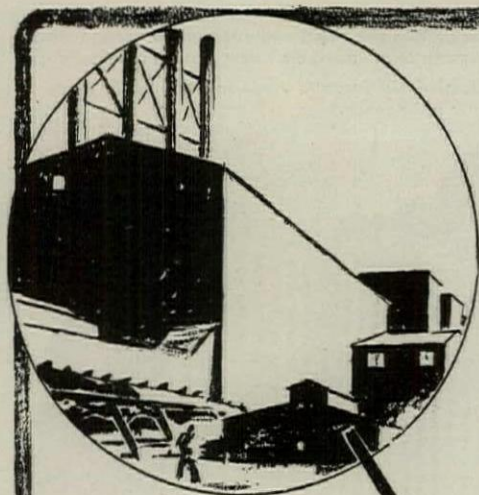


In 1903, Yeomans Form "A" Ejectors were installed in the La Salle Street Station, Chicago. After 27 years of strenuous service, these pumps are still operating perfectly, showing no signs of wear.

Yeomans Pumps

Sewage and Drainage





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You need never be caught short of PARTITION TILE when you use GYPSTEEL

FREIGHT delays and the uncertainties of railway service don't mean a thing to you when you use Gypsteel Gypsum Partition Tile. Our fast trucks make daily deliveries from our plant at Linden, N. J. or warehouse in Newark, anywhere within the New York Metropolitan Area.

Your contractor can phone us in the morning and he'll get Gypsteel tile that afternoon or early the next day at the very latest.

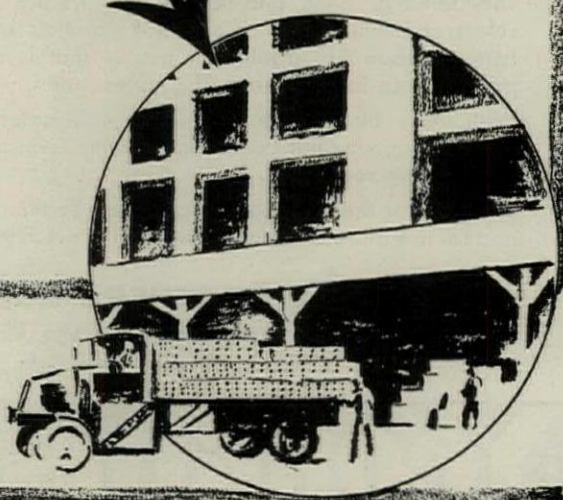
YOU CAN DEPEND ON IT!

Less Chipping and Breakage

AND when the tile arrives it will not be chipped and broken as much as you have come to expect of partition tile, because the Gypsteel Partition Tile is almost *three* times as strong as the standard specifications call for. This great strength of Gypsteel tile minimizes chipping and breaking, saving time and expense in setting up.

Our rapid delivery service and the great strength of Gypsteel Partition Tile are two of the numerous reasons why we are supplying so much of the partition tile being used today in the Metropolitan New York Area.

THAT AFTERNOON



STRUCTURAL GYPSUM CORPORATION

General Offices, LINDEN, N. J.

Linden 3700

"O.K." IN EVERY CASE

"STEELTEX was used for stucco and plaster base for the Stroh, Scherer and Holbrook Houses. The photos show the results . . . O. K. in every case."

(signed) Duncanhunter
Architect, New York



Interior view above shows living room of House of H. A. G. Scherer, Pine Grove Avenue, Summit, New Jersey. Exterior view (at left) of House of Herbert J. Stroh, Colt Road, Summit, New Jersey. Duncanhunter, Architect.



Architects, the country over, know from actual experience the true worth of Ribbed STEELTEX lath for interior plaster and STEELTEX for exterior stucco. They specify STEELTEX, having the assurance that plaster walls and ceilings will retain their strength, beauty and appearance unmarred for years to come. That, in itself, is worth a great deal to every architect who safeguards his reputation and gives to his clients a service in accordance with sound judgment.

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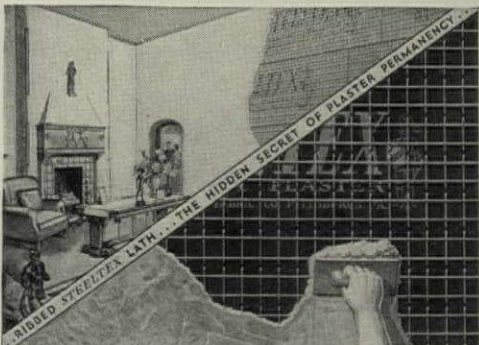
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Deadens Sound*

STEELTEX

FOR INTERIOR PLASTER

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*Prevents Cracks
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DEPT. H-51

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STEELTEX for brick or stone veneer ☐ STEELTEX for floors and roofs ☐
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NATIONAL REINFORCING (welded wire fabric) for buildings ☐
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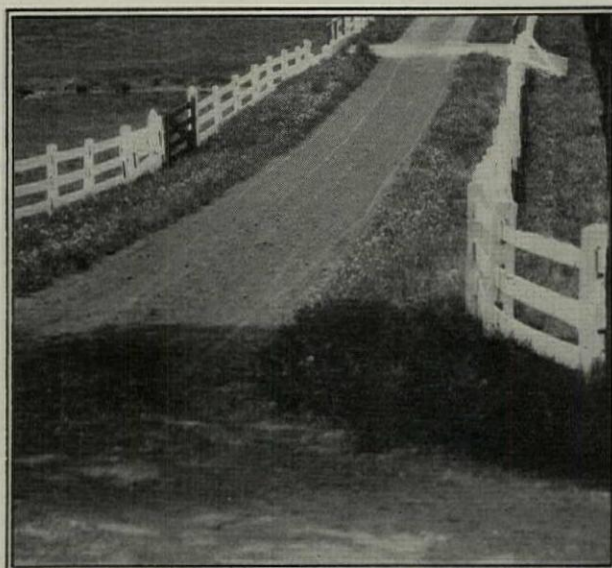
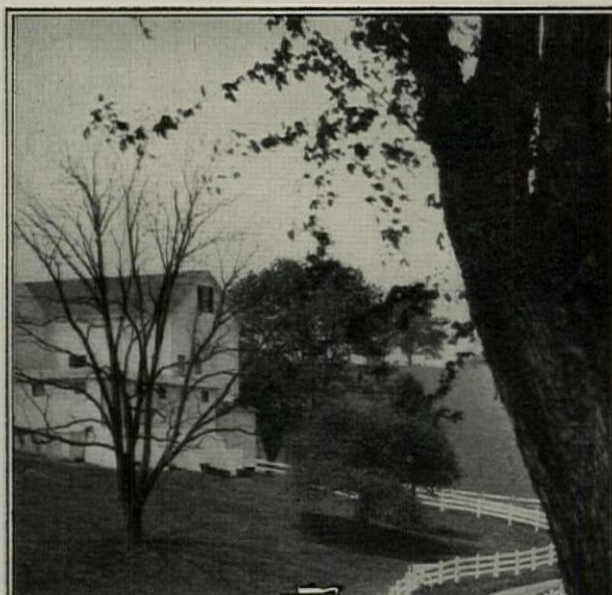
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PITTSBURGH, PA.



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while. And samples are readily available at the warehouses of the Pittsburgh Plate Glass Company. There's one conveniently located in every leading city.

Write for the new Pennvernon booklet, explaining and picturing the new process that makes flatter, brighter, better glass—at *no higher cost*. Address Pittsburgh Plate Glass Company, Grant Building, Pittsburgh, Pa.

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WINDOW GLASS

FIRST NATIONAL
BANK BUILDING
Detroit, Mich.



ALBERT KAHN, Inc.
Architect

OTTO MISCH CO.
Contractor

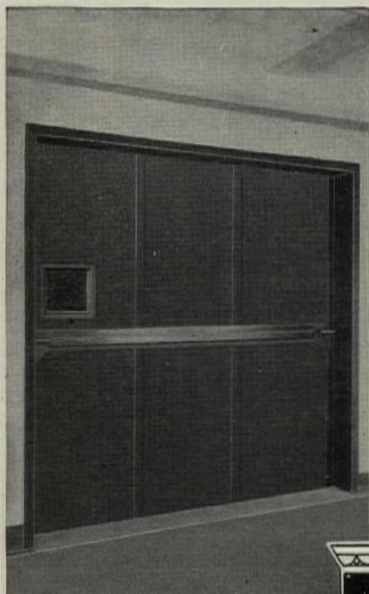
FOUR SHAFTS OF FREIGHT ELEVATOR DOORS

IN CONSTANT USE

THE NEW First National Bank Building of Detroit represents the latest development in the design of a combined bank-and-office building. Every item of its equipment was selected with a view to permanence, design, workmanship, and the ability to withstand abuse.

The four freight elevator shafts in this 30-story building are equipped with "St. Louis Freight Elevator Doors" to accord with the high class equipment throughout the structure. Because of the constant service required, care was taken to obtain here, as elsewhere, the most rugged construction available.

These, like all St. Louis Freight Elevator Doors,



are equipped with automatic Sill-Leveling Devices which maintain level trucking surfaces between elevator and floor under all conditions. This equipment is in use in many notable commercial structures in different parts of the country.

Literature describing it in detail is at the services of architects and others interested in construction work. Special engineering coöperation is also freely at the service of the architectural profession.



ST. LOUIS FIRE DOOR CO., 1138 S. 6th St., St. Louis, Mo.

Manufacturers of all kinds of Fire-Proof Doors and Door Control Systems





Westinghouse Elevators . . . Large savings are afforded through the higher efficiency of Westinghouse Elevators, especially so, in such commercial structures as the Pennsylvania Railroad Company Freight Station and Warehouse Building.

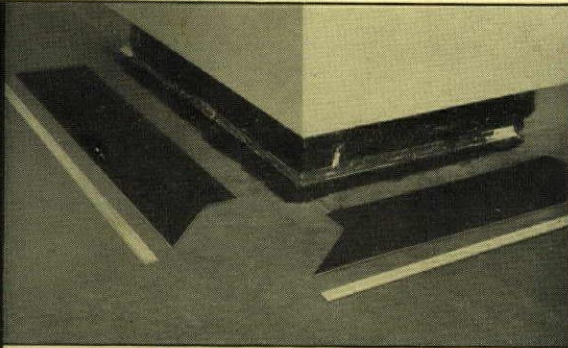
"Westinghouse Elevators are the logical highways of modern architecture"

Westinghouse Electric Elevator Company



THINGS

every linoleum contractor doesn't know



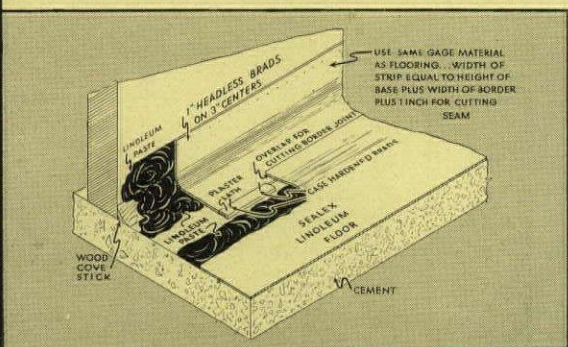
Materials assembled for laying one-piece cove-base and border in an "outside" corner. The cove-stick has been installed and Sealex Linoleum Paste has been applied on the wall.



Here we see the mechanic fixing the cove-base and border in place by means of headless brads, placed on 3" centers, 1/4" below top of base.



Picture shows mechanic completing the job, spreading linoleum paste under edge of the border and the patterned linoleum used for the floor.



The diagram above shows the materials required for a one-piece cove-base and border, and the mechanical details of assembly. The cove-stick is merely a piece of soft wood, triangular in shape, with 1 1/2" legs rabbetted to a concave face. This method of construction gives a neat, sanitary effect at comparatively low cost. It was developed entirely within the Bonded Floors organization and is available through Authorized Contractors of Bonded Floors.

THE pictures on this page show three steps in the installation of a *one-piece border and sanitary cove-base* in Sealex Linoleum. Constructing this as one unit is one of those fine points of craftsmanship that mark the difference between a good floor and a fine floor.

This one-piece border and cove-base was developed by the engineers of the Bonded Floors organization. The men best qualified to install it are the Authorized Contractors of Bonded Floors, located in principal cities throughout the country.

Everyone admits that the customary factory-made cove-base furnishes a satisfactory job. The one-piece base, border and cove, however, possesses certain definite points of superiority. It lends itself to a much greater variety of decorative effects. It makes possible a border of any width, in any weight of material and in any color—as opposed to the strictly limited assortment of effects in the factory-made cove.

Furthermore, this Bonded Floors cove-and-border is structurally sounder than the old-style type. The number of cove cross-joints is reduced. It is less expensive to construct—and can readily be installed

(See next page)

on the job by a skilled mechanic. We recommend it for commercial and business installations and particularly for schools and hospitals. Not to mention kitchens in private homes.

We have described this Bonded Floors improvement in some detail because we consider it a typical example of the progressive flooring service offered by Authorized Contractors of Bonded Floors. The ready-cut borders illustrated on the right are another service feature available through Bonded Floors contractors. These strips can be combined into a great variety of attractive border effects—without the expense and wastage of material that is inevitable when the border is cut out by hand on the job.

Still another field in which our Authorized Contractors have a distinct edge on their competitors is in designing and laying custom-made floors. Our designers have had conspicuous success in creating floors for all types of buildings. The most conservative period design and the most radical modernistic effect can be carried out with equal ease in Bonded Floors.

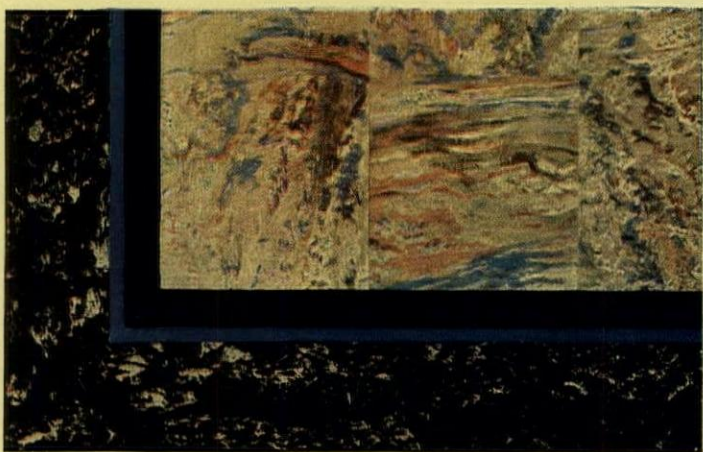
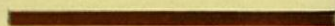
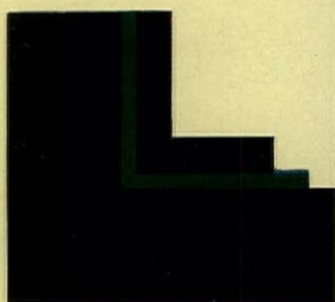
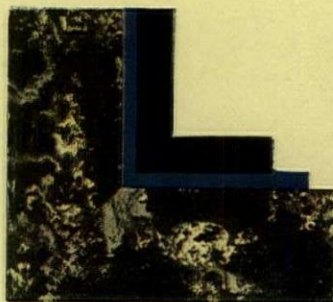
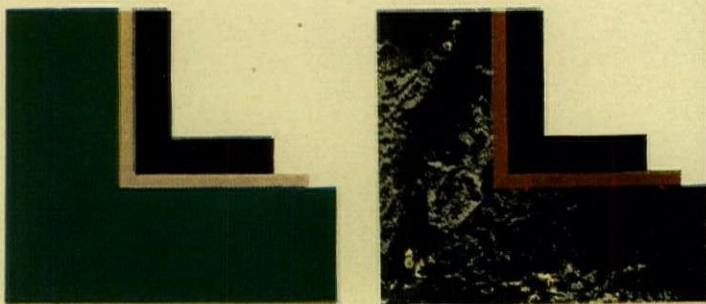
May we send you the names of Authorized Contractors near you?

