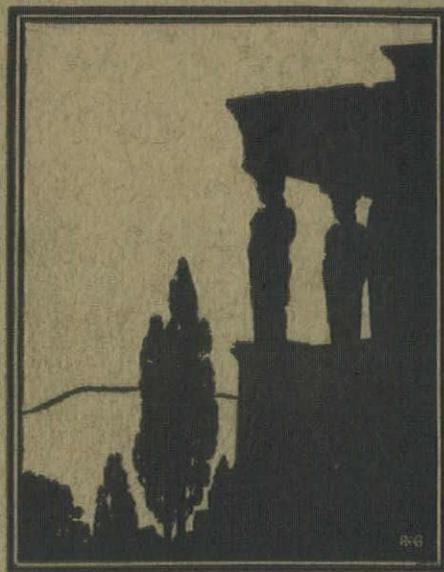


ARCHITECTURE

December 1931



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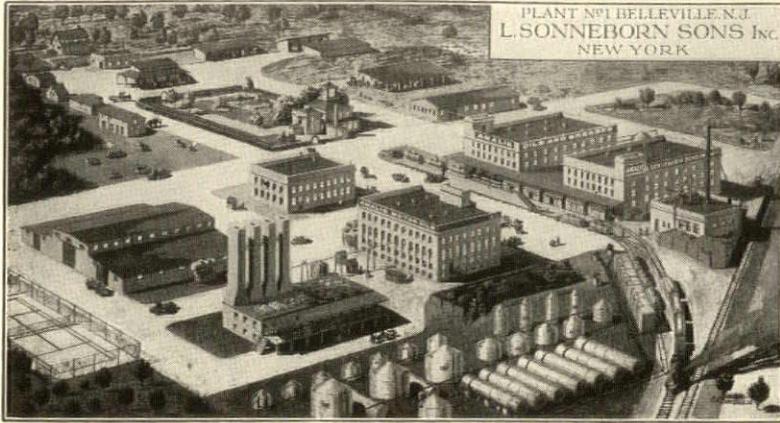
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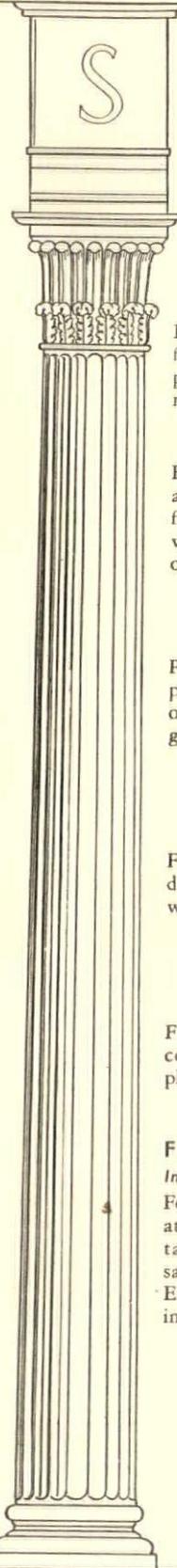
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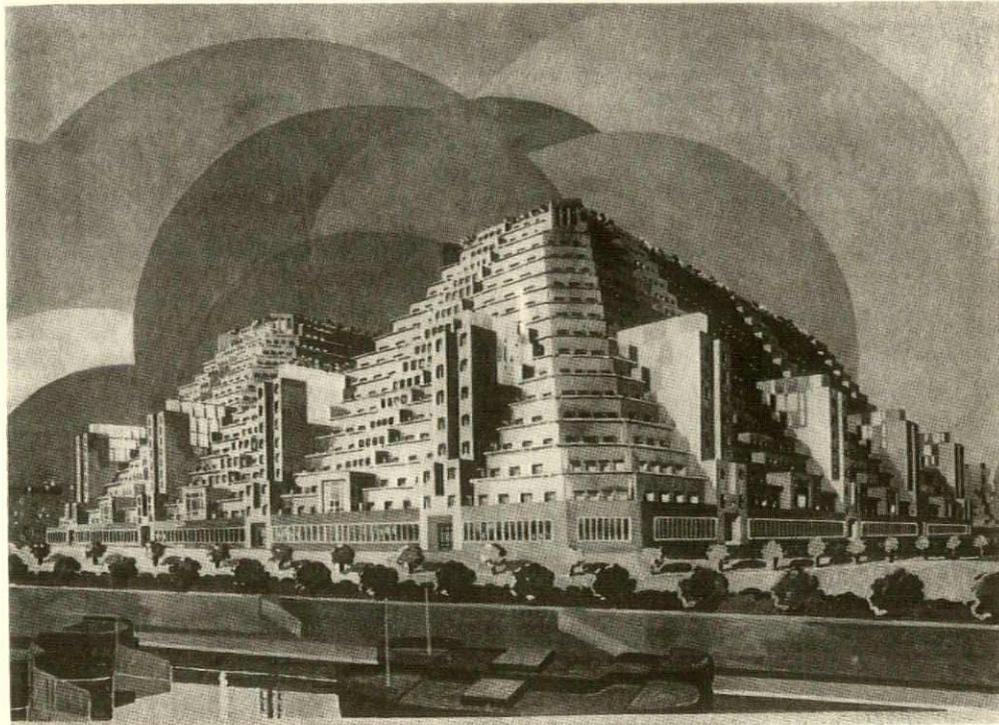
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ARCHITECTURE AND DECORATIVE DESIGN

With an introduction adapted from the French of

MAURICE CASTEELS

HERE is a book that presents a survey of our first faltering steps into a new style, both in Europe and in America. The title of the book in its original French—*L'Art Moderne Primitif*—is not an easy one to render into concise English. This is unfortunate, for the French title conveys the thesis of the book in a nutshell. A new style is being born; its eyes are but partly open as it gropes its way toward maturity. It is an art in its primitive stages still, but already it has moved from uncertain experiment to disciplined, assertive production.

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ARCHITECTURE, published by CHARLES SCRIBNER'S SONS, 597 Fifth Avenue, New York, N. Y. December, 1931. Volume LXIV, No. 6. Published monthly on the 28th of the month preceding date of issue. Entered as second-class matter, March 30, 1900, at the Post-Office at New York, N. Y., under the Act of March 2, 1879. Yearly subscription rate to members of the architectural and allied professions, \$5; to all others, \$10.

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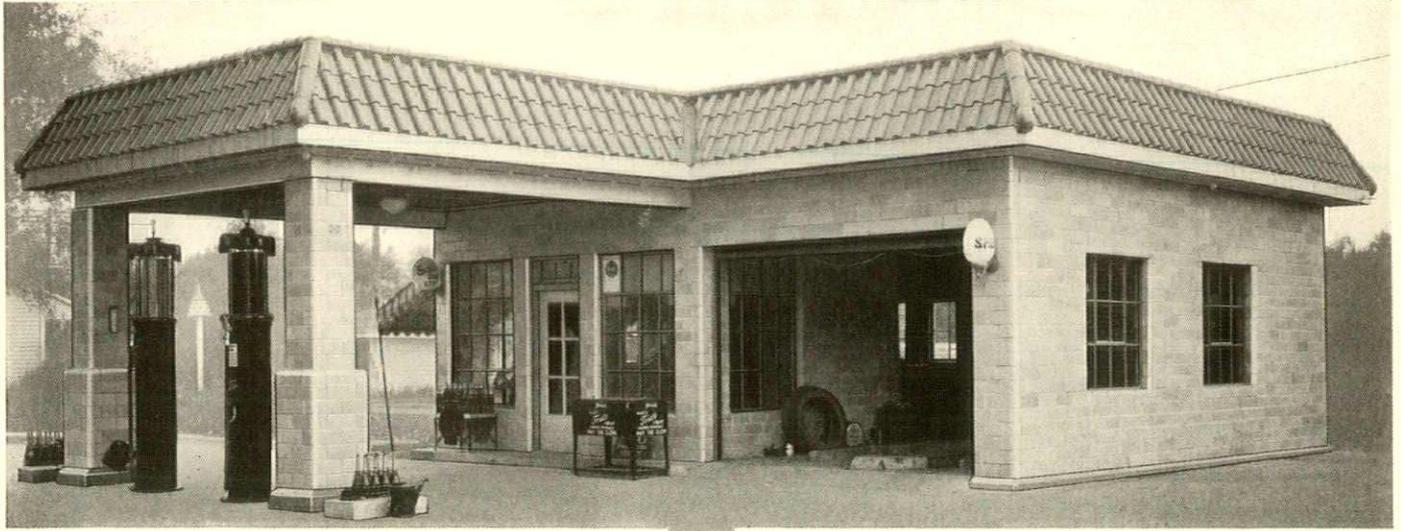
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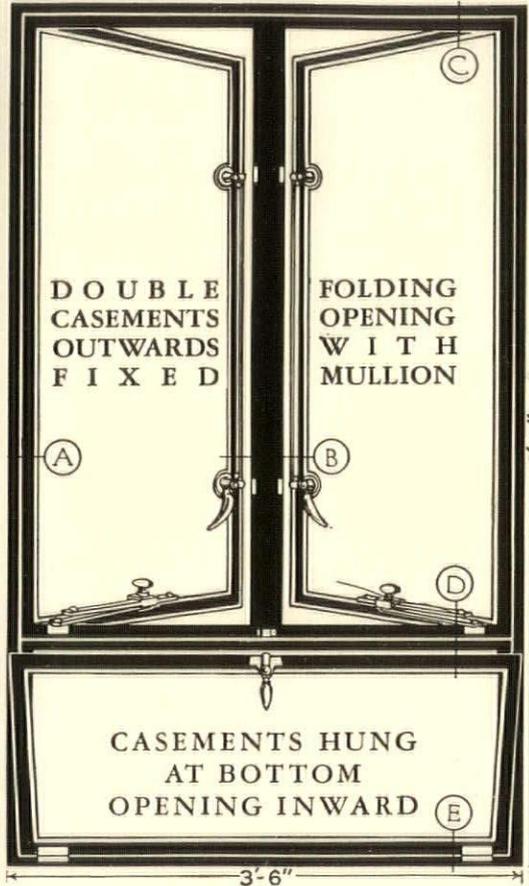
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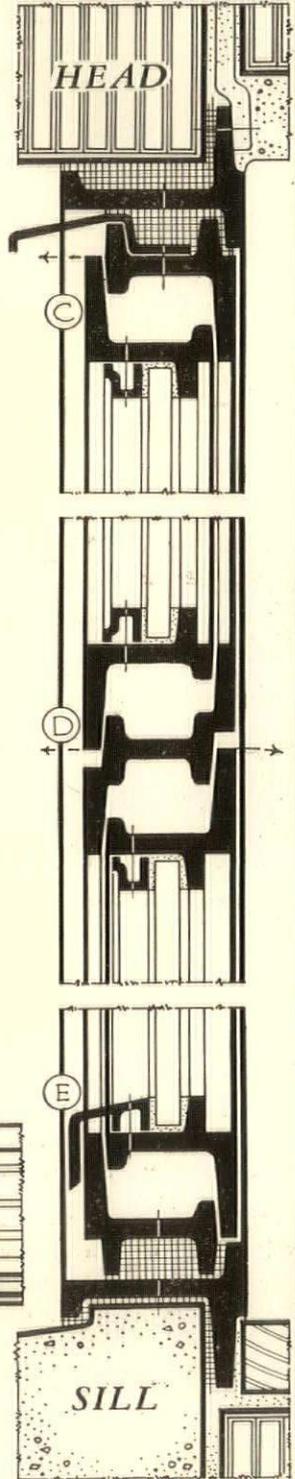
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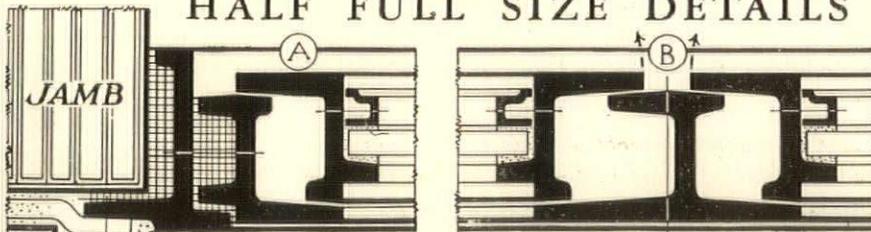
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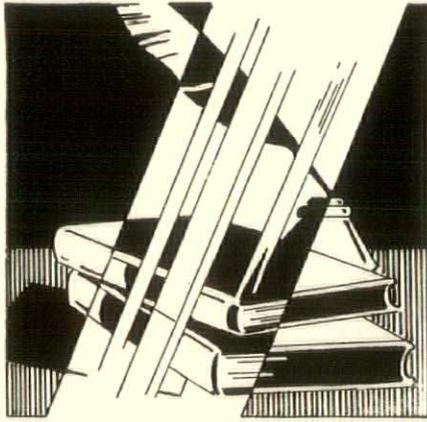


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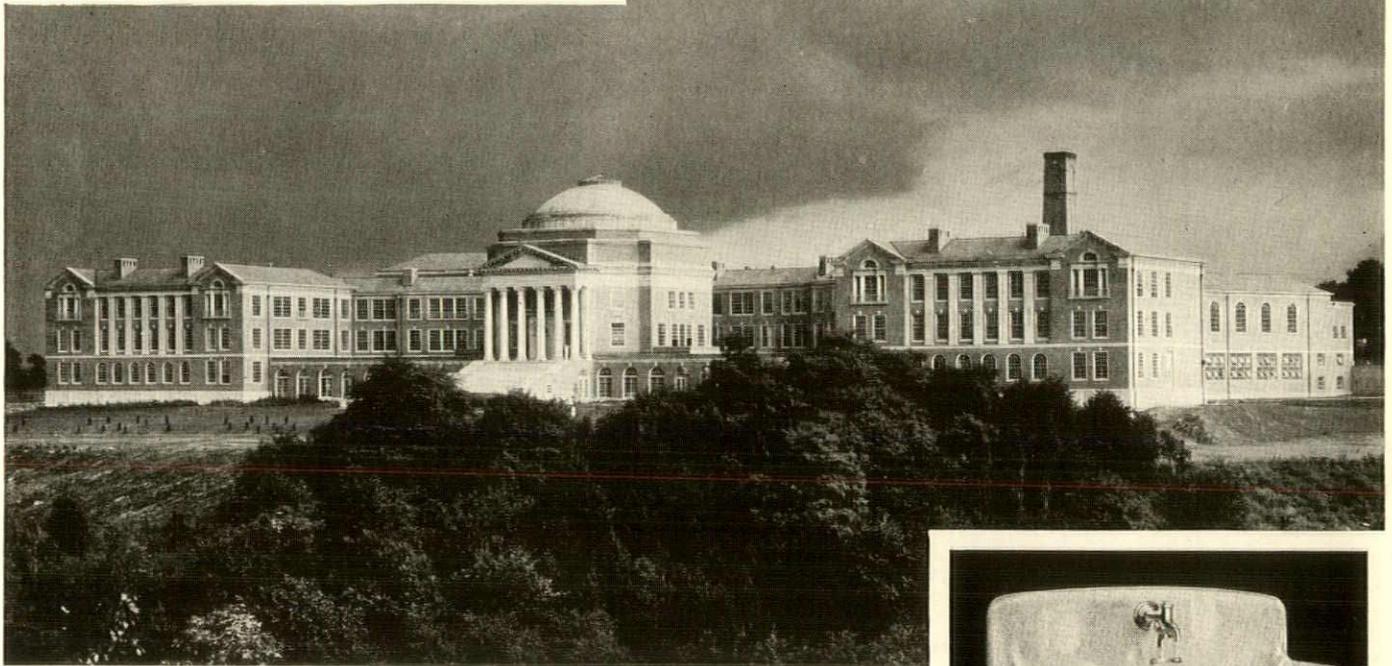
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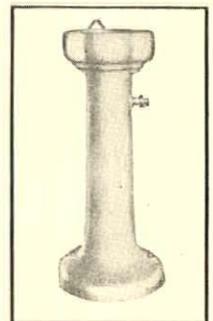
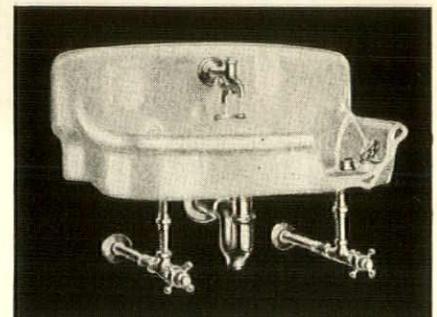
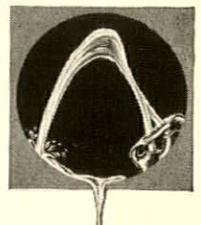
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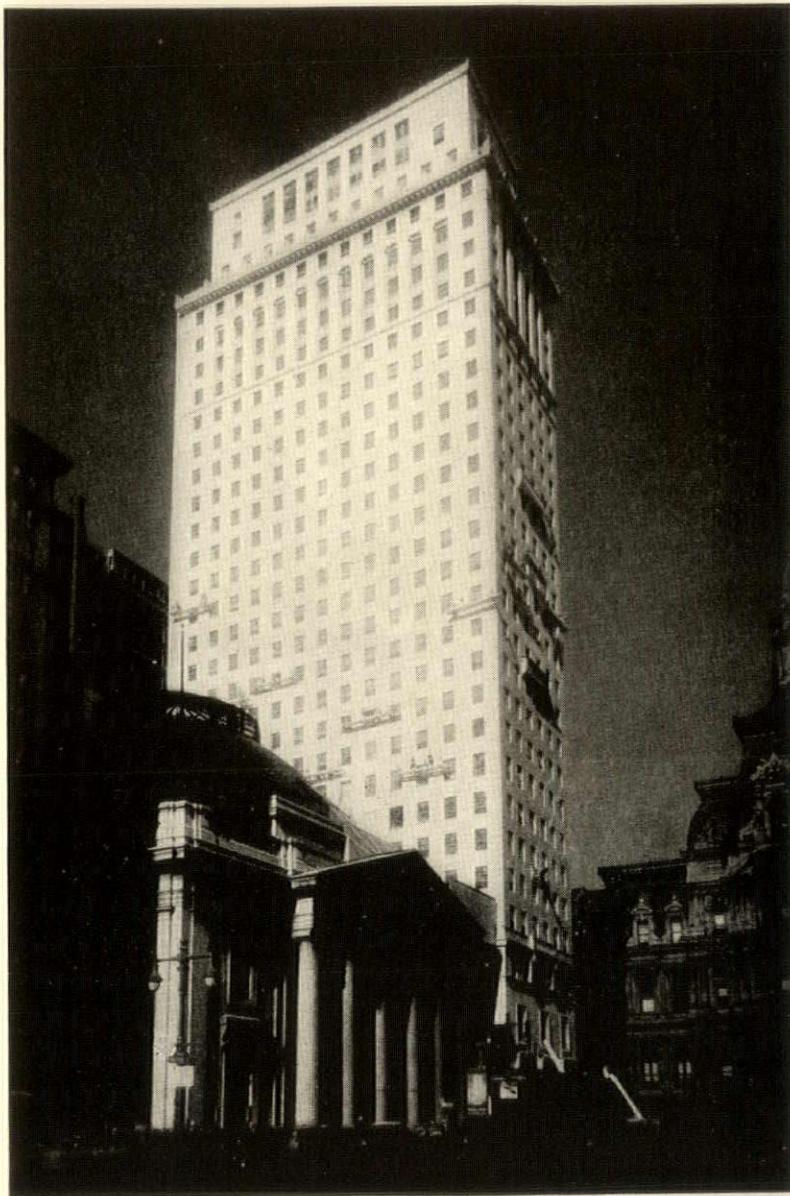
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And after 25 years Georgia Marble chosen again by the Girard Trust Company, Philadelphia



In the foreground the familiar *Girard Trust*, built a quarter of a century ago of Georgia Marble . . . just beyond, the new 30-story, all Georgia Marble, Girard Trust Company Building. The new building was completed and occupied November 2, 1931, less than one year after the marble contract was let. McKim, Mead & White are the architects for both buildings, and United Engineers & Constructors, Inc., the builders of the one just completed.

OVER twenty-five years ago the officers of the Girard Trust Company and their architects, McKim, Mead & White agreed upon Georgia Marble as the best material for their bank building . . . And last year when the exterior material for their new 30-story building was under consideration the officers of the Girard Trust Company and their architects McKim, Mead & White again agreed upon Georgia Marble as the best material . . . This helps to substantiate our contention, that the clients and architects who know the most about Georgia Marble are the ones most likely to prefer it.

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▶ ▶ IN HARTFORD

When architects design public buildings—structures that house highly valuable property and personnel—they usually specify A. D. T. Protection Services.

The New State Office Building in Hartford is typical. On every floor you will find A. D. T. Night Watchman's Supervisory and Fire Alarm Stations that are connected direct to the A. D. T. Central Station. A. D. T. Fire Alarm Gongs also are installed throughout the building.

Every hour of the day and night—week days—Sundays—holidays—A. D. T. Central Station operators are in constant touch with the building—ready to despatch emergency assistance or relay a fire alarm signal without a moment's delay.

The Connecticut State Capitol, the State Library, and the Hartford City Hall, also are A. D. T. Protected . . . as are the majority of the larger buildings of this type throughout the country.

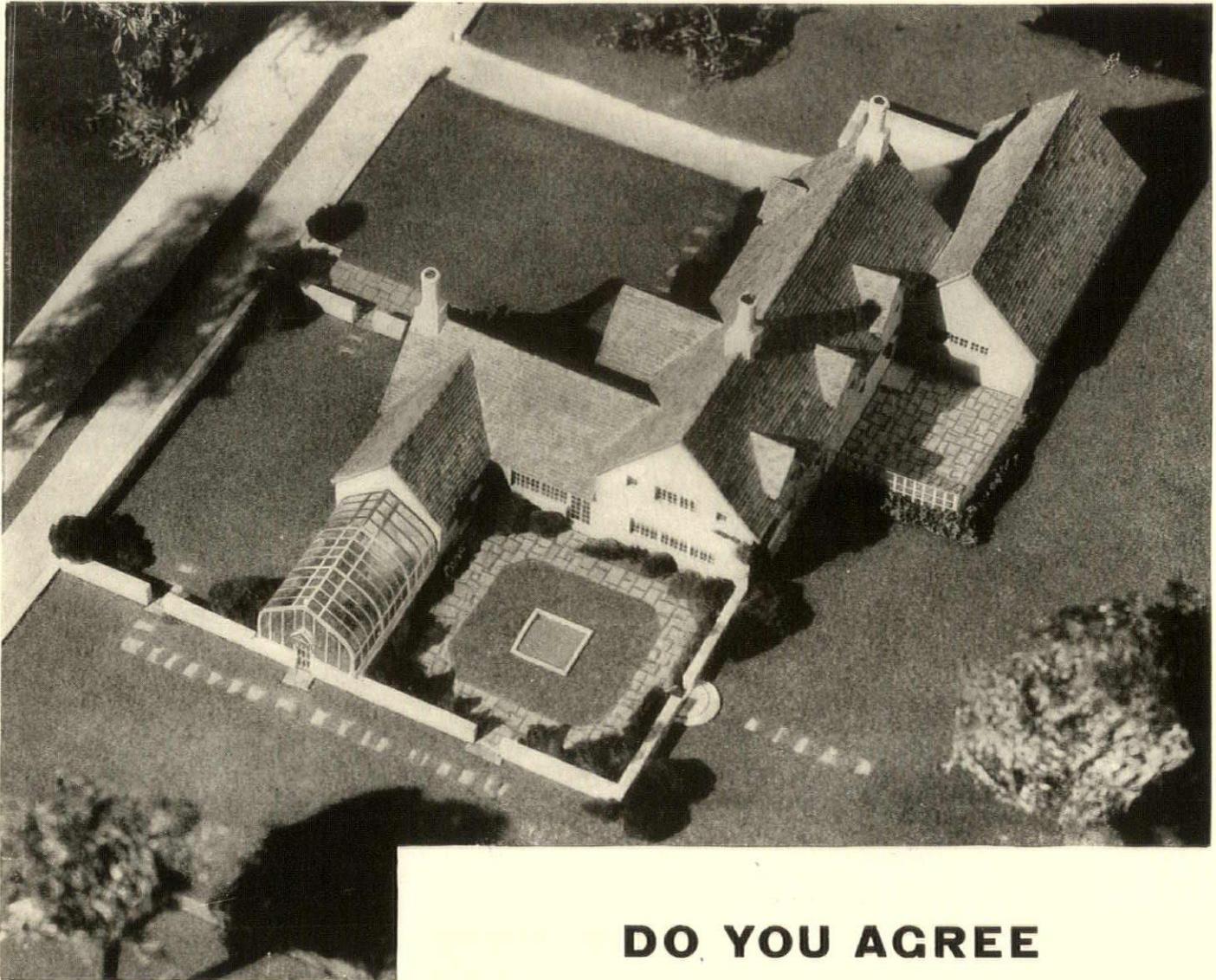
Specifications in Sweets. Bulletins on request. There are A. D. T. offices in 117 cities in the United States.

Connecticut State Office Building
Smith & Bassette, Architects



Landmarks of Modern Protection

Controlled Companies of
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Francis Keally, Architect.
Model by Edward Townsend Howes.
Photograph by George H. VanAnda.

DO YOU AGREE WITH THIS ARCHITECT?

LET US USE HIS OWN WORDS:

"In designing this layout I started off with the idea that the conservatory was just as important in the design of the house as any other part of it. I tried to make it an integral part of the composition.

"There is plenty of evidence as one drives through the country that owners are becoming more and more glass garden minded. This is presenting to the architect a new problem, and instead of steering clear of it he should accept it as part of his job and achieve the most artistic result that is possible."

To which let us add, that the new Improved V-Bar construction has many exclusive features making it particularly fortunate for just the purposes mentioned by Architect Keally.

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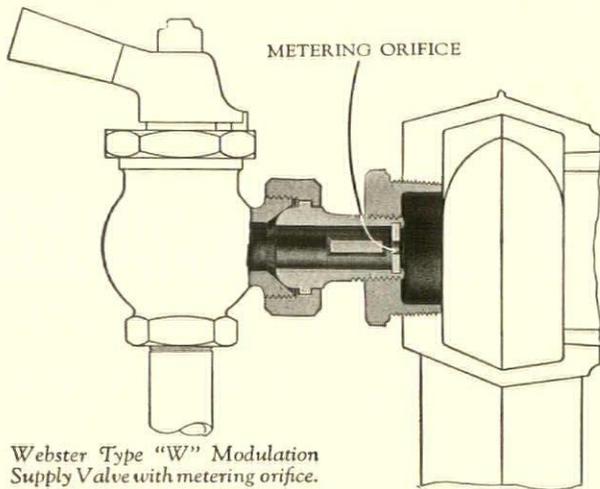
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You probably know of more than one installation where a condition like the above exists—where one or more rooms at a distance from the source of steam are “hard to heat” simply because they don’t get heat until last. This difficulty can be remedied in existing installations and built out of new installations by applying the “steam metering” principles of the Improved Webster Systems.

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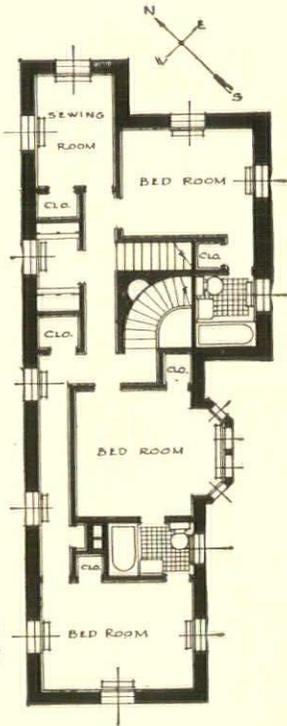


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THE BULLETIN - BOARD

APPOMATTOX MONUMENT COMPETITION

CONGRESS has provided for the acquisition of an acre of land at Appomattox, Va., commemorating the termination of the War between the States. Under the Quartermaster General, Construction Division, a competition is announced, full details of which may be had upon application to the same, Munitions Building, Washington, D. C. Drawings are due in Washington, D. C., not later than noon on Thursday, January 7.

The competition provides for the payment of \$2,300 to the author of the winning design, for which he will be required to furnish additional preliminary drawings and outline specifications. When Congress appropriates the necessary funds for construction, he will be commissioned as architect to prepare working drawings and specifications, and to act as advisor and consulting architect during construction, for which he will be paid \$2,700.

COMPETITION FOR A MEMBERSHIP CERTIFICATE

THE Architects' Emergency Committee of the Region of New York is conducting a competition for the design of a membership certificate in the Council of Registered Architects, State of New York, Inc. The competition is open to architects and draftsmen of both sexes living or working in the State of New York. There are fourteen cash prizes. Drawings are due not later than noon of December 22, 1931. Copies of the programme giving full details may be had by addressing Architects' Emergency Committee, 115 East 40th Street, New York City.

A. I. A. FRENCH TRAVELLING SCHOLARSHIP

AWARD of the French travelling scholarship of the American Institute of Architects to Robert Camelot of Paris is announced by Charles Butler of New York, chairman of the Institute's Committee on Education.

M. Camelot will make a special study of American stadia and playgrounds. For three months he will act as visiting professor of architecture at Massachusetts Institute of Technology in the absence of M. Carlu, who is detained in Paris by

illness. Later he will tour the principal cities of the United States and Canada.

M. Camelot is a graduate of the Ecole des Beaux Arts, having won in the course of his studies sixteen medals, including the Rougevin Prize, the Paulin Prize, and the Redon Prize twice. He also received the Stillman Prize, established by the late James Stillman, New York banker, in recognition of the services rendered to American architecture by the Ecole des Beaux Arts.

ARCHITECTURAL EDUCATION IN TEXAS

IN the October Bulletin Board under the heading, "Texas Goes to a Five-Year Course," we announced the action of only the Agricultural and Mechanical College of Texas. There are, of course, architectural courses in addition at Rice Institute, the University of Texas, and Texas Tech. The course at Rice has been five years, and this year the course at the University of Texas, as well as at Agricultural and Mechanical College, has become five years. These details are now added through the courtesy of Goldwin Goldsmith in order to make clear the matter of architectural education in the State of Texas.

COMPETITIONS FOR THE PRIZES OF ROME

THE American Academy in Rome has announced its annual competitions for fellowships in architecture, landscape architecture, painting, and sculpture.

In architecture the William Rutherford Mead fellowship is to be awarded, in landscape architecture the Garden Club of America fellowship, and in sculpture the Rinehart fellowship provided by the Peabody Institute of Baltimore, Md.

The competitions are open to unmarried men not over thirty years of age who are citizens of the United States. The stipend of each fellowship is \$1,500 a year with an allowance of \$500 for transportation to and from Rome and an allowance of \$150 to \$300 for materials and incidental expenses. Residence and studio are provided without charge at the Academy, and the total estimated value of each fellowship is about \$2,500 a year.

Entries for competitions will be received until February 1. Circulars of information and application

blanks may be obtained by addressing Roscoe Guernsey, Executive Secretary, American Academy in Rome, 101 Park Avenue, New York.

FIFTH ANNUAL SMALL- HOUSE COMPETITION AWARDS

THE work of architects from twenty-one States and also from Hawaii was submitted in the Fifth Annual Small-House Competition, held by *The House Beautiful* magazine, which closed on October 15. Two thousand dollars in prizes were awarded, three prizes having been offered for the best six to twelve room houses built recently in the United States east of the Mississippi and three prizes for those built west of the Mississippi.

The judges were Ethel B. Power, Editor of *The House Beautiful*; Eleanor Raymond, A. I. A., of Boston; and Robert Rodes McGoodwin, A. I. A., of Philadelphia.

The prizes and honorable mentions were awarded as follows: For the best houses east of the Mississippi: First Prize, Franklin Abbott, New York City; Second Prize, Waldron Faulkner, New York City; Third Prize, Dwight James Baum, New York City.

Honorable Mention: Hudson & Hudson, Buffalo, two houses; W. E. Kapp, Detroit; Henry Dubin, Highland Park, Ill.; Baumann & Baumann, Knoxville, Tenn.

For the best houses west of the Mississippi: First Prize, Gordon B. Kaufmann, Los Angeles; Second Prize, Roland E. Coate, Los Angeles; Third Prize, Austen Pierpont, Ojai, Calif.

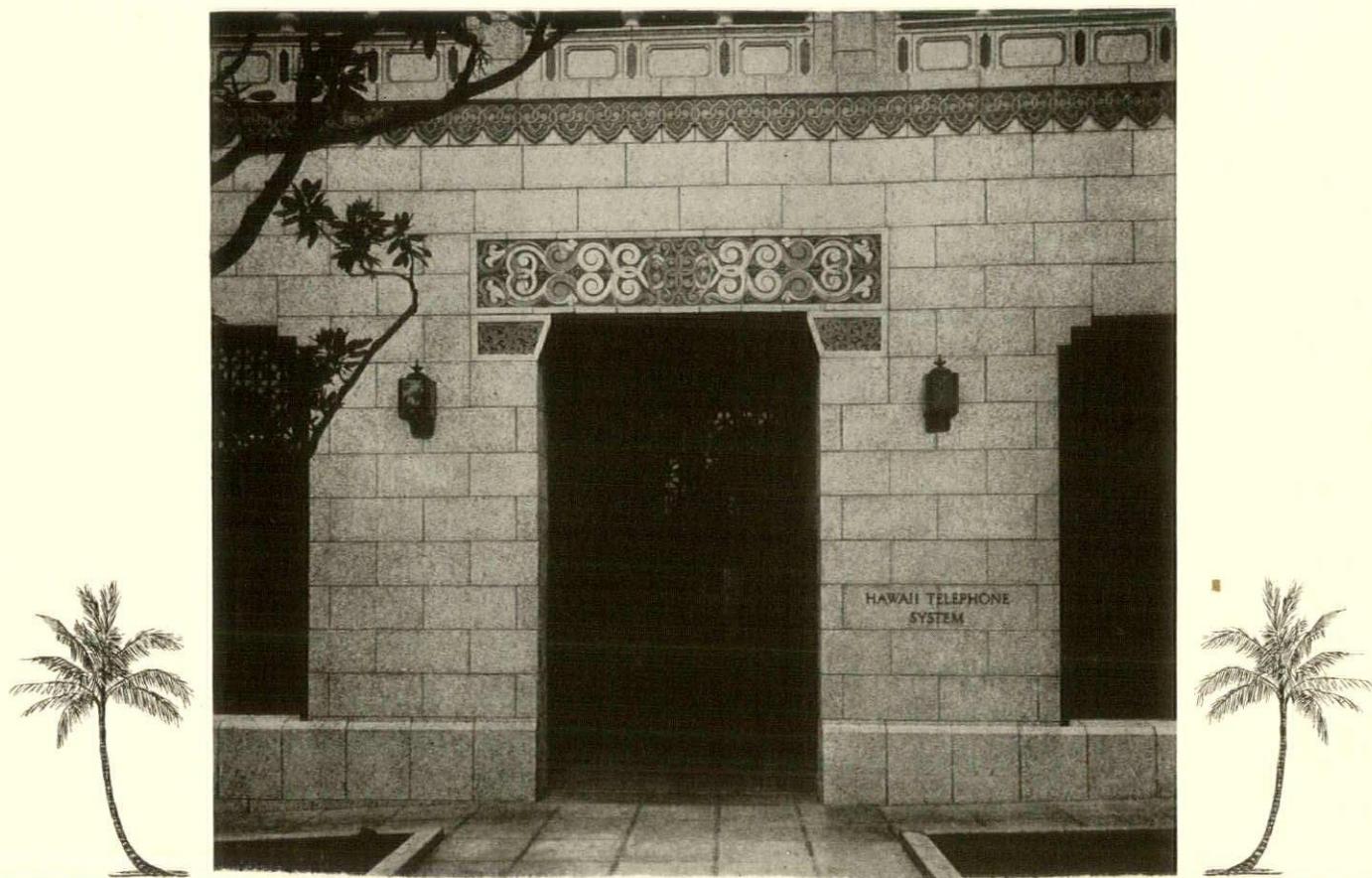
Honorable Mention: Roland E. Coate, Reginald D. Johnson, H. Roy Kelley, David J. Witmer, and Loyall F. Watson, all of Los Angeles; and John F. Staub, Houston, Tex.

California and New York led in the number of entries submitted, as well as in the awards received.

THE BUILDING SITUATION

BUILDING permits in 562 cities and towns of the United States during the month of September, 1931, amounted to \$96,258,098 according to official reports made to S. W. Straus & Co. This figure represents a 13.7-per-cent decline from August of this year, when the volume for these cities was \$111,474,294. Permits issued during September, 1931, fell 42.2 per cent below the same month of 1930. This

(Continued on page 13)



In Hawaii—as Elsewhere
MODERN ATLANTIC TERRA COTTA
Expresses the NEW trend in Architecture

THE decided trend toward color and effective ornamentation in architecture has emphasized the interest in Atlantic Terra Cotta. For with Atlantic Terra Cotta there is beauty without extravagance. It meets in every respect the need for a building material, both for exterior and interior use, that is substantial in structure, versatile in application, strikingly attractive in its coloring. . . . Above is illustrated the entrance detail of a new building for the Hawaii Telephone System in Hilo. Atlantic Terra Cotta in a mottled golden cream and buff Abbochrome with a special oak bark surface was used for the entire exterior, relieved with Polychrome panels and Chinese border motif.

Write for illustrated booklet. With more than 50 years of experience, four large plants, a splendid corps of artists, artisans and draftsmen, we can offer architects exceptional co-operation on problems pertaining to Terra Cotta.

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THE BULLETIN - BOARD *Continued*

decline between the months of August and September of this year is not as drastic as it may seem, due to the fact that the expected decline between permits for these two months, due to seasonal factors alone, is 9.8 per cent.

As a group the twenty-five cities reporting the largest volume of permits for the month showed a decline of 12.3 per cent from August; a decline of 32.5 per cent from September last year, and a decline of 42.8 per cent from September of 1929.

Thirteen of the cities made individual gains over September, 1930—namely, Boston, New Haven, Worcester, Washington, D. C., Indianapolis, Terre Haute, St. Louis, Yonkers, Pittsburgh, Cambridge, Hackensack, St. Paul, and Englewood. Nine of these twenty-five cities registered advances over September, 1929. They are as follows: Boston, New Haven, Worcester, Indianapolis, Terre Haute, Yonkers, Hackensack, Englewood, and Albany.

W. KENNETH CLARK,
1884-1931

W. KENNETH CLARK, of New York City, who was known not only throughout this country, but abroad, for his architectural photography, died at the Sibley Memorial Hospital in Washington on October 31. Of the great amount of photographic work done by Mr. Clark, probably the best known is that which he did in collaboration with Russell F. Whitehead in the *White Pine Series*, now published as *The Monograph Series*. In the opinion of many, Mr. Clark's photographs have set a new standard in the representation of architectural detail.

One of his notable achievements was the photographing of the Mayan remains in Central America for the Carnegie Foundation.

DANIEL CHESTER FRENCH,
1850-1931

DANIEL CHESTER FRENCH, noted sculptor, died in his sleep on October 7, at his home in Stockbridge, Mass., where he had been confined to his bed for two weeks with heart disease.

Daniel Chester French held a commanding place in his art for more than half a century. Success came to him comparatively early in life. When he was twenty-three years old

his model of "The Minute Man" was accepted by the citizens of Concord at a meeting presided over by Ralph Waldo Emerson.

The excellence of this work, which commemorated the embattled farmers who "fired the shot heard round the world," was comparable to his statue of Abraham Lincoln, now in the Lincoln Memorial at Washington. He was seventy when this was completed, so that nearly half a century separated his two best-known pieces of work.

In the intervening years Mr. French worked with unflagging energy on a variety of subjects, both massive and small. His own favorite was the bust of Emerson now in Emerson Hall at Harvard College.

Mr. French attended the Massachusetts Institute of Technology in Boston for a year. Then for a brief period he worked in the studio of J. Q. A. Ward, after which he went abroad and worked for a year under the tuition of Thomas Ball in Florence. Later he studied in Paris.

Among his well-remembered works are the colossal figure of the Republic, and his Columbus Quadriga, designed for the Chicago World's Fair. But it was the memorial to Martin Milmore, "Death and the Sculptor," in Forest Hills Cemetery near Boston, which won for him a medal at the Paris Salon of 1892. The four groups in front of the Customs House—Europe, Asia, Africa, and America—are among his better-known works in New York City.

Although Mr. French began his career by modelling animals, he usually co-operated with his former pupil, Edward C. Potter, when he received a commission for an animal group.

He did the three pairs of bas-reliefs for the bronze doors of the Boston Public Library; the "Spirit of Life," executed by Katrina Trask, at Saratoga, N. Y.; the Alice Freeman Palmer Memorial for Wellesley College; "Memory," in the Metropolitan Museum of Art; "Mourning Victory," a memorial to the Melvin Brothers at Concord, Mass.; the "Alma Mater" for Columbia University; the "Justice, Knowledge, and Force" for the Appellate Courthouse, in New York, and the figures of Greek Religion and Greek Poetry for the Brooklyn Institute.

His statues include those of Governor James Oglethorpe, at Savannah, Ga.; Lincoln, at Lincoln, Nebr.; Roger Wolcott and William F. Bartlett, at Boston; Governor Pillsbury, at St. Paul, Minn., and

the busts of Emerson, Phillips Brooks, and Edgar Allan Poe in the Hall of Fame.

He received medals at the Paris Exposition in 1900, from the New York Architectural League in 1912; from the Panama Pacific Exposition at San Francisco in 1915, and from the National Institute of Arts and Letters in 1918. He was a member of the National Commission on Fine Arts from 1910 to 1915 and its chairman for the last three years. He was honorary president of the National Sculpture Society, a member of the Art Commission of New York, the Architectural League, the American Academy of Arts and Sciences, and the Accademia di San Luca in Rome. France made him a Chevalier of the Legion of Honor in 1910. He received the honorary degree of A.M. from Dartmouth, Harvard, and Yale, and Litt.D. from Columbia.

PERSONAL

Atwood & Weeks, Inc., architects, have moved their principal office from Chapel Hill to 204 Trust Building, Durham, N. C.

Michael J. De Angelis, architect, announces the opening of his offices in the Investment Building, Fourth Avenue, Pittsburgh, Pa.

Ernest R. Gilbert, architect, formerly associated as designer with L. P. Smithey, of Roanoke, has opened an office at 2801 Stonewall Avenue, Richmond, Va., and would like to receive manufacturers' catalogues for his A. I. A. files.

Leo J. Sharps, architect, announces the opening of his office for the practice of architecture, at 1412 Burlingame Avenue, Burlingame, Calif., and would like to receive manufacturers' samples and catalogues.

Samuel Z. Moskowitz, architect, announces the opening of his office at 578 Madison Avenue, New York City. Mr. Moskowitz would like to receive manufacturers' catalogues and samples.

The partnership of Gaggin & Gaggin, architects, has been dissolved, and each member will carry on the practice of architecture individually: T. Walker Gaggin with offices in the First Trust and Deposit Building, Syracuse, N. Y., and Edwin H. Gaggin working at 846 Ostrom Avenue, Syracuse, N. Y.

Charles R. Greco, architect, Edward G. Reed, associated, announce the removal of their offices to the Citizens Building, Cleveland, Ohio.

New Beauty — IN EMBOSSED LINOLEUM

Shaded Tiles of Softly Blended Colors Now Offered by Armstrong

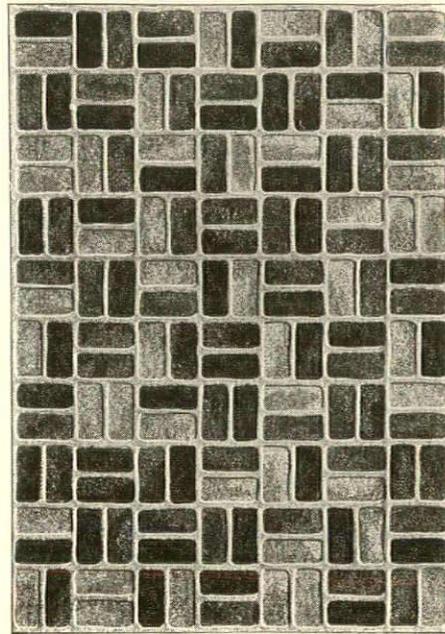
LONG a favorite with architects and their clients, Armstrong's Embossed Linoleum now bids for still greater popularity. *Shaded Embossed*, a brand-new type, gives effects never before achieved in linoleum.

Colors are softly blended, ranging from deep to delicate hues in the same tile. The mottled gray interliners which frame these strikingly shaded tiles do not show dust and dirt. Embossing adds depth and texture.

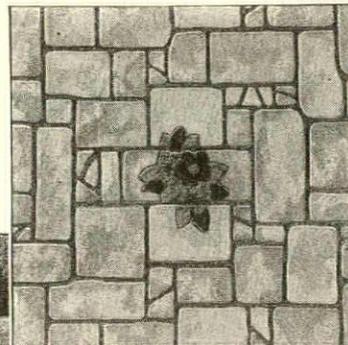
Run your hand over the Accolac-Process surface . . . you'll feel a satin-smoothness that means easy, inexpensive maintenance. Quiet comfort underfoot is another virtue.

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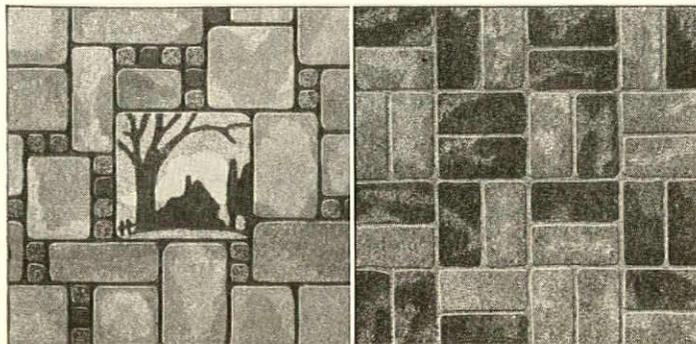
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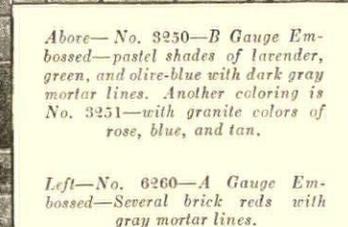
Here's No. 6240—A Gauge Embossed—shaded red tiles with dark gray interliners. Other colorings are No. 6241—light blue, gray, and white tiles with occasional tiles in rose and green; and No. 6242—tiles in three shades of fresh, cool green with occasional tiles in lavender and orange.



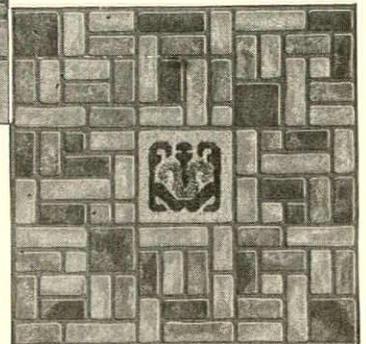
Below—No. 3260—B Gauge Embossed—green tiles with insets of purple, gold, and white. No. 3261, the same design, has red tiles, dark gray interliners, and insets of blue, orange, and white.



No. 6250—A Gauge Embossed—Contrasting granite colors of rose, blue, and tan with occasional silhouette inset figures in blue. No. 6251 is the same design in heather purple, olive, and blue-green with black silhouette insets.



Above—No. 3250—B Gauge Embossed—pastel shades of lavender, green, and olive-blue with dark gray mortar lines. Another coloring is No. 3251—with granite colors of rose, blue, and tan.



Left—No. 6260—A Gauge Embossed—Several brick reds with black mortar lines.

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ARCHITECTURE

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THE PROFESSIONAL ARCHITECTURAL MONTHLY

VOL. LXIV, NO. 6

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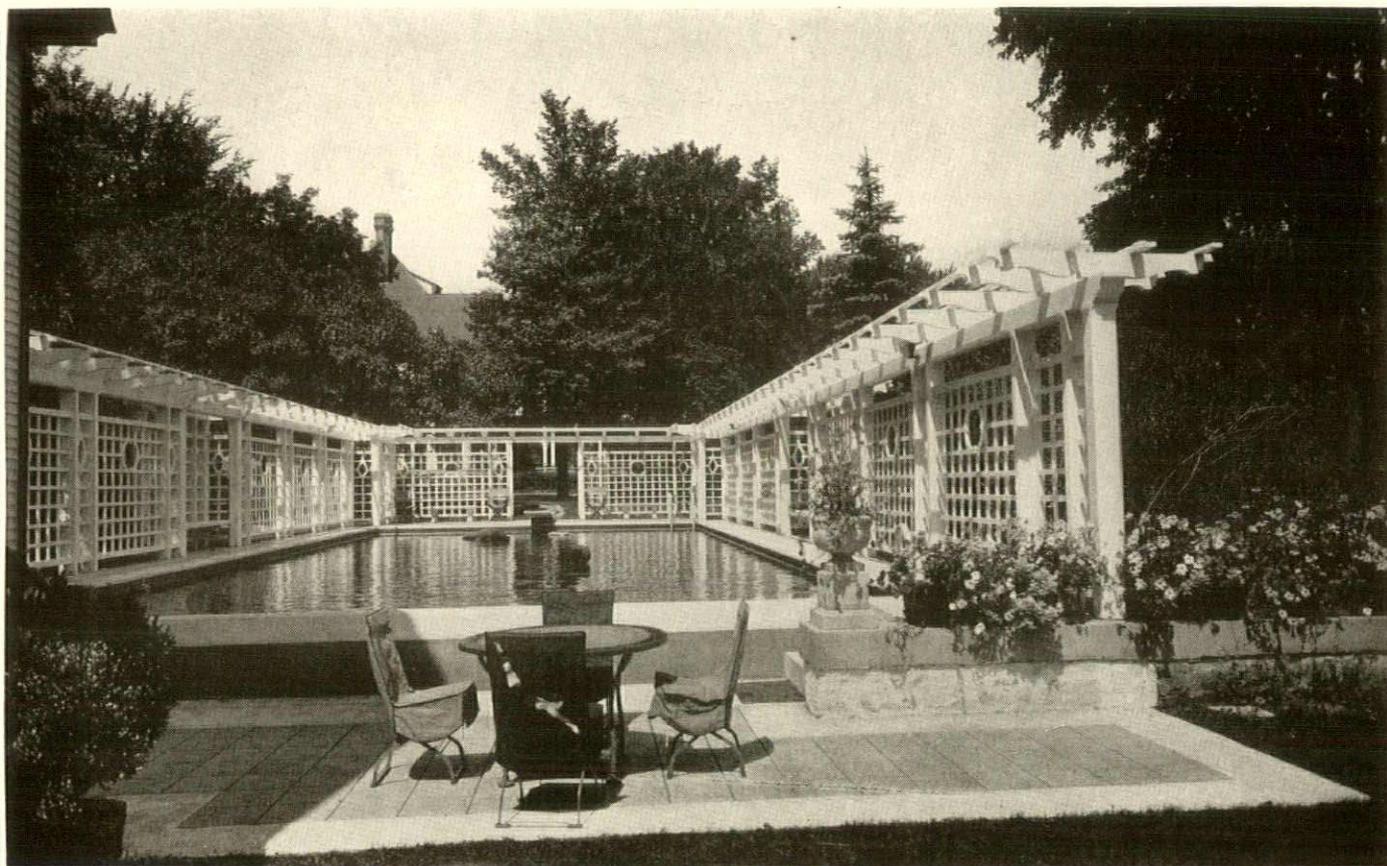
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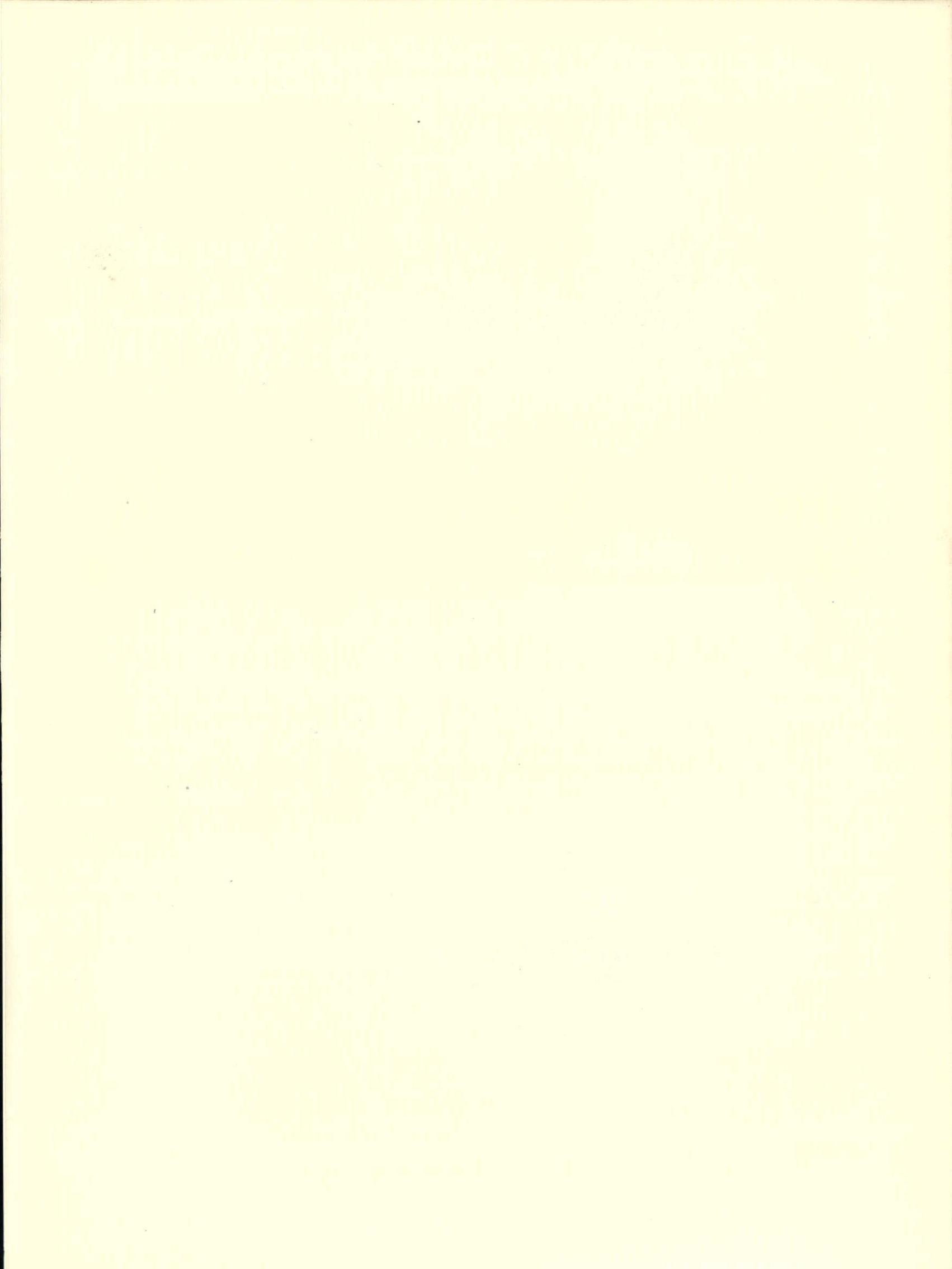
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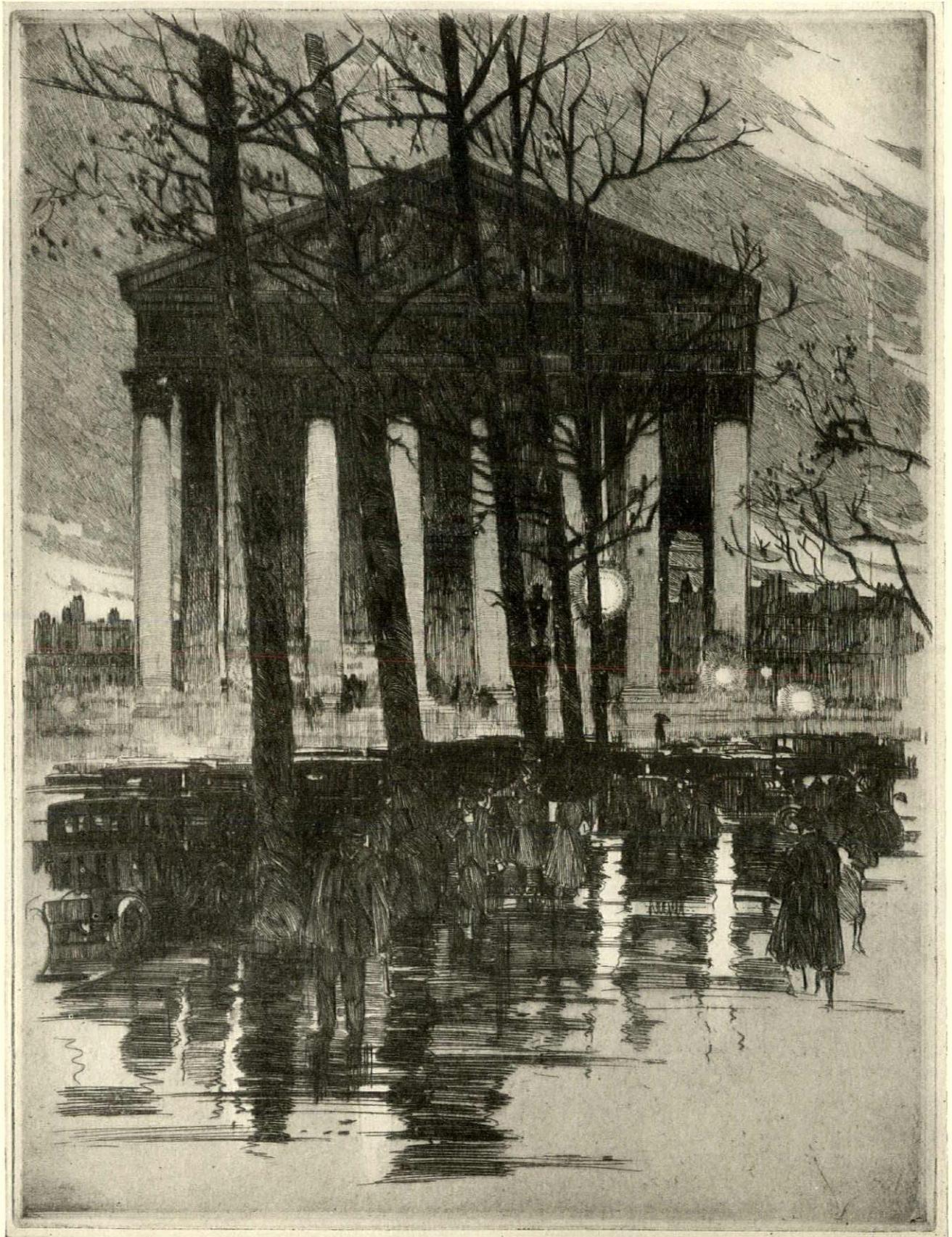
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CHURCH OF THE MADELEINE, PARIS.
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From the etching by Donald M. Kirkpatrick

ARCHITECTURE

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Regulating Lines

By Claude Bragdon

 WORK of architecture may be both dramatic and organic, but it will fail to achieve the perfection of a work of art unless it be also *schematic*.

What is the meaning of this word in this connection? It means a disposition of parts according to some co-ordinating law or principle—just as every part of every snowflake, for example, is disposed according to the mathematical law which governs water-crystallization. Only in this way is multiplicity co-ordinated into unity, and unity dissolved into multiplicity without itself being lost in the process. Like the string of a bead necklace, like the baton of an orchestra leader, schematization is the *binder*, the preserver of union.

In decorative and pictorial art this is frequently the *color scheme*, a principle according to which colors have been chosen, grouped, and proportioned; in music it is the *key*, or chosen series of notes comprising a single scale; and the division of time into bars, beats, and measures operates to the same end.

Now, quite in analogy with this dividing of time into larger, lesser, and least units, it is an aid to unity in architectural design to divide space similarly. And because it is the general practice to develop an architectural idea first in two dimensions, the useful agent for such subdivision will be a surface marked off into squares—what is known as profile paper. By means of such *regulating lines* the principal relations of length, width, height, and of lesser subdivisions to greater, are easily co-ordinated into a single scheme of mathematically related parts, expressible by ratios of small quantity—“musical” therefore.

Such employment of linear units is one aspect

In lieu of wide and somewhat difficult search on the reader's part, Mr. Bragdon focusses for us a concise survey of man's attempts to follow "regulating lines" in his designing, with practical suggestions for utilizing their aid.—EDITOR.

of what is known as static symmetry. It is the most obvious method of tying a design together by means of an invisible mathe-

matical net. It can be seen in the enclosures built by primitive man no less than in the works of great architects, as their surviving drawings, indeed, sometimes attest (Illustration 1). There is another order of regulating lines, however, more subtle, more various, and at the same time more simple: the co-ordination of the various parts of a design by means of such elementary geometrical figures as the circle, the equilateral triangle, and the square.

“The regulating line,” says Le Corbusier, “is a satisfaction of a spiritual order which leads to the pursuit of ingenious and harmonious relations. It confers upon the work the quality of rhythm.” Now the circle, the equilateral triangle, and the square, themselves yield “a satisfaction of a spiritual order” because the spiritual world is the archetypal world and they are *archetypal*. To attempt to tell why, or in what manner, would lead too far afield; suffice it to say that they are the two-dimensional correlatives of the sphere, and of the tetrahedron and the cube, the simplest of the Platonic solids. A more intelligible reason is that these figures may be said to constitute the “regulating lines” of the human temple itself, as shown in Illustration 2. And to them should be added the pentagram, or five-pointed star, which is also intimately related to the body of man—its symbol, in point of fact, by reason of man's “five-foldness.”

Another easily applied and highly useful variety of regulating lines is what are known as *parallel diagonals*. The principal mass of a building being indicated in the form of a rec-

PLAN OF A CHURCH BY VILLARD DE HONNECOURT — REGULATING LINES IN THEIR MOST SIMPLE FORM

1:2 - OCTAVE

2:3 - FIFTH

3:4 FOURTH

4:7 - SUB-MINOR 7TH

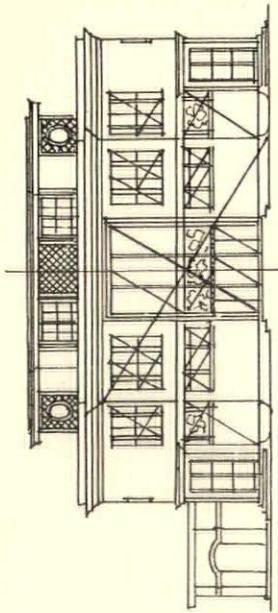
RECTANGLES OF STATIC SYMMETRY

Illustration 1

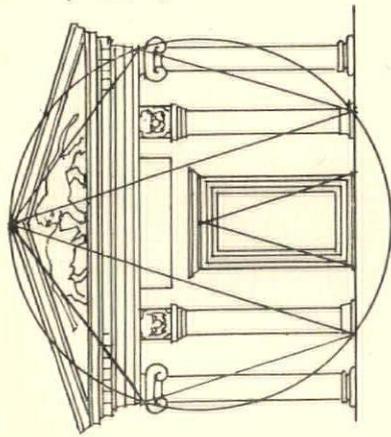
THE HUMAN FIGURE IN ITS RELATION TO ELEMENTARY FIGURES OF GEOMETRY. THE CIRCLE, THE SQUARE, THE EQUILATERAL TRIANGLE & THE PENTAGRAM OR FIVE POINTED STAR

Illustration 2

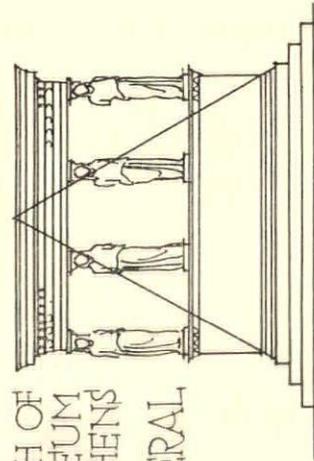
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PARALLEL DIAGONAL REGULATING LINES
THE FACADE OF A VILLA BY LE CORBUSIER

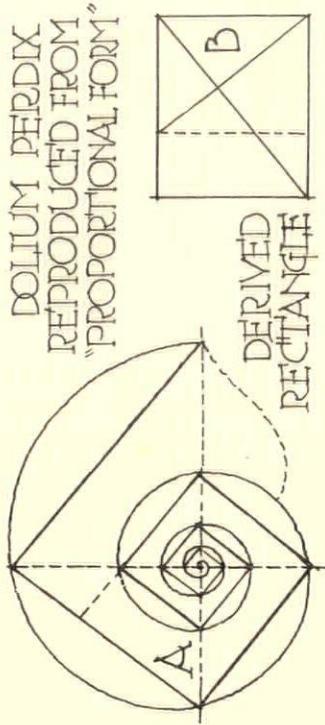


TOMB OF MIRA
IN ASIA MINOR
THE PENTAGON

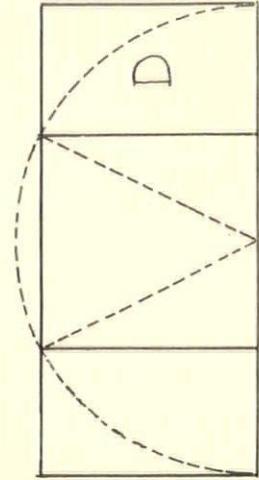


CARYATID PORCH OF
THE ERECHTHEUM
AT ATHENS
THE EQUILATERAL
TRIANGLE

Illustration 3

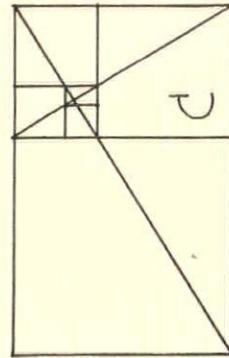


LOGARITHMIC OR EQUI-ANGULAR SPIRAL
THE KEY-FIGURE OF DYNAMIC SYMMETRY



THIS 'ROOT-FIVE
RECTANGLE
EQUALS THE
WHIRLING SQ.
RECTANGLE
PLUS ITS RE-
CIPROCAL "D"

FORMATION OF THE ROOT-FIVE RECTANGLE



"RECTANGLE OF THE
WHIRLING SQUARES"
SO CALLED FOR
THE REASON THAT
ITS CONTINUED RE-
CIPROCAL'S CUT OFF
SQUARES

WHIRLING SQUARE & ROOT-FIVE RECTANGLES

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Illustration 4

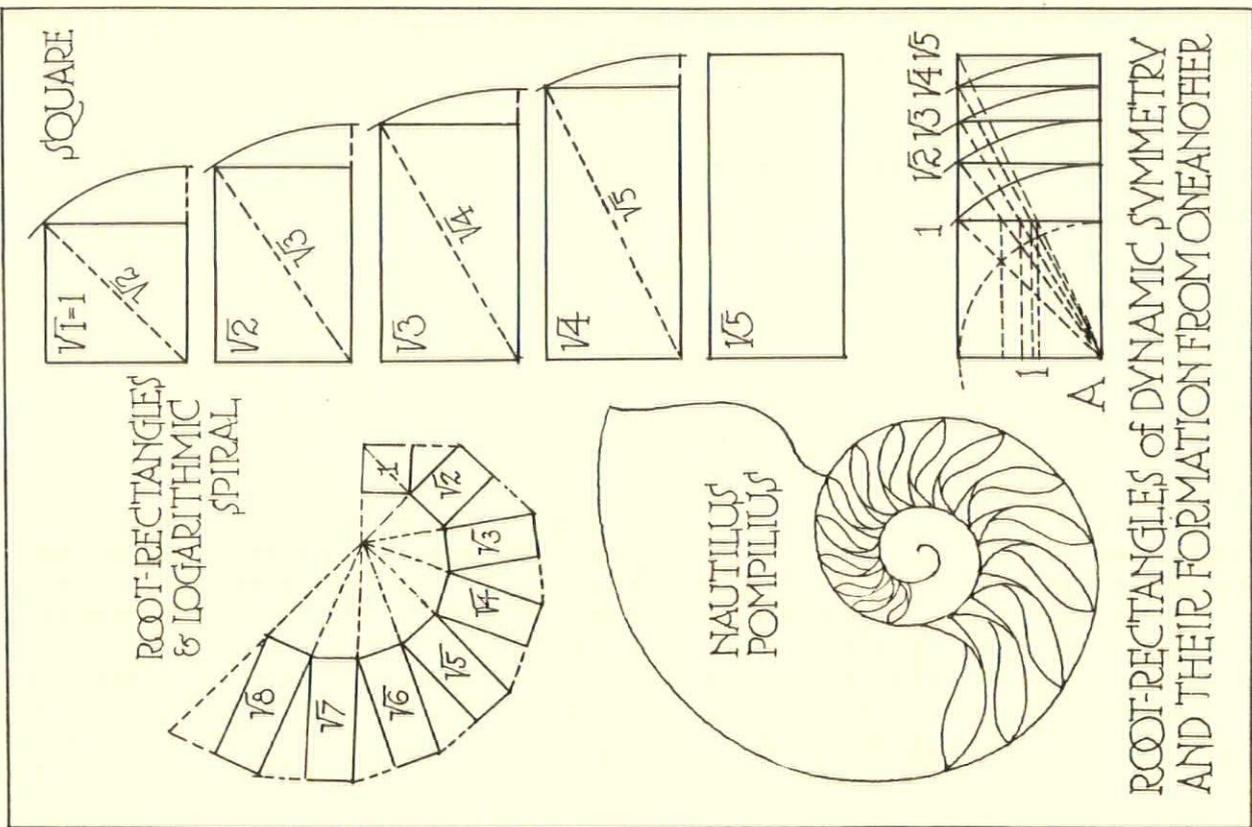
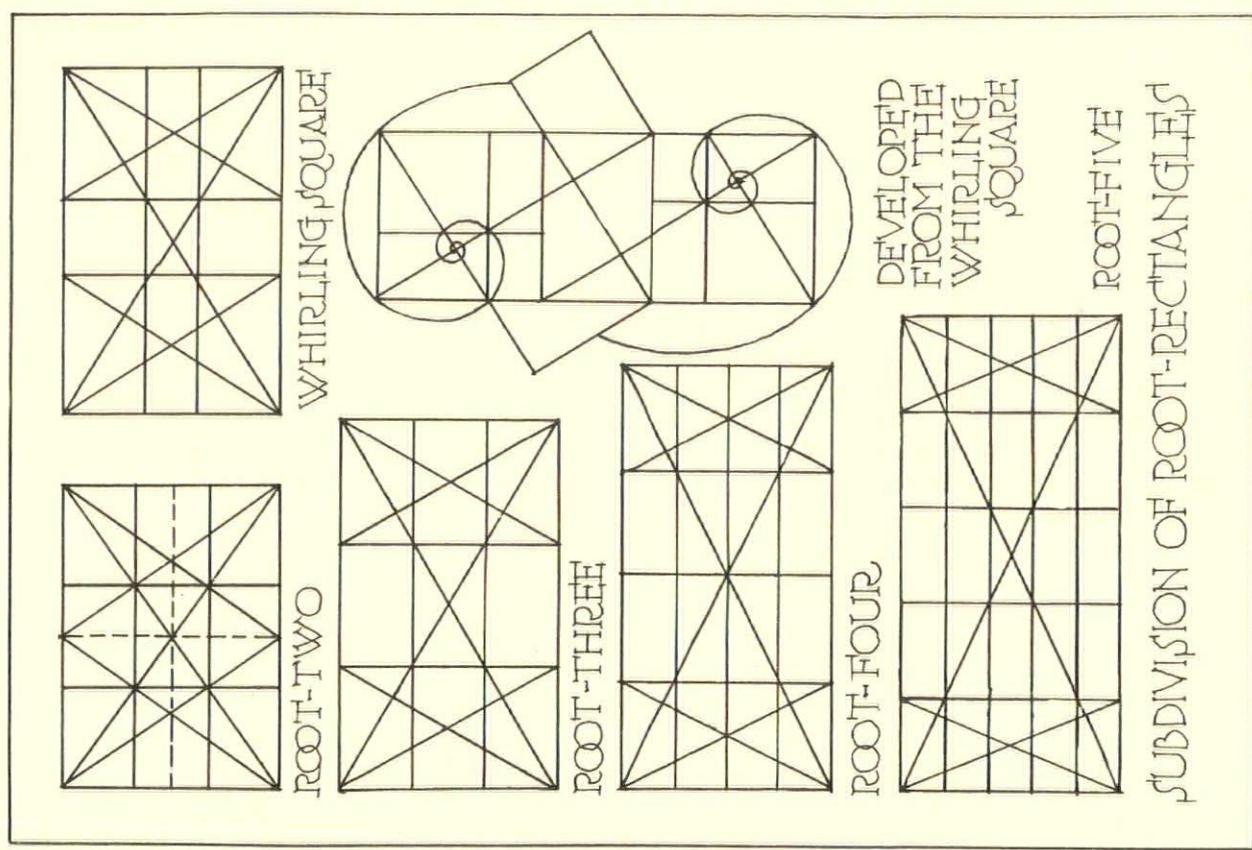


Illustration 5



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Illustration 6

tangle, the diagonal of that rectangle and its perpendiculars will establish the proportions of the secondary elements—pavilions, wings, doors, windows, etc. This conforms to the laws which govern bodily structure, for a tall, thin person has long, slender hands and feet; whereas if the figure be stout and squat these members will be short and thick. The use of this order of regulating lines is indicated in Illustration 3.