CONGOLEUM-NAIRN INC. : . . General Office: KEARNY, N. J.

BONDED FLOORS



Bonded Floors are floors of Sealex Linoleum and Sealex Treadlite Tile, backed by a Guaranty Bond issued by the U. S. Fidelity and Guaranty Company. Authorized Contractors of Bonded Floors are located in principal cities.



The decorative possibilities of linoleum floors may be greatly enhanced by the use of either ready-cut or custom-cut borders. Directly above, for example, is our "Leonardo" pattern (No. 3225) used with a ready-cut border assembly of black marbled, blue and plain black strips. Other border strips and border assembly suggestions may also be seen above.

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is favored for *Natural Interiors*

ARCHITECTS and interior decorators find that Tidewater Red Cypress (Coast Type) meets *every* requirement of the smart, modern interior.

Its exquisitely patterned grain combines simplicity with distinction. Its mellow, glowing surface yields a charm found in no other material. And yet, Tidewater Red Cypress is comparatively inexpensive.

And versatile—this Wood Eternal can be stained or varnished, painted

or waxed, charred or left in its natural state, always with beautiful effects that never go stale.

No wonder, then, more of it is used every year for panels, doors, beams and trim. No wonder more home-owners every year are enthusiastic in their approval of interiors *whenever* and *however* Tidewater Red Cypress is employed.

A Book of Interiors—sent free

Many noted architects have contributed

photographs of their interesting work for this booklet, which well illustrates the beauty and unusual versatility of Tidewater Red Cypress.

For your complimentary copy, address the Southern Cypress Manufacturers' Association, Jacksonville, Florida. If your dealer is not stocked with Tidewater Red Cypress, he can get it for you quickly—or you can write direct to any of the Association Mills listed at the bottom of this page.



Quaker Photo Service

The architect, Mr. Harry Sternfeld of Philadelphia, Pa. employed Tidewater Red Cypress in creating this lovely interior in the home of Mr. W. N. Morice, Flowertown, Pa.

TIDEWATER RED CYPRESS

(COAST TYPE)

THE WOOD ETERNAL

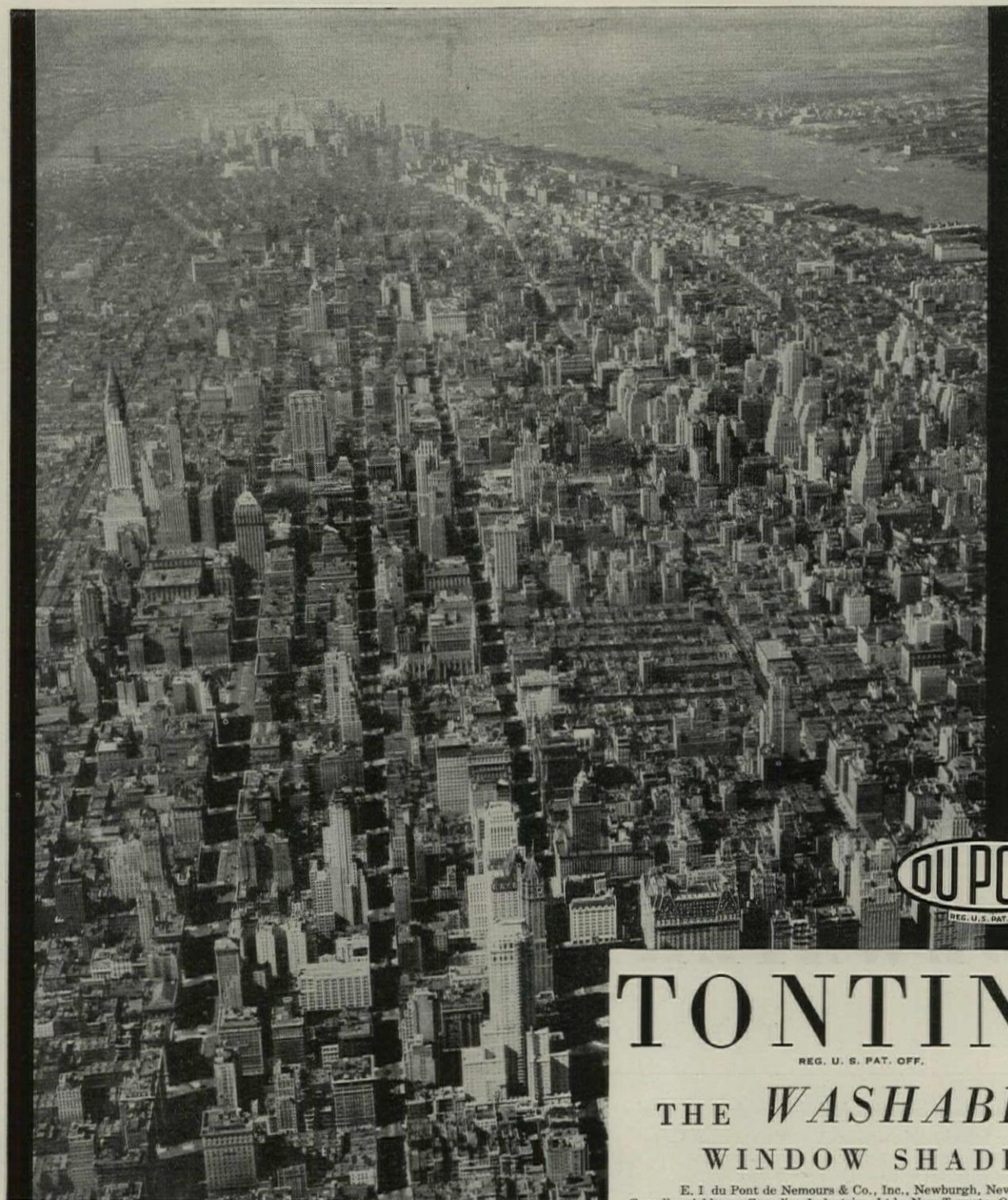
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TONTINE WASHABLE WINDOW SHADES



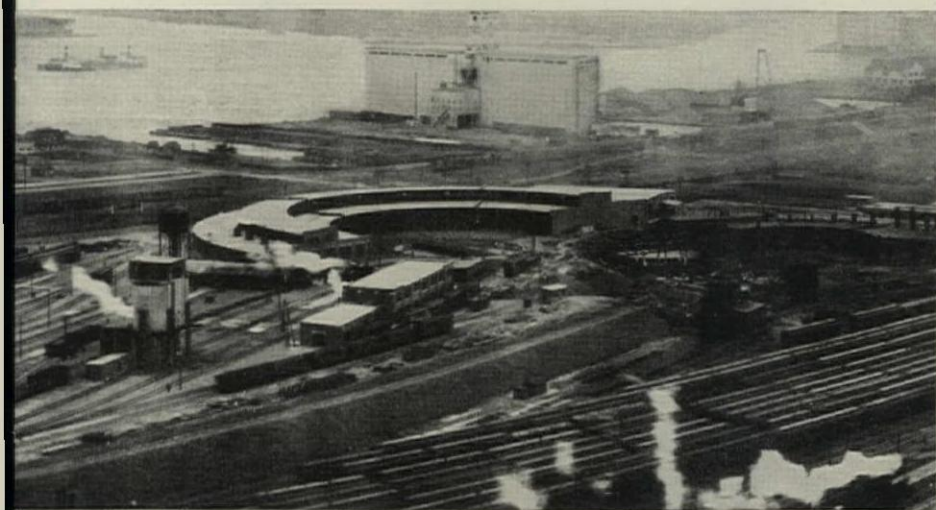
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Canadian Address: Canadian Industries, Ltd., New Toronto, Ontario, Canada

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New High Level Terminal, Canadian Pacific R. R., Toronto. Built on MacArthur Standard Compressed Concrete Piles. This is the third job we have completed for this railroad.

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**We drive every type of pile therefore our
recommendations are unbiased**

REPPEAT orders from every important field prove that we are keeping faith with engineers, architects, and owners. Our ability to give satisfaction on any kind of a pile job is the result of our being *equipt to drive any type of pile*. Thus when we recommend a specific type of pile for your job, it is an unbiased professional recommendation. Also, during the progress of any pile job, if tricky soil conditions make it necessary to change from one type of pile to another in any particular spot, this can be done without delay as *our standard rig is designed to drive every type of pile*.

LET US QUOTE ON YOUR REQUIREMENTS

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CONCRETE PILE CORPORATION

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BOSTON DETROIT PHILADELPHIA CLEVELAND
CANADIAN MacARTHUR CONCRETE PILE CO., Ltd., MONTREAL

*Check your requirements
against*

MacArthur qualifications:

Product	proven
Experience	20 years
Equipment	latest
Resources	unlimited
Personnel	capable
Clientele	illustrious
Responsibility	demonstrated
Engineering	sound
Performance	100%
Speed	record-breaking

Giles Drilling Corporation (an affiliated company) will welcome the opportunity to submit estimates on core borings or soundings of any description.



EXAMINE A BAKELITE MOLDED DOOR KNOB AND FORM YOUR OWN OPINION

You cannot appreciate the unusual beauty and quality of Bakelite Molded door knobs, until you have actually seen and handled them. The colors are pleasing to the eye, and the smooth surface to the touch. You will immediately think of many places where they may be used appropriately. Fine appearance is but one of the advantages of Bakelite Molded door knobs. They are strong and hard, cannot be dented, and withstand long, se-

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The registered Trade Mark and Symbol shown may be used only on products made from materials manufactured by Bakelite Corporation. Under the cop-

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THE MATERIAL OF A THOUSAND USES

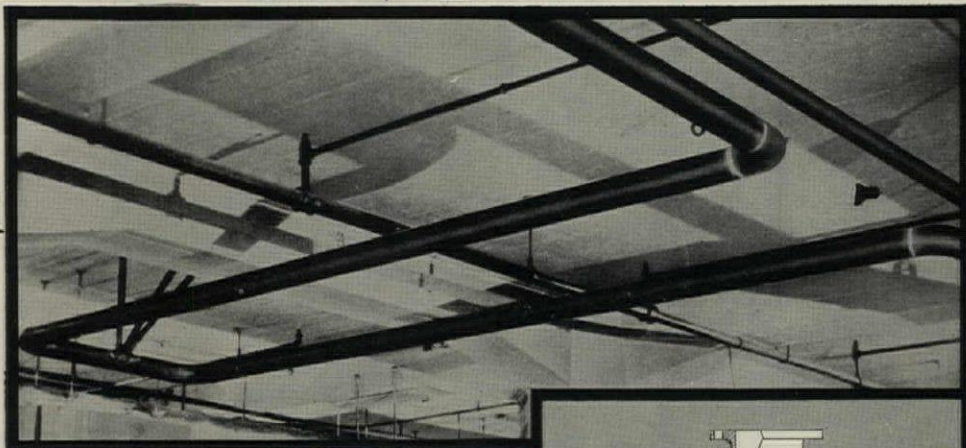
OXWELDING

ASSURES
SUPERIOR
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SUCCESSFUL and efficient operation of any piping system is dependent to a marked degree upon satisfactory performance of the pipe joints. For this reason the pipe joint has taken its place as a most important part of design.

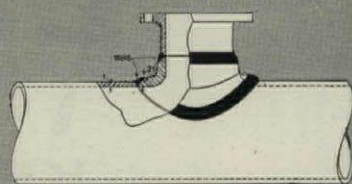
The oxwelded joint is permanently tight, strong and compact. It reduces friction, leakage, radiating losses and maintenance and thus assures increased serviceability and operating efficiency. In addition to these inherent advantages of the oxwelded joint, lines constructed by oxwelding can be crowded into small space where necessary, and transmission pipes can be closely nested in tunnels.

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Explanation of Design:

In piping systems under very high pressures, transverse stresses resulting from the fluid pressure may be highly concentrated at the intersections of tee or branch connections. To strengthen the fitting against such stress concentrations, a special forged saddle of proper form and shape can be welded into the header, and the nozzle or branch pipe welded to it as illustrated.

Uses:

Saddle Nozzle Fittings are very desirable for extremely high pressure services when the pressure stress in the header is 7,000 lb. per sq. in. or higher and the openings are 8 in. in diameter or larger.

Specification:

When saddle nozzles are specified, the following features should be included in the specification:

1. The edge of the saddle shall be beveled to an angle of 45 deg. and the opening in the header shall also be beveled, forming a good vee for welding.
2. Edges beveled with the blowpipe shall be thoroughly cleaned of slag before welding.
3. Saddle and header shall be carefully fitted in order that thorough fusion at the bottom of the vee may be obtained.
4. Welds shall be reinforced to a height in excess of the thickness of the saddle.
5. Preheating while welding saddle to header and subsequent annealing are recommended.
6. The weld shall be of sound metal free from laps, gas pockets, slag inclusions or other defects.

The above is excerpted from a handbook on fundamental designs, titled, "Design Standards for Oxwelded Steel and Wrought Iron Piping," published by The Linde Air Products Company. A copy of this handbook should be in every architectural drafting room. It is yours for the asking. Just fill in and mail the coupon.

Technical Publicity Dept., 12th Floor
205 East 42nd St., New York, N. Y.

Please send me a copy of your new book, "Design Standards for Oxwelded Steel and Wrought Iron Piping" which also explains procedure control for pipe welding.

Name

Company Position

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P.P.-9

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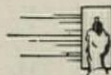
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FAST FINISH

KEENE'S CEMENT



Again Best Bros. keep step with progress! A new product of merit . . . FAST FINISH Keene's Cement . . . is now ready to save time and work. Ready to produce plastering of a quality such as only genuine Best Bros. Keene's Cement will accomplish. Best Bros. FAST FINISH Keene's Cement needs no admixtures. Used with good aged lime-putty, it will set up fast enough for finish troweling without waiting.