But the most important system of regulating lines is that to which Jay Hambidge, its re-discoverer, gave the name of dynamic symmetry. It differs from static symmetry in that it is based upon the commensurability of areas instead of the commensurability of lines. It is said to have originated in the land-surveying operations by means of rope-stretching of the ancient Egyptians, an art at which they became very adroit by reason of the annual inundation of the Nile valley. They applied the same methods to the laying-out of their temples; the Greeks learned these from the Egyptians and ultimately developed a universal canon of proportion. Such at least was Mr. Hambidge's contention, largely borne out by the evidence which he adduced.

It is my belief that a working knowledge of dynamic symmetry will become a necessary part of the education of the architect of the future; and as it is to him that this essay is primarily addressed, I shall present the bare essentials of the system as briefly and clearly as I can.

When Hambidge told me that the logarithmic spiral was the generative figure of dynamic symmetry I had to believe in it at once, because this "*spira mirabilis*" is as it were the form of forms; and, if the astronomers are right in thinking that the spiral nebulae are stellar systems like our own, it is the very pattern of the universe itself. This spiral appears constantly in nature as a cone rolled in upon itself, the result of continued proportionate growth, as illustrated in the nautilus' shell and the ram's horn, and there are few organic forms in which the logarithmic spiral may not be traced.

This, then, is the egg from which dynamic symmetry is hatched, and the process is as follows: First translate the spiral into its rectilinear equivalent, as in Illustration 4. (A) Now complete the rectangle and it will be seen that the two radii vectors of the spiral at right angles to one another (indicated in dotted lines) constitute a diagonal and the perpendicu-

lar to the diagonal. These lines establish proportion within the rectangle for the reason that the perpendicular to the diagonal is itself the diagonal of a reciprocal rectangle (B), and this process goes on repeating itself as shown in the whirling-square rectangle C.

There are certain rectangles whose sides are divided into equal parts by the perpendicular to the diagonal. These possess remarkable properties, one of which is that the ends and sides, though not (with one exception) commensurable in line, are commensurable in square. They are called root-rectangles, and the first four of the series with their combinations and derivatives constitute the *material*, so to speak, of dynamic symmetry. They are shown, together with the square, their generating figure, in Illustration 5, and Illustration 6 shows them subdivided by means of their diagonals and perpendiculars to the diagonals into reciprocal forms, similar to the whole. Let us examine these rectangles in detail.

In the root-two rectangle, the long side is divided into two equal parts by the perpendicular to the diagonal. A square constructed on the end is exactly one-half, in area, of the square constructed on the side. The numerical relation between the end and side would be $1 : \sqrt{2}$, or $1 : 1.4142$, an indeterminate fraction. The perpendicular to the diagonal forms the diagonal of a reciprocal rectangle equal to half the whole, and lines drawn through the intersections of the perpendiculars with the diagonals subdivide the rectangle into shapes similar to the whole.

In the root-three rectangle the side is divided into three equal parts by the perpendicular to the diagonal. A square on the end is one-third the area of a square on the side, the end and side being therefore in the relation of $1 : \sqrt{3}$. The reciprocal defined by the perpendicular to the diagonal is one-third the whole.

In the root-four rectangle the perpendicular divides the side into four parts, the ratio between its end and side being $1 : \sqrt{4}$. The square root of four being two, this root rectangle is unique in having its sides commensurate both by squares and by linear units. The reciprocal defined by the perpendicular to the diagonal is one-fourth of the whole.

In the root-five rectangle the division is into five parts and the ratio between the end and the side $1 : \sqrt{5}$. A derivative of the root-five rectangle, and closely related to it, is the whirling-square rectangle, so called because its

continued reciprocals cut off squares (*C*, Illustration 4). An interesting fact in connection with the whirling-square rectangle is that the ratio between its end and its side, 1:1.618, is also the ratio between any two terms of a converging summation series—so called because each succeeding term of the system is obtained by adding the two preceding terms. This ratio expresses the fact in the growth of plants known as phyllotaxis, or leaf-distribution, thus relating this rectangle to nature in a direct and vital way.

As said before, only the first four root-rectangles are used in dynamic symmetry, because beyond the root-five the relations become too subtle for the eye to resolve—like those harmonics which are beyond the compass of the human ear. The whirling-square rectangle is a root-five rectangle minus one of the whirling square's reciprocals. A square-plus-a-root-five rectangle determined, according to Mr. Hambidge, the chief proportions of the Parthenon, and there are other derivatives and combinations which might be mentioned, but farther than this it is not necessary or profitable to go.

The easiest way to lay out the root-rectangles is by a decimally divided scale, though it is the one least calculated to bring out their harmonic subdivisions and their relation to one another. The ratios between the ends and sides expressed decimally are as follows:

| | |
|----------------------|----------|
| Root-two..... | 1:1.4142 |
| Root-three..... | 1:1.732 |
| Root-four..... | 1:2. |
| Root-five..... | 1:2.236 |
| Whirling square..... | 1:1.618 |

A better way, at least for a beginner, is to use geometry instead of arithmetic, developing the rectangles from the square and from one another; for by these means they are perceived to be units of an infinite series having certain properties in common, and interrelated in amusing and amazing ways.

The method is indicated in Illustration 5: the diagonal of each root-rectangle, beginning with the square, determines the length of the side of the next succeeding. They may also be developed inside a square by using the quadrant of circle as shown in *A*, Illustration 5. The root-four rectangle, being a double square, is established by a single semicircular swing of the compass. A quick way of drawing a root-five rectangle is shown in Illustration 4, and thereby

is automatically created within it a rectangle of the whirling squares and its reciprocal.

Architectural design, in the last analysis, is a matter of space subdivision, and as such is all compounded of mathematical relations—they are *there*, whether or no, and cannot be thought or argued away. This being so, if these relations, instead of being merely fortuitous, are made orderly, coherent, of the same sort discoverable in organic growth and structure, there will result that satisfaction of the eye to which we give the name of beauty, the correlative of that satisfaction of the mind to which we give the name of truth.

The square, the circle, the equilateral triangle, the root-rectangles and the rectangle of the whirling squares are *significant forms* in the sense that they are mathematically unique and important, as it were *archetypal*. Therefore it is entirely reasonable that they should be used as regulating lines, a warp of stretched threads, so to speak, on which to weave any design whatsoever. And this *woof*, or pattern, however free and various, will be subtly acted upon by what is underneath—the mathematics will *show through*, imparting to the design an organic beauty which it might otherwise lack.

It is quite true that masterpieces have been created by men who could have had no knowledge either of static or dynamic symmetry. Their work, nevertheless, on analysis is found to submit itself to such geometrical synopsis. The explanation of this is that "the artist follows the rules without knowing them"—he is a subjective mathematician in the same sense that a gifted but untrained musician unconsciously follows the laws of musical harmony. The question then arises, why *have* regulating lines if the intuition of the artist achieves the desired result without them? The sister art of music provides the most effective answer to this question. No matter how gifted a composer may be, for his talent to express itself fully a knowledge of harmony is necessary; his ignorance of it will bar him from certain things he might otherwise accomplish, and trap him into errors otherwise avoided. Now, regulating lines are to architecture what the science of harmony is to music. It is true that they have only a negative value, in that they will no more make a man a good designer than a knowledge of harmony will make a man a good composer: they are an aid, and not a substitute for self-expression, but they are an aid which should not be underrated or ignored.



Photographs by Sigurd Fischer



President's Office and Executive Offices, respectively, of E. R. Squibb & Sons, Squibb Building, New York City. The Firm of Ely Jacques Kahn, architects

Modernism in Woodwork

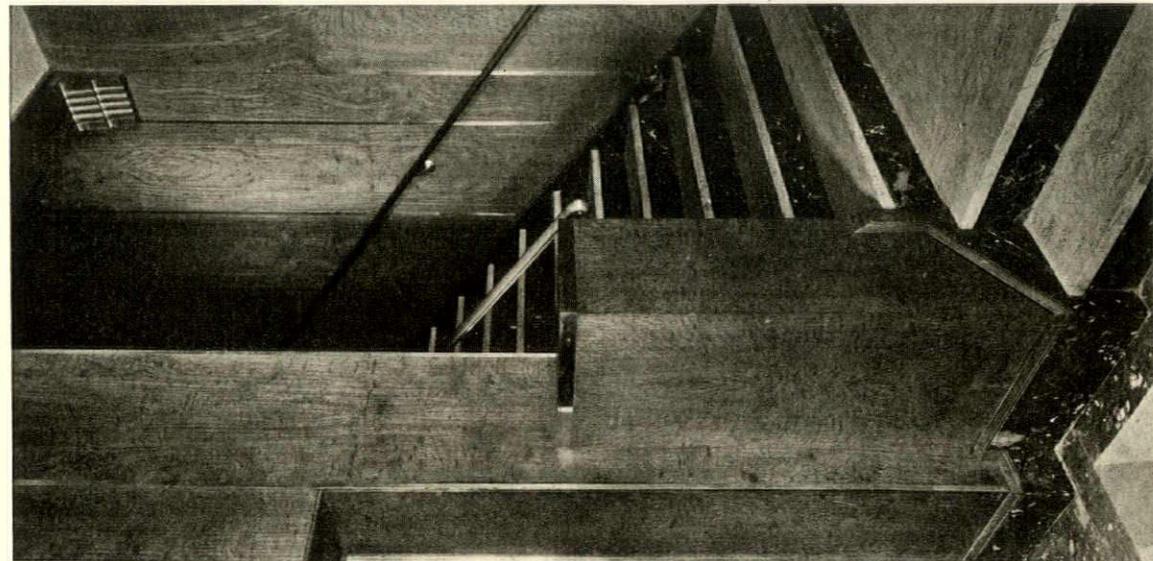
By Alfred Berman

THE so-called "modernistic" style of design was accorded a cold reception by cabinetmakers as well as by most other craftsmen when it arrived on our shores, for craftsmen are by training, and hence by second nature, extremely conservative in the practice of their respective vocations. Steeped in the beauties of the past, they are too often incapable of recognizing merit in the work of the present. In the beginning it was frequently with a certain amount of contemptuous amusement that they deigned to execute a work designed in this presumptuous new fashion. Only too often, alas, the finished product displayed ample evidence of the lack of sympathy and understanding on the part of the maker. But when architects of prominence evinced a tendency to patronize it, a certain number of craftsmen awoke to the realization that this style of design merited and demanded

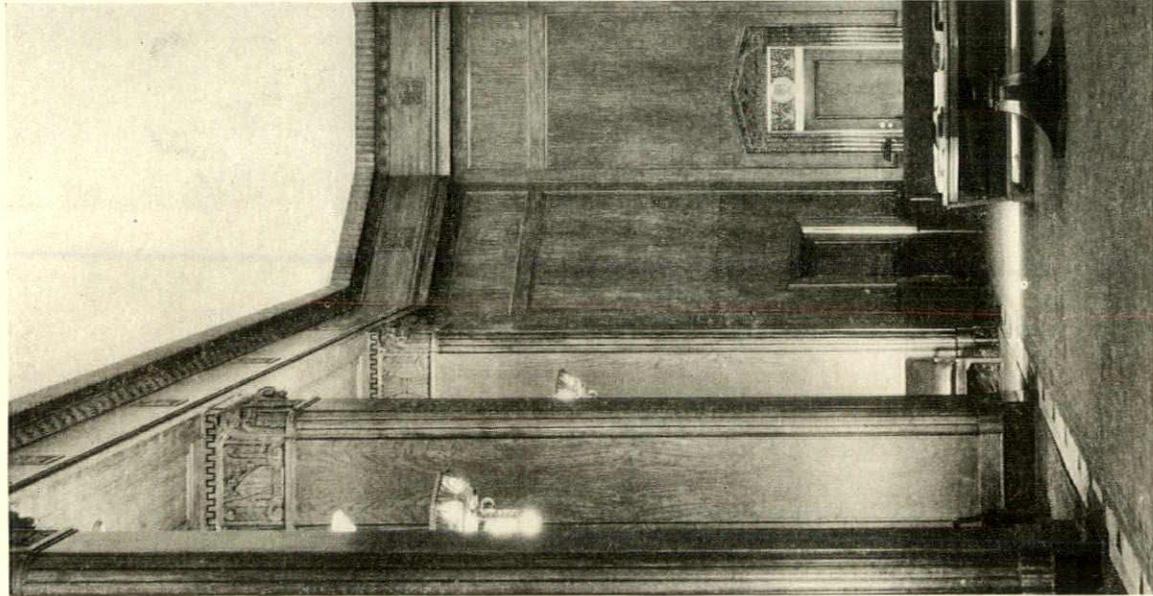
no less careful study and aspiring craftsmanship than had been accorded in the past to the classic periods by generations of artisans. In particular, the cabinetmaker found himself forced to cope with a number of problems, many of which were complex, and all of which were of great importance.

The most important development of all for the cabinetmaker, and the source of many of his ills, lies in the new emphasis which has been placed upon the character and the effects of the wood itself. Much of the present-day design is evidently planned simply to set off the veneer and to emphasize it, throwing upon it the burden of the entire decorative function. It is therefore not surprising that many of the architects visit the veneer yards to select their veneers before they design their woodwork.

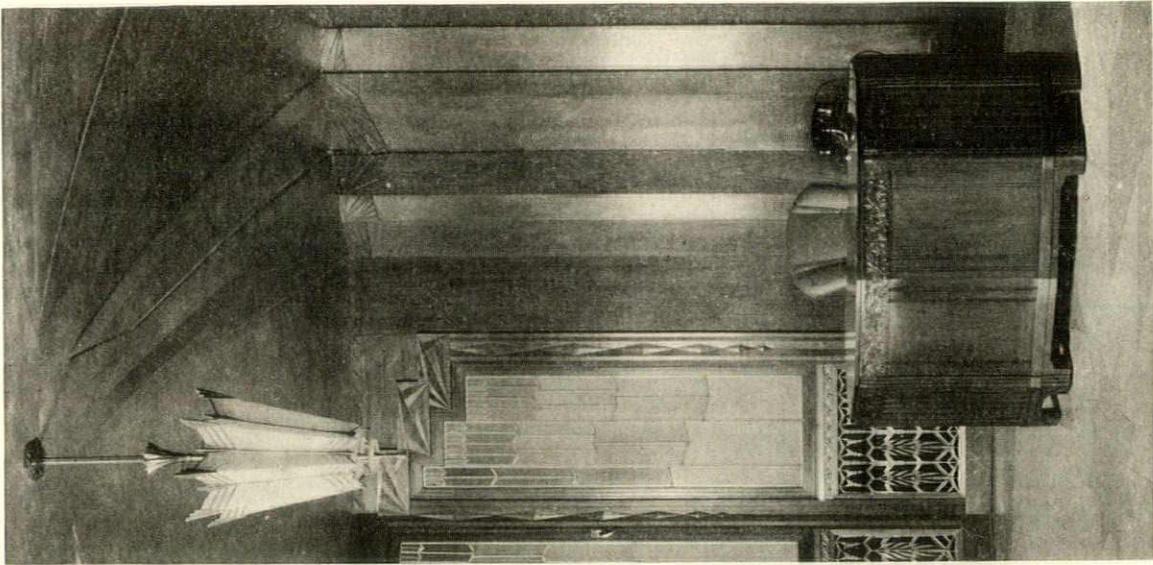
In response to this strong emphasis placed on the wood, rich and unusual cabinet woods



Photograph by Harold Monson
Woodwork at the foot of a stairway in the New York Trust Company's quarters, New York City. Walker & Gillette, architects



Photograph by Harold Monson
A detail in the Senior Officers' Room, City Bank Farmers Trust Company, New York City. Cross & Cross, architects



Photograph by Tebbs & Knell, Inc.
An office in the New Jersey Bell Telephone Company's Building, Newark, N. J. Voorhees, Gmelin & Walker, architects

were placed at a premium, and as a result a concentrated worldwide effort was made to obtain unusual new woods.

It was necessary to analyze these woods, to experiment, to study. Certain ones had to be discarded, others used with care. Some were of a streaky nature, others defective; others again displayed a tendency to check and split after a short time. Woods which were ideal for furniture, where small surfaces prevail, were often entirely useless for wainscoting which deals always in large expanses. Many things had to be learned by costly experience—and there are many more yet to be learned.

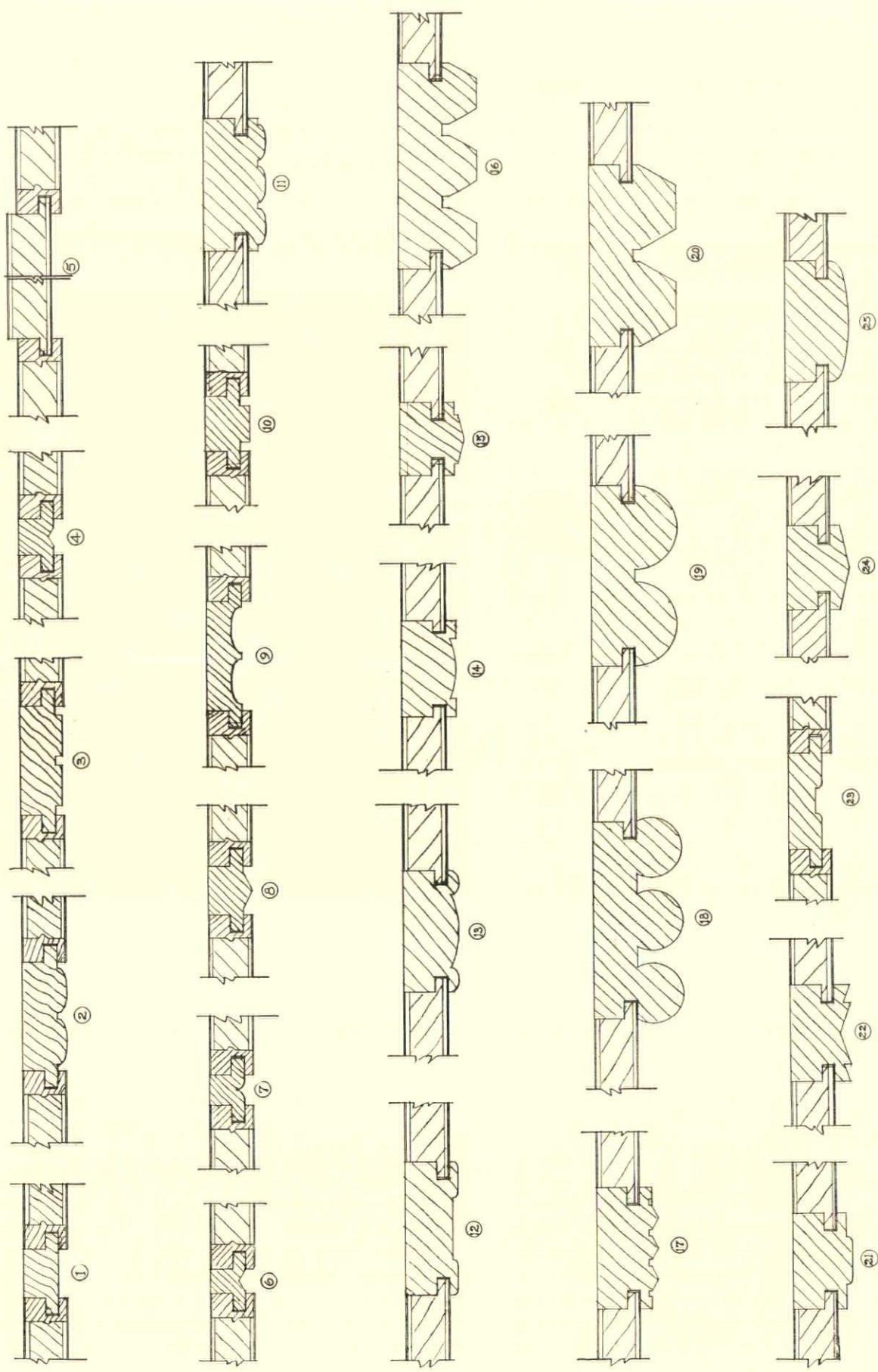
It should be noted that the best of modern woodwork is invariably made of plywood. To some of my readers this will seem an entirely unnecessary statement. Nevertheless, I am sure that to others it will come as a shock. There are still many persons, and among them not a few architects, who believe that veneering is a process employed to save materials and expense, and that it is at best a rather shoddy practice. The truth of the matter is that, broadly speaking, to-day all good woodwork is veneered, not to save expense, for it is often more costly, but to insure lasting qualities and a more beautiful job. It is not my intention to enter into a technical discussion of the advantage of plywood over solid wood, this being a subject which has been often and comprehensively treated. Yet it should be stressed that without plywood much of our modern woodwork would be extremely impracticable if not impossible. But it is important to point out that plywood has by no means reached the height of its development, and that woodworkers everywhere, as well as research bureaus of various kinds, are constantly experimenting in an endeavor to improve the technical qualities of this very important product. Such progress as woodwork will make in the future will doubtless depend upon improvements in the fabrication of plywood.

Most face veneers to-day are sliced to $\frac{1}{32}$ in. in thickness—some slightly thicker, others even thinner. Not many modern woods, with the exception of oaks and related woods, are sawn. This is due to the costliness of most imported woods, which makes it expedient for the veneer man to get the greatest possible yield from his log. It is also of importance to the cabinet-maker, for the thinner the veneers are cut the finer can be the matching of the successive sheets. Nevertheless, $\frac{1}{32}$ in. is somewhat thinner

than good practice would recommend. A thickness of $\frac{1}{24}$ to $\frac{1}{20}$ in. is to be preferred. It is interesting to note that many architects continue to specify that no veneer less than $\frac{1}{8}$ in., and in some cases $\frac{1}{4}$ in. in thickness, shall be used on wainscoting. It is doubtless the intent of these architects to provide a substantial and lasting job. The result, however, is quite the contrary.

When a veneer log is sliced or "shaved" into its component sheets of veneer $\frac{1}{32}$ in. thick, these sheets are kept together in the same order in which they leave the log—often they are numbered to avoid confusion. When the cabinetmaker begins to assemble his veneers, in laying out the panels for his wainscoting, he usually matches these sheets of veneer by reversing every second sheet, producing a series of matched figures, often called "flowers," which repeats itself from one panel to the next, gradually changing its form by graded variations. From the first panel to the last there is a decided difference in figure and character, but between any given panel and its immediate neighbors the difference is generally imperceptible. There is more than one way of matching the sheets of veneers together, and since this is a matter of great importance in determining the final character of the woodwork, it should be given careful study from every angle. Often a veneer matched one way will give a blatant and strident figure. Matched another way it will produce a rare and beautiful effect. The matching of the veneer, in modern woodwork, is fundamentally another means of design, since it establishes lines and forms as distinct as any moulding or carving and gives symmetry to the work.

What has been said should serve to stress the great importance of the veneer phase in modern woodwork. It can be readily observed that in dealing with veneer $\frac{1}{32}$ in. in thickness, and, when veneers are sliced abroad, they are often cut no more than $\frac{1}{32}$ to $\frac{1}{40}$ in., there are apt to be many problems. One of these is the danger of the penetration of the glue to the surface of the veneer, resulting, in the case of delicately colored woods like avodire, white cherry and prima vera, in a spotty appearance which is very undesirable. In cases where dyed woods are being used, such as the so-called "gray-harewood," there is the danger of a chemical reaction between the water of the glue and the dye in the wood, as well as subsequent fading in the color of the veneer. Ex-



The sections illustrated are intended to illustrate sound construction principles in allowing for the "movement" of woodwork; they are not offered as suggestions in decorative design. These inserts should be spaced not less than six or seven feet apart in veneered plywood, and they may be of the same wood as the panels, or of a contrasting wood, or of metal

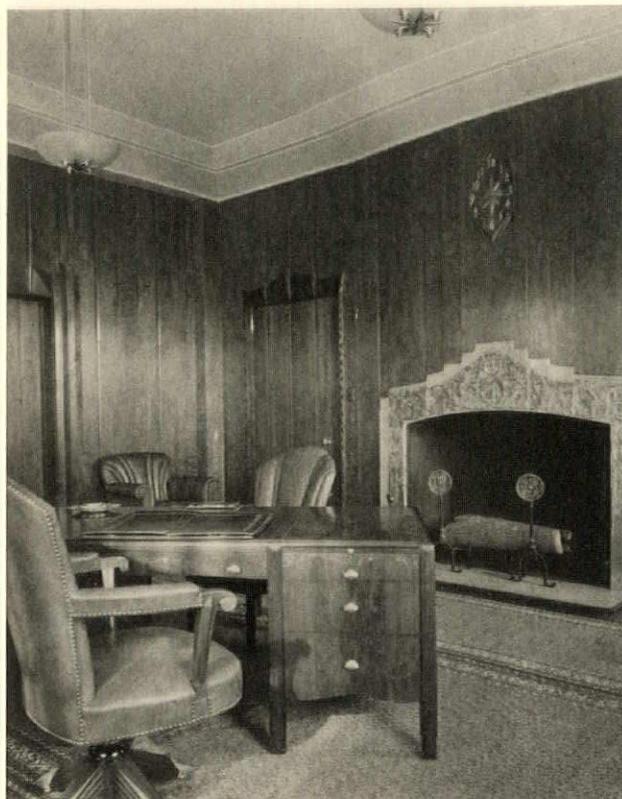
perimentation, however, has produced ways of solving these problems more or less satisfactorily. There is also the obvious danger, in cleaning off the panels and sandpapering the wood to a smooth finish, that a trifle too much pressure applied by the cabinetmaker in any single spot will cause the veneer to be "sanded through," and an ugly blotch of glue mars the panel. It is therefore not without amusement that most cabinetmakers listen to the claims of certain wood-products manufacturers who offer veneers cut $\frac{1}{60}$ in. or $\frac{1}{80}$ in. in thickness, and pretend that they will afford a durable job.

While the method of matching veneers described above is that most frequently employed and generally furnishes an interesting and dignified effect, nevertheless more complicated matching is often resorted to as a means of producing a greater variation in form and design. Thus we see veneer matched diagonally—herringbone pattern, or reversed in symmetrical rectangles and squares, or in combinations of several different forms. Each one of these designs presents grave constructional problems of which the architect—and too often even the woodworker—is not always aware. The woful result is seen later when checking develops in the face veneer, or when warping or twisting of the wainscoting results.

It should be borne in mind, in working with wood, that here is an organic material, cellular in its structure and in its fundamental nature not unlike the sponge. While all structural materials, whether steel, marble or plaster are subject to change with the atmosphere, none of these substances is marked by the same radical mutations as wood. There is a saying among cabinetmakers that wood never dies. Figuratively speaking, it is always a thing alive, a spirit which struggles against being bound and imprisoned. Most of the problems of the cabinetmaker to-day result from his efforts to imprison the wood, to enlase it, to cast it into a permanent form like bronze, or marble. To this end he has devised plywood. To this end he passes his work through a long string of processes which would have made his predecessors gape, processes which require complicated machinery unknown to any age before ours. And despite all this, it must be confessed that he has been only partially successful.

In fact, were it left to the cabinetmaker, he would probably never make the attempt, for it is one of the strongest traditions of the craft that there is no power which can hold wood

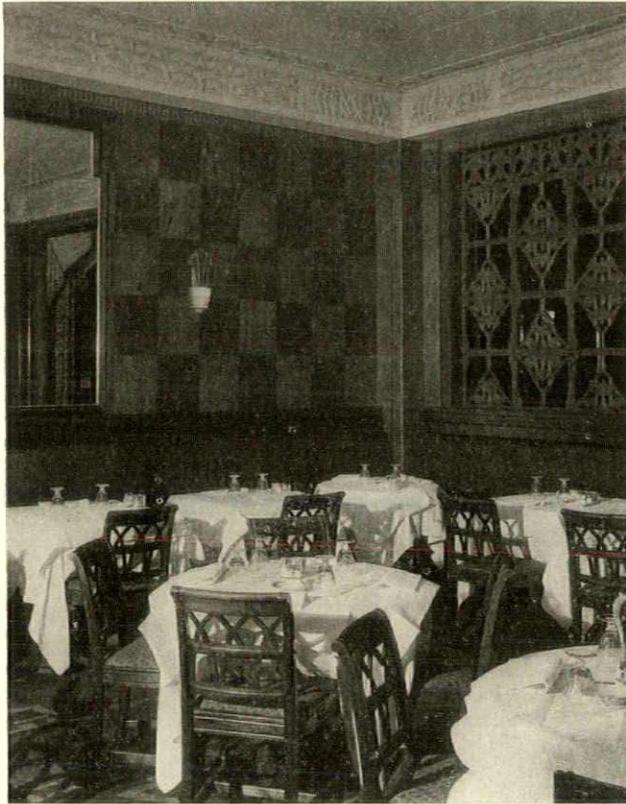
when it starts to "work." Wainscoting, almost from our first acquaintance with it, in the fourteenth century in England, has been built of narrow framework with panels inserted loose, to permit of expansion and contraction in them. In its earliest forms these panels were made of the width of a single board. It was only in the seventeenth century, when architects began to take a hand in the designing of wainscoting,



An office in the New Jersey Bell Telephone Building, Newark, N. J. Voorhees, Gmelin & Walker, architects

that the large panel, composed of several boards glued together, was introduced. And we have reason to believe that it was accepted with great reluctance by the cabinetmaker of that day, who would never have dared brave the wood in such fashion. But these large panels were a success because they too were placed loose in frames and permitted to "work." No architect to-day would think of designing a door without specifying that the panel is to be inserted loose in the frame. Yet the same architects frequently and unhesitatingly design wainscoting which is entirely flush or which may stretch for 30 or 40 ft. without a single projection of even the thickness of a hair. It is true that this wainscot is built of carefully constructed plywood—but it is not true

that plywood does not "work." Unfortunately it does—a great deal less than solid wood, granted, but still it does. Now picture this plywood wainscoting delivered into a building where there is still at least a considerable amount of moisture (and in what modern building is there not moisture when the woodwork is installed?). The wainscoting must be delivered in sections, usually not larger than



A detail of Whyte's Restaurant, New York City, showing veneered surfaces in a checkerboard pattern contrasting with a carved wood grille. Shreve, Lamb & Harmon, architects

8 ft. to permit of entrance to the building, or into elevators or through doorways. Then these sections, already swelled by the moisture in the building, must be glued and bolted together to form a wainscot 20 or 40 ft. long and that in turn is fastened to the wall. Then one month or three months later the steam heat is turned on in the building, steam heat in the excessive American fashion. Our woodwork begins to dry, and as it does it shrinks, and in shrinking something must give way. The logical point for this wainscoting to give is at the joints constructed in the building.

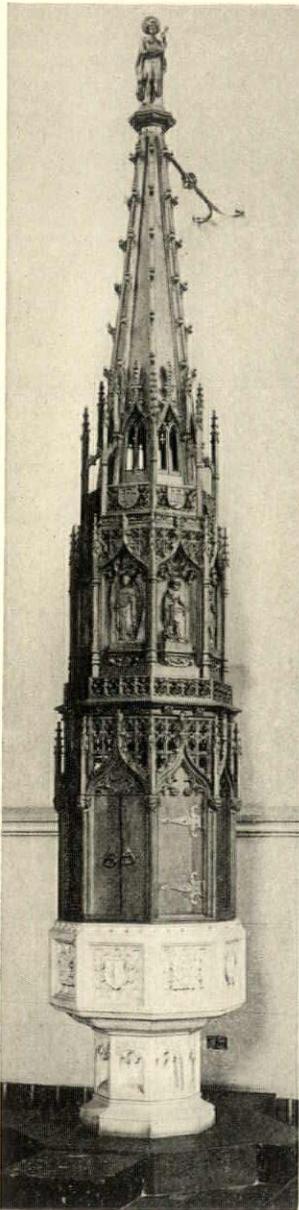
The woful result is a series of unsightly open joints. The author has known 5-ply panels $\frac{7}{8}$ in. thick to shrink $\frac{1}{2}$ in. in every 6 ft. If some expedient is then employed to fill in these crevices, the penalty will be a series of swellings when the humid air of summer causes the woodwork to expand.

An increasing number of architects are taking cognizance of this problem and many have devised methods of meeting the situation by making some slight modification in their design without disturbing its fundamental character. On page 338 are illustrated some methods which have been employed or may be employed for this purpose. One often used and entirely satisfactory method, from the cabinet-makers standpoint, is to introduce, at regular intervals of not more than 6 or 7 ft. in width, some sort of projection or break. This may be very slight, not more than an eighth of an inch in thickness by an inch or two in width, yet it enables the cabinetmaker to construct his woodwork in such a manner as to permit it to "work" fully without exhibiting any unsightly crevices or ridges. Other expedients have been employed, such as the introduction of a V-cut, or various kinds of sinkages, or of metal stripings. Many of these methods have incidentally added an interesting feature in the design.

Architects and craftsmen of all types are too prone to forget to-day that our greatest masterpieces were produced at a time when each craftsman was a designer, and each designer was a craftsman capable of taking up chisel or mallet or saw to execute the work he had just designed.