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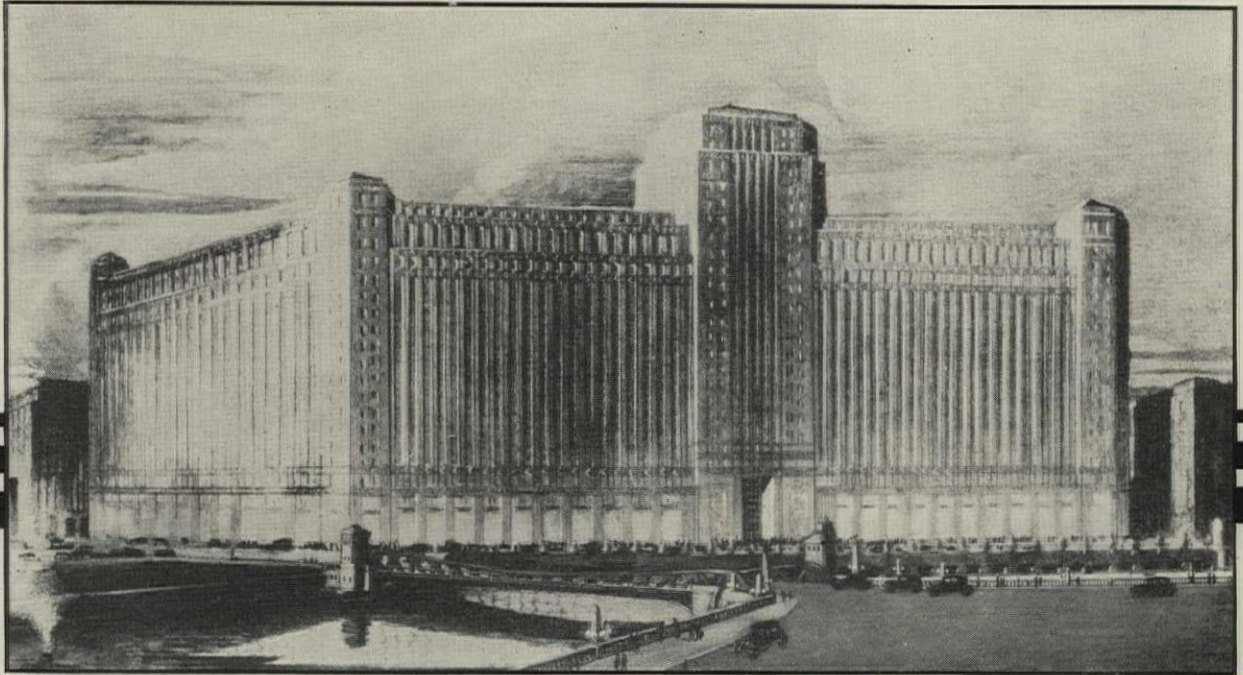
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We invite you to write for literature containing full particulars about this pure gypsum FAST FINISH Keene's Cement.

LARGE BUILDINGS MEAN *heavy door traffic*



The World's Largest is Equipped with
RIXSON "30" FLOOR CHECKS

*The Merchandise Mart, Chicago.
Architects: Graham, Anderson,
Probst & White. Contractors: John
Griffith & Sons.*

In the race for more and more gigantic buildings is involved a problem of population and traffic. The larger the building the more inhabitants it has—thus, naturally, the greater the wear and tear on the door controlling devices and floor hinges.

The choice of the Rixson "30" as the device to control heavy-duty doors in Chicago's Merchandise Mart is significant. It climaxes this Floor Check's reputation

as standard for use on all office and public buildings. They have been installed in an imposing majority of such buildings for more than a decade.

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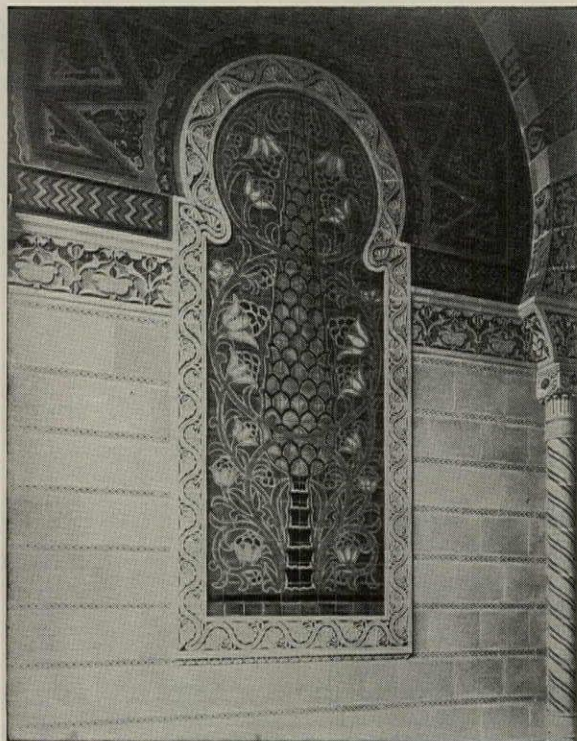
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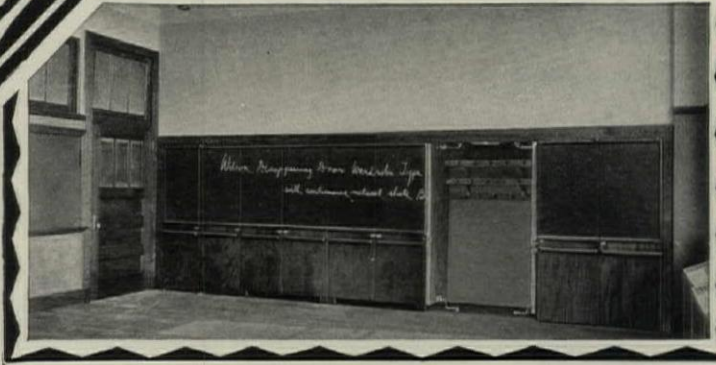
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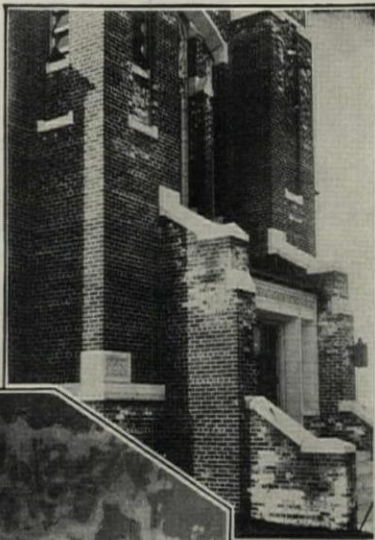
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ABOVE: An etching of the Chase National Bank Building, New York. LEFT: Interior showing W. & J. Sloane Battleship Linoleum.

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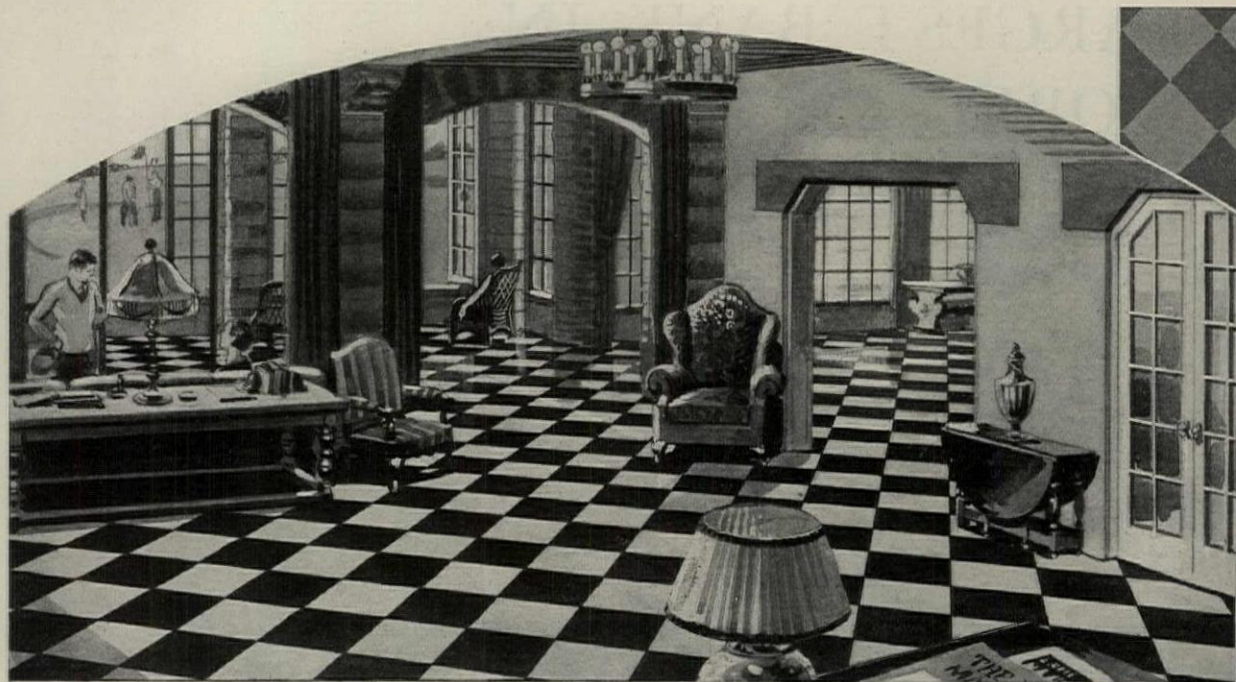
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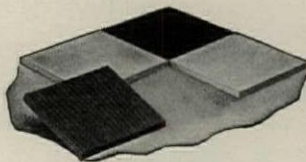
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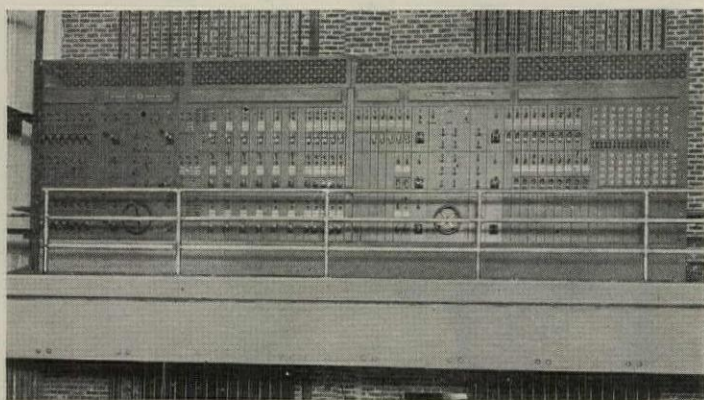
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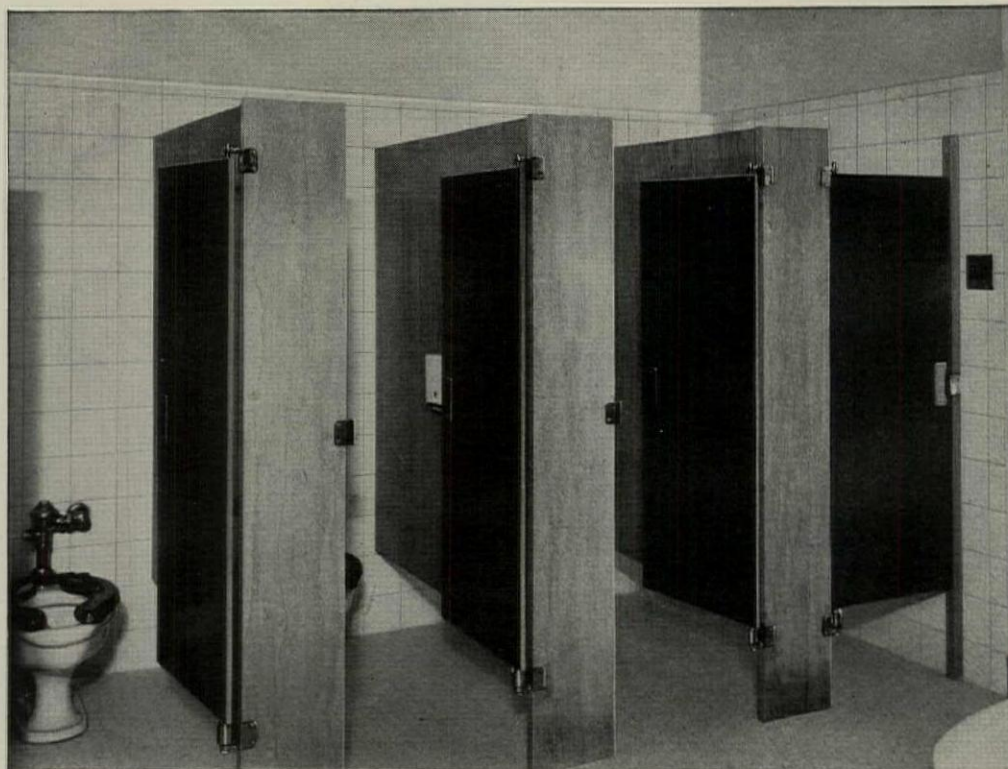
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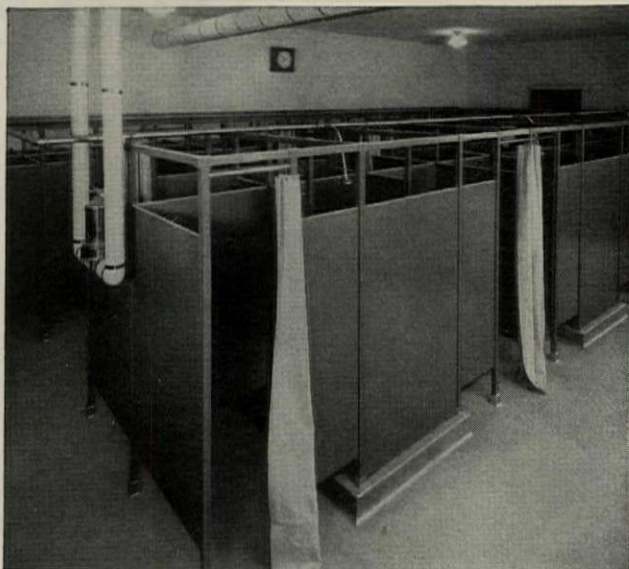
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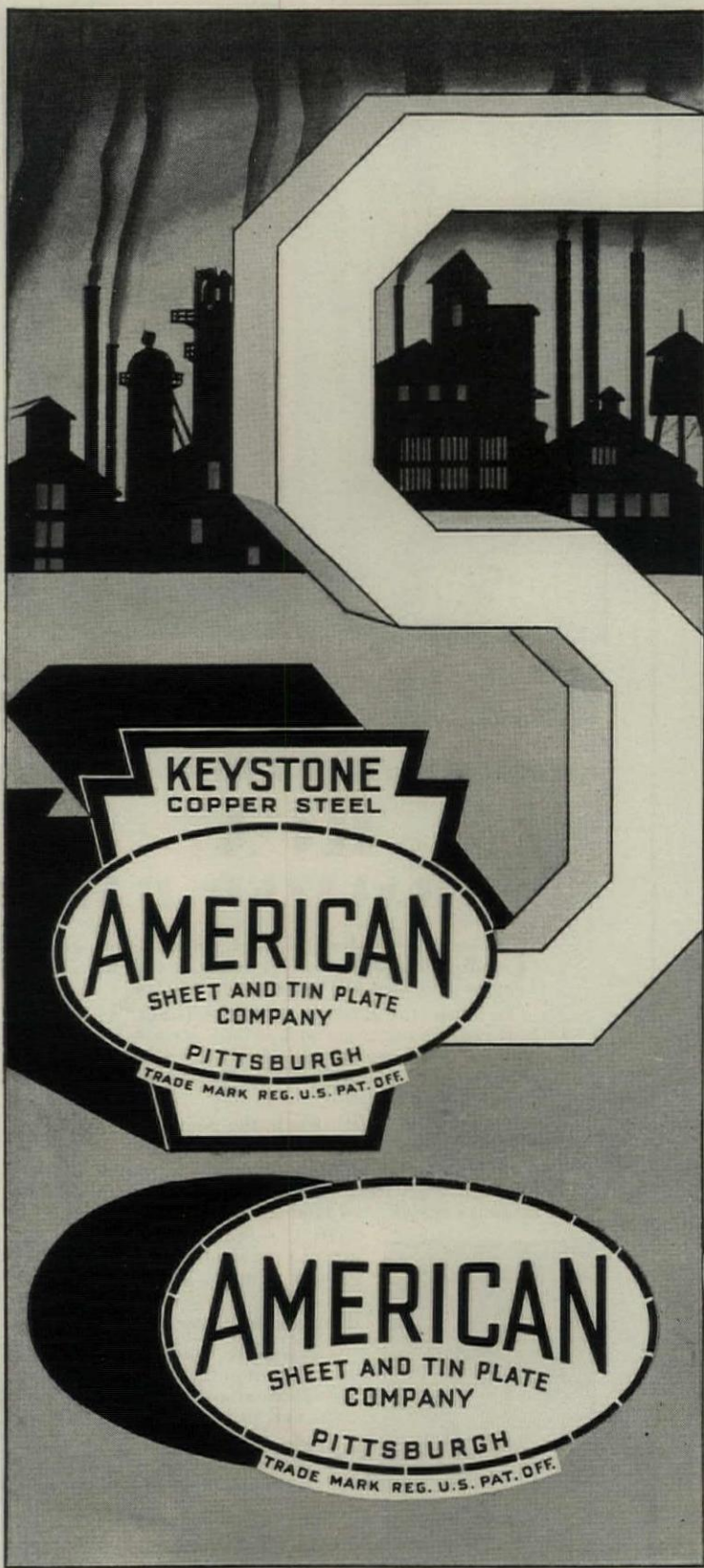
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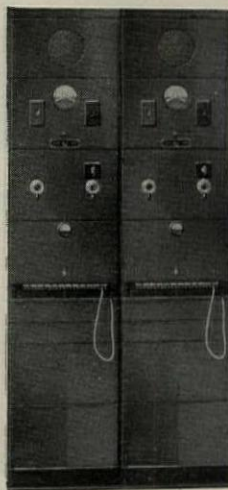
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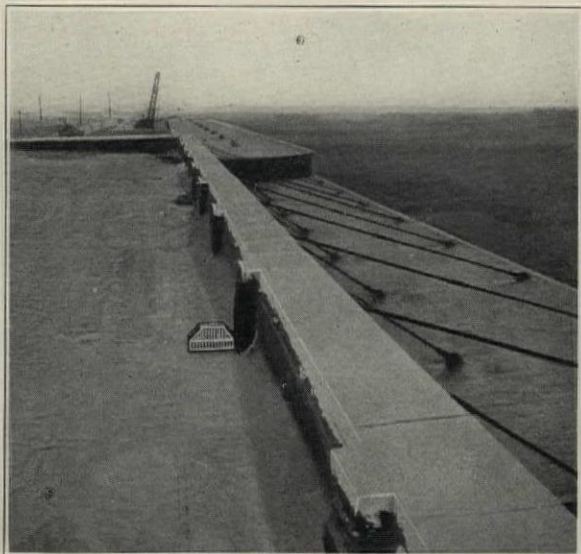
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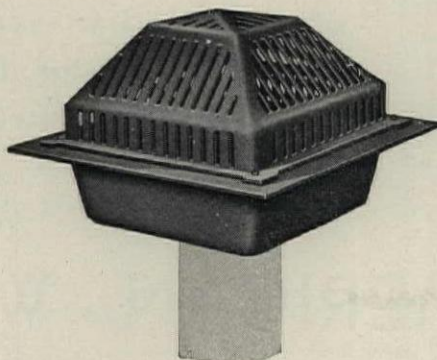
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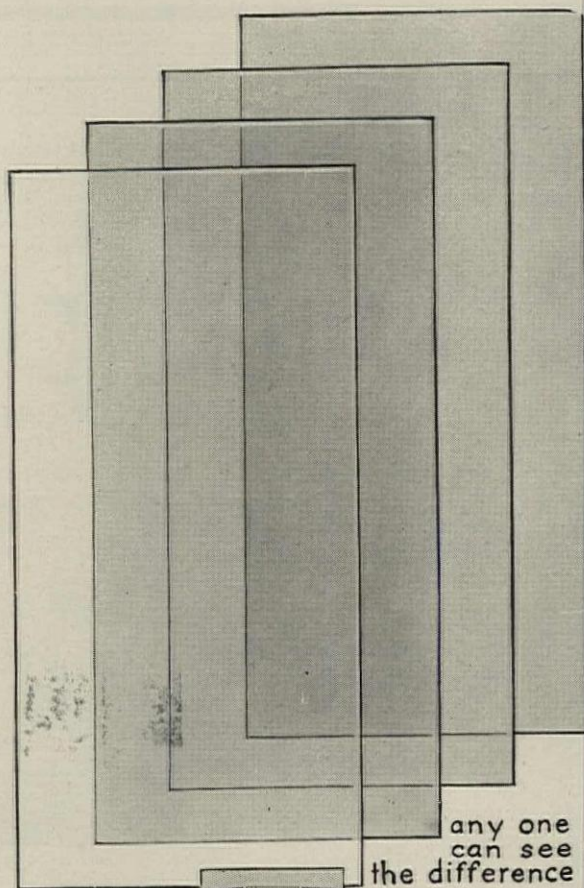
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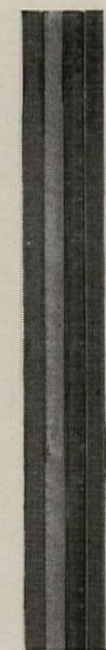


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Alcoa Aluminum Window Sills

were used in the Central Union Bank, Evansville, Indiana

-Alcoa Aluminum Spandrels, of course



Central Union Bank, Evansville, Indiana. Architects, McGuire and Shook. Associates, Walker and Weeks. Contractors, International Steel and Iron Co.

In designing the Central Union Bank, the architects, Messrs. McGuire and Shook, were mindful of the example set by the largest metropolitan buildings. They specified window sills of Alcoa Aluminum. These sills are of extruded aluminum. 112 of them, each 4 ft. 6 in. long, have a total weight of approximately 819½ lbs. They also used Alcoa Aluminum spandrels—a practice that is rapidly becoming standard with most architects.

By using these Alcoa Aluminum sills and 112 Alcoa Aluminum spandrels 4 ft. 8 in. x 4 ft. 4 in., weighing approximately 10,784 lbs.—the architects lifted about 25,000 lbs. of surplus dead-weight from the face of this bank building. And they saved money.

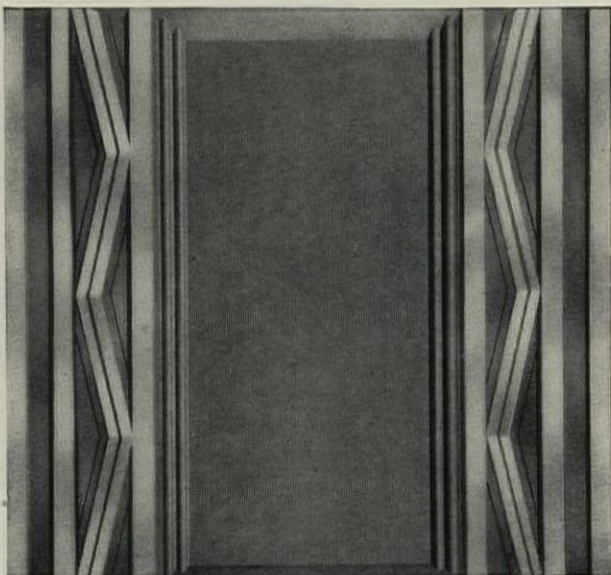
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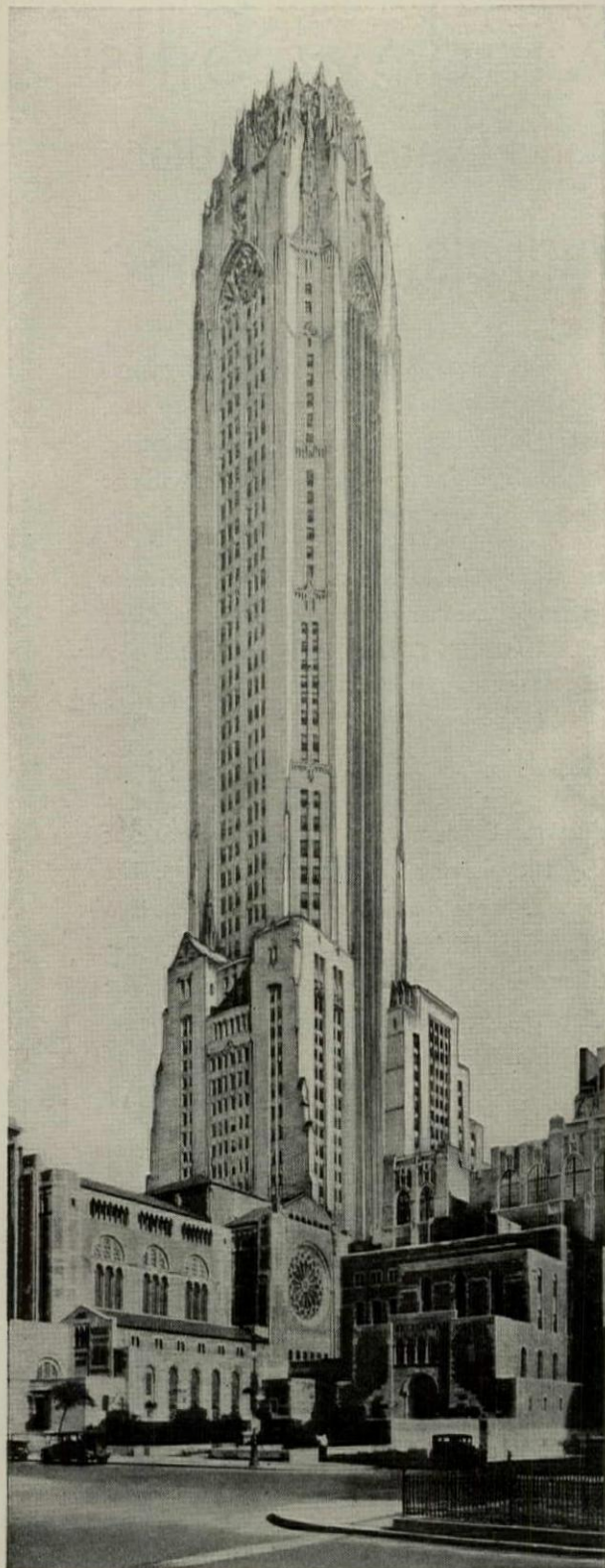


These Alcoa Aluminum spandrels are 4 ft. 8 in. by 4 ft. 4 in. 112 of them weigh approximately 10,784 lbs.