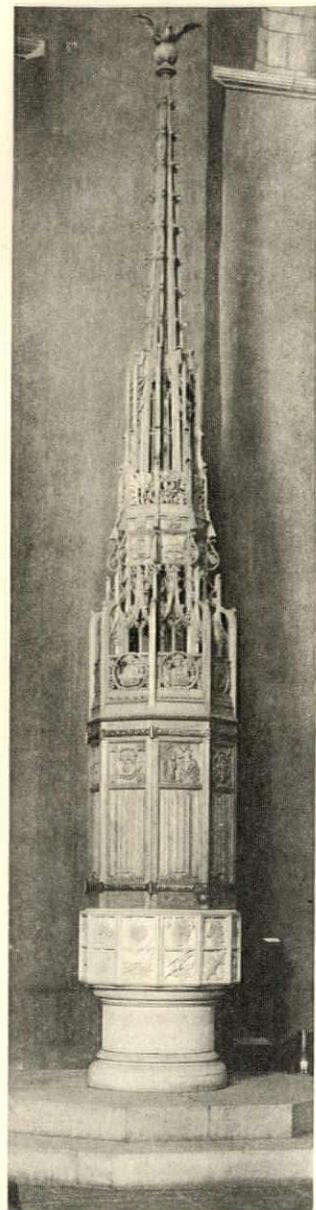
The tempo of modern industry and modern civilization has made it necessary in the field of architecture to subdivide the function of conceiving from that of accomplishing. This division of the hand from the brain can escape failure only by the closest co-ordination of the two parts. If this co-ordination is lacking, the result can only be that flatness and that disharmony and that technical blundering which marks many of our modern products in the field of the crafts. If American craftsmanship is to make the progress which it so badly requires, our architects must not shut themselves up like Montaigne in their ivory towers, and our craftsmen must be made to comprehend that they ought to be more than mere manufacturers.

Font, Lutheran Church of Our Redeemer, Chicago. An octagonal font of Bath stone. Designed by Hervey Flint



The famous Kinton pulpit, Kinton, Devonshire. Built in the fifteenth century, and restored through the efforts of the late Sabine Baring-Gould

Font, Chapel of the Intercession, New York City. A stone font with an elaborately carved cover. Bertram G. Goodhue, architect



The Liturgical Requirements of Churches

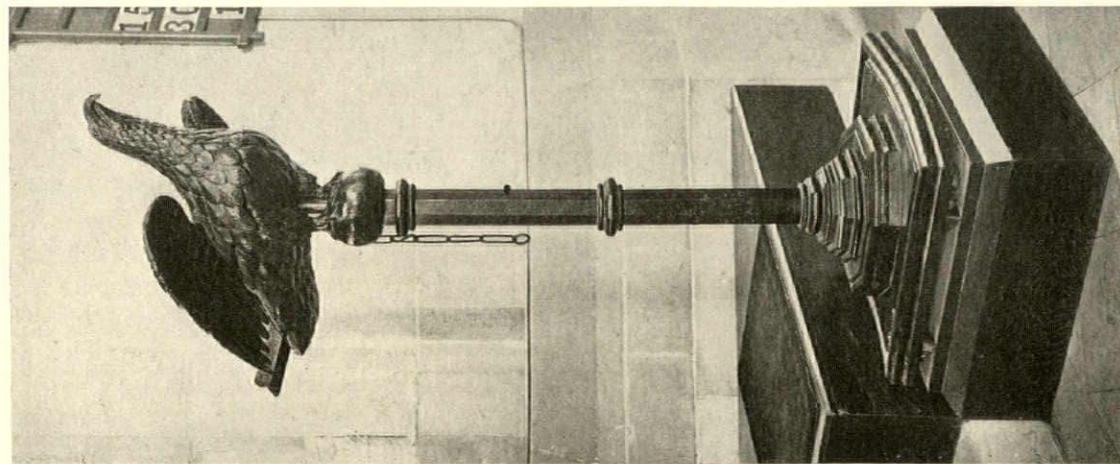
VII. (CONCLUSION)
 FONTS, PULPITS, LECTERNS AND
 MINOR FURNITURE

By *F. R. Webber*

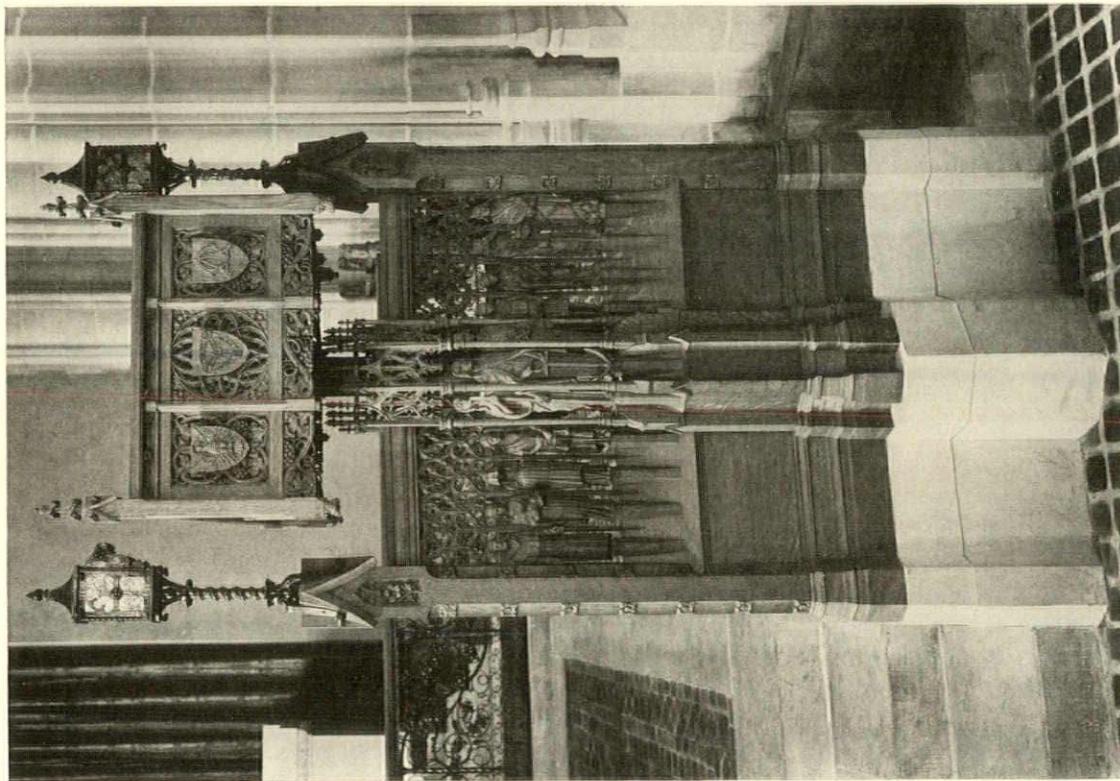
THE FONT.—The liturgical churches have always used a baptismal font. In recent years many non-liturgical congregations have introduced it. Among Roman Catholics and Episcopalians, the font is properly placed somewhere near the west entrance to the church, symbolizing the fact that Holy Baptism is the entrance to the Kingdom. Lutherans believe that the entrance to the chancel is the proper place for the font, and it is generally placed near the chancel steps, and generally on the north side of the church.

Sometimes it is placed within a niche in the eastern wall of the north transept.

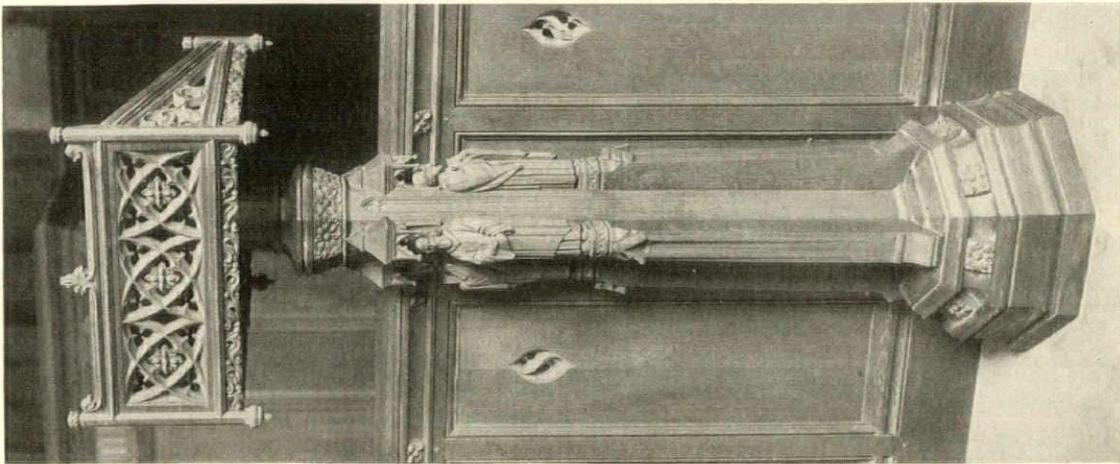
The earliest fonts were of stone, and were often either square or octagonal. Often they were large enough for the immersion of infants. Modern fonts are generally octagonal in form, for the octagon is the symbol of regeneration, or the new birth in Holy Baptism. The font ought to stand either within the nave, or in a baptistery opening out of the nave. Generally it is elevated a step or two above the nave, and in parishes where the sponsors kneel this must



Fourteenth-century wooden eagle lectern
for Leighton Buzzard, Bedfordshire,
England



Lectern, Church of the Saviour, Cleveland, Ohio, of carved
oak with a base of Indiana limestone and lamps of hand-
wrought iron. Corbusier & Foster, architects



Modern Gothic lectern carved of white
oak. Flint Presbyterian Church, Flint,
Mich. Designed by Worth E. Munn

be taken into consideration by the architect. The font must have a cover. This may be a simple, tight-fitting lid, or it may be a cover in the form of a lofty spire, beautifully carved. Magnificent examples are to be found in the later mediæval churches, many of which are pictured in the late Francis Bond's "Fonts and Font Covers," in Howard and Crossley's "English Church Woodwork," and other such books.

Whatever the form of the cover, it must be designed in such a way that it is not removed without some exertion, for well-meaning persons *will* fill it with cut flowers if there is no cover. The font must have a bowl at least 16 to 20 in. in diameter, lined with beaten copper, pewter or hardened lead. If there be a drain, it must connect with mother earth, and in no case with the sanitary system. The best material for a font is stone. If stone is out of the question, good effects are possible in oak.



The Pulpit.—In liturgical churches the pulpit is almost invariably octagonal in shape. It may be of stone, but most architects prefer oak, because of its effect of greater warmth.

The pulpit is not part of the chancel furnishings. Its proper place is within the nave, for then it becomes a symbol of the clergyman arising as a witness-bearer in the midst of his people. Among non-Catholics this is likewise symbolical of the universal priesthood of believers. In ancient times the pulpit was generally on the north side of the church, and at one of the nave columns. In later days it was placed on the south side of the nave, especially in Germany. Many architects favor the northward position, arguing that the Gospel ought to be preached from the north, or Gospel side of the nave. The south side is generally better lighted, and more cheerful in winter. Liturgically, symbolically and traditionally there are good arguments on both sides of the question, and an abundance of sound precedent. As a general rule, parishes tracing their historic ancestry to England prefer the northward position, while those whose early history goes back to Germany and the Scandinavian countries favor the south side. There are countless exceptions in both instances. No general rule can be laid down. Local custom and local conditions often decide the matter. In either case

the pulpit ought to stand well to the west of the chancel arch.

In a small chapel an elevation of 18 in. above the floor of the nave will be sufficient. In an ordinary parish church the pulpit need not be elevated more than 36 in. from floor of nave to floor of pulpit. In a church of great size, 42 to 48 in. or more may be necessary. The average interior diameter of an octagonal pulpit will range from 30 to 36 in. If larger than that, it is apt to be out of scale with the church building. In no case ought the pulpit to be so large or so conspicuous as to compete with the altar. Architecturally and symbolically the altar is the dominant, and all things must be subordinated to it. The rail of the pulpit ought to be from 38 to 40 in. in height above the floor of the pulpit. The steps must be broad and easy, with a platform at the top to prevent a clergyman from stepping backward and possibly sharing the fate of Eli of old. It was once customary to provide every pulpit with a crucifix, to remind the preacher of his duty to proclaim Christ crucified. There must be a small shelf within the pulpit for any additional books which the clergyman may need. The desk proper must be about 18 in. broad by 14 deep, and adjustable in height. A light suspended from the ceiling, or from a bracket, is better than the unsightly orchestra lamp so frequently seen some years ago.



The Lectern.—The lectern is an essential article of furniture in the modern church. Originally intended for the singers, and placed in the midst of the choir stalls, it is now looked upon as the proper place from which to read the Epistle and Gospel. It is placed to one side of the nave, forward of the chancel arch. If it can be kept several feet to the westward of the chancel arch, it will be better from an acoustical standpoint.

The lectern may be either of the ordinary desk sort, or it may be triangular-headed, with two desks. Often there are two Bibles, one opened to the Epistle and the other to the Gospel, or to the Old Testament lesson and the New. In this case the head of the lectern must be provided with a swivel, so that it may be turned. It is likewise well to have this head adjustable, by means of a heavy screw concealed within the vertical standard of the lec-

tern. The average height of the lectern will be about 44 in. from the floor to the lower part of the sloping desk, with provisions for raising or lowering it a few inches.

Eagle lecterns were once popular, but if used at all they must be treated conventionally rather than realistically. Exeter Cathedral has a lectern rather of the realistic sort, and among the children of the town there is an amusing belief that it comes to life and flies thrice round the church on the eve of certain festivals.

The Litany Desk.—This is a low, humble fald-stool, placed at the head of the central aisle. It ought to be carried in only on those days when needed. The priest says the Litany, coming down into the midst of his people. It symbolizes the command given by the old-time prophet, "Let the priests, and the ministers of the Lord, weep between the porch and the altar, and let them say, Spare Thy people, O Lord."—Joel 2:17.

The litany desk ought to be raised six inches above the floor of the nave by means of an attached kneeler without a cushion. A bit of carpet or cloth is sufficient, and denotes mortification of the flesh. The lower part may be 22 by 24 in. in size, and the desk proper from 10 to 12 in. wide by 22 to 24 ft. long, and raised about 22 to 23 in. above the kneeler. Like all other articles of furniture, it ought to be designed by the architect. Because of its use, it ought to be severely plain, yet beautiful in its proportions.



The Sanctuary Lamp.—A single lamp hangs before the altar in Roman Catholic and in some Episcopal churches. Among Lutherans it was frequently used, down to a century ago. It ought to be simple and chaste in design, and only the purest olive oil should be used in it. The globe, in non-Catholic churches must be of transparent, uncolored glass. To use red or blue glass is a violation of the rubrics, but a violation frequently met with. In churches practising reservation, this lamp is essential. Where reservation is not the rule, it is sometimes used to denote belief in the Real Presence of Our Lord's Body and Blood, in, with and under the visible elements. There are many who believe that this lamp must not be used unless reservation be practised.

The Paschal Candlestick.—This is a large

candlestick that stands on the north or Gospel side of the altar. It bears a candle which burns from Easter until the Ascension, being extinguished at the reading of the Gospel on Ascension Day. It symbolizes the forty days spent on earth by Our Lord between His Resurrection and His Ascension. It may be beautifully carved of oak, and richly adorned with pure gold and subdued color, toned down with lacquers so that the candlestick may not become too prominent a feature.

In parishes where an advanced ceremonial is the rule, there will be need for such things as censers, naviculæ, asperges, vessels for holy water, and standards for candles and banners carried in procession. If the parish is able to afford it, these things may be designed by the architect and made by skilled craftsmen. Even though the parish may be poor, the architect ought to be consulted in their selection.

The Hymn Boards.—All liturgical churches use one or more hymn boards. There ought to be not less than seven spaces for letters 4 in. high. The day of the Church Year, the numbers of the hymns, the page upon which the Introit is found, and the Psalms for the day, are often placed in the hymn board, although in some parishes the Introit is not generally posted. If no wall space is to be found, it is an excellent plan to mount the hymn boards on vertical movable standards about 8 ft. or so high, with bases broad enough to insure stability. The central panel of the hymn board ought to be removable.

Minor Fittings.—The architect ought to be asked to design any alms boxes, pedestals for potted plants and palms, tract racks and notice boards that may be required. Alms boxes ought to be of very heavy oak, bound with hammered iron straps, and provided with a lock, especially if the church be left unlocked, as all churches ought to be. Since potted plants are not permitted on the altar, several tall pedestals of good design ought to be provided, and carried out when needed. Tract racks, so essential in these days of church publicity, ought to be of oak, and need not be of ornate design, but rather of a neat, utilitarian appearance. The notice board ought to be of oak, with a pressed cork background. The upper part may be carved, and may bear the word "Notices" in carved and colored lettering. Upon this are placed all announcements that are not directly connected with the church and her services.



Vernon Howe Bailey
Vitre 1927

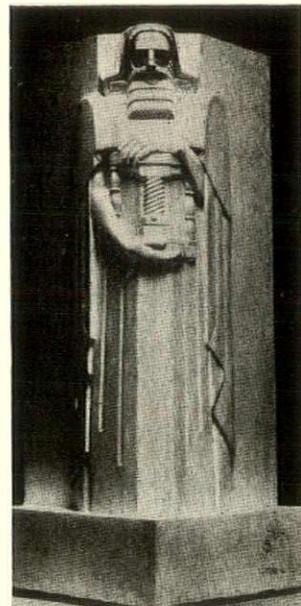
VITRÉ. From the pencil drawing by Vernon Howe Bailey

« ARCHITECTURE »



"Flight," in bronze, was recently awarded the Cross of Merit and the Gold Medal at the International Exposition held under the auspices of the Italian Government at Bologna, Italy. Richard H. Recchia, sculptor

Laboratory Building for the A. O. Smith Corporation in Milwaukee, Wis. Holabird & Root, architects

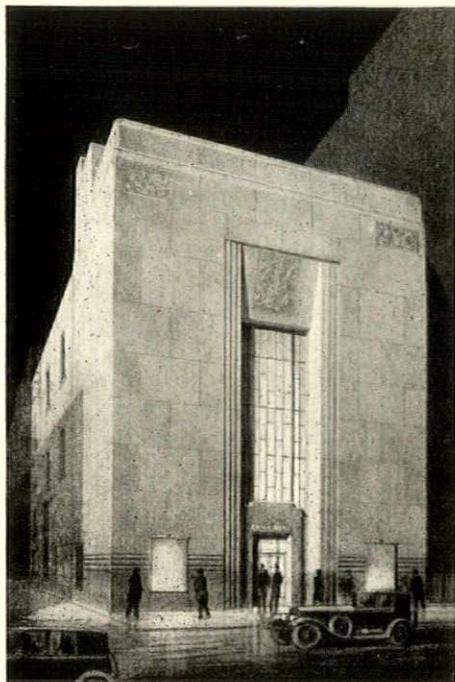


Model for the corner of a modern building, symbolizing printing, for which Ottavio Mastrovito, of Yonkers, N. Y., won the Paris Prize of the Beaux Arts Institute of Design

Architectural News

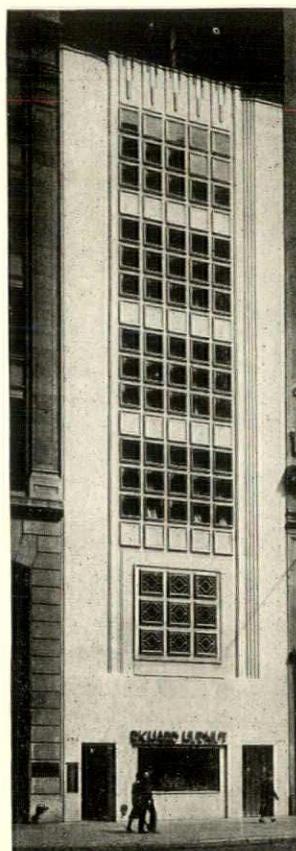
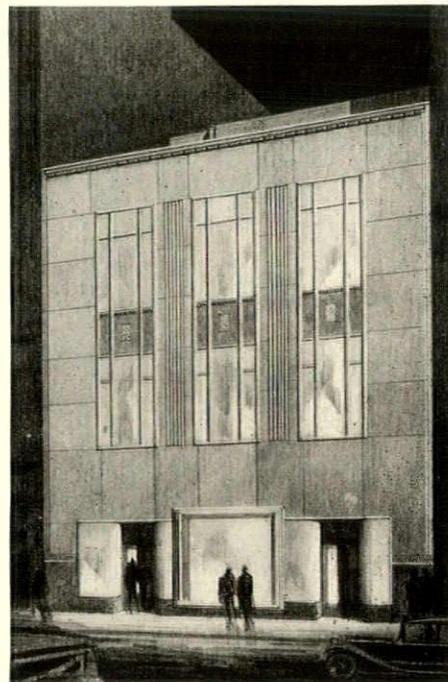
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The Dearborn Street Substation, recently completed for the Commonwealth Edison Company, Chicago, Ill. Holabird & Root, architects



graphs

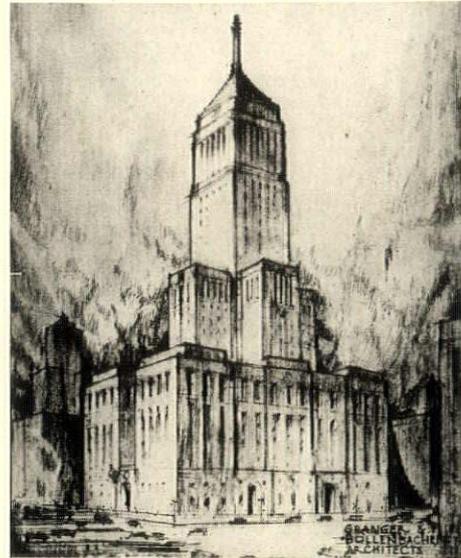
Preliminary perspective for the Garland Court Substation of the Commonwealth Edison Company, Chicago, Ill. Holabird & Root, architects



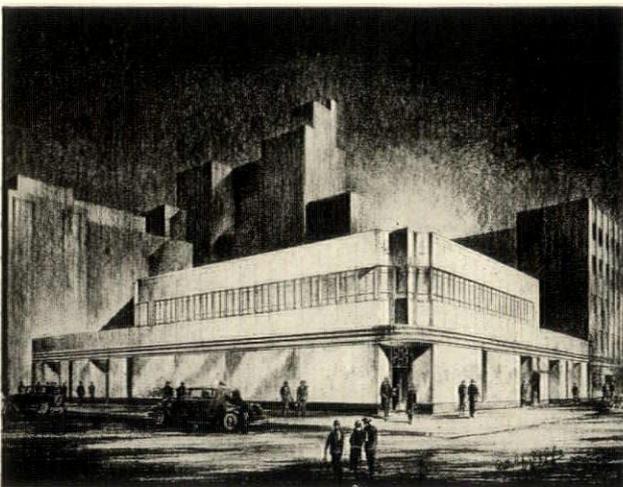
Building for Richard Hudnut, Fifth Avenue, New York City. The Firm of Ely Jacques Kahn, architects; Eliel Saarinen, associate architect



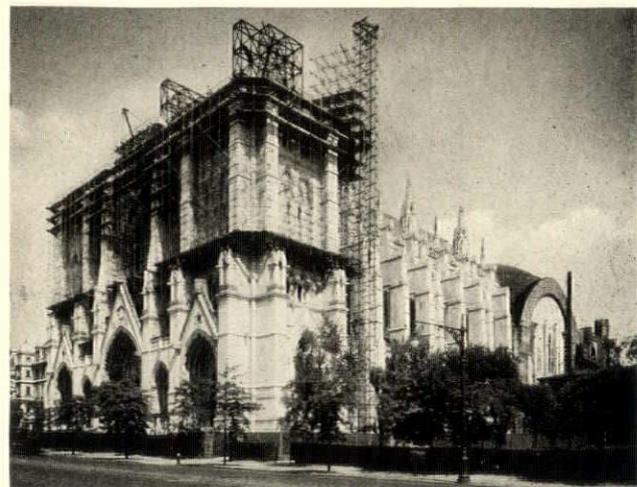
Field house to be erected in Marquette Park, Chicago, with which will be built an outdoor swimming-pool and a wading-pool. Alfred S. Alschuler, Inc., architect



The proposed Civic Centre for the site of the present Criminal Courts and Jail Building, Dearborn and Austin Streets, Chicago. Granger & Bollenbacher, architects



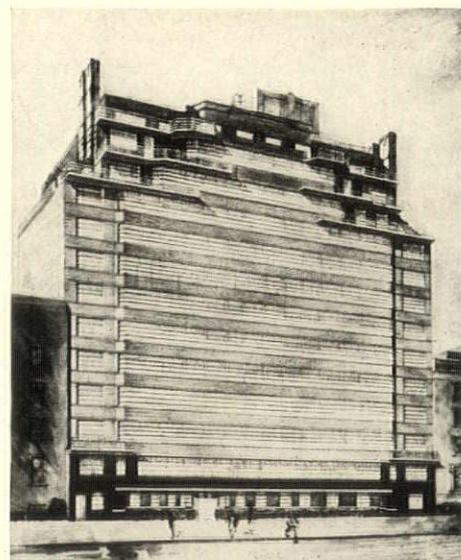
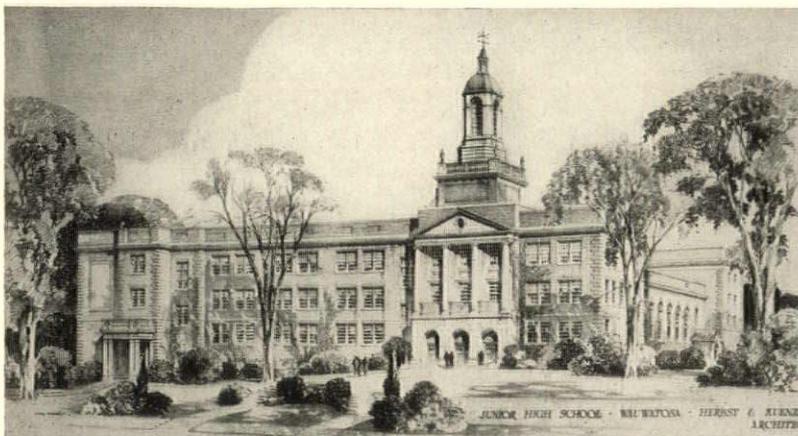
Berwyn, Ill., has under construction a Medical Arts Building with an exterior of Bedford stone, black granite, aluminum, and plate glass. Walter Conley & D. W. Carlson, associated architects



A progress photograph showing the west front of the Cathedral of St. John the Divine, New York City. Cram & Ferguson, architects

The City of Wauwatosa in Wisconsin is about to erect this Junior High School of brick and stone. Herbst & Kuenzli, architects

Proposed apartment building, East 56th St., New York City, of cantilever construction faced with brick and glass. Arthur Weiser, architect



BOOK REVIEWS

SMALL STONE HOUSES OF THE COTSWOLD DISTRICT. By E. A. RUGGLES. 143 pages, 11 by 15 inches. Illustrations from photographs and pencil drawings. Cleveland: 1931: J. H. Jansen. \$15.

Here is a subject from which no architect—even those inculcated with modern utilitarianism—can turn away in disinterest. The stone houses of the Cotswold District form one of the priceless heritages of the past in domestic architecture, and the author has now brought together abundant photographic evidence of it which the publisher has well presented. Meade A. Spencer's supplementary pencil drawings on a tinted paper constitute a welcome foil to the photographic illustrations.

INVESTIGATION OF VARIOUS FACTORS AFFECTING THE HEATING OF ROOMS WITH DIRECT STEAM RADIATORS. By ARTHUR C. WILLARD, ALONZO P. KRATZ, MAURICE K. FAHNESTOCK, and SEICHI KONZO. 104 pages, 6 by 9 inches. Illustrations from diagrams and photographs. Bulletin No. 223, Engineering Experiment Station. Pamphlet binding. Urbana, Ill.: 1931: University of Illinois. 55 cents.

THE STORY OF ARCHITECTURE IN ENGLAND. By WALTER H. GODFREY. 346 pages, 5¼ by 8 inches. Illustrations from photographs and drawings. Printed in Great Britain. New York: 1931: Harper & Brothers. \$6.

Combining two volumes in one: I, From Roman Times to the Reformation; II, From Tudor Times to the End of the Georgian Period. Mr. Godfrey's purpose has been to interest the layman, and clarify for the student a subject which, aside from its technical phase, is in fact a history of the English people over this period. The architect himself will find, in concentrated form, many facts which he would otherwise find only in a wide reading of English architectural history.

BRICK ENGINEERING, Vols. I and II. By MAJOR L. B. LENT. 92 and 126 pages, respectively, 4¾ by 7½ inches. Illustrations from photographs and diagrams. Cleveland: 1931: Common Brick Manufacturers' Association of America. Vol. I, 75 cents in leather cover, 50 cents in paper cover. Vol. II, \$1 in leather cover, 50 cents in paper cover.

Two volumes have been issued in a series planned to cover in three volumes, of handbook size, the design and construction of brick masonry. Volume I treats of the physical and chemical properties of brickwork and the significance of these properties in the performance of brick masonry. Volume II covers

the design and construction of brick masonry in buildings, including mortars, water-proofing, various strengths, design from a structural standpoint, the essentials of good workmanship and other useful data.

STRAIN MEASUREMENT IN THE REINFORCEMENT FOR THE DOME OF THE NATURAL HISTORY BUILDING. By W. C. LYON, H. L. WHITTEMORE, A. H. STANG, and L. R. SWEETMAN. 12 pages, 5¾ by 9¼ inches. Illustrations from photographs and diagrams. Research Paper No. 268. Reprint from Bureau of Standards Journal of Research, Vol. 6, February, 1921. Pamphlet binding. Washington: 1931: U. S. Department of Commerce, Bureau of Standards. 15 cents.

An investigation of, and reinforcement of, some supports in one of the group of buildings of the Smithsonian Institution, Washington, D. C.

HYDRAULIC SERVICE CHARACTERISTICS OF SMALL METALLIC PIPES. By G. M. FAIR, M. C. WHIPPLE, and C. Y. HSIAO. 34 pages, 6¼ by 9¼ inches. Illustrations from photographs and diagrams. Reprinted from Journal of the New England Water Works Association, Vol. XLIV, No. 4. Pamphlet binding. New York: 1931: Copper & Brass Research Association.

RECOMMENDED MINIMUM REQUIREMENTS FOR FIRE RESISTANCE IN BUILDINGS. Report of the Department of Commerce Building Code Committee. 58 pages, 6 by 9 inches. Illustrations from diagrams. Pamphlet binding. Washington: 1931: U. S. Department of Commerce, Bureau of Standards. 10 cents.

MODERN DUTCH BUILDINGS. By F. R. YERBURY. 100 pages, 8½ by 11 inches. Illustrations from photographs by the author, and drawings. Printed in Great Britain. New York: 1931: Charles Scribner's Sons. \$10.

Mr. Yerbury's pictorial surveys of contemporary architecture have become a staple product. Architects have come to expect Mr. Yerbury to gather together the records of his observations in extensive travel so as to show the significant works. Mr. Yerbury's photographic discrimination always strikes a happy mean between the photograph that is informative architecturally, and that which is impressive in composition. His present volume is supplemented by plans, sections, perspectives, and other drawings which make more understandable the photographs.

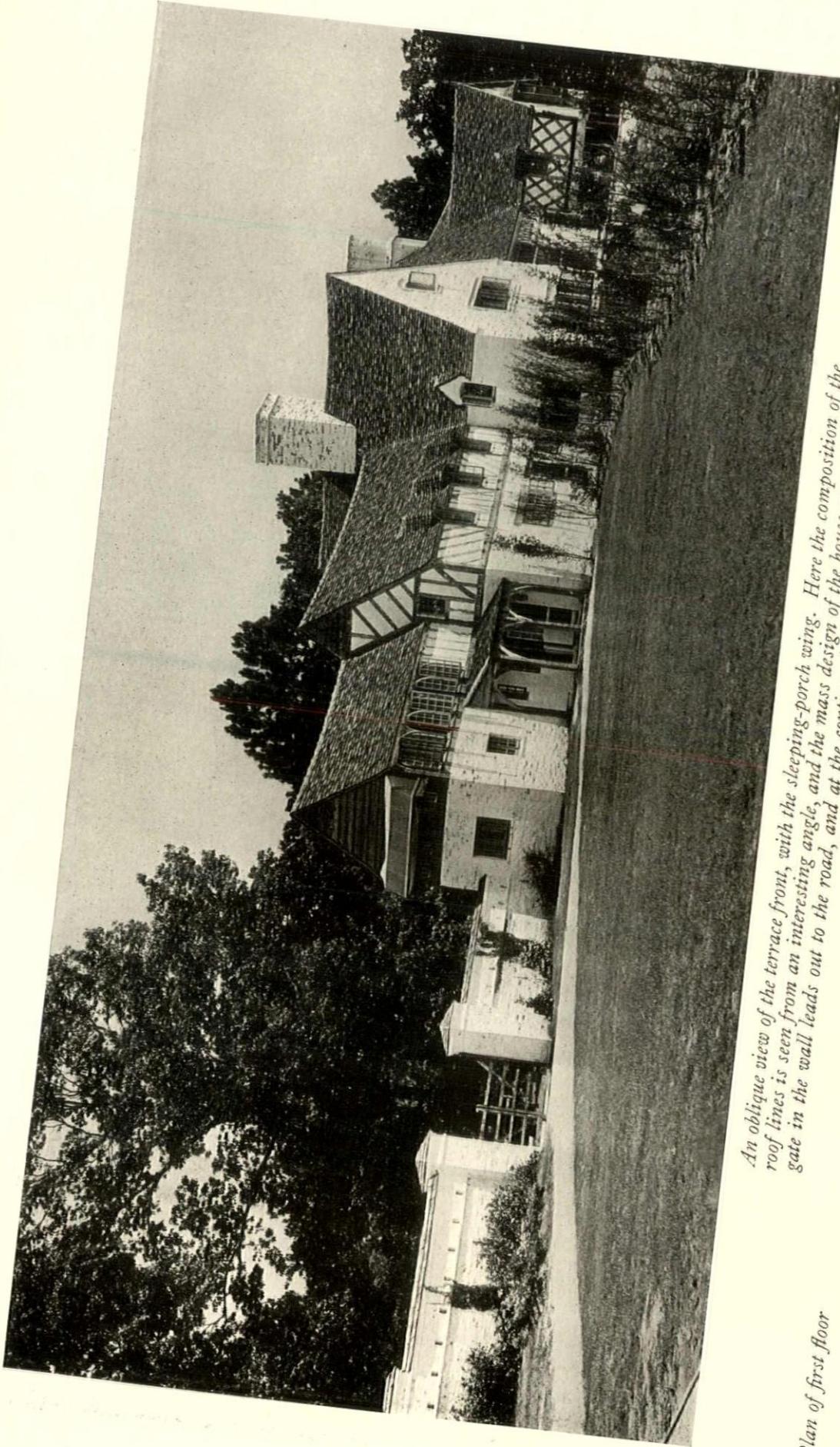


HOUSE OF HAYWOOD NELMS, HOUSTON, TEXAS

FRANK J. FORSTER, ARCHITECT

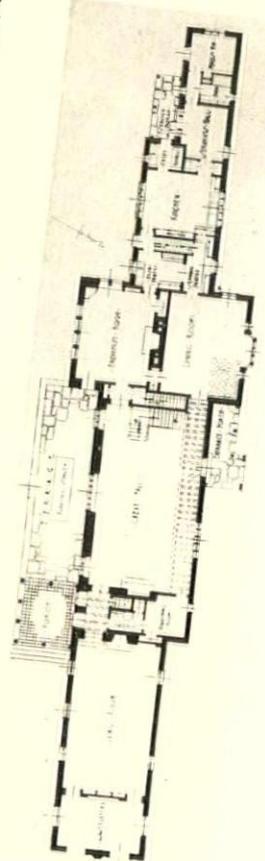
Photographs by Merchant-Thayer & Co.