ALCOA ALUMINUM



RCA VICTOR BUILDING NEW YORK



ARCHITECTS: CROSS & CROSS

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THE FRINK CORPORATION

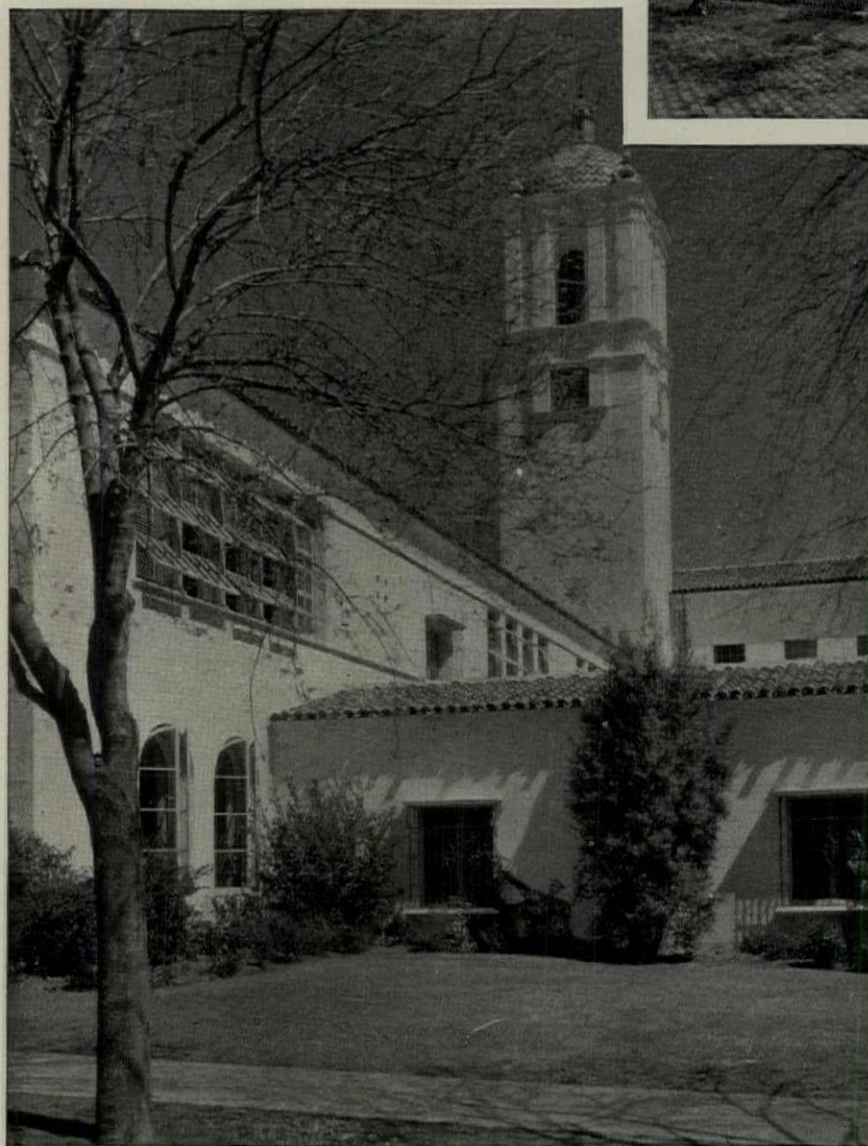
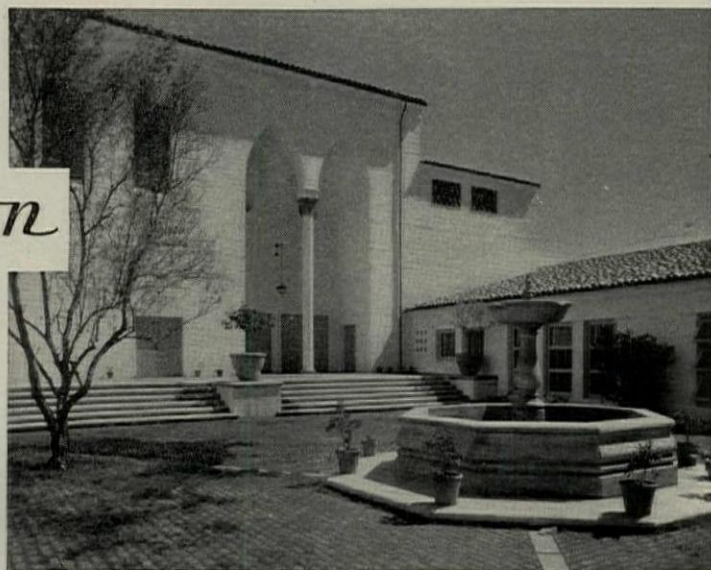
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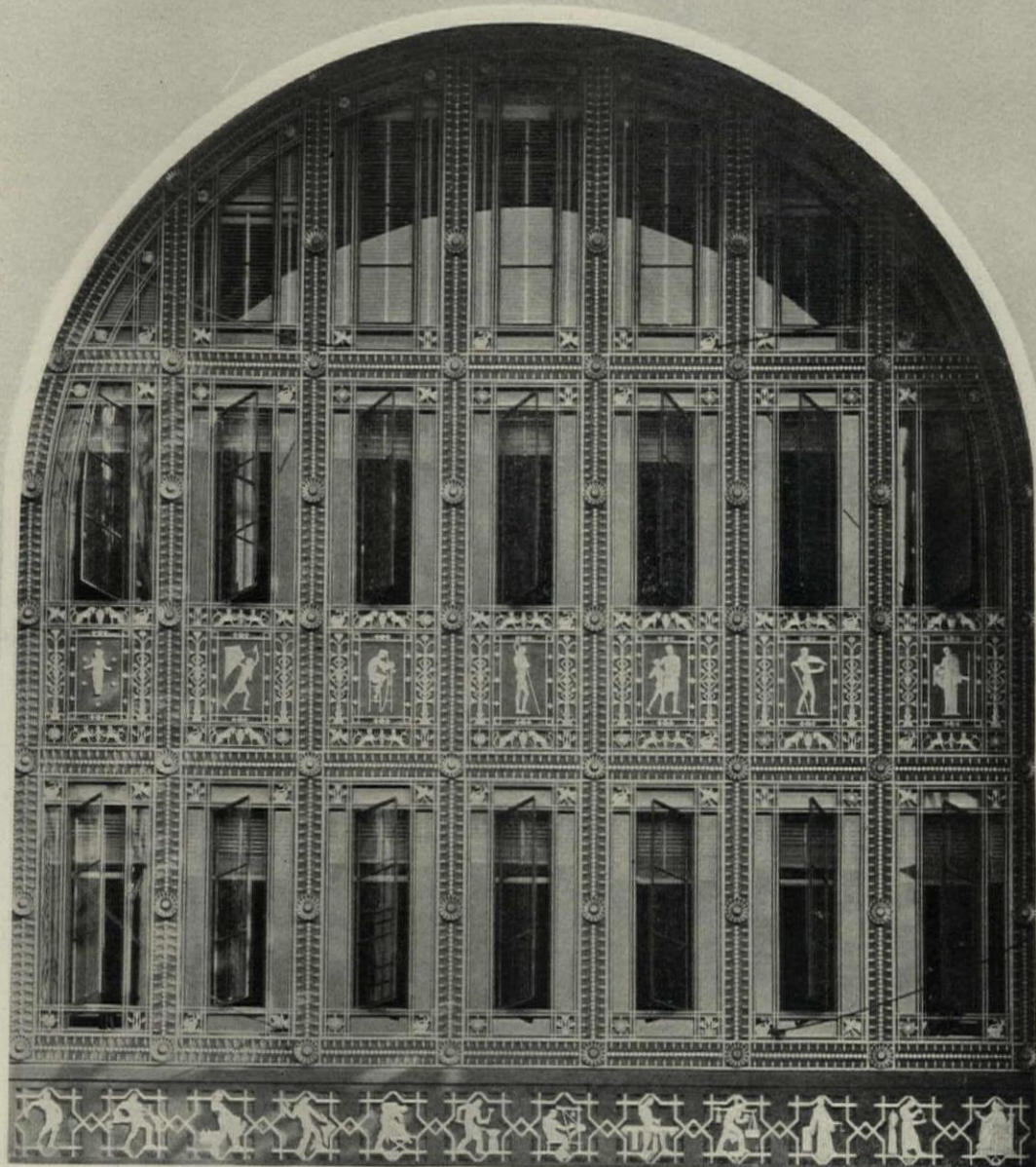
These views are of the Hawthorne School, Beverly Hills, California, of monolithic construction throughout, with decorative details cast in place. R. C. Flewelling, Architect.

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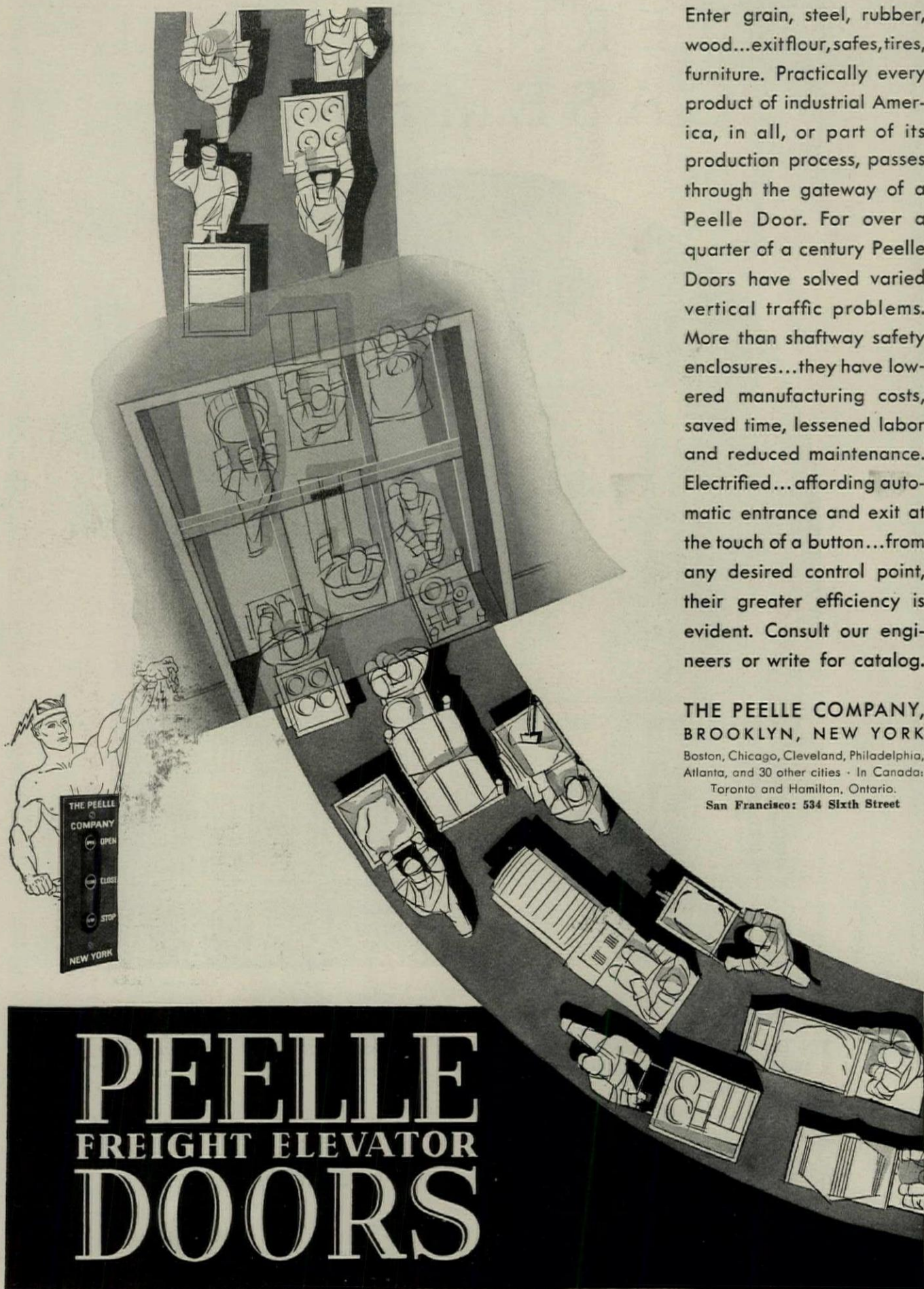
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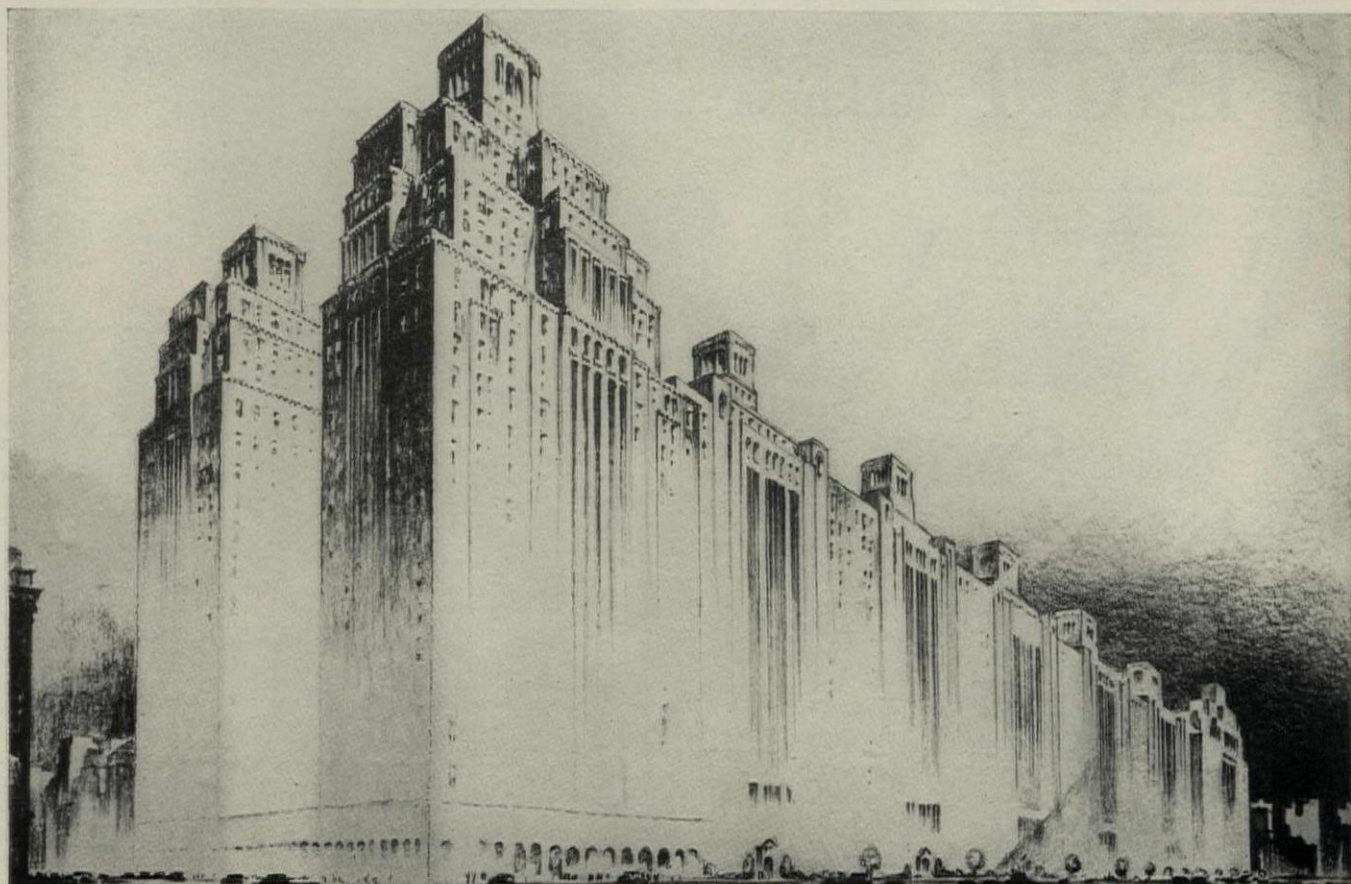
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Enter grain, steel, rubber, wood...exit flour, safes, tires, furniture. Practically every product of industrial America, in all, or part of its production process, passes through the gateway of a Peelle Door. For over a quarter of a century Peelle Doors have solved varied vertical traffic problems. More than shaftway safety enclosures...they have lowered manufacturing costs, saved time, lessened labor and reduced maintenance. Electrified...affording automatic entrance and exit at the touch of a button...from any desired control point, their greater efficiency is evident. Consult our engineers or write for catalog.

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*Where Construction Speed Was
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IN the world's largest apartment house development, where the speed of erection was outstandingly important, Minwax Flat Finish was successfully used. This new, Quick Drying form of the Minwax Method makes it possible to have lustrous, beautifully finished floors well within the limits of the most rapid construction program.