The terrace front gives a definitive impression of the manner and texture of the brickwork and of the roof treatment. The brick is Lamy clinker, whitewashed, and the roof is of handmade shingle tile, in a range of burgundies, reds, and browns

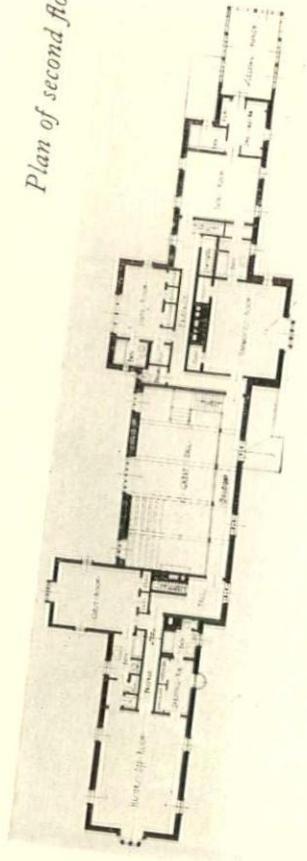


An oblique view of the terrace front, with the sleeping-porch wing. Here the composition of the roof lines is seen from an interesting angle, and the mass design of the house as a whole. The gate in the wall leads out to the road, and at the continuation of the wall is placed the children's playhouse

Plan of first floor



Plan of second floor



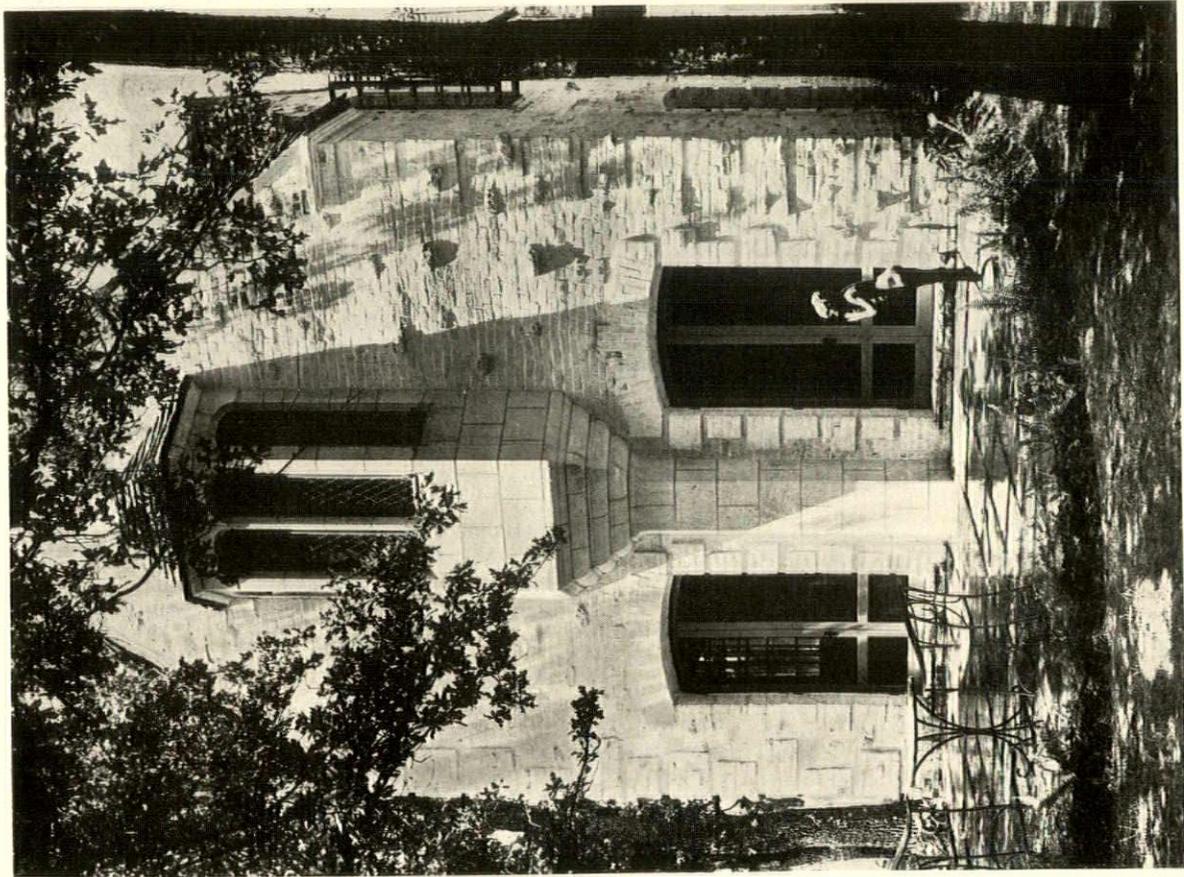


HOUSE OF HAYWOOD NELMS, HOUSTON, TEXAS
FRANK J. FORSTER, ARCHITECT

This detail of a gable end on the terrace front reveals the technic of the solid oak timber work, which is dowelled and pegged. The wood has been given an interesting relationship to the brickwork by means of a rubbed application of whitewash



The main entrance allows of closer examination of the roofing, with its irregular laying and rounded valleys, and shows, as well, the structural integrity of the exterior timberwork

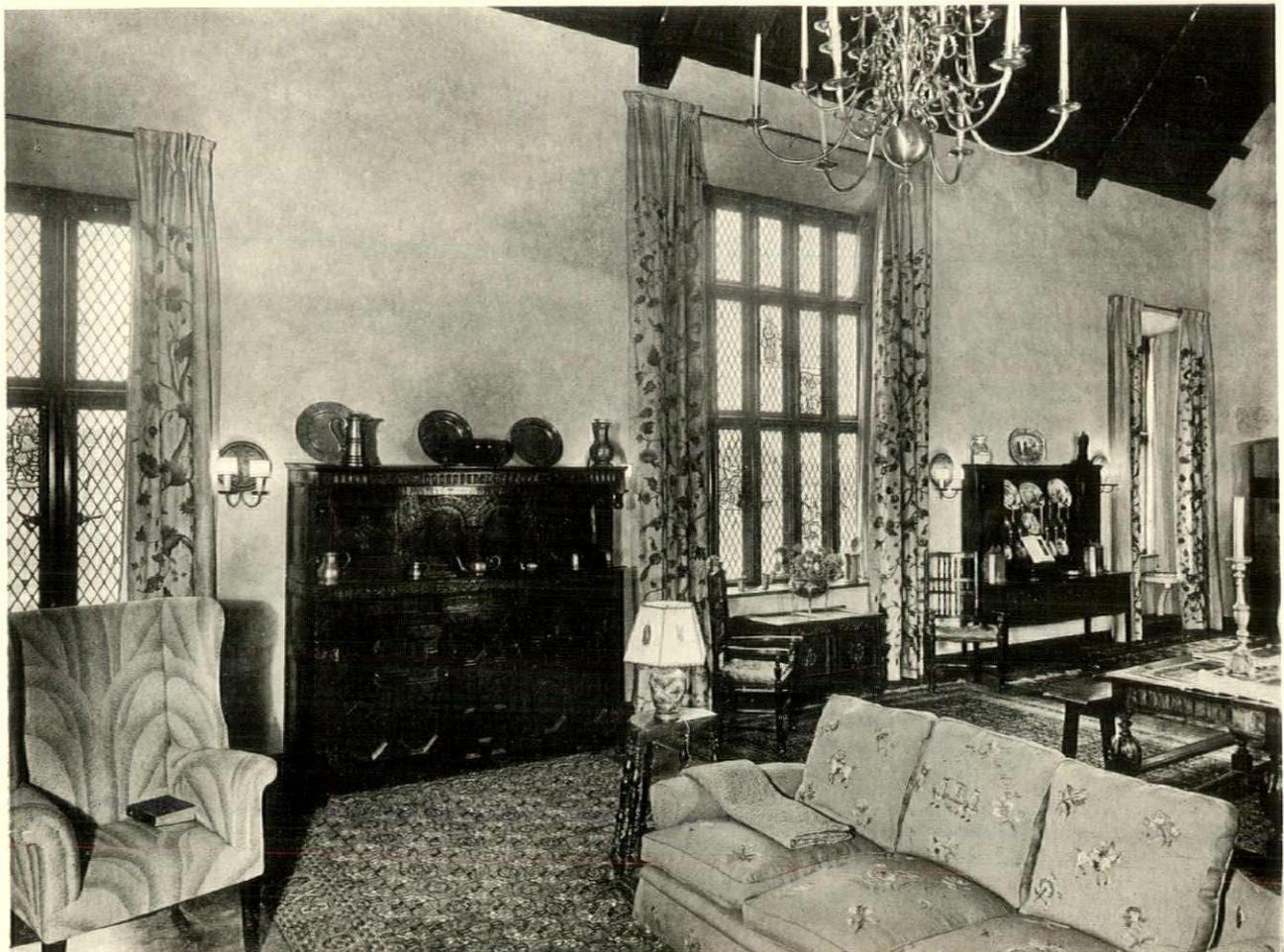


This oriel window on the garden end shows the rather unusual combination of limestone with the white-washed brick, and also the brick quoins and the cornice of corbelled roof tile



HOUSE OF HAYWOOD NELMS, HOUSTON, TEXAS
FRANK J. FORSTER, ARCHITECT

The treatment of the French farmhouse dormer window is seen in detail in this portion of the terrace front, and also one of the rounded valleys in the tile roofing



A portion of one of the side walls of the Great Hall, with its leaded mullioned windows. The furniture reveals a definite expression of good taste in its selection

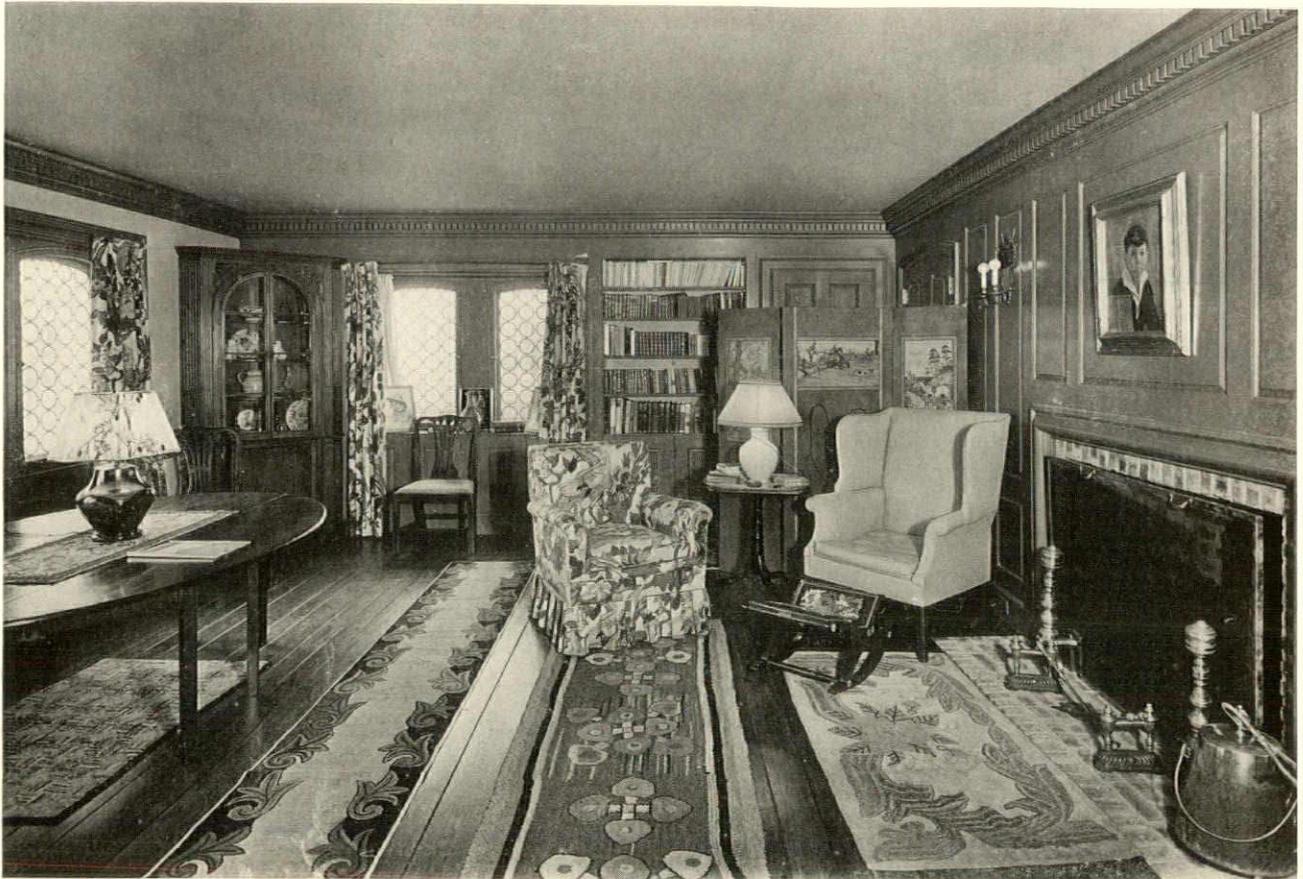


The oak-paneled passage from the Great Hall to the living-room. The quality of this panelling derives from the fact that it was hand-wrought throughout



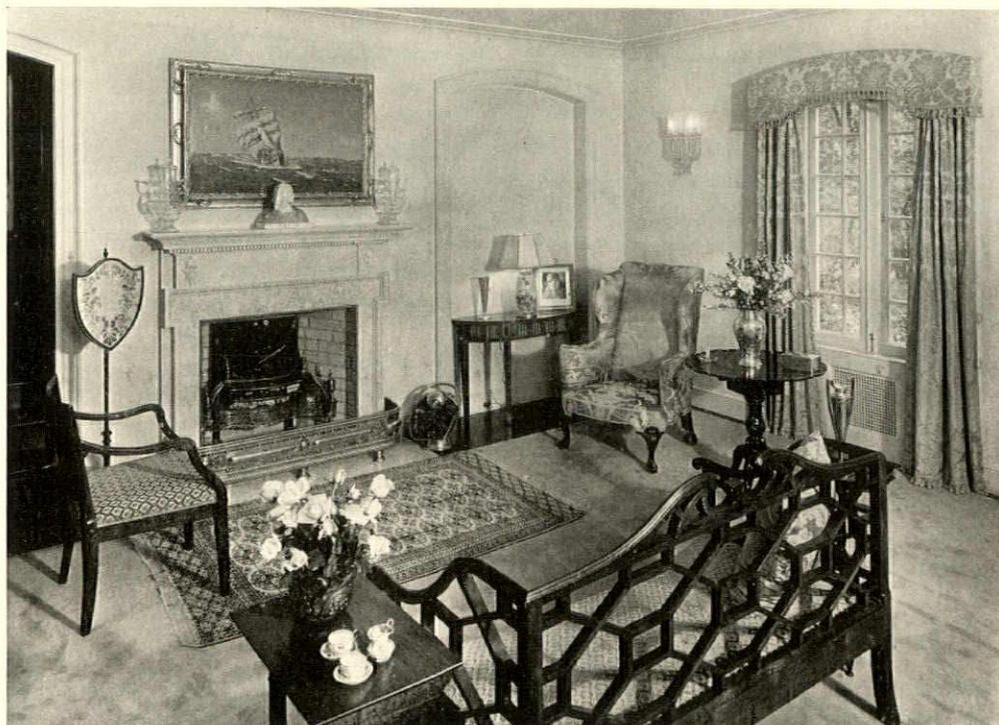
HOUSE OF HAYWOOD NELMS, HOUSTON, TEXAS
FRANK J. FORSTER, ARCHITECT

Covering the entire fireplace end of the Great Hall is a dry fresco of Robin Hood and his company. The roof trusses are of oak, taken from an old barn, and all the woodwork is carved by hand, achieving an authentic quality



One end of the living-room, which offers Georgian conventionality in contrast to the earlier, more rugged manner of the Great Hall

An unusually successful achievement in the breakfast-room, which is designed without intention of expressing any stylization from an historic period



Some Pitfalls in Supervision

By *W. F. Bartels*

It is a truism among architects and builders that

the plumbing fixtures of a building fix its age—unless it has been renovated. Fifty years ago the vitreous china toilet was unknown. Now, built-in bathtubs are so universally used that they are merely designated “bathtubs,” it being taken for granted that they will be built-in. For the most part they are made of iron on which a form of enamel is baked. Not always is a perfect article turned out, and it is up to the supervisor to see that the tubs coming on his job are in first-class condition. And only high-class plumbers are above the practice of putting in fixtures here and there that are “seconds” or run of the factory when regulars or selected grades have been called for. After the tub is trundled to its position and unpacked, on concrete or tile floors, it is set on brick piers built by the bricklayer. See that these support the tub fully and firmly. Often the piers will be made to an approximate height slightly lower than that required; then in levelling the tub and getting it to the correct height wooden wedges will be used. This is permissible if a substantial part of the pier is then carried up to the tub and well grouted. This will take the weight of the tub off the wooden wedges. On shrinking or decaying, the latter let the tub settle and thus cause ugly and unsightly cracks where plaster or tile joins the tub. The tub of course must be set at the correct elevation or else the finished floor will not meet it at the right height. The more room (within reason) the mechanic has to work in between the tub and the floor, the better the chances for a good all-around job, particularly as regards the waste connection.

After the waste is connected a pail of water thrown in the tub will show whether or not the waste is tight and if the tub drains properly. It is well to have heavy paper pasted on the tub and a temporary wooden lid knocked together. This will prevent workmen from throwing refuse in the tub and the paper will help prevent the surface from being marred. In some localities the best practice calls for wooden padlocked covers to protect the whole.

When porcelain tubs are used it is a good

XVI. PLUMBING FIXTURES

plan, if possible, to inspect the tubs before they are delivered. In firing such a large article of clay as a tub more faults are likely to develop than in the enamelling of an iron casting. Hence pre-job inspection often saves the trouble of removing defective tubs.

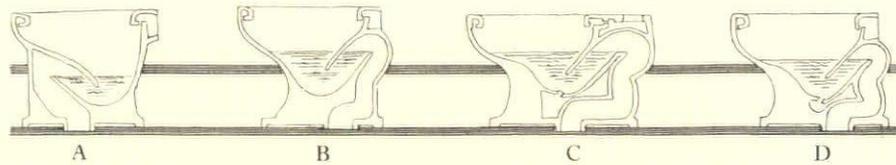
Sinks and laundry trays must be carefully installed. Where they are fastened to a board or blocking, these latter should not come above the top of the sink. Cracking of plaster and curling and warping of the wood support will result in giving the wall against which the fixtures are set a very poor appearance. Setting the fixture at a standard height must be checked, rather than any height convenient to the mechanic. Where the fixture has leg supports the height will of course be automatically determined. However, the legs should be set so as to be useful rather than ornamental. Legs or supports should not be made tight against either the floor or fixture by wedges, but the fixture itself should be adjusted. The type of trap and gauge of drain pipe should correspond to that specified—but it should be examined to be sure it does.

The fixtures themselves may be enamelled iron, porcelain or vitreous china. In case of the enamel chipping off the iron rust will soon cause ugly spots; in porcelain the surface of the sink or lavatory may peel or chip, likewise causing an unsightly surface. Because of these possibilities vitreous china is used when cost permits.

Vitreous china is a material made chiefly from clay flint and feldspar. It is fired and glazed with the result that the finished product is such that “a fractured piece of material taken from any part of a vitreous china plumbing fixture, after being immersed in red aniline ink of good color strength for one hour, shall not show any discoloration through the glaze and shall not show absorption when broken, to a depth greater than $\frac{1}{8}$ in. below the surface of fracture at any point.” (U. S. Dept. of Commerce Bull. No. 52.)

It is not to be expected that an article as large as a plumbing fixture can be made of vitreous china without flaws. But of course too many faults, such as warpages, dull spots, unglazed checks and specks, etc., should not be

Longitudinal sections through types of water closets: A, the Wash-Down; B, the Reverse Trap



C, the Siphon Jet, with its top supply; and D, the Reverse Trap with jet, an improvement on B

allowed. The manufacturers have grading rules for each article, and pieces not measuring up to these standards are called "culls" to differentiate them from the "regular selection."

The difference between "culls" and "regular selections" can easily be determined by two short red lines parallel to each other and placed on the back of the fixture by the manufacturers. These marks are made by cutting through the glaze and filling the cuts with red paint. A common way for plumbers to hide these telltale marks is to paste some sort of label over them.

As water closets come with so many different names it behooves the superintendent to see that he is getting the kind and type called for. The following are the general types of water closets, but no effort is made to list names of individual fixtures:

(A) The Wash-Down works as its name implies. It has its water area near the rear of the fixture and a siphon trap at the front of the fixture. Its chief drawback is its small water space, thus leaving a comparatively large area of the bowl open to fouling.

(B) The Reverse Trap bowl has a siphon trap at the rear of the closet and water is supplied from the back. Its larger water area makes it superior to the ordinary wash-down type.

(C) The Siphon Jet has a top supply inlet to rim, and jet. It is somewhat similar to the reverse trap type, but it is superior to any of the above in that it has a deeper water seal, a larger water area, a larger-sized trap way and smoother and more quiet action. Naturally, with all this, it is a larger fixture, weighs more, and costs more.

(D) The Reverse Trap with Jet is the same as type B except that it has a jet added to help start the flow; and to a great extent has superseded the reverse trap type.

In installing the water closet the first necessity is that of providing a level area for it to stand on. Next, the flange must be well "sweated on" to the lead bend. By this is meant the soldering of the brass flange to the lead pipe connecting to the soil line. It is exceedingly short-sighted for any plumber to neglect to do this properly, since it requires his

return to the job to repair it gratis later on. In New York City the plumbing inspector must inspect the flanges before they are connected, and it is well for the superintendent on any job to do likewise.

It is difficult to determine any interior defects in water-closet bowls and their connections. To find these, as well as any in the other fixtures, a smoke or peppermint test is put on. This consists in connecting the smoke machine to the house trap and forcing the smoke through the soil lines until it emerges through the vent lines above the roof. Any break in a line will be revealed by the emission of the smoke or the odor of peppermint.

Urinals are generally of the stall or wall-hung variety. The former should not be installed close together, and care should be taken that the floor in the space between them has pitch away from the wall. The wall-hung type has the advantage of a constant water area. The valves on these fixtures, as well as on water-closet bowls, should be looked over to see that they are the kind specified. Manufacturers have of necessity several different grades, and while the valve may be by the specified manufacturer, the grade may not correspond to that called for.

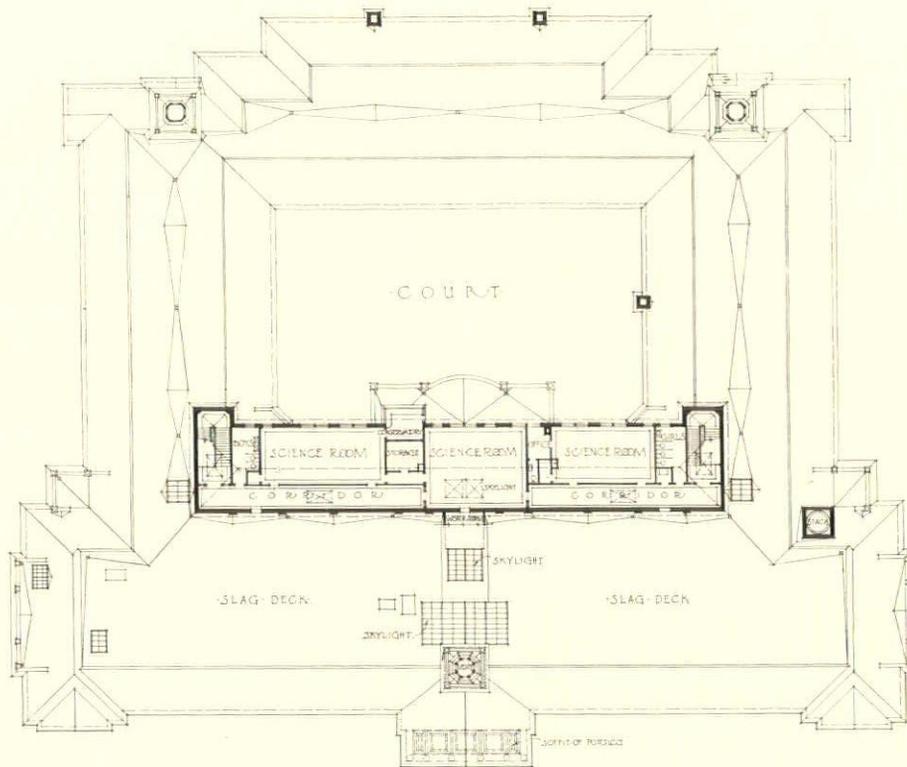
In high-grade work, lavatories are generally of porcelain or vitreous china. Upon cracking or peeling, porcelain will present a porous body, while vitreous china will not allow a deep penetration. The pedestal type must be firmly set. As with sinks of the hung type, it is essential that the support be substantial and fixed so that it does not show. The lavatory should not overhang any other fixture, so as to interfere with its use. The branches and drain should come out of the wall if possible in back of the fixture and not have to be run horizontally before connecting with the fixture. Anything which mars the beauty of a bathroom is generally the result of poor workmanship and lack of forethought in layout. It will be well worth the superintendent's time to visualize the finished appearance so that he may anticipate the requirements or correct the plumber's "roughing" in time to give a bathroom a well-arranged and finished appearance.



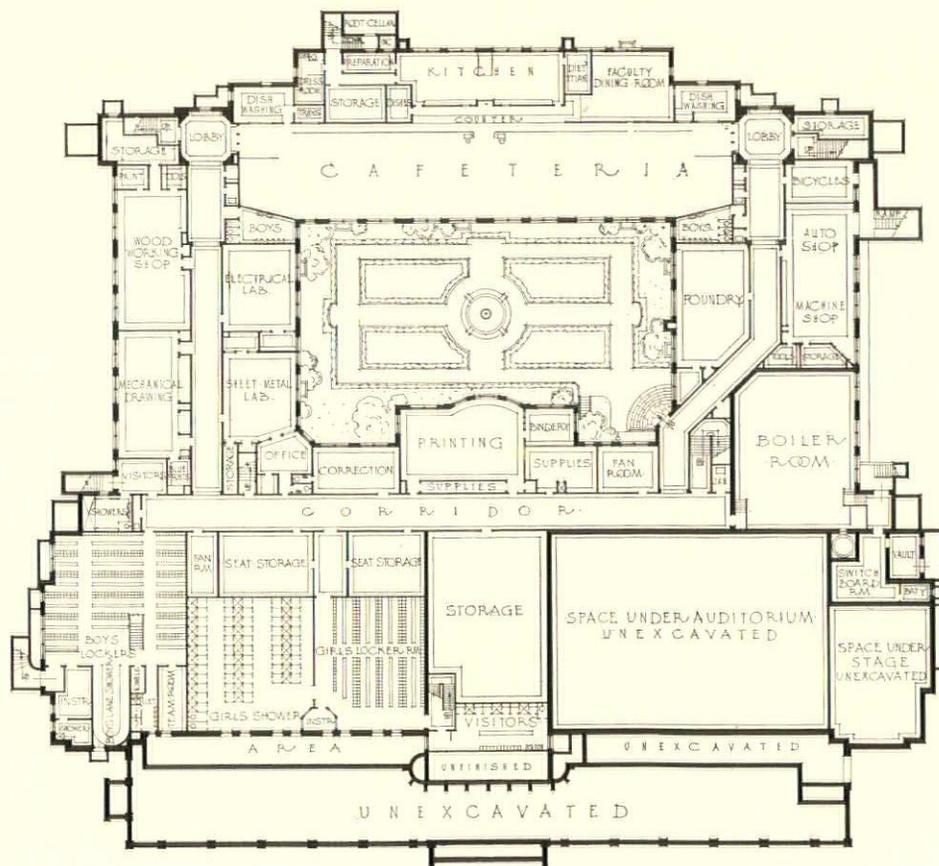
JUNIOR HIGH SCHOOL, UPPER DARBY, PA.

HEACOCK & HOKANSON, ARCHITECTS

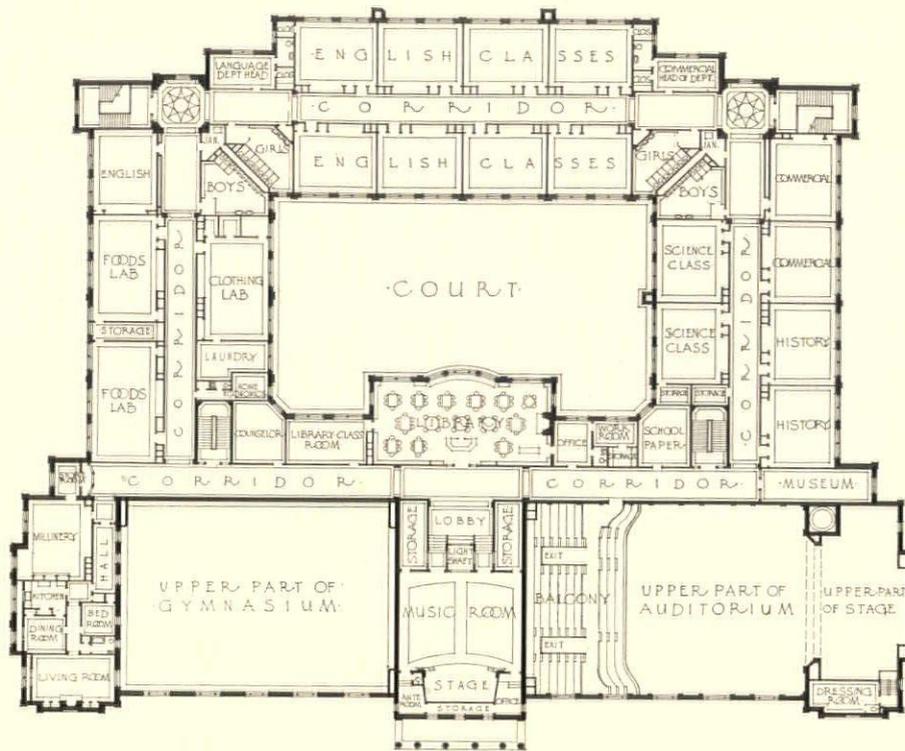
Dark red brick is used for the exterior walls, with molded brick for certain reveals; limestone for the trim and architectural focal points. For the roof, fire-proof composition shingles were used, similar to those being used in the restoration of Williamsburg, Va. The construction is steel frame, fire-proofed



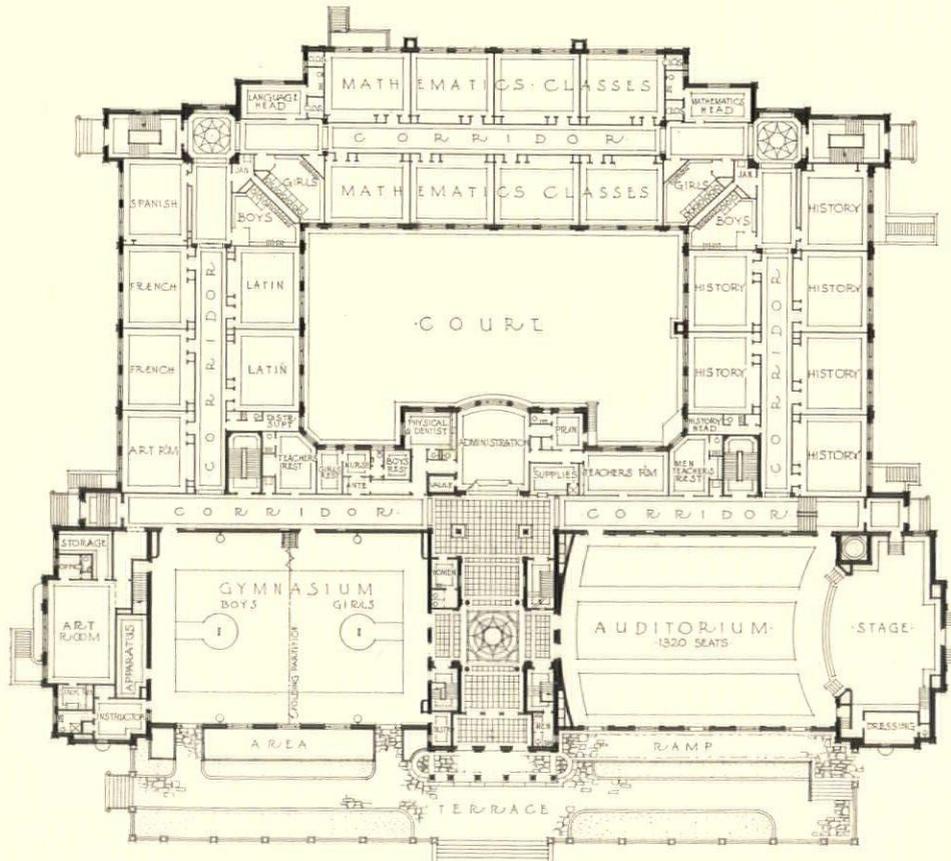
Plan of third floor and roof



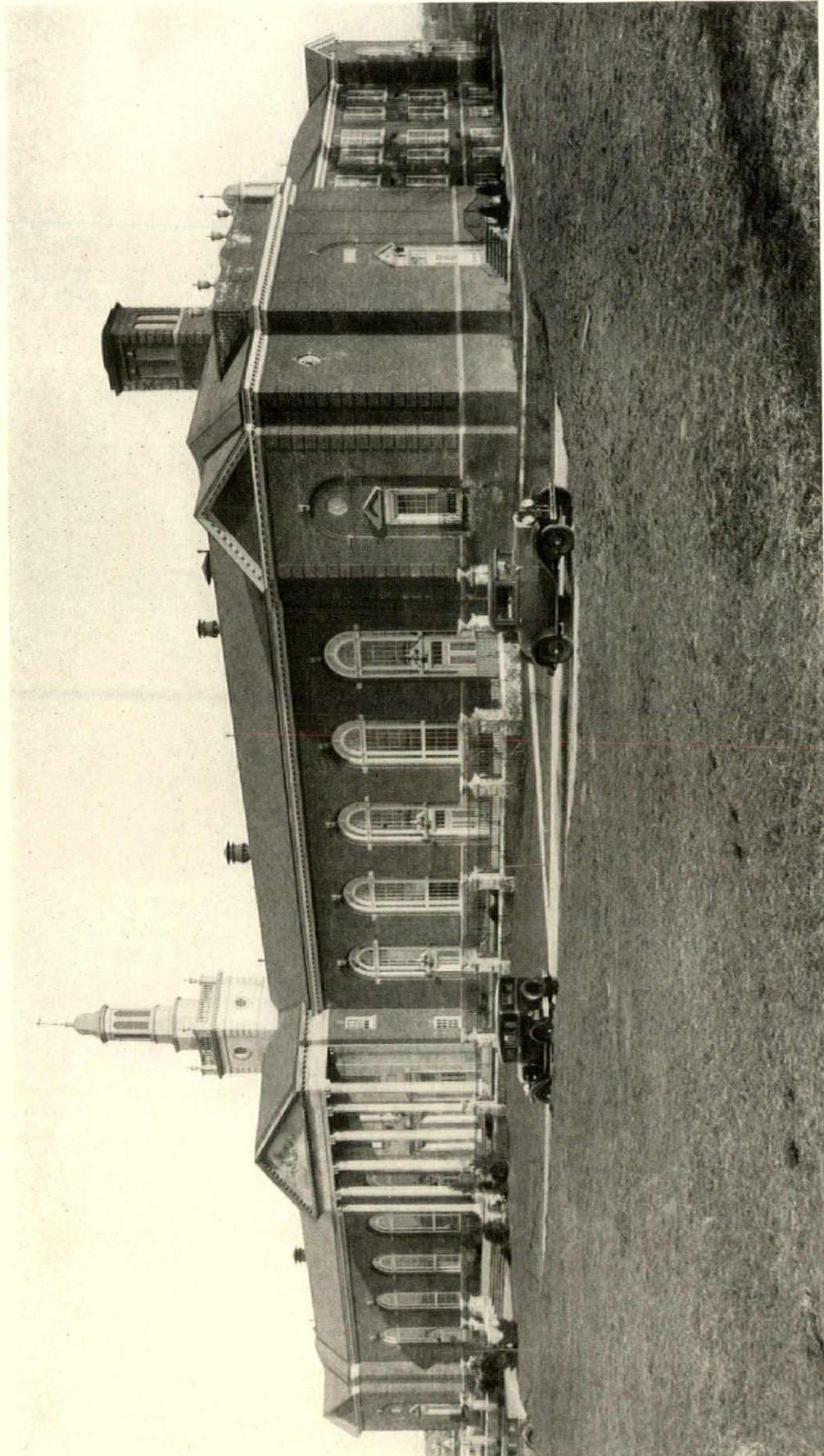
Plan of basement



Plan of second floor



Plan of first floor



The building is situated upon a six-acre tract in Delaware County just outside of Philadelphia. It has an overall length of 303 feet and a depth of 246 feet