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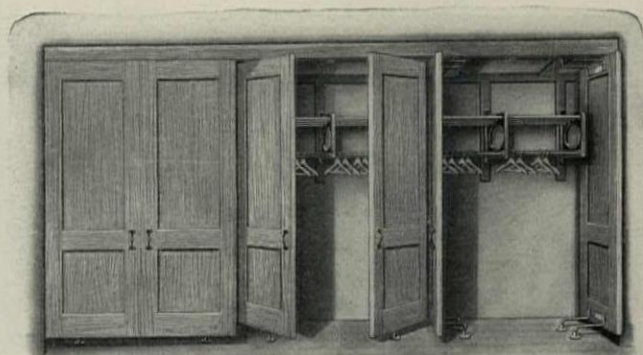
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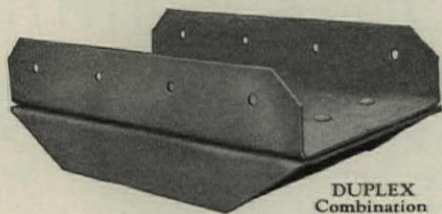
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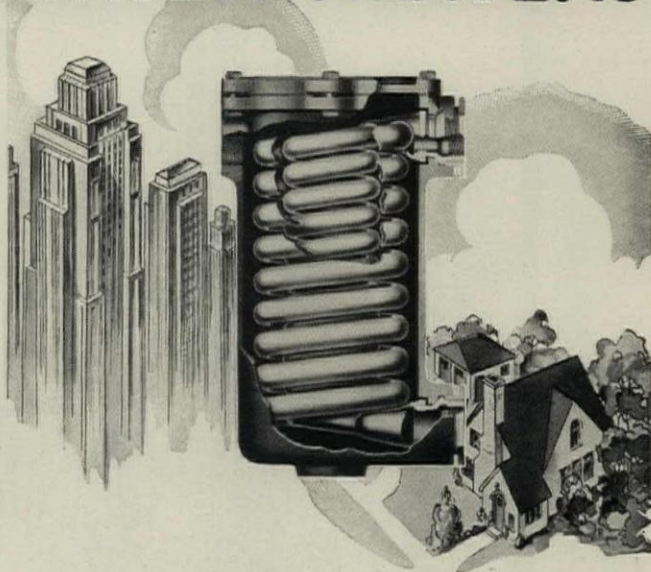
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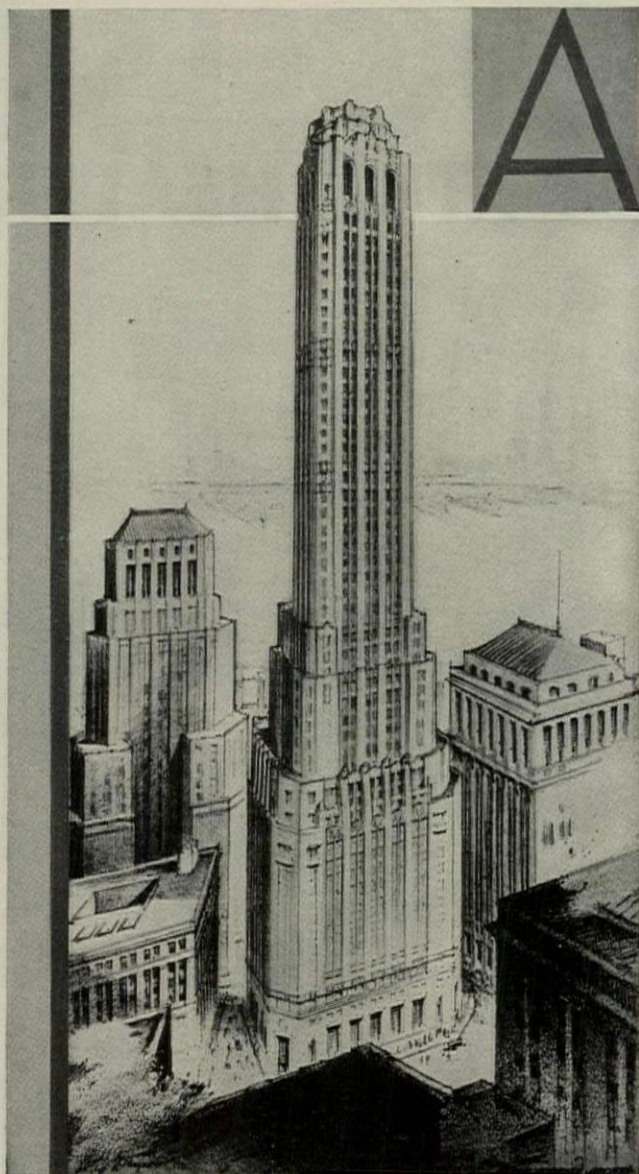
You are invited to write for Architect's file, showing fourteen different methods of installing EXCELso, together with complete information on the various EXCELso models and sizes.

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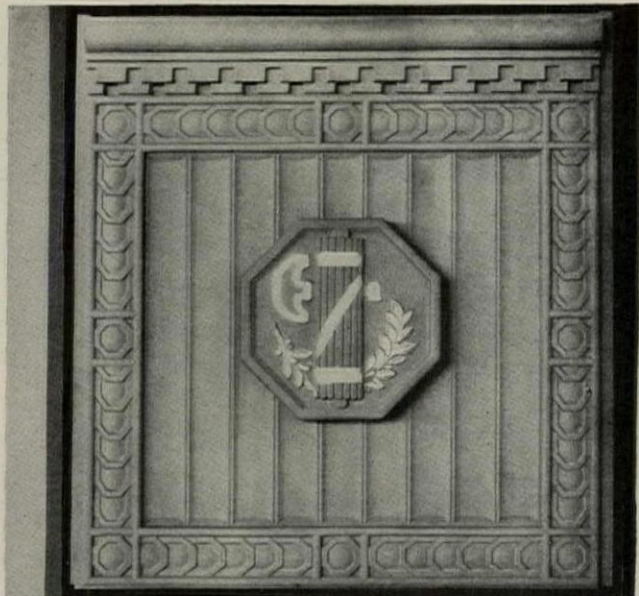
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EXCELso INDIRECT WATER HEATERS

Sizes to heat water for one family or one hundred



City Bank-Farmers Trust Building, New York, N. Y. Owner, National City Bank. Architects, Cross and Cross, of New York. General Contractor, Geo. A. Fuller Co., New York. Sub-Contractor, C. E. Halback and Co., Brooklyn, N. Y.



Alcoa Aluminum Spandrel Base with decorative ornament set in position over vent opening. Spandrel 4 ft. 5 1/2 in. x 4 ft. 11 3/4 in. Weighs 116 lbs.

Alcoa Aluminum reduce weight on City Bank-

By using Alcoa Aluminum, which weighs only $\frac{1}{3}$ as much as other materials commonly used, the weight of the City Bank-Farmers Trust Building is being reduced many tons without the expenditure of a penny extra. This great weight saving both reduces the cost of shipping, trucking and hauling, and speeds up work on the job.

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On this building six different decorative ornaments are being used on one spandrel base. When ventilation was desired behind the spandrel, vent has been cast in the base and the ornament placed to cover it.

Both the Architect and Builder have found Alcoa Aluminum a most helpful material for many architectural purposes. It is easily worked. It can be wrought, drawn or extruded. It can be cast accurately to any design. No design is too intricate. It can be readily fitted in place either on the exterior face of the structure or on the interior.

ALCOA

Ornaments and Spandrels 300,000 lbs. at no extra cost, Farmers Trust Building, N.Y.C.



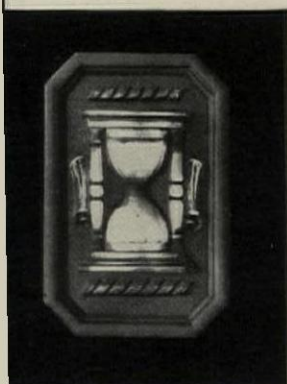
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"These Aluminum Spandrels and Ornaments shall be made of Alcoa No. 43 alloy, having a silicon content of 5%. The average tensile strength shall be 17,000 lbs. per sq. inch and the average elongation 5% in two inches. The weight shall not exceed .097 pounds per cubic inch. The surface shall be free from imperfections and in all respects equal to sample submitted."

of the 6 different Alcoa Aluminum Ornaments used on Spandrels in this Building



Alcoa Aluminum Spandrel Ornament—14 in. x 20 7/8 in. Weighs 10 lbs.



Alcoa Aluminum Spandrel Ornament—19 1/2 in. x 20 in.—9 in. across bottom. Weighs 10 3/4 lbs.



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Alcoa Aluminum Spandrel Ornament—21 1/4 in. x 21 3/4 in.—9 in. across bottom. Weighs 13 lbs.

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would have
prevented
this

A WAKENED to the smell of smoke! The mad scramble to arouse the family! A dash to the bedroom door . . . driven back . . . the hall and stairs a seething mass of flames . . . a paragraph in the next day's paper tells the story.

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Check them off—steel lath, steel joists, steel doors, steel trim, steel wall tile, medicine cabinets, laundry trays, steel radiator enclosures—these and many others mark the modern building. Each brings a definite saving of time, money, labor, space, weight or fire loss . . . If you desire full information on any steel building products—write Trade Research Division, National Association of Flat Rolled Steel Manufacturers, Terminal Tower Building, Cleveland, Ohio.

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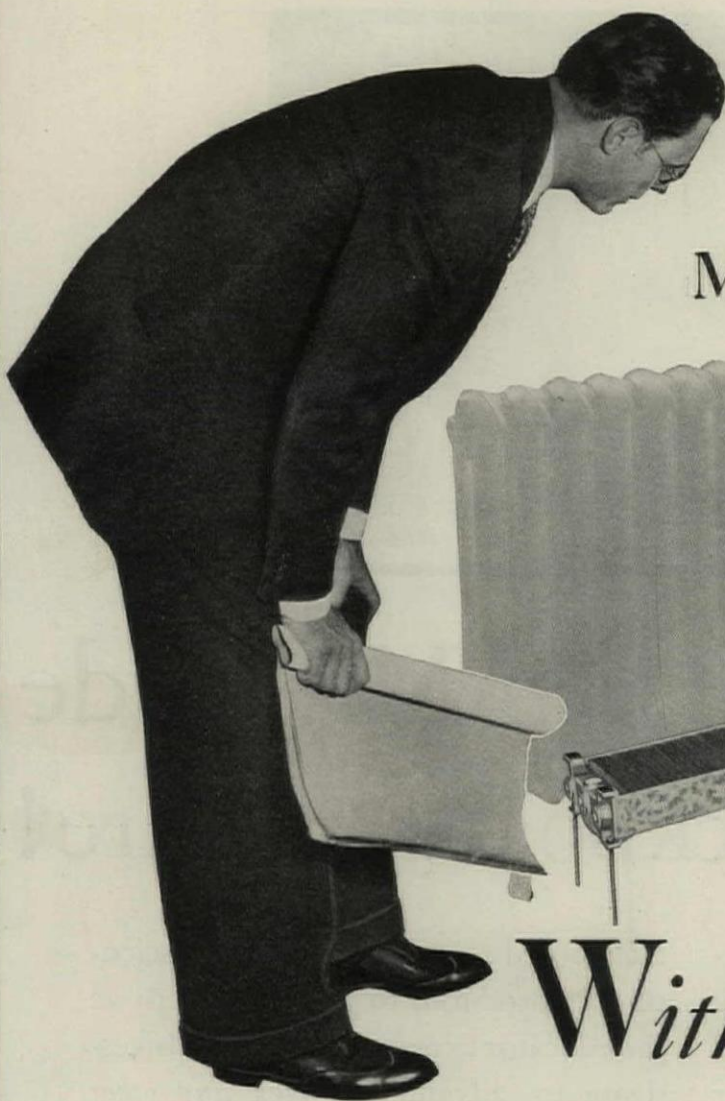


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—since Trane engineering and production brought the price of concealed heat down to the level of old-fashioned radiators

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Send the coupon today for complete description of Trane Concealed Heat, and full set of architectural details.

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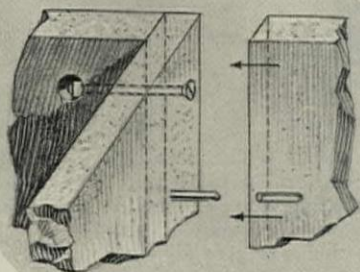
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55 Distributor Warehouses Assure You Immediate Service

A slightly higher first cost is true economy in unsupervised parts of school buildings



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Alberene construction stands the gaff

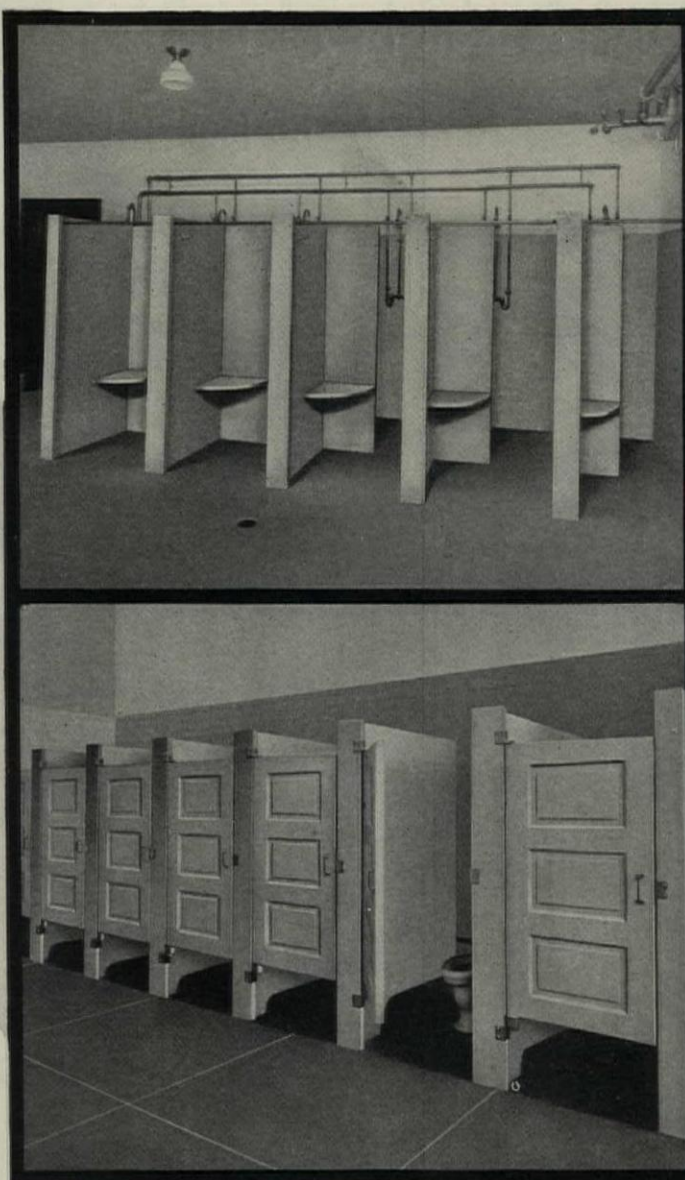
THE carelessness and rough usage to which shower and toilet rooms in schools are subjected makes it imperative that partitions be durable. Any attempts at economy through the use of materials which are cheaper and which cannot be fabricated properly for the purpose, reacts unfavorably by increasing upkeep costs.

Alberene Stone aside from its proven methods of construction (rigidity and permanent waterproofness of joints) is selected by architects because it is easy to clean and keep sanitary. Considered from every angle it is the most economical form of partition.