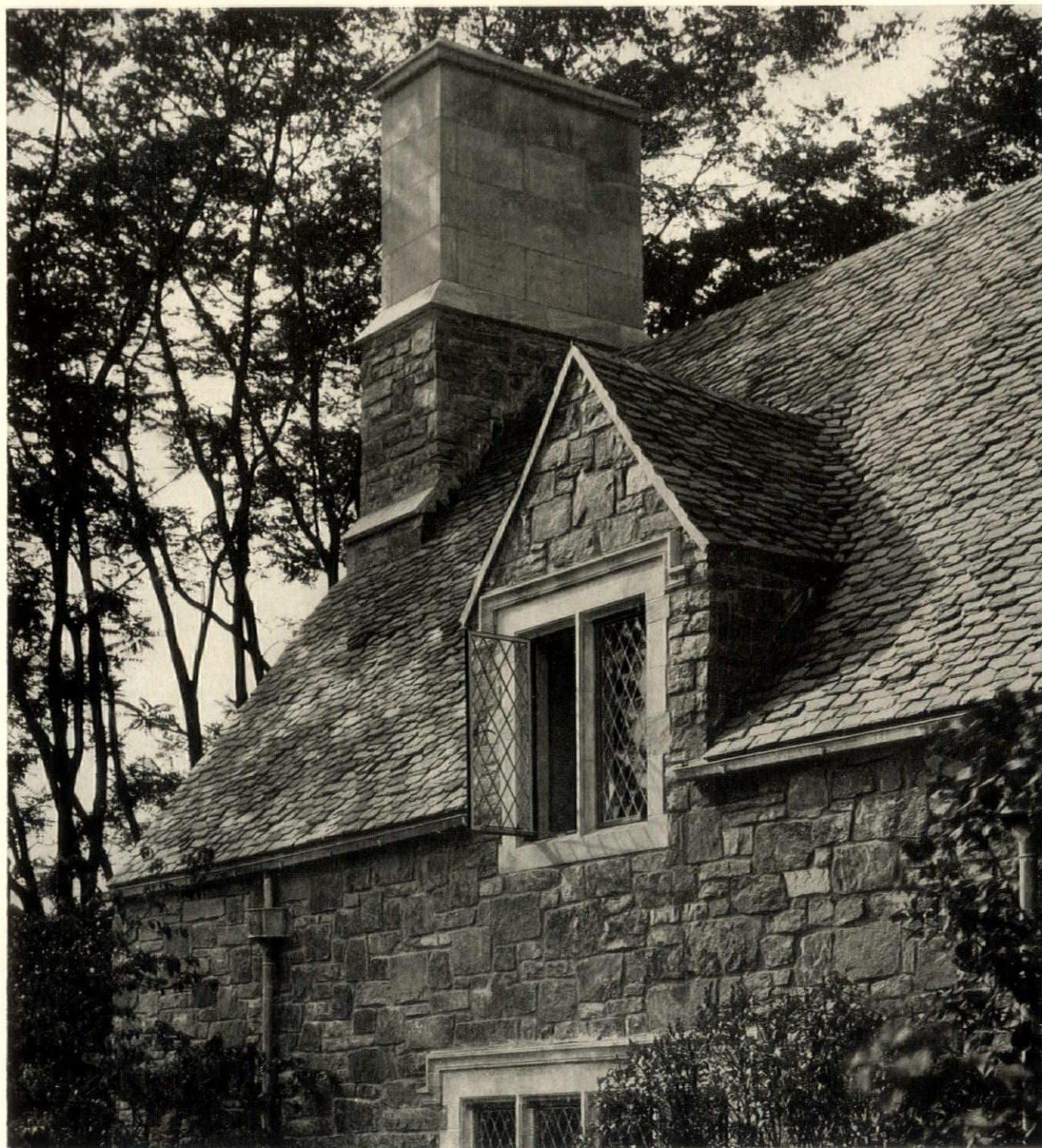
FAVORITE FEATURES

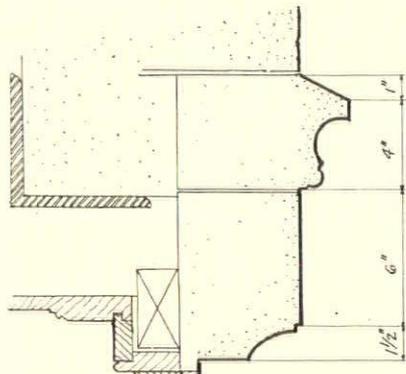
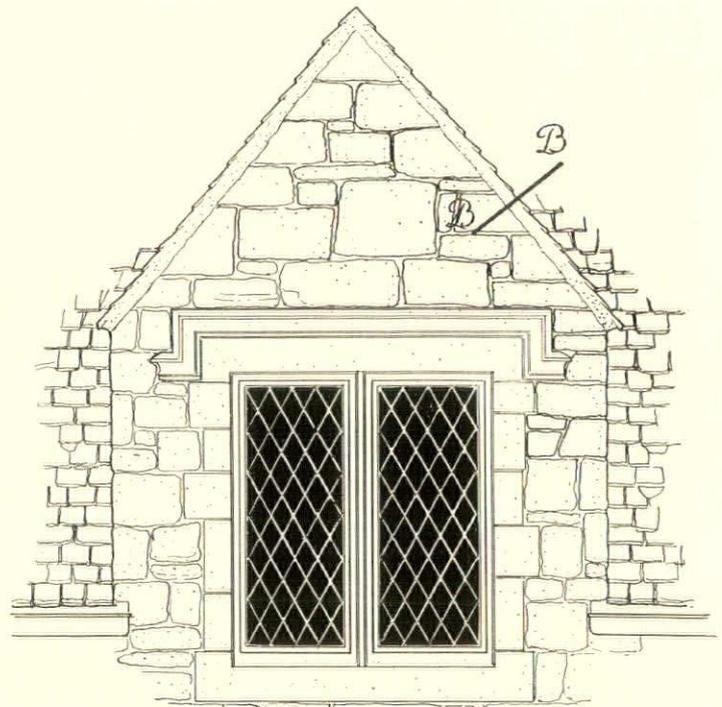
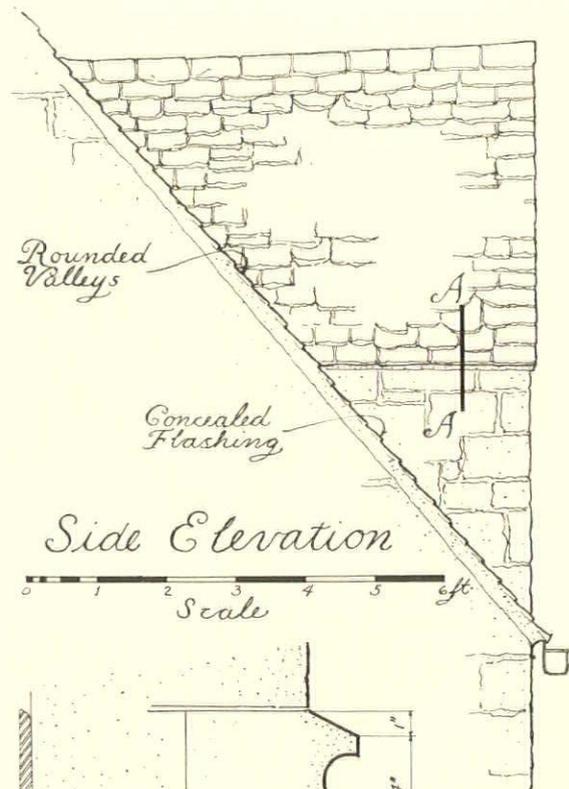


III. VERNA COOK SALOMONSKY

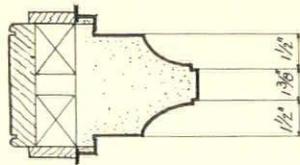


In almost every piece of work that an architect designs there is, when it is finished, something that he would prefer to have otherwise. Once in a long while, however, he rings the bell so clearly that even his sophisticated eye finds it good. The architect tells himself that it worked out as he had hoped, and he would not change it if that were possible.

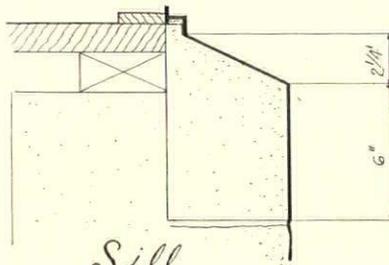




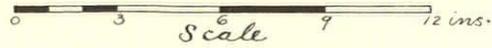
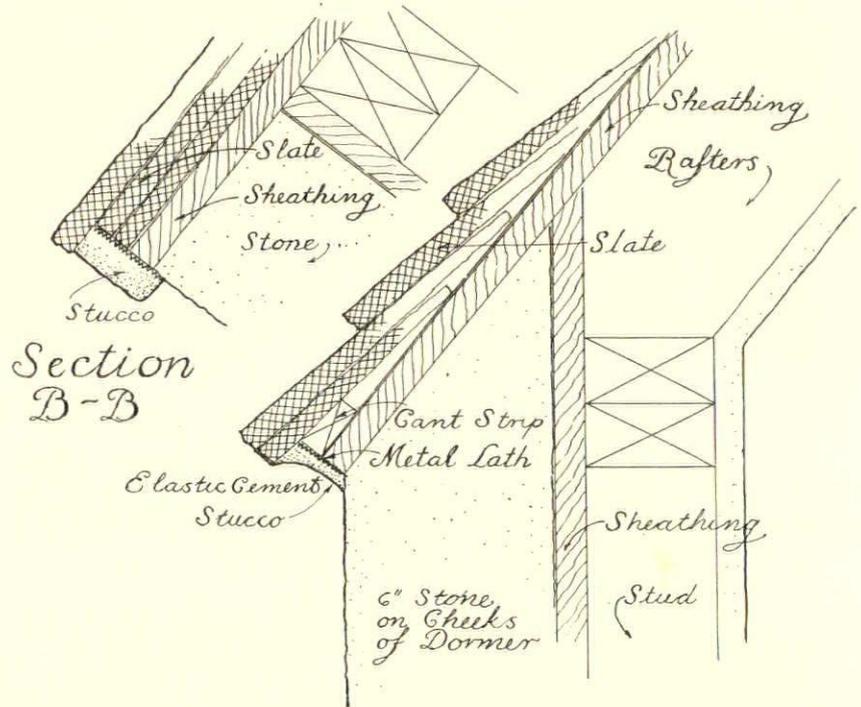
Head



Mullion

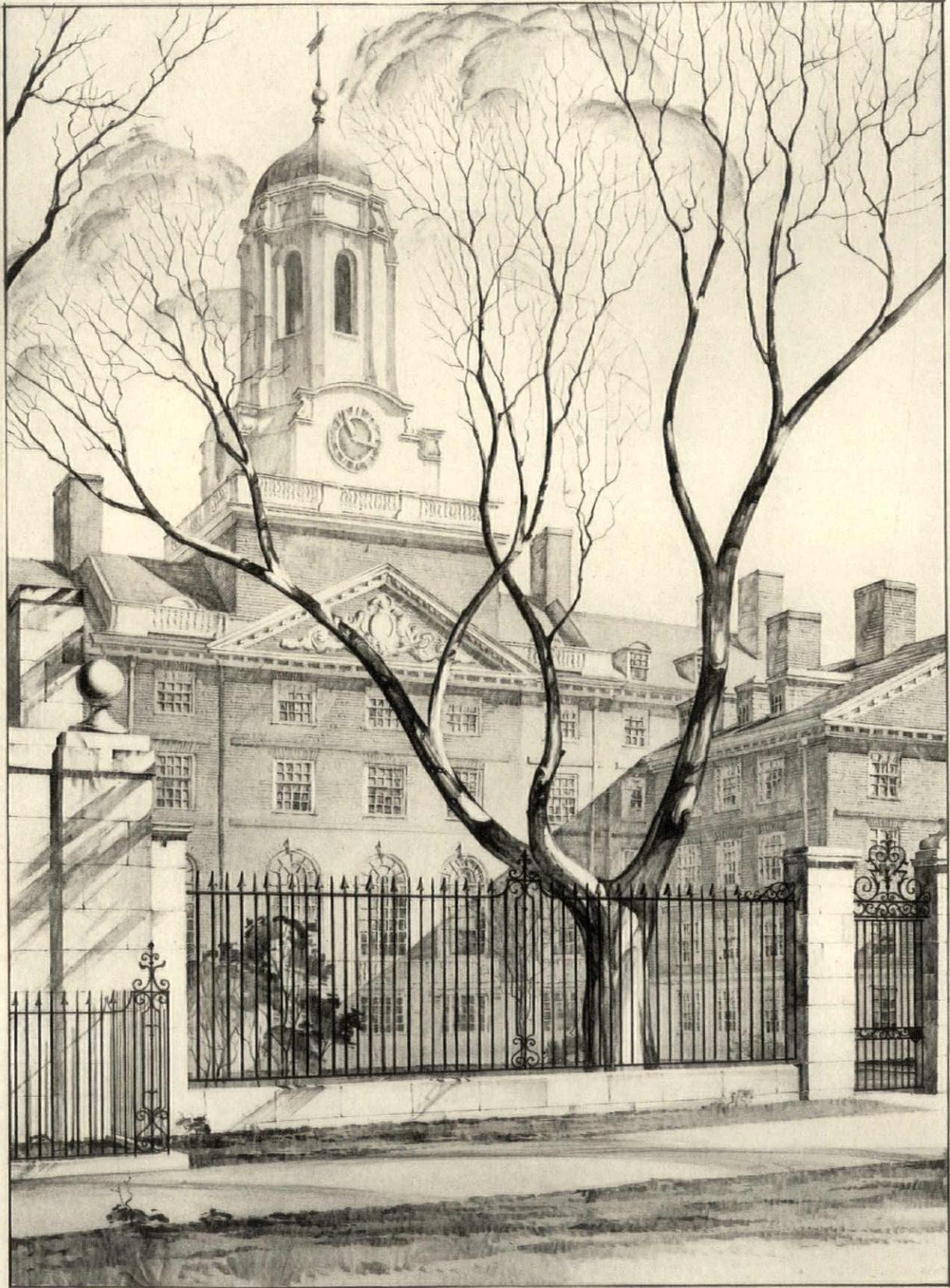


Sill



A DORMER WINDOW, COUNTRY HOUSE FOR ALEXANDER CRANE, SCARSDALE, N. Y. (See photograph overleaf)

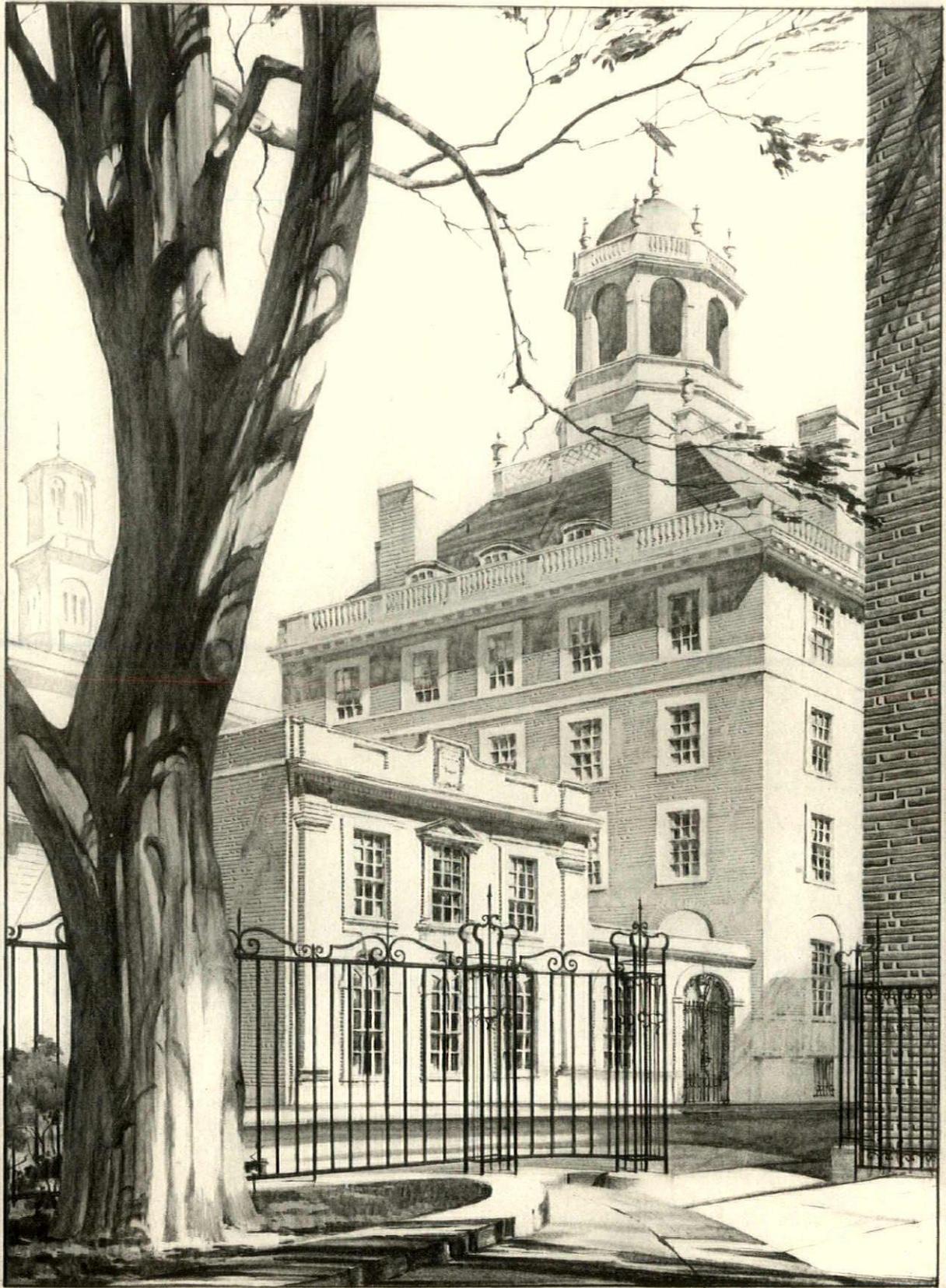
VERNA COOK SALOMONSKY, ARCHITECT



DUNSTER HOUSE, COURT, AND MEMORIAL DRIVE, HARVARD UNIVERSITY
COOLIDGE, SHEPLEY, BULFINCH & ABBOTT, ARCHITECTS

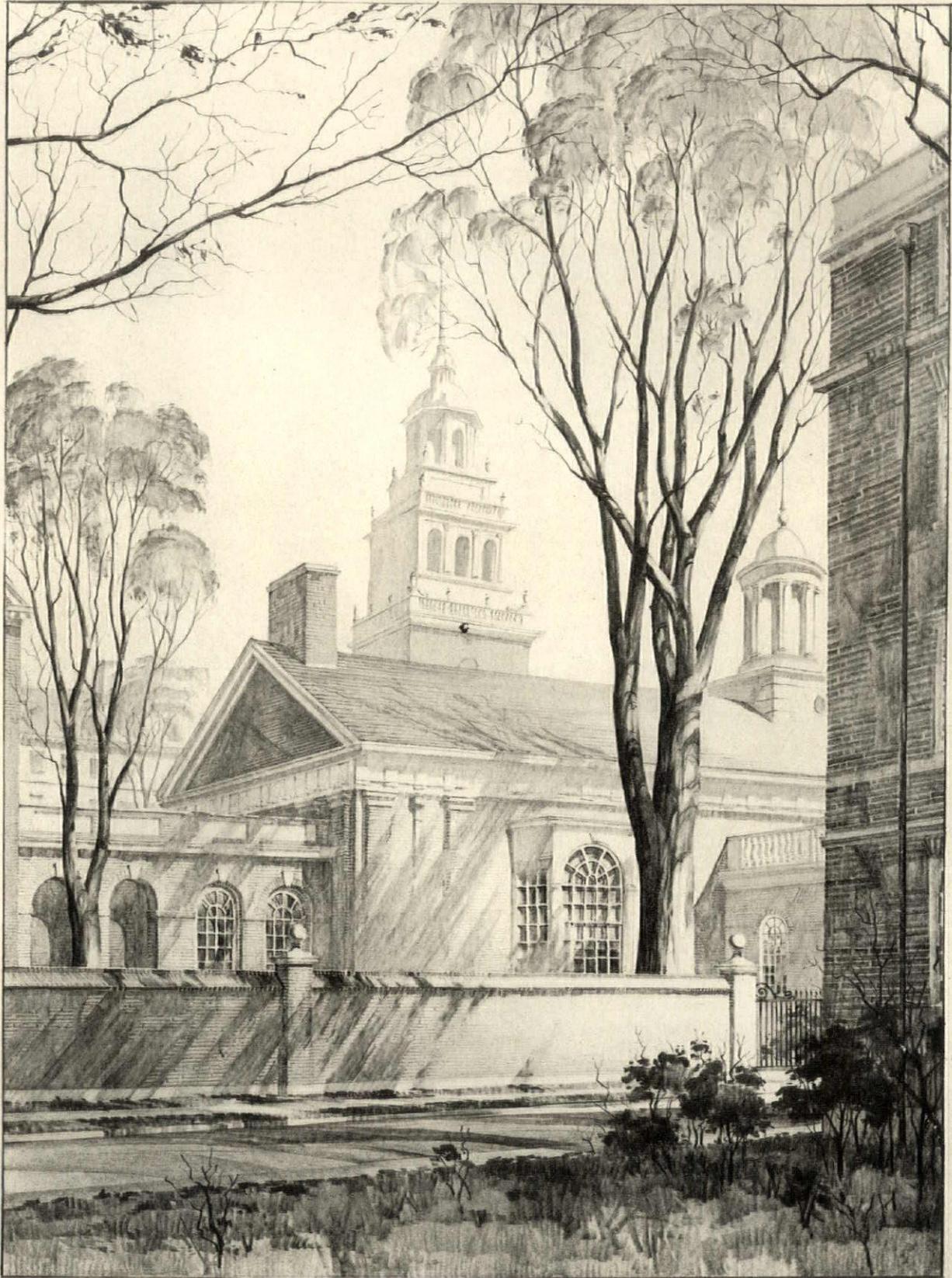
◀ ARCHITECTURE ▶

From the pencil drawing by Constantin A. Pertzoff



ADAMS HOUSE AND RUSSELL HALL, HARVARD UNIVERSITY
COOLIDGE, SHEPLEY, BULFINCH & ABBOTT, ARCHITECTS

From the pencil drawing by Constantin A. Pertzoff

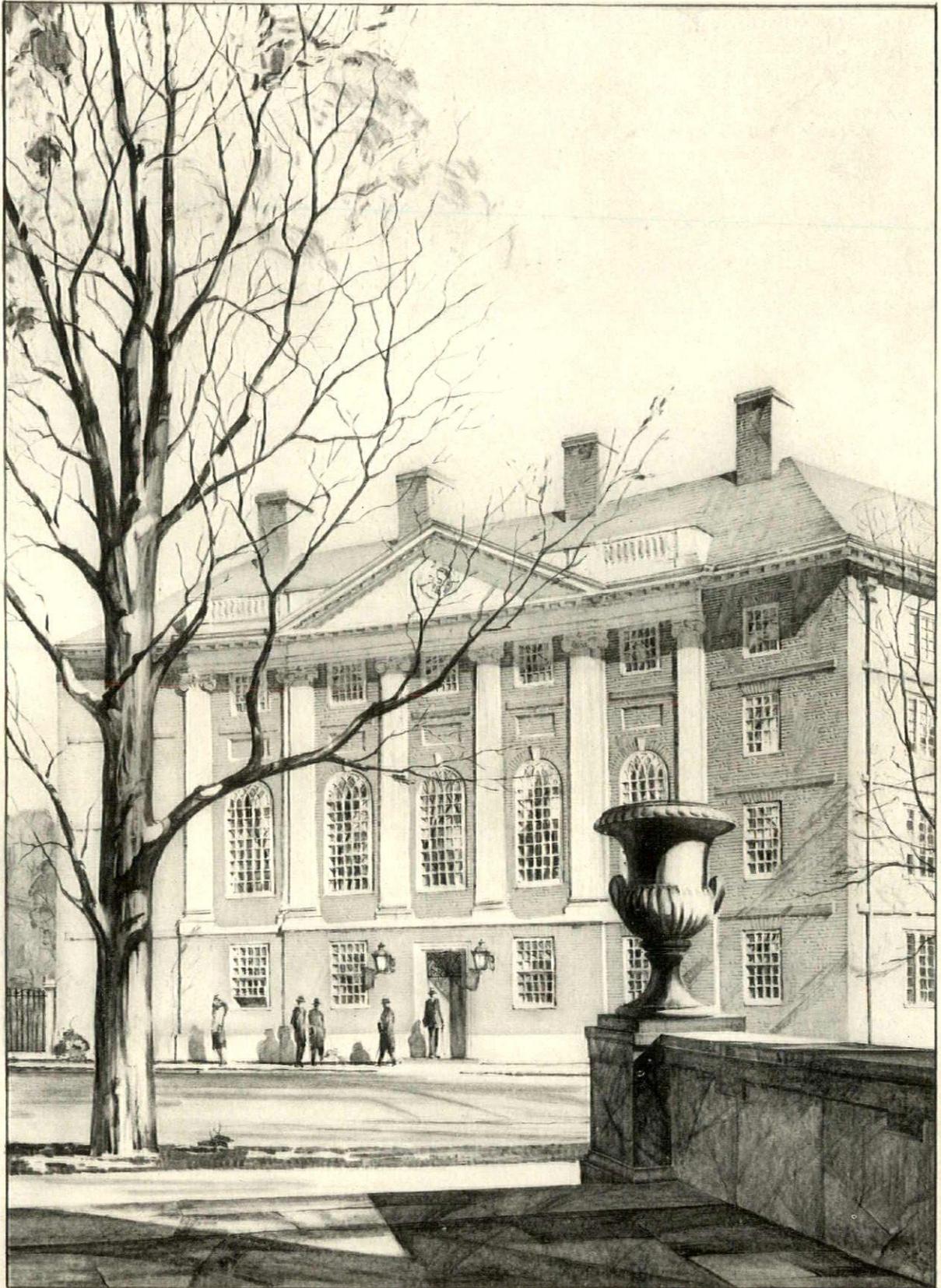


LOWELL HOUSE, HARVARD UNIVERSITY

COOLIDGE, SHEPLEY, BULFINCH & ABBOTT, ARCHITECTS

From the pencil drawing by Constantin A. Pertzoff

« ARCHITECTURE »



LIBRARY OF ELIOT HOUSE, HARVARD UNIVERSITY
COOLIDGE, SHEPLEY, BULFINCH & ABBOTT, ARCHITECTS

From the pencil drawing by Constantin A. Pertzoff

Monday, September 14.—With all this talk of lower building costs, it is astonishing to find that in London, according to *The Architects' Journal*, the cost of building to-day is about 85 per cent above that in 1914, without any promise of its coming down. The Englishman blames this on shorter hours, insurance for social service, and other miscellaneous causes. From this distance it looks as if our English brothers have got to develop a lot more efficiency, or possibly a lot more inclination on the part of the workman to give a day's work for his wage.

Wednesday, September 16.—Went down to the New School for Social Research to hear Frank Lloyd Wright talk on architecture—mostly a diatribe against the eclectic. Wright said that he was going to "read him out of the party," but by the time the evening was over the eclectic had been deprived of mind, soul, and most of his body. I often wish, in hearing Wright speak, which he does so well, that he would deal less in destructive criticism, and more fully in constructive suggestions. A remark I overheard as the audience filed out seemed rather pat: "My, but he is a good *hater!*"

Thursday, September 17.—Lunched with David Coyle, Lorimer Rich, Robert Wiseman, and Charles H. Conrad of Binghamton, discussing some of the infinite possibilities in pre-fabrication of wall slabs for the construction of small houses. Obviously unless steel becomes much cheaper, the successful scheme will not consist of a steel sheet on the outside. Whatever the material finally used for the outside surface, there is the difficulty of joints—not a mechanical difficulty, but the aesthetic one of avoiding the appearance of the old battened barn. If some way could be found to make wood fireproof it would have a tremendous advantage over anything else yet discovered in weather tightness, flexibility, ease of working, and ease of re-modelling.

Saturday, September 19.—H. Roy Kelley, leaving for Washington to participate in President Hoover's conference on home building and home ownership, asked me whether I had any thoughts on the subject. I have. The average working man in America cannot afford more than a total investment of \$5,000 in his home. If so, this means that the individual detached house is out of his reach. Carried on with the best intentions in the world, the own-your-own-home campaign has done a lot of harm in persuading people to attempt the ownership of houses that are beyond their means. Then, too, there is far too much of the speculative factor involved. The average man buys a home that a speculator has put up, and he is practically sure to get less than his money's



The Editor's Diary



worth. This whole problem of housing people of average or below average incomes resolves itself into a problem of group planning and group building. It is the only method that will give the prospective home owner a fair break. Group planning and building of this sort is probably best done by limited profit corporations using land that has not come under the real-estate speculator's notice. Another point is that we have a good deal to learn about making small-house construction more durable and economical. Nevertheless, the chief opportunities for saving lie rather in proper use of the land, cutting out unnecessary roads and driveways, grouping public-utility services, decreasing the cost of selling and the cost of financing.

Tuesday, September 22.—I was talking with David Coyle to-day, who is describing for *The American City* what seems to me to be a flawless scheme for helping to equalize the business cycle. In a nutshell it is this: Building is our greatest national activity. Building, however, is divided into two distinct parts: first, buildings that are put up with the expectation of profit for the individual; and second, buildings that are put up for the profit of all of us. At present we have too many of the first kind—too big a factory. What we should be building now is buildings of the second class—"permanent improvements," which do not increase our capacity for making things, but which do raise the whole standard of living. This industrial plant of ours has grown too big for us at the moment—we make more than we can buy, and this has come about for the reason that our surplus capital finds its way too readily back into industry to make still more capital. If we could divert this capital in times of prosperity so that it might not continue to expand and poison our whole industrial life, we could use it instead for "permanent improvements."

The only logical way of diverting this capital is by a heavy graduated income and inheritance tax—a tax with teeth in it. If we could all be set to work now building "permanent improvements," normal business activities would return. The government or the state can borrow this money on bonds as they would for a war, paying these borrowings by skimming off the excess capital produced when times are normal. What we need is not more of an industrial plant, but more of a market. Building "permanent improvements," among other things, assures that market.

Wednesday, September 23.—Rutherford Boyd is back from a six months' trip abroad, most of which time was spent in Spain, Italy, and Southern France. He brings a lot of helpful advice for those who would take a car abroad. First of all, the car should be of small horsepower, since you are taxed on that. Second, the car, preferably, should be old, since the hubs of passing carts have a way of leaving the evidences of their passing on your fenders.

Thursday, September 24.—Dropped into the office of Electus D. Litchfield to see his finished preliminary drawings of the Albany Post Office, Court House and Customs House, and found a most stimulating and effective departure from the traditional Roman type—no cornices, no columns, but a restrained and beautifully proportioned marble structure that seems to express our own age rather than that of another time and another people.

Friday, September 25.—Went up to Larchmont to see some new work being done by Lee Perry, among which was a fireproof house of steel, stone, and cinder blocks. Was impressed by the fact that in numerous houses which he has built in that locality lately, an air-conditioning system is used, fuelled with gas. With gas at sixty cents per thousand cubic feet, the cost of operation is in the neighborhood of three hundred dollars a year.

On to Rye to see what Arthur H. Olmsted has been doing with a new method of monolithic concrete construction in house building. Mr. Olmsted has been at the job of building poured concrete houses since Thomas Edison urged the use of the house poured into steel moulds. Finding a lack of flexibility in most of these systems using elaborate moulds, Olmsted has finally developed a system which requires no apparatus brought to the job but a mixer, a few wheelbarrows and shovels. The details of the system will be found more fully explained in an early issue.

Sunday, September 27.—An architectural milestone is being razed in Chicago—the Home Insurance Building, Major William Le Baron Jenny's first essay in

steel construction, and frequently called the father of skeleton steel skyscrapers.

Monday, September 28.—Attended Victor White's luncheon in the Roof Garden of the new Waldorf-Astoria, where representatives from among the magazine editors, interior decorators and critics had assembled to see the room which White had decorated. Incidentally, its claim to be called a roof garden is due to the fact that the roof above a great metal-ceiling grille can be rolled back to open the central portion to the sky. To the room's merit as an individualistic interior, the photographs published in the November issue will testify.

Tuesday, September 29.—Leonard Schultze gave a dinner to-night to about a hundred men—many of those who had participated in the creation of the Waldorf-Astoria, together with others whose interest was chiefly in witnessing the culmination of a magnificent achievement. Kenneth Murchison presided as toastmaster, introducing Mr. Charles Hayden, representing the group of bankers who financed the \$42,000,000 investment; Mr. Albert H. Harris of the New York Central Railroad, representing the owners of the land; Louis Horowitz, representing Thompson-Starrett Corporation, the builders, whose idea it was, parenthetically, that the Waldorf-Astoria must not perish with the old building, but go on to greater glories; Leonard Schultze of Schultze & Weaver, the architects; William S. Coffin, President of W. & J. Sloane, speaking for the interior equipment and furnishings; and Lucius M. Boomer, the captain of the ship. The significant fact was brought out that on the very date of the October, 1929, Wall Street debacle, the money was pledged to build the new Waldorf-Astoria. Depressions and panics come and go, but the traditions of this great hotel are too firmly rooted either to be pulled up or to be disturbed by events of the moment. New York has had, and will continue to have, its Waldorf-Astoria before the present depression was known, and long after it will have been forgotten. Leonard Schultze, upon whom the tributes of his associates fell all during the evening, insisted that the building is a monument to the American workman. Throughout the two years of building the sub-contractors vied with each other as to the excellence of their work and their products. The architects had four men constantly supervising the work, but Mr. Schultze said that shortcomings were almost always discovered and remedied by the builders without the interference of the architects.