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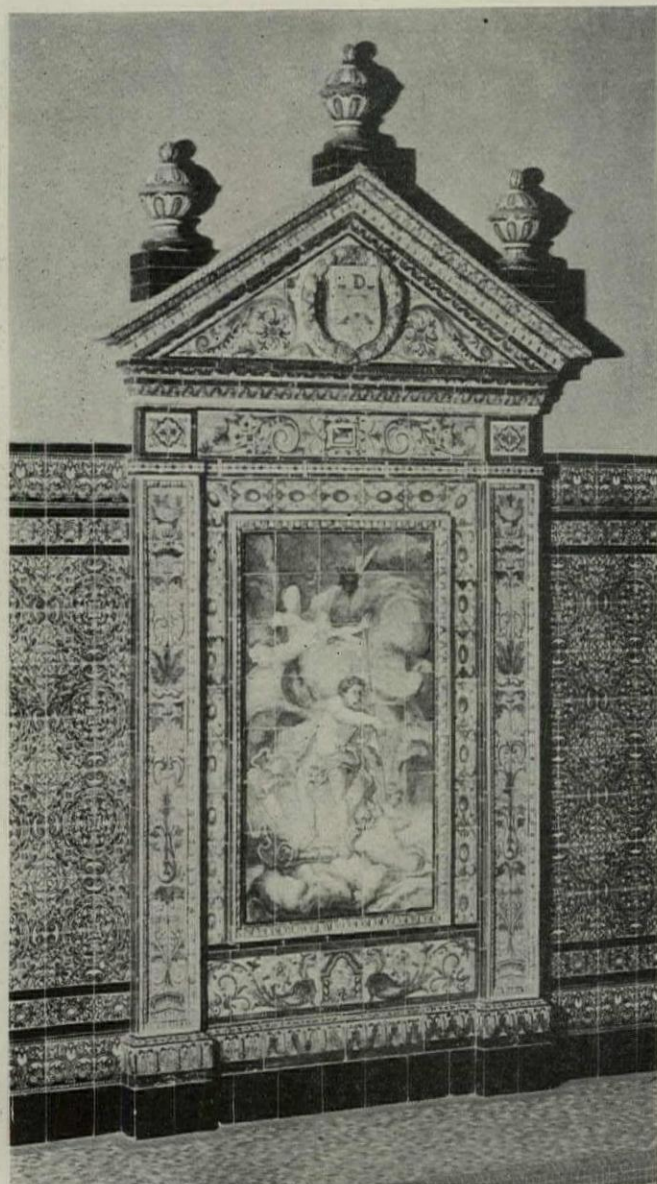
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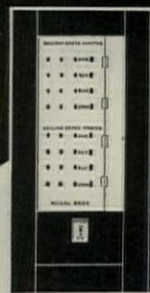
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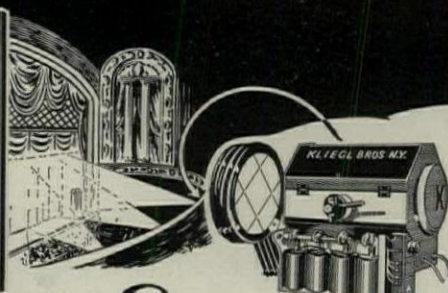
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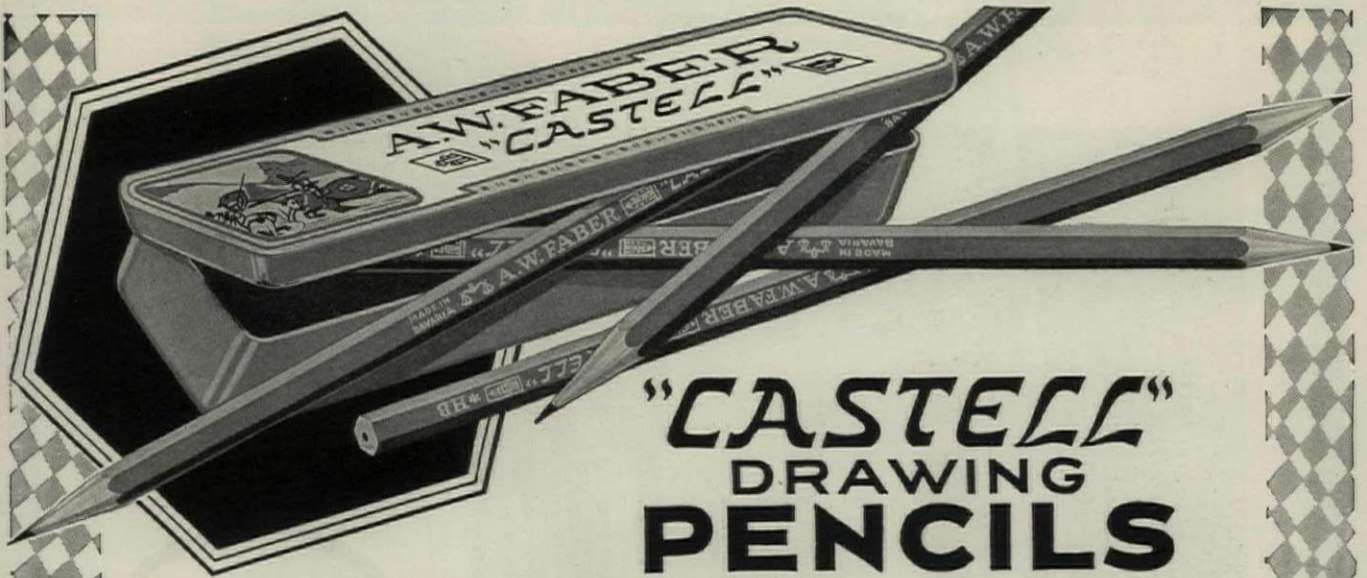
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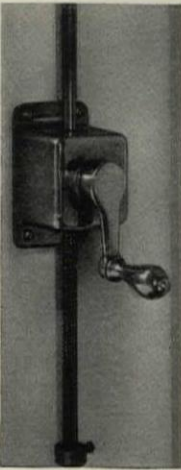
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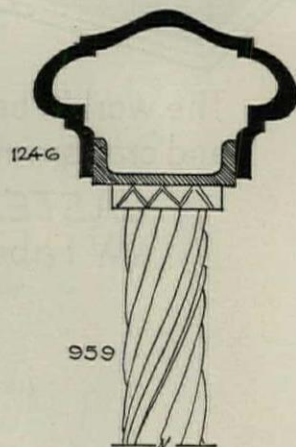
Residence of George H. Whitely, Jr., York, Pa.
Fred Dempwolf, Architect,
Metal Work by
William Christensen
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Braun Handrail in a Georgian Setting

IN THIS instance the handrail was selected from Braun stock for its exact conformity to the style.

In Catalog 30—issue of 1930—you will find a variety of shapes, both classic and modern, in a satisfying range of sizes. Some of them are new, #1248 particularly, illustrated at the right, has not been cataloged as yet.

If Catalog 30 is not in your files, please write for it.



#1247



#1248



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that are finding immediate
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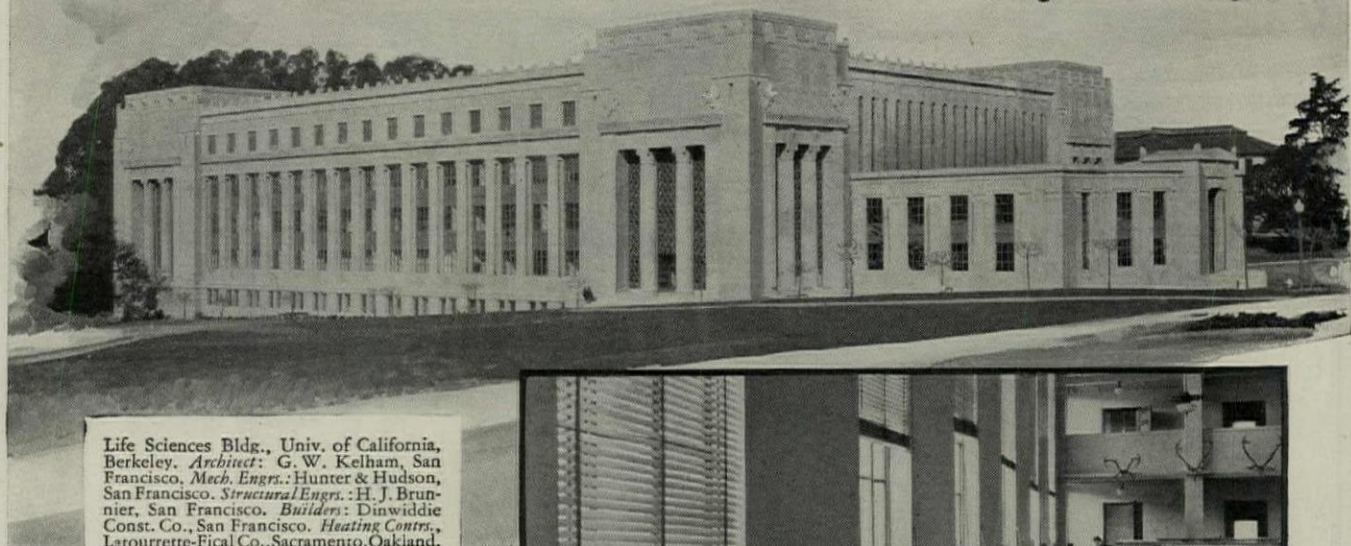
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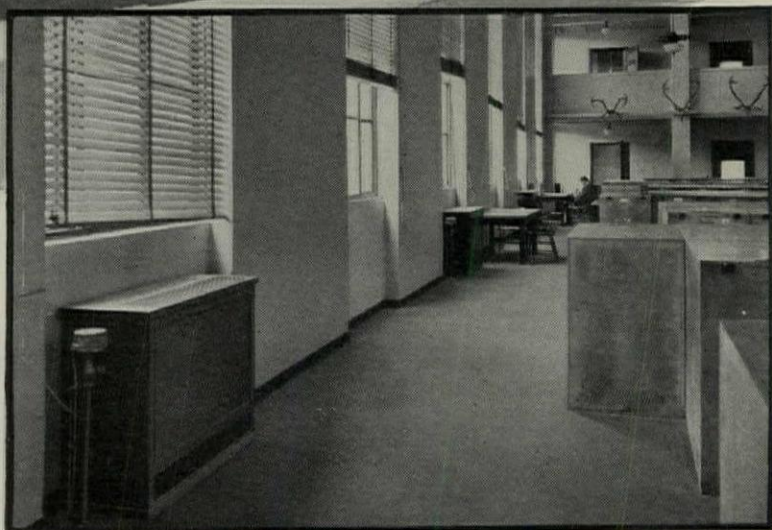
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SUPPLYING THE *Breath of Life*



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...in the Life Sciences Building, University of California



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Libraries, laboratories and lecture rooms are free from the slow anaesthetic of bad air. Pure, invigorating air is continually circulating...noiselessly, without drafts. It's drawn in from outdoors, filtered clean, tempered to comfortable warmth when needed, and then passed gently into the rooms

...by Sturtevant Unit Heater-Ventilators. The units blend in quietly with the appointments. And the vents are concealed... nothing detracts from the dignity of the exterior.

Sturtevant Unit Heater-Ventilators are adaptable to an endless variety of installations in schools, churches, institutions, office buildings, etc. You will be interested in our Catalog 361. Our nearest office will send you one...for the asking.

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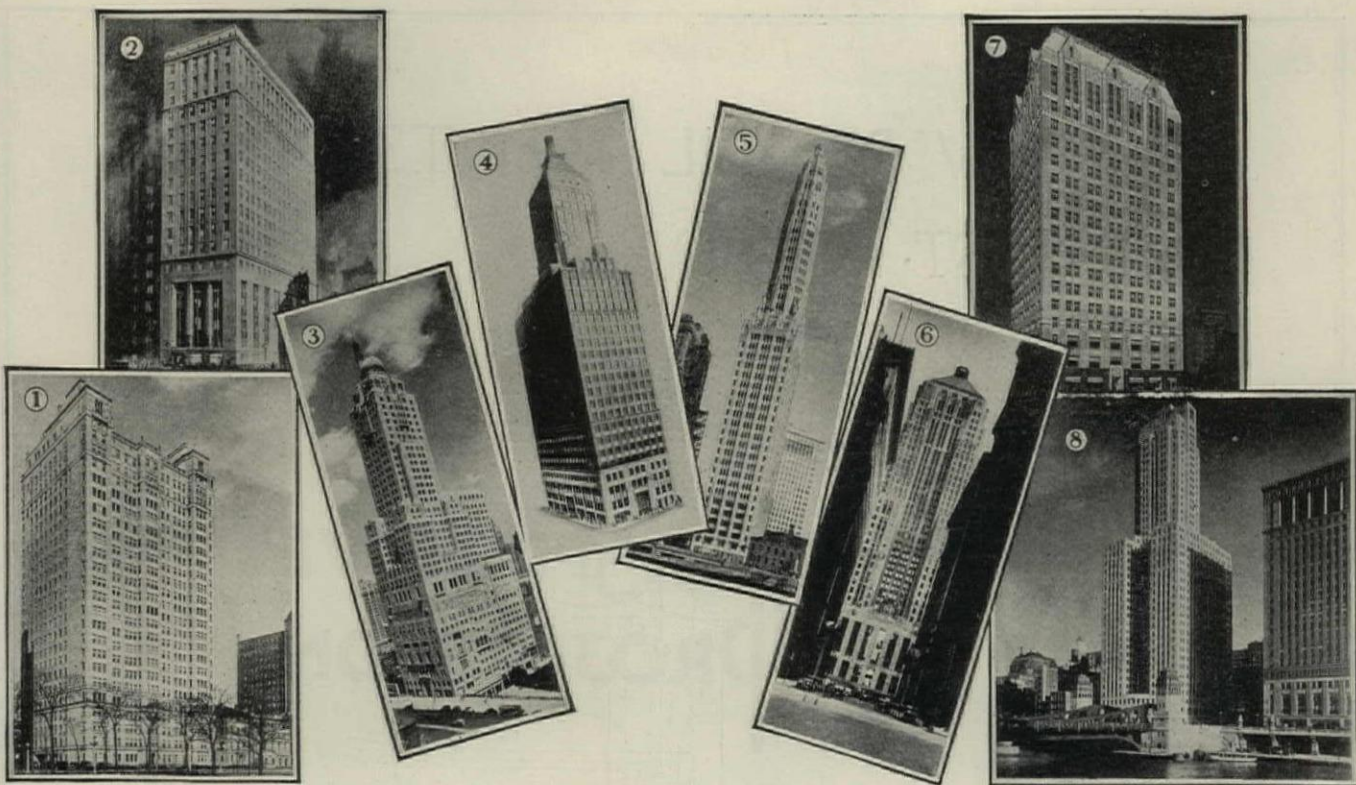
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Mechanical Engineers—H. A. Durr & Company,
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- 2 Chicago Evening Post Bldg., Chicago, Ill.
Architects—Holabird & Root, Chicago
General Contractors—McLennan Construction Co.,
Chicago
- 3 Medinah Athletic Club, Chicago, Ill.
Architect—Walter W. Ahlschlager, Chicago
General Contractors—Paschen Bros., Chicago
- 4 Trustees System Building, Chicago, Ill.
Architects—Thielbar & Fugard, Chicago
General Contractors—McLennan Construction Co.,
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General Contractors—R. F. Wilson & Company,
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General Contractors—Hegeman-Harris Co., Inc.,
Chicago
- 7 10 West Elm Street Apts., Chicago, Ill.
Architects—B. Leo Steif & Company, Chicago
General Contractors—Adolph Lindstrom Company,
Chicago
- 8 La Salle-Wacker Bldg., Chicago
Architects—Holabird & Root and A. N. Rebori, of
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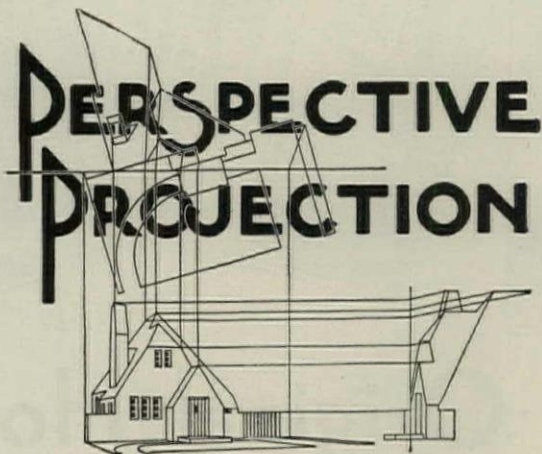
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Arthur L. Guptill