Thursday, October 1.—Thomas J. Foster has been contributing to *The Iron Age* in recent weeks a series of articles reviewing the use of steel in house building. Having surveyed the whole field,

Mr. Foster points out that our methods of last year are practically those of Naugle in 1907. We have got to think of walls, partitions, floors, and roofs in the light of new conditions and new structural relationships. Our minds apparently find great difficulty in getting away from traditional methods of wood or masonry—and neither will serve for steel.



Monday, October 5.—Arthur H. Olmsted in town for lunch and to discuss the present state of building with regard particularly to residential work. The kaleidoscope of building methods is changing almost daily, but at the moment the picture shows interesting possibilities in a combination of Mr. Olmsted's own method of pre-cast concrete structural units with one of the flat-tile-and-concrete floor systems, supplemented by the use of structural steel, particularly in the light joists and a few H columns to lessen the floor spans. It appears at the moment that neither the all-steel nor all-concrete house affords the logical solution, but rather a combination of these.

The Paris voyageurs had a family party at The League to-night at which the ladies were permitted to see a somewhat expurgated edition of the moving pictures, tableaux, and Tony Sarg's marionette show, recording events of the great Paris pilgrimage of last spring.

Wednesday, October 7.—History seems to have been in the making on September 23 last, when the delegates of nineteen leading national organizations, all related to building, met at The Octagon and put together the framework of a consolidation of interests. This is not merely the establishment of another national organization, the creation of a lot of new committees and new secretaries, but rather a correlation of existing machinery so as to avoid the duplication or the conflict of effort. It will be interesting to see what will come out of this, for the possibilities are enormous.

Thursday, October 8.—Electus D. Litchfield convicts me, in a letter today, of a shameful error in the Diary of July 30, wherein I attributed Augustus Saint Gaudens's Sherman to Daniel Chester French, who yesterday passed on to join the immortals. In a book called "The Jungle of the Mind," Doctor Edgar James Swift shows how common it is to commit errors of this kind, writing down one name when one really knows another name should take its place. This is what happened in this particular lapse of mine. Litchfield, moreover, disagrees diametrically with my feeling that the combination of realism and metaphysical idealism combined in this

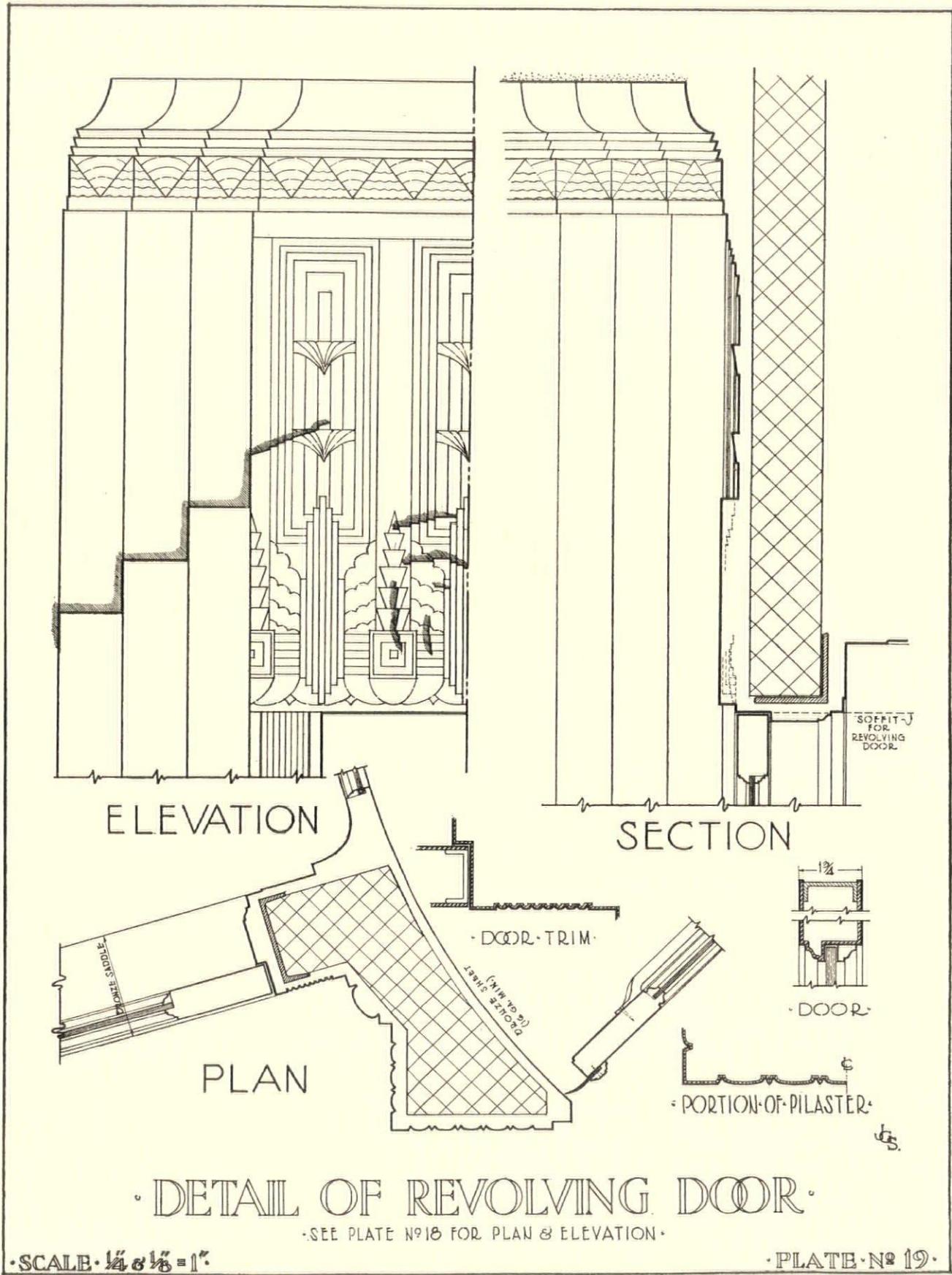
figure of a walking angel leading Sherman on his charger cannot be made a success. He says: "Since Augustus Saint Gaudens and Stanford White placed this magnificent memorial in the Plaza, I have, metaphorically, gone down on my knees each time I have passed it, and thanked God that there were such men who could do such things. The élan and irresistible determination which carried Sherman on his victorious way, as well as the rugged soldier and his dynamic mount, are surely miraculously embodied in the bronze of that magnificent group. Take off your goggles, old man, and look again." Nevertheless, I am of the same opinion still.

Saturday, October 10.—President Hoover has launched the scheme we discussed in Washington last spring, looking toward the provision of a free flow of credit to those wishing to finance or refinance their homes. The tentative programme calls for a mortgage bank with regional branches created by existing private realty loan institutions, but supervised and chartered by the government. Fifty per cent of the wealth of this country is in real estate, yet there is no provision in the American financial structure for liquefying money invested in real-estate securities, or for providing a flow of capital for real-estate investments from one section of the country to another. The President's scheme is in effect a central mortgage bank with regional discount branches, along the general line of the Federal Reserve system; it has become an obvious necessity which, with some ingenuity and skill, can be worked out as to its details.

Monday, October 12.—In these days when hundreds of new materials are constantly being brought forward for use in buildings, it is interesting to learn that down in Georgia at least one builder is using cotton duck as an outside covering over the sheathing for his gables and dormers. A felt paper is put on over the sheathing, the cotton duck hung in vertical strips over this, butt-jointed, painted three coats, and covered with wood battens. The work has been tight and so durable that the first house has been repainted only once since its erection seven years ago.

Wednesday, October 14.—Forty or fifty men from the New York Chapter, A. I. A., together with several architects from northern New Jersey, Westchester County, and Brooklyn, gathered at dinner to-night at The League, and afterward listened to G. Meissner, the district manager, Home Construction Division, of Sears, Roebuck & Company. Mr. Meissner faced a somewhat antagonistic audience, some members of which felt that the company's home-

(Continued on page 372)



A SERIES OF WORKING DRAWINGS BY JACK G. STEWART

building efforts were taking bread out of the architect's mouth. By the time Mr. Meissner had explained the system, answering scores of rapid-fire questions from almost all present, most of us were convinced that his company has developed a helpful and ingenious scheme for acting as general contractor and financing agent in the building of homes. The stock-plan end of the business is at the moment an insignificant part of the work, due largely to the glut of speculators' houses on the market. On the other hand, the business of alterations, additions, and modernization, as they call it, is flourishing. The company will act as general contractor to build houses costing up to forty or fifty thousand dollars, working under the direction of the architect, and furnishing what he specifies, whether it is the company's own stock or not. Moreover, the company finances these houses with a first-mortgage loan up to 75 per cent of the cost of the land and house, which mortgage is amortized over a period of fifteen years. At the end of a most interesting evening session, a committee was appointed representing the New York Chapter, the Brooklyn Chapter, and the architects of northern New Jersey, to confer with Mr. Meissner as to possible means by which the architects and the company may work more advantageously together. It was suggested that the company might even enter upon a policy of advertising: "If you don't find the house you want in our book of stock plans, consult your architect and allow us to build it for you."



Thursday, October 15.—Fourteen or fifteen architects met with our committee of the New York Chapter on Education at dinner to-night to formulate a plan by which we could pass on to the high-school students of New York some slight grasp of art appreciation with regard to architecture. When one recalls the fact that in the regular courses of school and college, the student never hears the word "art" from first to last, the extent of the possibilities involved is tremendous. Forest Grant, director of art in the New York high schools, told us many interesting things about how much easier it has been to inculcate some ideas of art appreciation than to attempt to hammer in the technic itself. The student who is forced to make a pencil drawing hates it, while the student who has his eyes opened to what art is in the social structure, absorbs this readily and asks for more.

Saturday, October 17.—I hear that the new George Washington Memorial Bridge over the Hudson River is to remain unclothed with stone. Cass Gil-

bert was to have sheathed the great end towers with masonry, and they were designed for this purpose. The steel skeleton itself has made such an impression upon the public that protests flooded in against covering up the structure's bones. The Port of New York Authority first denied the appeals to leave off the stone, but has now yielded, possibly by reason of considerations of economy. As E. N. Jenckes of the *Springfield Republican* points out, this is likely to be hailed as a victory for functionalism in design, or perhaps as a triumph of the engineer over the architect. As a matter of fact, neither inference would be justified. The steel towers have taken the form they possess partly by reason of the fact that they were to be covered with masonry. The purely functional steel form might conceivably have looked very different. Of course, it by no means follows that structural steel, in order to be beautiful, must be conceived as a skeleton of masonry. The fact is, however, in this case the architects and engineers worked very closely together with the purpose of achieving a great engineering project that would at the same time be beautiful. That it remains beautiful unclothed is a rather happy accident.

Monday, October 19.—I see that A. W. Faber and Johann Faber of Germany, and L. C. Hardtmuth of Czechoslovakia are joining their pencil-making forces under a Swiss holding company. Their total production capacity is estimated at four million gross of pencils annually, practically none of which at the moment are being used by architects.

Tuesday, October 20.—The double-deck elevator, of which we were talking some time ago, is making its debut in New York this winter in the sixty-seven-story home of the Henry L. Doherty and City Service Companies. This building saved about four hundred square feet of floor space per floor on sixty floors, by using eight double-deck elevators instead of fourteen single cars. The floor heights, of course, have to be uniform, with the two decks of the elevator the same distance apart. Each deck has its own operator, and the car does not start until both doors are closed, and both control handles are moved to "Start." During off-peak hours of traffic, the top compartments are used to serve all floors, the lower compartments remaining closed.

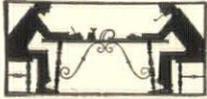
Thursday, October 22.—Ralph Walker, just back from Europe, shared with forty or fifty of us at The League his observations concerning theatre design. His firm is working on a new Opera House for Philadelphia, and his recent trip abroad was for the purpose of finding out what Europe can teach us in theatre design. On the way home I

mused upon the different manner in which such a subject would have been discussed when Carrère & Hastings were designing the New Theatre, later called the Century, in New York City. There would certainly have been talk of the "grand plan," the importance of a dignified façade, and possibly even some consideration of sculptural details. Ralph Walker, however, and his many questioners, talked of seat spacing; sight lines and how they are distorted by too much elevation in the usual high galleries; what the actor and singer has to aim at in his audience; cycloramas, stage wagons, and elevators; the question of whether in a few years we will not be achieving with lighting what the stage carpenter now assembles laboriously on a wagon; size of off-stage space, horizontal and vertical; the possibility of putting a small theatre and a large theatre stage to stage, with a movable separation wall; traffic lines for motors and their relation to the rest of the city. In other words, the design of a theatre to-day consists in achieving comfort and functionalism, if you will, first of all. Mechanically the creation must be workable, the audience must be able to approach it and see and hear comfortably. All of these having been achieved, the appearance of the work is brought into the study. Beauty will not take care of itself, but it will be logically achieved according to the designers' abilities and gifts after the real bones of the structure have been put together.

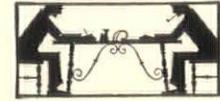


Saturday, October 24.—Spent an hour with Romer Shawhan, who has developed a new sort of service to the architectural profession. Shawhan used to be head of the George B. Post office in Cleveland, and later was head of Simon & Simon's office in Philadelphia. Being an architect himself, he knows some of the architect's troubles with regard to marble, and has set up an office as a consultant on marbles. He has at his fingertips all of the information about all of the marbles, apparently; how much there is in this country in the block, whether the quarries are working, whether this particular marble is good for exterior or floor use, what the Bureau of Standards' abrasive tests show, where the marble has been used, alone or in combination with others—in fact, he can supply information, and combine samples, so as to solve an architect's marble problems in a few minutes. Incidentally, of course, the architect avoids the uncomfortable feeling of having bought a combination of marbles from over-enthusiastic marble salesmen only to find that there is not enough of them in this country, nor enough perhaps even in the quarries, to supply the need.

CONTACTS



DEVOTED TO A BETTER UNDERSTANDING OF THE BUSINESS SIDE
OF ARCHITECTURE AND ITS RELATION TO THE INDUSTRIES



MARBLE, to a great many architects, is just another "pain in the neck"!

Considering the permanent decorative value, utility, and the economy of marble, this attitude (which has been spreading for some time) is most unfortunate. After all, the architect is, and always has been, marble's best friend.

But what happens when an architect has an important problem, or any kind of a problem, in marble decoration?

The chances are that he has in his mind a very good idea of what he wants. Whether he has or not, he quite correctly stops before carrying his sketches too far to see what marbles he has on file. These he finds coated with dust, no doubt, of various sizes, many broken, and intuitively feels that most of them are probably obsolete.

Now he calls for the catalogues of color plates! Yes, they are helpful for general characteristics, color, and to refresh one's memory about a few marbles, mostly foreign, but they are only color plates after all, and are so often misleading. Hence, the catalogues are not the answer.

Then he recalls about four marble importing concerns whose representatives have been calling upon him regularly. He sends for each and, in turn, explains what he has in mind. All four, with the eyes of good salesmen on "stock on hand which must be moved," decide on about three marbles each. But they want to be sure to "please" the architect, so add about seven more. The result is that about forty marble samples arrive at the architect's office.

In many cases, the architect gives the selection a glance and says: "Sorry, but they aren't what I had in mind at all!" It is then a case of "try again."

Time is also lost because marble men fail to recognize the fact that the architect has very decided notions about color and the combinations of color. If he hates green he won't use it, just as, if a vegetarian, he will spurn a juicy steak. It is a waste of time and an annoyance to

How Is the Architect to Know Marbles?

By Romer Shawhan

insist upon telling him how beautiful a marble is, if he doesn't like it and it doesn't suit his purpose.

Also, few marble men or their representatives have any particular sense of "scale." It is simply a matter of training. With the best intentions in the world they will often suggest a beautiful marble with large veinings, which might be very appropriate for a large hall or elevator lobby, yet when used for some smaller dependency would be simply inappropriate or out of scale.

But now he realizes it is a case of "hunt," so he finally accepts the invitation of one of the salesmen to visit his company's showroom. Even there his taste isn't satisfied and he finds no real facilities for properly trying out various color combinations if he desires to do so.

Then he remembers another display room. There might be something there. If not, he knows of several marble importers who have yards in the Bronx, Long Island City, and Astoria. What a fine prospect for a busy man!

Many architects do not realize the fact that a majority, in fact, almost 75 per cent, of all marbles coming from abroad are procurable by and from practically all of the importers, but each importer, nevertheless, maintains a separate staff of the identical marbles of this class, only under different names.

Marbles in the above category are "open" or "competitive" marbles. Nor is there anything but a

narrow margin of profit in them, for their sale to the marble manufacturer depends upon the prices the importer quotes, what stock he has on hand, and how badly he might like to unload it. Also it depends upon whether the marble manufacturer likes to do business with him. If the marble manufacturer prefers to pay a few cents more per cubic foot and buy it from some other importer, that is up to him. It is just so much less profit on his contract price, that is all. Ordinarily, the architect is not much concerned with the source of the marble blocks, just so the material is what is specified and reasonably agrees with the approved samples.

"Exclusive" marbles, however, are those controlled by some one importer or wholesaler. Instead of a quarry selling its material to any one, arrangements are made for the "exclusive" selling rights, which usually means that the firm handling it must guarantee the quarry a certain minimum cubage annually. Sometimes such arrangements are kept up over an extended period, but if the marble hasn't a very ready sale and the stock accumulates, the agreement soon terminates.

What riles the architect particularly is the number of names given to the same marble. Lumachelle de Lourdes, for instance, is called "Lumachelle" by one importer, Saint Jeanne by another, and Apennine Fossile by still another. If you want to call it Breche de Lourdes, that is all right too! They all mean the same marble, from the same quarries in the Hautes-Pyrenees, France.

Noir Coquille d'Iseste is called Curly Black, Noir Coquille, Sainte Anne Noir, Noir Fossile, and so on, each importer suiting his own fancy or making up a new name when he decides to import some of the stock. That many names are made up overnight is no exaggeration.

It is all very silly and adds to the architect's difficulties.

One reason the importer does it is to try to be first in line on price with the marble manufacturer while the job is being estimated. When one of these new names is sprung on the

manufacturer he doesn't know, any more than the other importers do, what the specified marble really is or where it comes from, until manufacturers and importers alike begin to bother the architect, by telephone or visit, to inquire what the material looks like and whose label is on the back of the sample.

There are times, however, when a camouflage name affords the importer a little protection, at least for awhile, but the truth cannot be hidden for long. It happens in cases where the importer (perhaps on one of his trips to Europe) runs across a new marble. He agrees to handle the material in the United States but does not agree to retain the exclusive selling rights by buying a stipulated annual cubage. The marble is really on the status of a competitive marble, although being imported at the moment by only one firm.

But if the marble has merit and finds favor for some large project, the source of the material and the producer must come to light. The architect wants to know; so does the general contractor, and so do the marble manufacturers who bid on the work, for their estimates quite naturally reflect the manufacturing difficulties of the materials they use. If these difficulties are not known, their allowance for contingencies would quite naturally be augmented as a matter of protection.

The "Truth about Marble" is what the architect is interested in, but it is a fact that he does not always get it.

Of course, this condition can change and the service could be improved if the general growl from architects' offices becomes a concerted roar, and it seems to be becoming that.

What the architects want and need badly is a "Unified Marble Service." Every important city should have one, and each display room should be in charge of a qualified architect and colorist combined, and one who knows the peculiarities of the material.

What the world has to offer the architect in usable and purposeful marble should be on display in that one place, the cardinal points of the Unified Marble Service being:

1. To help the architect find what he is looking for in marble, and,
2. To tell him the *truth* about it.

Give him every facility to make a choice, whether he likes Tennessee, Georgia, Vermont, Alabama, or foreign marbles. It is obvious that over a period of time the volume of marble would average out very well, and each company or interest supporting the Unified Marble Service would receive its proper proportion of the marble selected and used.

Suppose we say that four hundred marbles could be quickly listed as active procurable marbles on the market. Does the architect realize he has such an infinite range of color in such a durable material? It is almost certain that he doesn't, and how he would appreciate an opportunity to look over such a range!

With the Unified Marble Service supported by a majority of the marble manufacturers, the architect would surely find what he wants quickly. At least he would know that he was looking at what the world had to offer in marble at the time of his visit. If a sample of a marble were not on file, it would mean that it was no longer available, or was not worth using.

In addition, architects are surfeited with "salesmanship." They hate it. They much prefer to discover what they are looking for by going to a place where they would be sure to find the answer to their problem.

Once he finds what he wants, an architect then wants to know all about that material:

1. The name of the marble.
2. Is it sound?
3. Is it adaptable for exterior, interior, floors, wainscot, monolithic columns, toilet partitions, etc.?
4. What is the cost in relation to other marbles?
5. What are the manufacturing difficulties? Does it need waxing, sticking, and liners?
6. Is it an "open" or an "exclusive" marble?
7. Is there stock in the vicinity? How much?
8. If no stock is in the vicinity, how long will it take to get it either from this country or from abroad?
9. If the job is a large one, is the monthly quarry production sufficient to meet the progress schedule of the building?
10. Is the quarry shut down in winter?
11. What are the size restrictions for panels when the marble is sawed with or across the bed?

12. What happens if the quarry goes bankrupt after an important skyscraper gets under way? etc., etc.

All this information should be available from a Unified Marble Service, and should be wholly reliable. An architect could telephone in, write in, or come in for such information, and should be able to obtain it forthwith, together with samples (which could be delivered that day or the next). In most cases, knowing they could talk to a man trained like themselves, they would call in person rather than otherwise. An architect will arrange to leave his office almost any time if he knows he can save his time and the time of his men; he does it frequently in paying a visit to his modeller, whose material is also heavy.

The Unified Marble Service would also be a "Central Bureau for Registered Marble Names," in the best interests of the architectural profession and the industry as well, cutting out the bunk of five, six, and seven trade names to a marble. The practice is an insult to the architect's and marble manufacturer's intelligence.

The fact remains that radical changes in the entire marble industry are long past due. From the standpoint of many, an intelligent educational campaign to create good will and popularize the use of marble is essential. It is also essential that some cure be applied to eliminate the evils which often crop out when contracts are awarded to marble manufacturers. The marble men certainly have just cause for complaint when it comes to the methods employed and the treatment they receive from some of the "clever buyers" with whom it is necessary for them to negotiate.

All that is necessary to correct most of the evils mentioned above, and a great many which have not been mentioned, is for a few of the larger marble manufacturers to get together and put their faith in the individual they pick to develop the Unified Marble Service. Such a move would be a protection to themselves and at the same time would give to the architect a service he has a right to expect.

Other firms would soon fall into line with the leaders, and the expense, shared by many, would be economy itself.



ARCHITECTURE'S PORTFOLIO OF



PARAPETS

THE SIXTY-SECOND IN A SERIES OF COLLECTIONS
OF PHOTOGRAPHS ILLUSTRATING VARIOUS MINOR
ARCHITECTURAL DETAILS

Forthcoming Portfolios will be devoted to the following subjects : Concealed Radiators (January), Interior Clocks (February), Outside Stairways (March), Leaded Glass Medallions (April), Exterior Doors (May), and Metal Fences (June). Photographs showing interesting examples under any of these headings will be welcomed by the Editor, though it should be noted that these respective issues are made up about six weeks in advance of publication dates.

Subjects of Previous Portfolios

1926-27

DORMER WINDOWS
SHUTTERS AND BLINDS
ENGLISH PANELLING
GEORGIAN STAIRWAYS
STONE MASONRY TEXTURES
ENGLISH CHIMNEYS
FANLIGHTS AND OVERDOORS
TEXTURES OF BRICKWORK
IRON RAILINGS
DOOR HARDWARE
PALLADIAN MOTIVES
GABLE ENDS
COLONIAL TOP-RAILINGS
CIRCULAR AND OVAL WINDOWS

1928

BUILT-IN BOOKCASES
CHIMNEY TOPS
DOOR HOODS
BAY WINDOWS
CUPOLAS
GARDEN GATES
STAIR ENDS
BALCONIES
GARDEN WALLS
ARCADES
PLASTER CEILINGS
CORNICES OF WOOD

1929

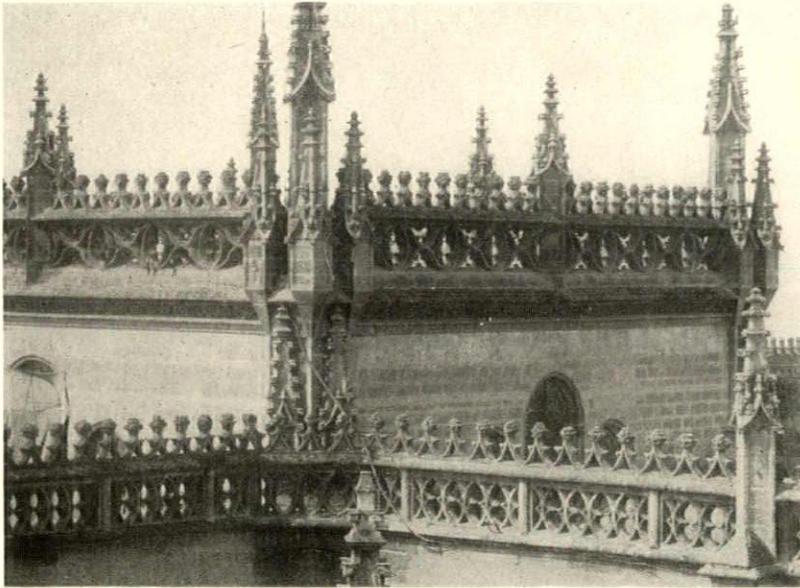
DOORWAY LIGHTING
ENGLISH FIREPLACES
GATE-POST TOPS
GARDEN STEPS
RAIN LEADER HEADS
GARDEN POOLS
QUOINS
INTERIOR PAVING
BELT COURSES
KEYSTONES
AIDS TO PENETRATION
BALUSTRADES

1930

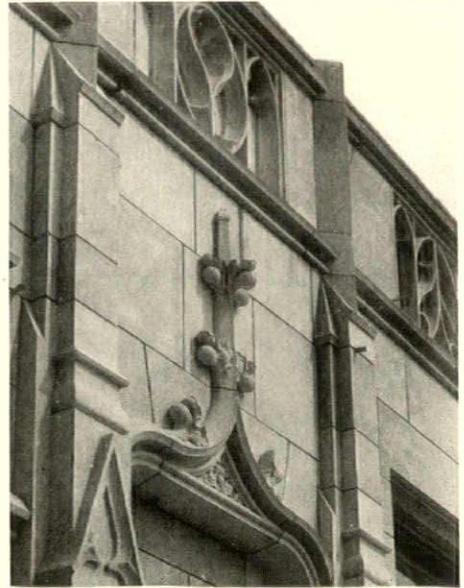
SPANDRELS
CHANCEL FURNITURE
BUSINESS BUILDING ENTRANCES
GARDEN SHELTERS
ELEVATOR DOORS
ENTRANCE PORCHES
PATIOS
TRELLAGE
FLAGPOLE HOLDERS
CASEMENT WINDOWS
FENCES OF WOOD
GOTHIC DOORWAYS

1931

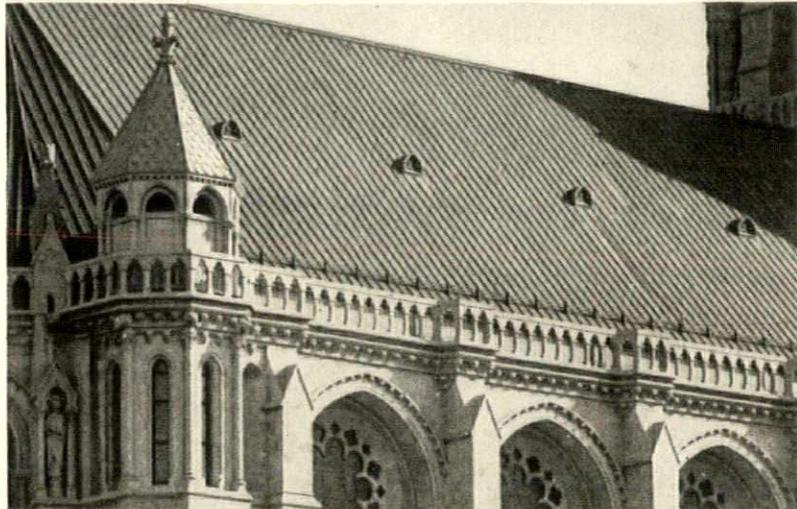
BANKING-ROOM CHECK DESKS
SECOND-STORY PORCHES
TOWER CLOCKS
ALTARS
GARAGE DOORS
MAIL-CHUTE BOXES
WEATHER-VANES
BANK ENTRANCES
URNS
WINDOW GRILLES
CHINA CUPBOARDS



*Stone
Cathedral of
Seville*

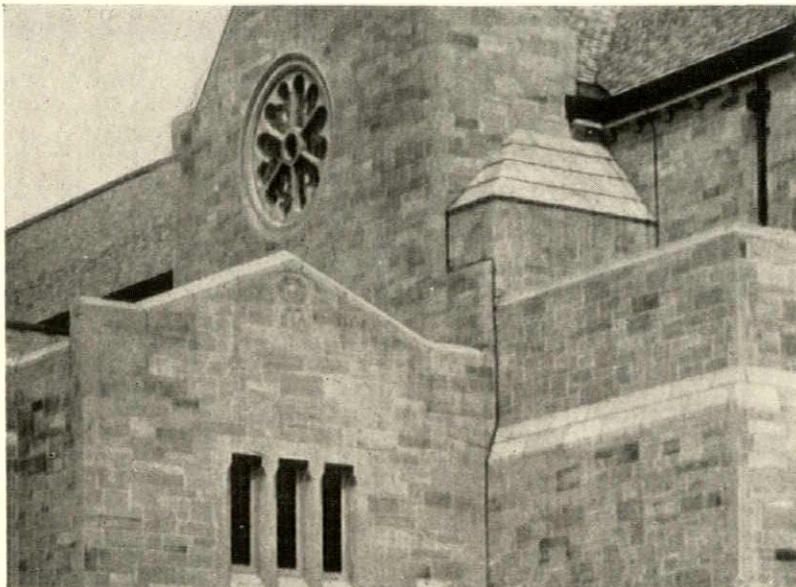


*Stone
Price & Walton*

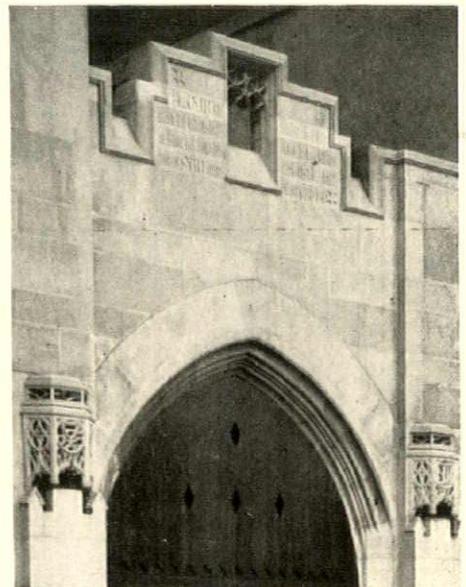


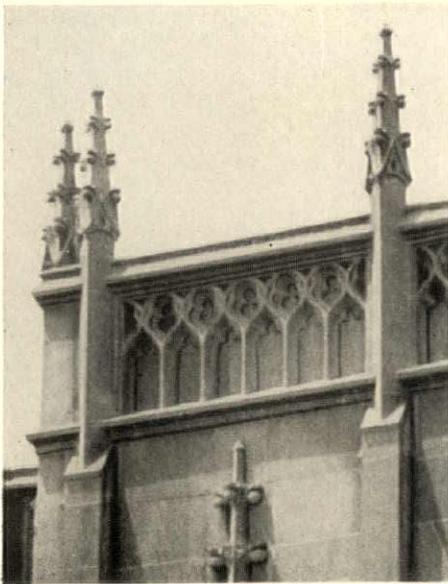
*Stone
Henry C. Pelton and
Allen & Collens*

*Stone
Walker & Weeks*

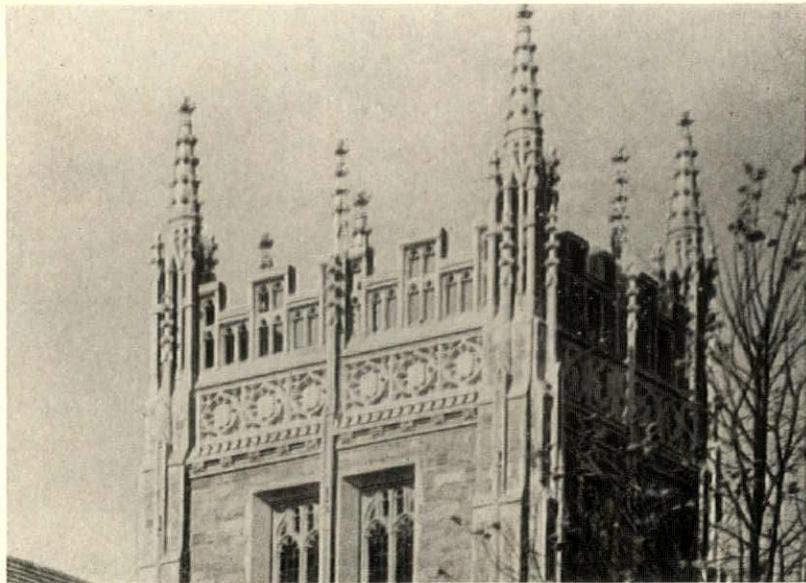


*Stone
Mayers, Murray
& Phillip*





Stone
Price & Walton



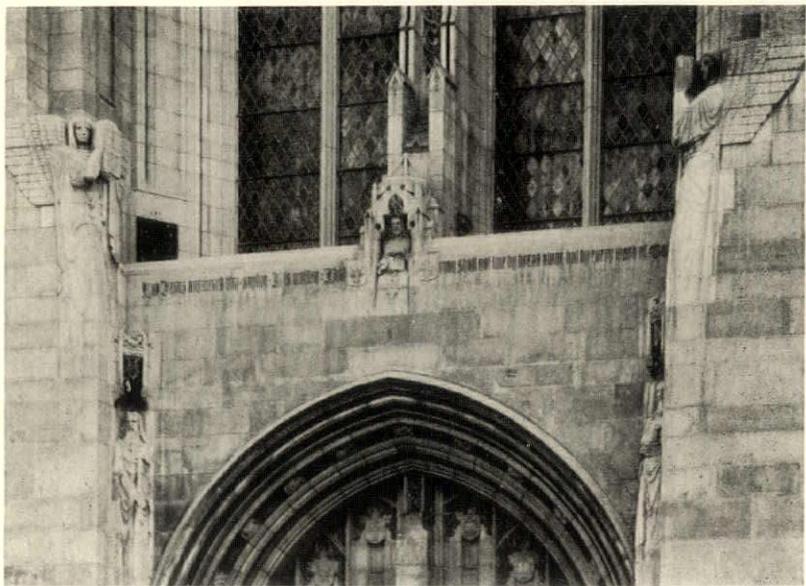
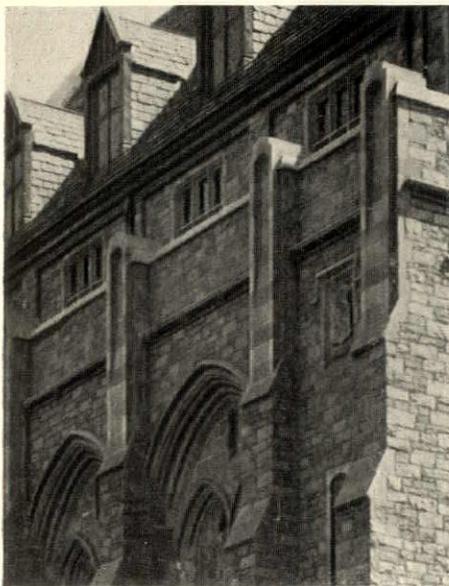
Cast stone
Maginnis & Walsh