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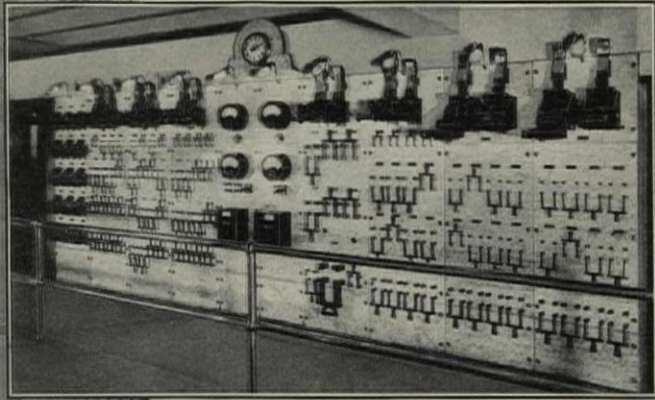
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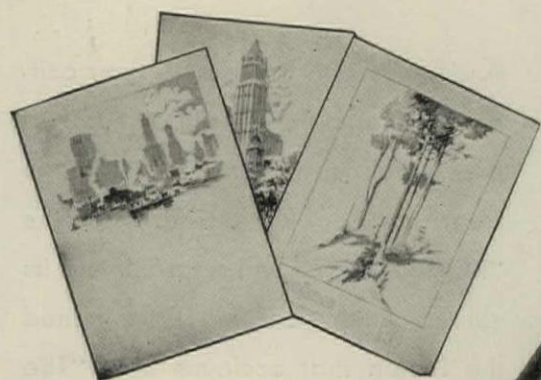
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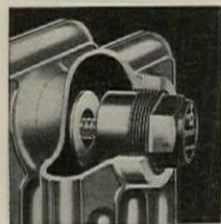


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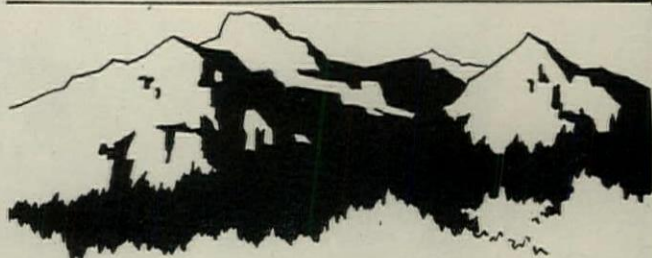
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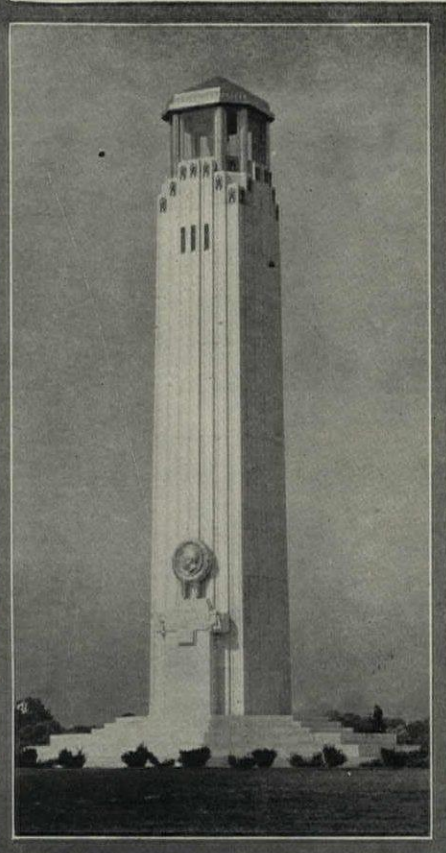
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The production of a new ultra-violet-ray glass to sell at ordinary window glass prices has just been announced by the American Window Glass Company, Pittsburgh, Pa. Lustraglass, as the new glass is named, is made by an improved process, vertically flat drawn. According to the announcement of the manufacturers, it is unusually clear, white, and perfectly flat, being almost entirely free from the greenish cast characteristic of the usual window glass.

A new Monel metal finish, designated as No. 8, especially adaptable to kitchen sinks, has been developed by the Hunting Mill of the International Nickel Company to replace those finishes formerly known as No. 3 and No. 4. It has a silver satin appearance with more lustre than both of the latter but without the high reflectivity of the full finished No. 5. It was developed to eliminate the need on the part of fabricators for further polishing of their products after manufacturing operations are completed.

A scheme for systematic cooperation between union and management similar to the plan in operation for some years on the Baltimore & Ohio Railroad has been adopted between Yeomans Brothers Pump Company, Chicago, and the International Association of Machinists. Stabilization of employment, reduction of operating costs, improvement in detailed design and quality, and better operating conditions are the major benefits expected to be derived. To this end the union has pledged its cooperation, and the company its willingness to share with employees the gains arising from cooperation.

The news of the sudden passing on Aug. 3rd of Charles F. Gleason, vice-president of the Gleason-Tiebout Glass Co., Brooklyn, N. Y., will come as a shock to his many friends in the trade. He was seventy years old and a native of Weymouth, Mass. At the age of twenty Mr. Gleason came to Brooklyn where he entered the employ of his uncle, Elliott P. Gleason, in the Elliott P. Gleason Mfg. Co. When the Gleason-Tiebout Glass Co. was formed he became vice-president.

The Trane Co., La Crosse, Wis., manufacturers of convection heaters, reports that the progress of this type of heater has been so great during the past year that it has been obliged to build a new manufacturing unit. In addition the company is operating on a twenty-hour-a-day two-shift schedule in order to meet the demand for its heaters.

Paul R. Clark, formerly president of the Fireproof Products Company, has been appointed New York District Manager of the Genfire Steel Company, with offices at 31 Union Square, New York City, and 605 Broad Street, Newark, N. J. Mr. Clark was previously Sales Manager of the General Fireproofing Company of Youngstown, Ohio, going to New York in 1917, at which time the Fireproof Products Company was organized.

Kalman Steel Co.	42
Kawneer Company, The	88, 89
Kerner Incinerator Co.	126
Keuffel & Esser Co.	64
Kewanee Boiler Company	8
Kewaunee Mfg. Co.	28
Kliegl Bros. Universal Electric Stage Lighting Co.	134
Koh-I-Noor Pencil Co., Inc.	148
Kohler Company	25

Leonard-Rooke Company	51
Libbey-Owens-Ford Glass Co.	38
Lord & Burnham Co., The (Sash Operating Div.)	135
Louisville Cement Company	23
Ludowici-Celadon Company	87
Lupton's, David, Sons Co.	39

Mac Arthur Concrete Pile Corp.	101
Medusa Portland Cement Co.	4
Milcor Steel Co.	154
Minwax Co., Inc.	125
Mueller Mosaic Co.	106
Murphy Varnish Co.	58

Nailcrete Corp., The	117
National Association of Flat Rolled Steel Manufacturers	130
National Fireproofing Co.	17, 18, 19, 20

National Lime Association	34
National Lumber Manufacturers Assn.	65
National Radiator Corp.	27
National Steel Fabric Co.	93
National Terra Cotta Society	50
National Tube Company	10
New York Belting & Packing Co.	110
New York University	142
Northwestern Terra Cotta Company, The	2

Oak Flooring Manufacturers Association of the United States	21
Orange Screen Co.	29
Otis Elevator Co.	108

Pecora Paint Company	51
Peelle Company	124
Pittsburgh Plate Glass Co.	94
Portland Cement Association	122
Prometheus Electric Corp.	41

Rail Steel Bar Assn.	33
Raymond Concrete Pile Co.	5
RCA Victor Co., Inc., Engineering Products Division	116
Reading Iron Co.	30
Richards-Wilcox Mfg. Co., 3rd Cover	59
Rising & Nelson Slate Company	59
Rixson, Oscar C., Co., The	105

Safety Car Heating & Lighting Co.	48
St. Louis Fire Door Co.	95
Sargent, J. D., Granite Co.	41
Sedgwick Machine Works	29
Sketch Club Atelier	142
Sloane, W. & J.	109
Smyser-Royer Co.	50
Sonneborn, L. Sons, Inc.	43
Soss Mfg. Company	143
Southern Cypress Manufacturers Assn.	99
Staedtler, J. S., Inc.	142
Stedman Rubber Flooring Co.	146
Stevenson Cold Storage Door Co.	69
Structural Gypsum Corporation	92
Structural Slate Co.	61
Sturtevant, B. F., Co.	138

Taylor Co., The Halsey W.	36
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Tyler Co., The	4th Cover

Union Carbide and Carbon Corp.	103
United Spanish Craftsmen	134
United States Gypsum Co.	13
United States Rubber Co.	150

Vermont Marble Co.	51
Vonnegut Hardware Company	32

Ward Leonard Electric Co.	149
Warren Webster & Co.	15
Weber Costello Co.	132
Weber, F., Co.	143
Welded Products Corp.	61, 143
Western Pine Manufacturers Assn.	63
Westinghouse Electric Elevator Co.	96
Westinghouse Elec. & Mfg. Co.	112
Wilson Corporation, J. G.	107

Yale & Towne Mfg. Co., The	44
Yeomans Brothers Co.	91

Zouri Co., The	153
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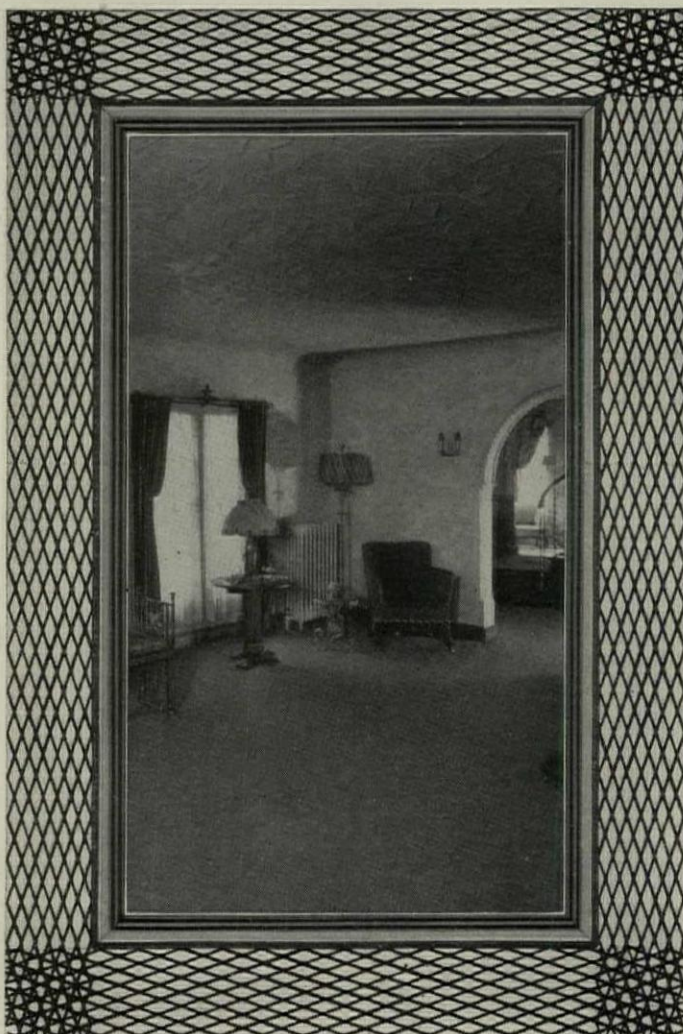
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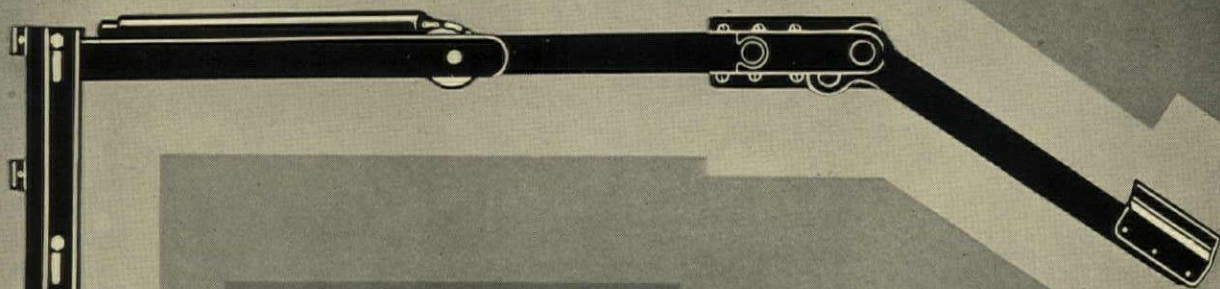


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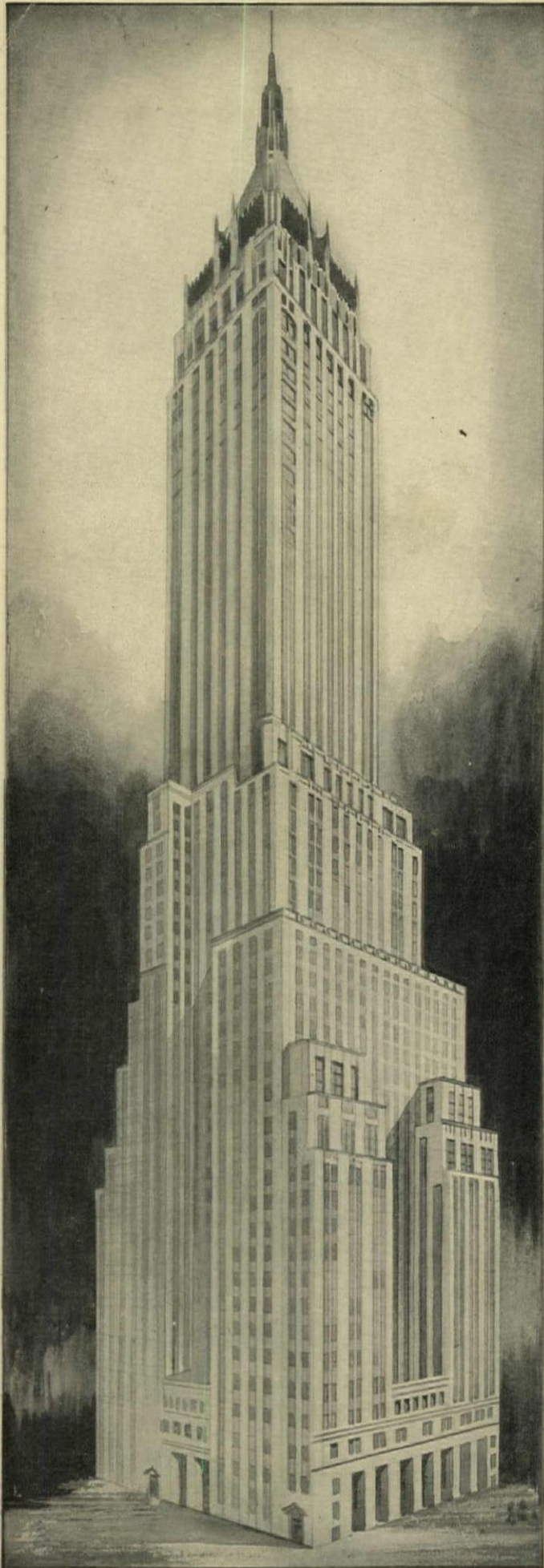
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