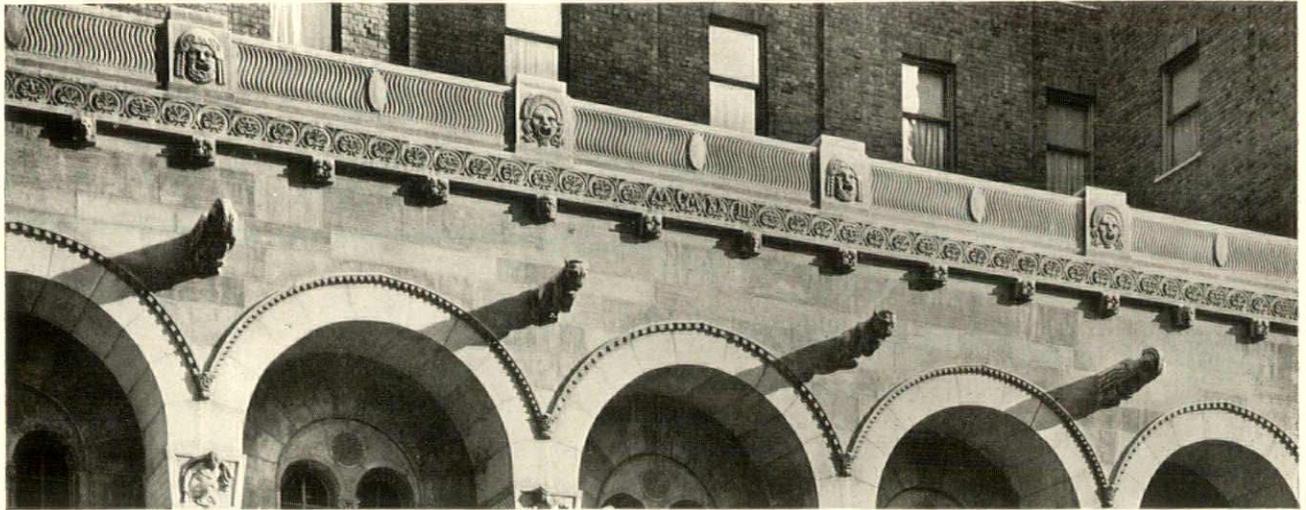


Stone
Aymar Embury, II

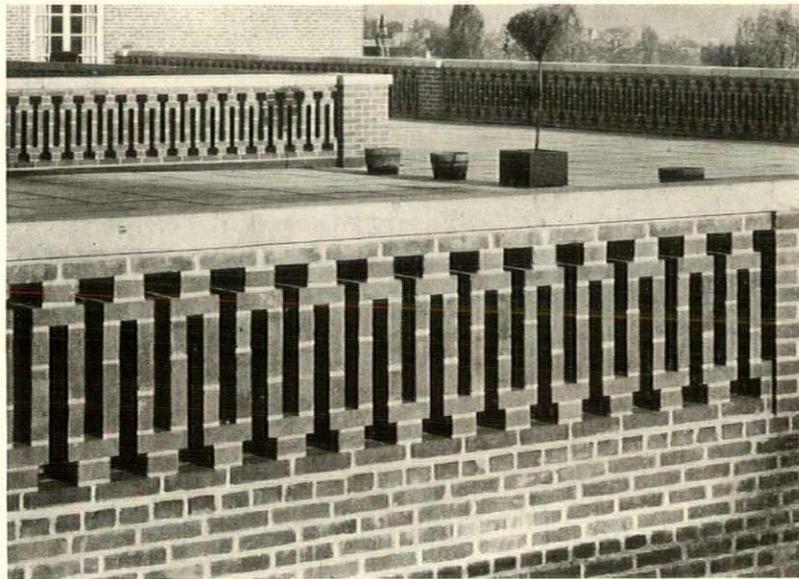
Stone
Henry C. Pelton and
Allen & Collens

Stone
Mayers, Murray
& Phillip





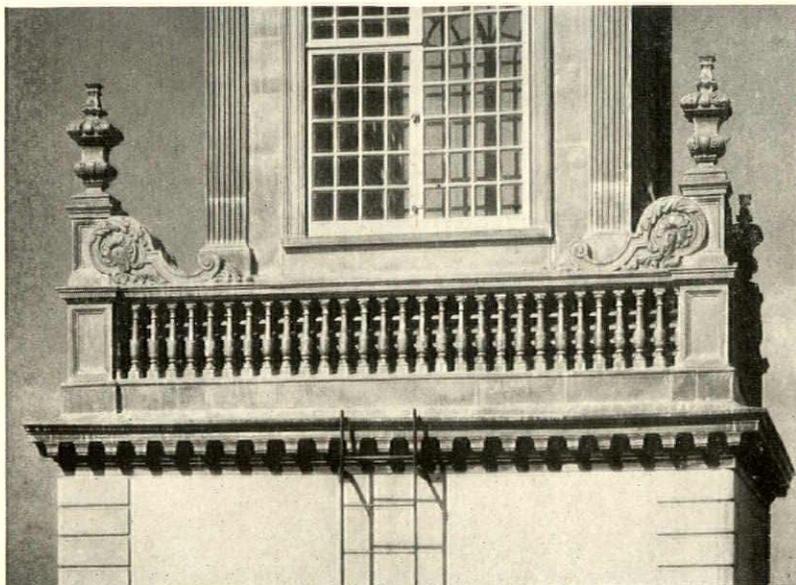
*Cast stone
Arthur Loomis
Harmon*



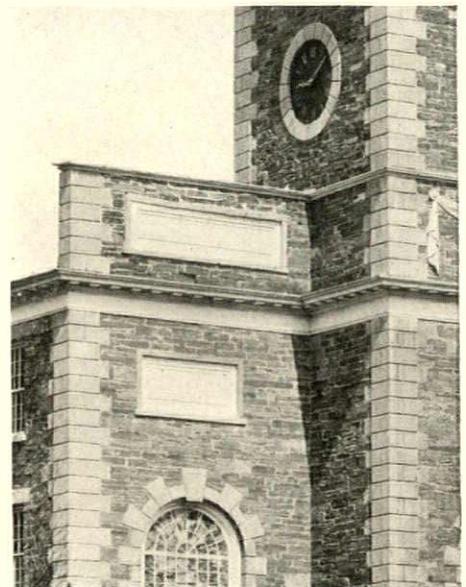
*By courtesy of
The Architects' Journal*

*Brick
Sir Giles Gilbert
Scott*

*Leaded copper
Ripley &
LeBoutillier*



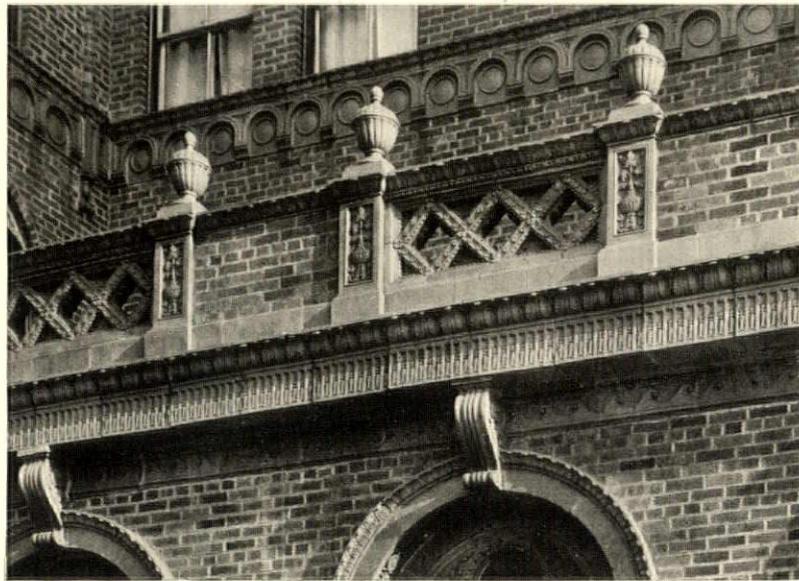
*Stone
Philip Hooker*





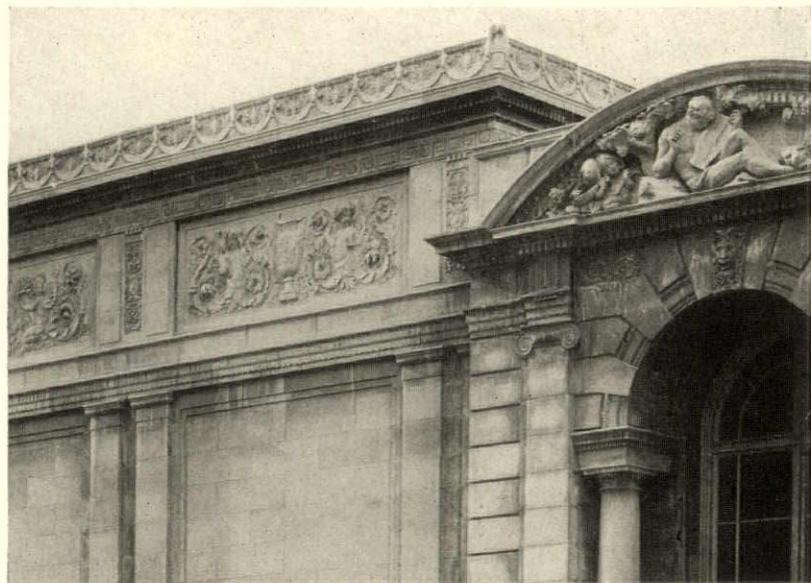
*Stone and brick
Thompson, Holmes
& Converse*

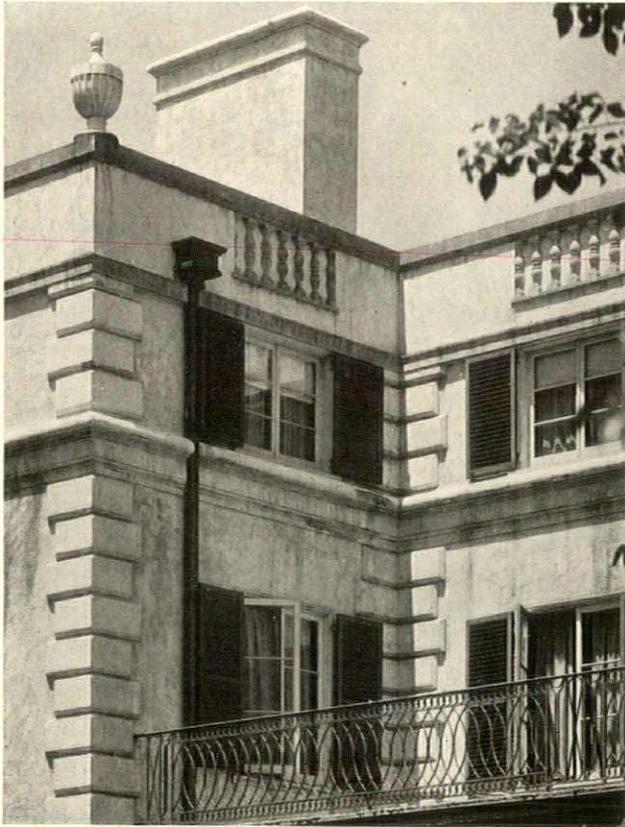
*Terra-cotta and
brick
Halpin & Jewell*



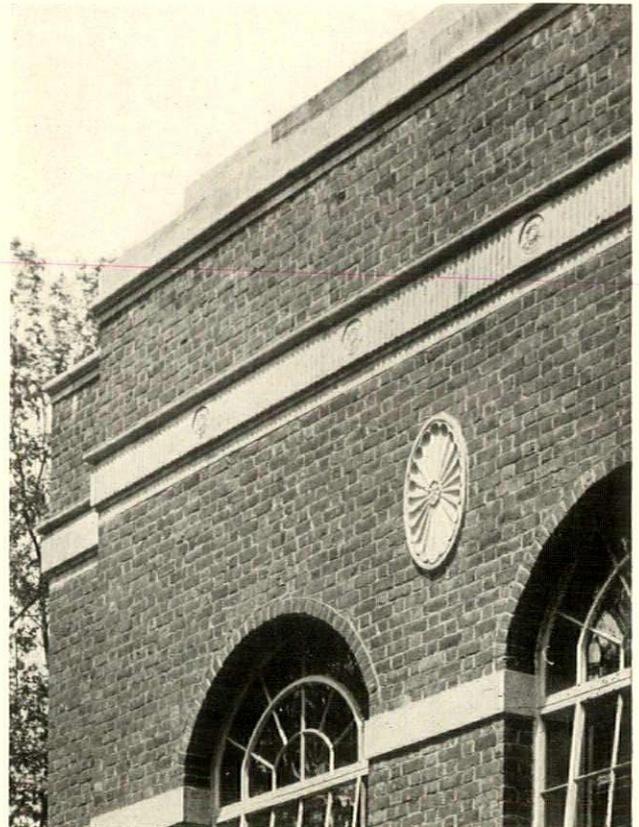
*Stone
F. B. Snook
& Sons*

*Stone
Carrère & Hastings*



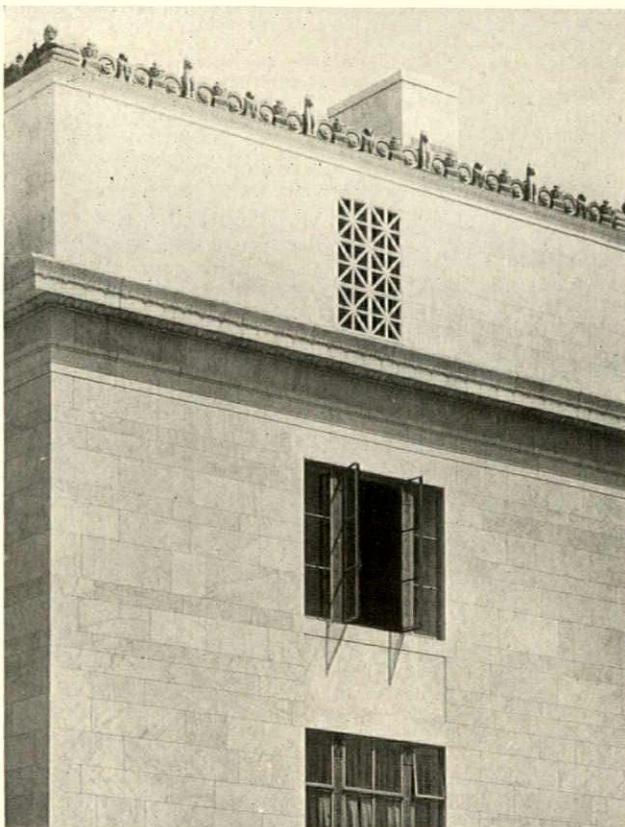


Stucco on metal lath. Aymar Embury, II

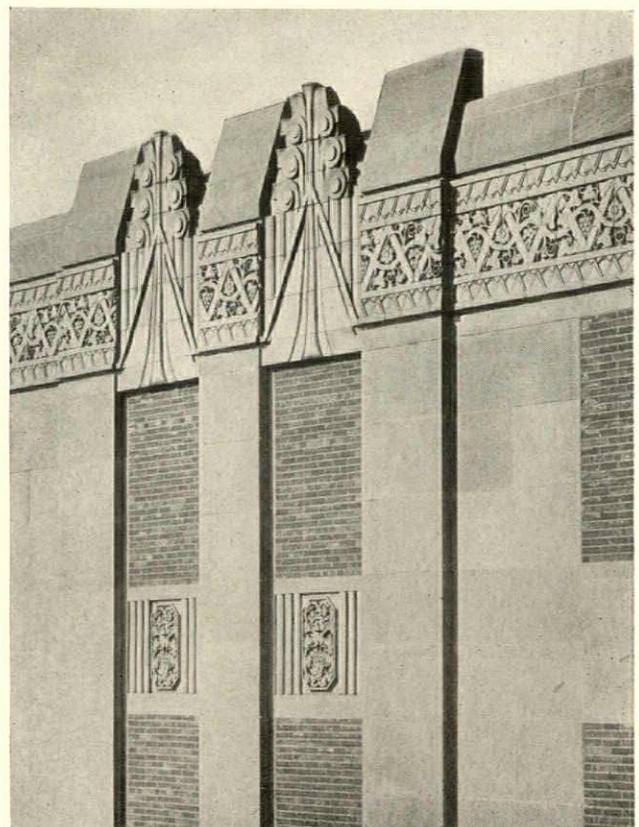


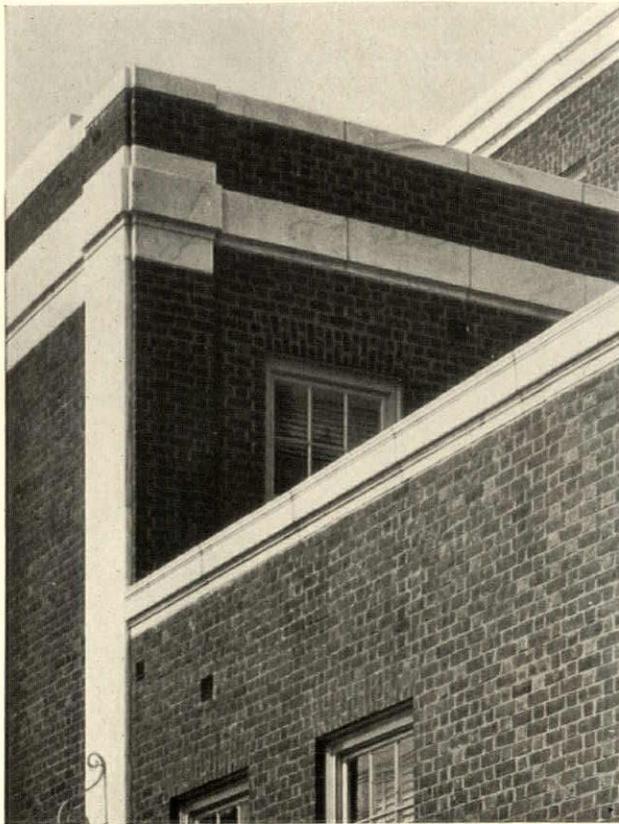
Brick and Marble. Davis, Dunlap & Barney

Stone and terra-cotta. Bertram G. Goodhue

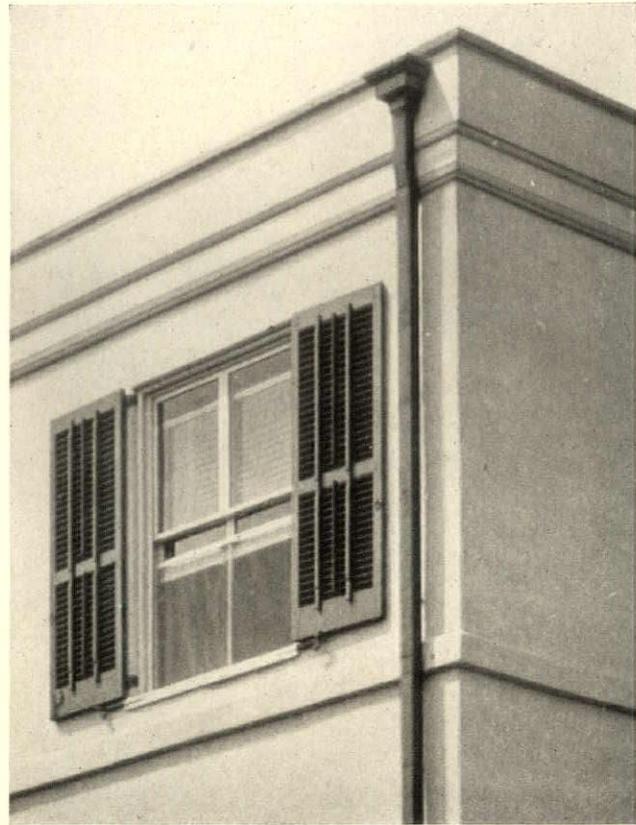


Terra-cotta. Graham, Anderson, Probst & White





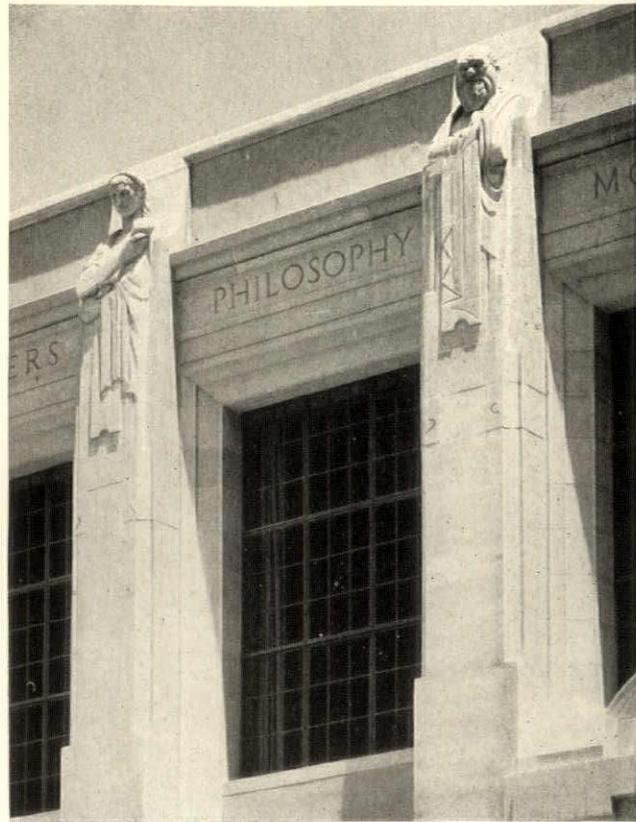
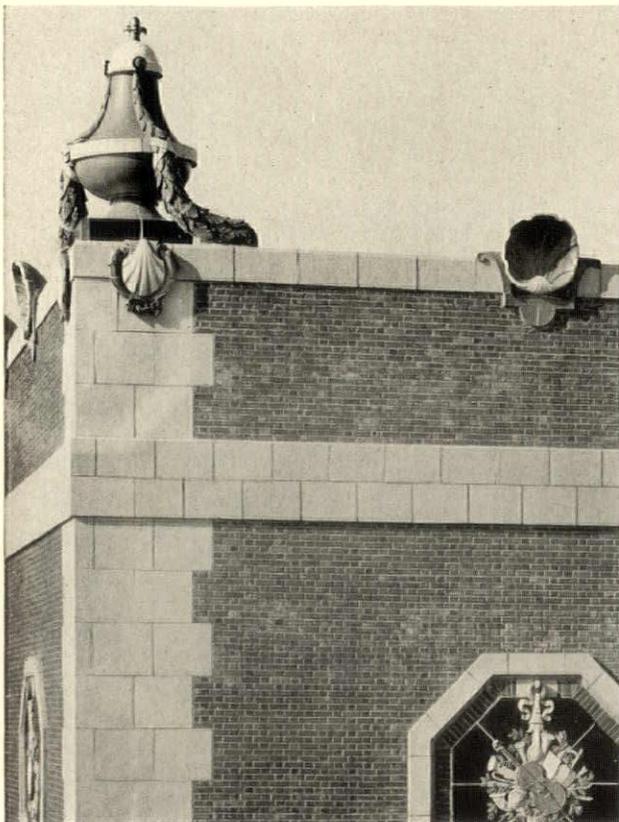
Brick and marble. Davis, Dunlap & Barney



*Stucco. Leigh French, Jr.
H. D. Eberlein in association*

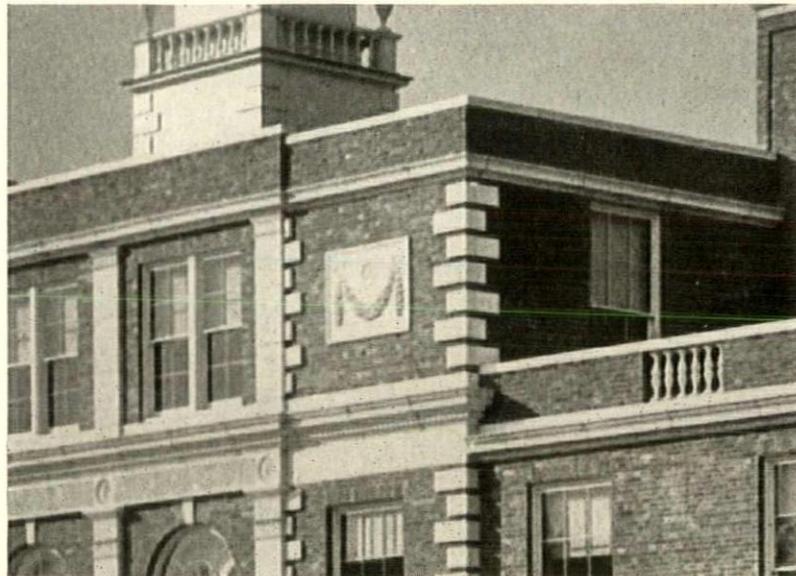
Brick and terra-cotta. Warren & Wetmore

*Stone. Bertram G. Goodhue; Carleton M. Winslow,
associate; Lee Lawrie*



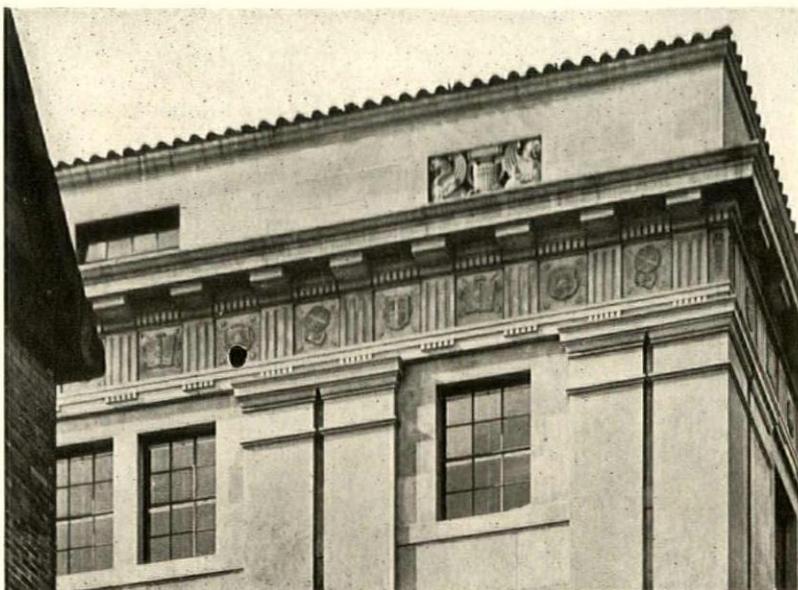


Stone
Edwin T. Hall and
E. Stanley Hall

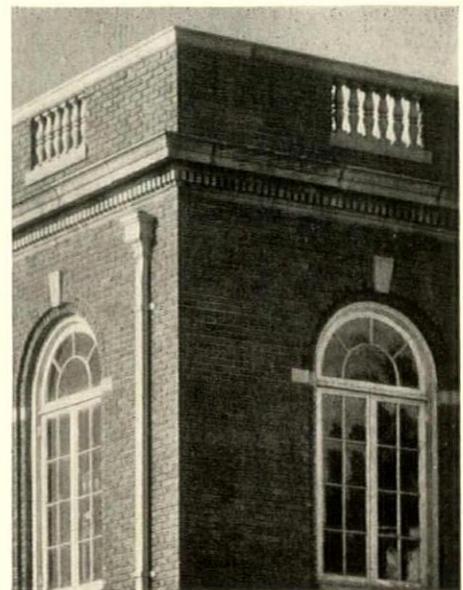


Brick and
terra-cotta
Edward S. Hewitt

Stone
Goodwillie &
Bessell



Brick and
terra-cotta
Edwards &
Sayward





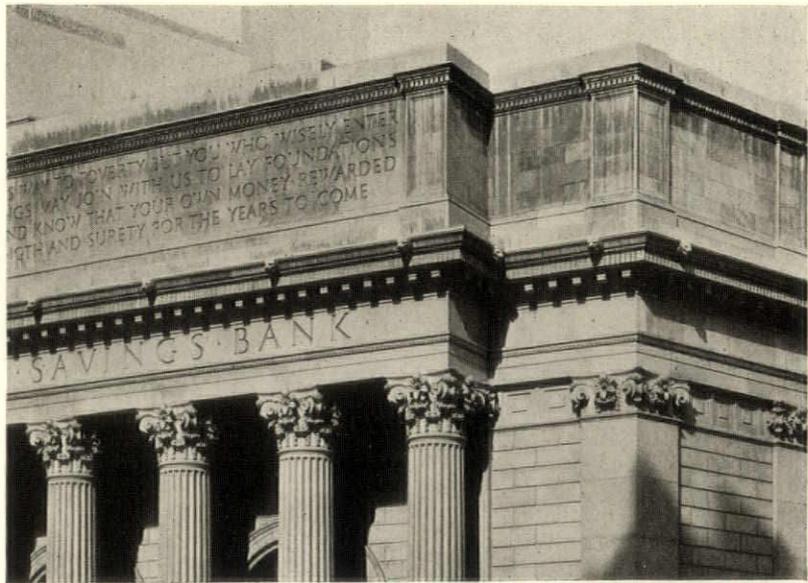
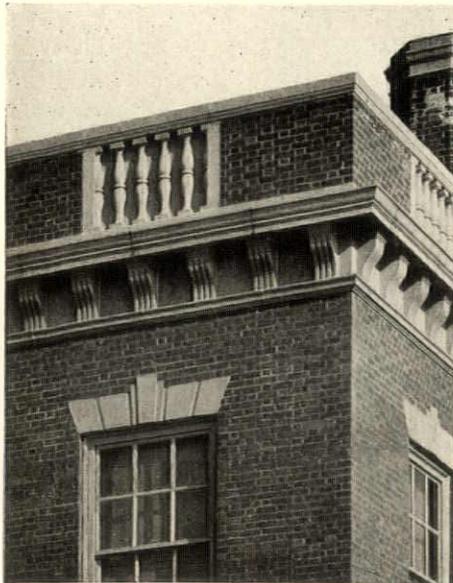
*Brick and stone
Thompson, Holmes
& Converse*

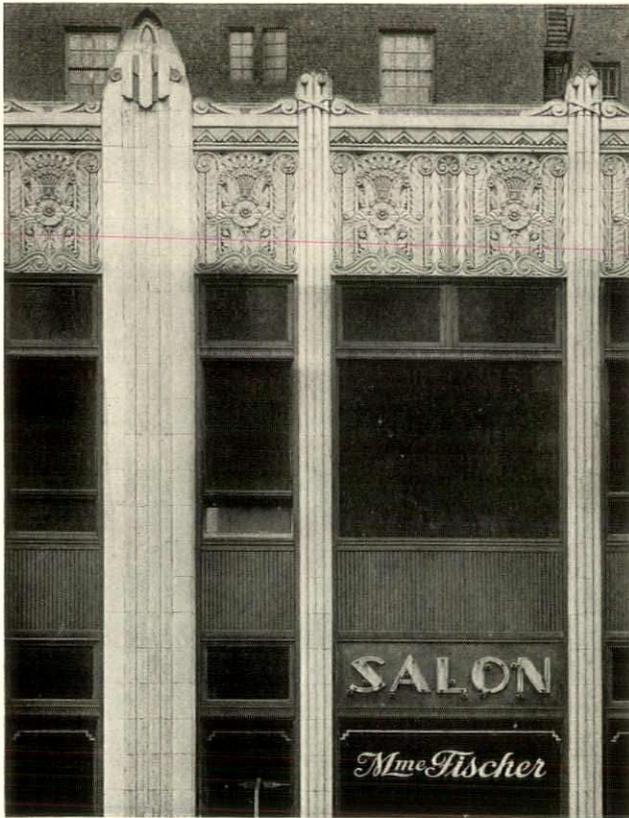
*Brick and
terra-cotta
Mayer & Mathieu*



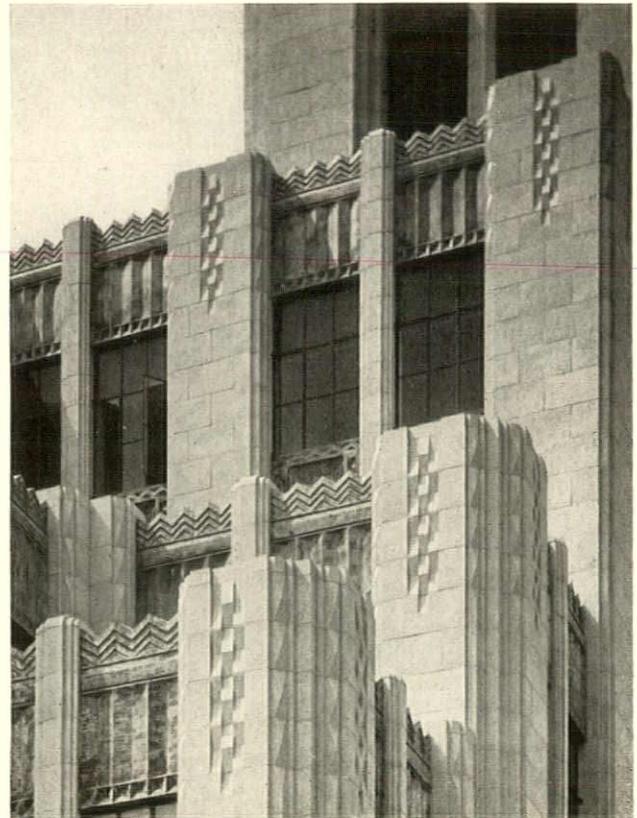
*Brick and
terra-cotta
Gray & Lawrence*

*Stone
York & Sawyer*





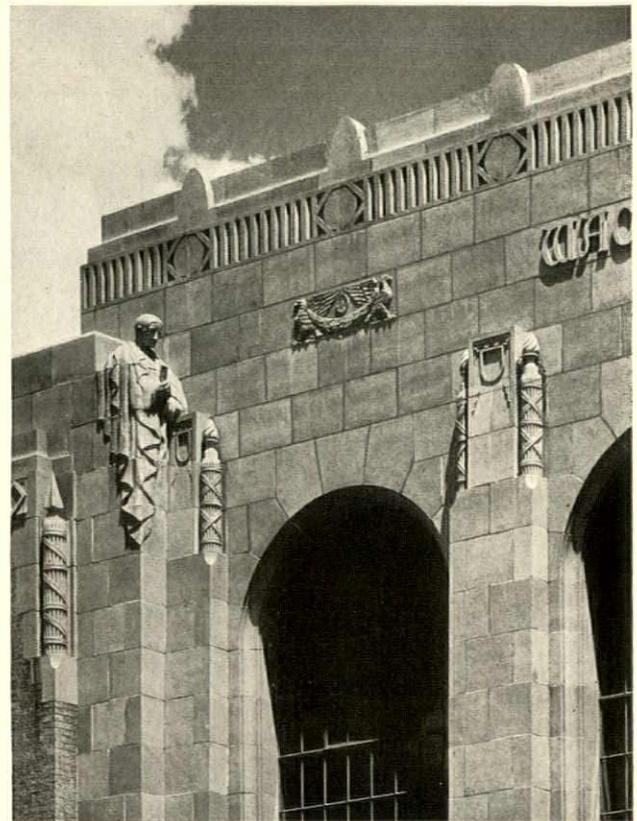
Polychrome terra-cotta. Stuckert & Company

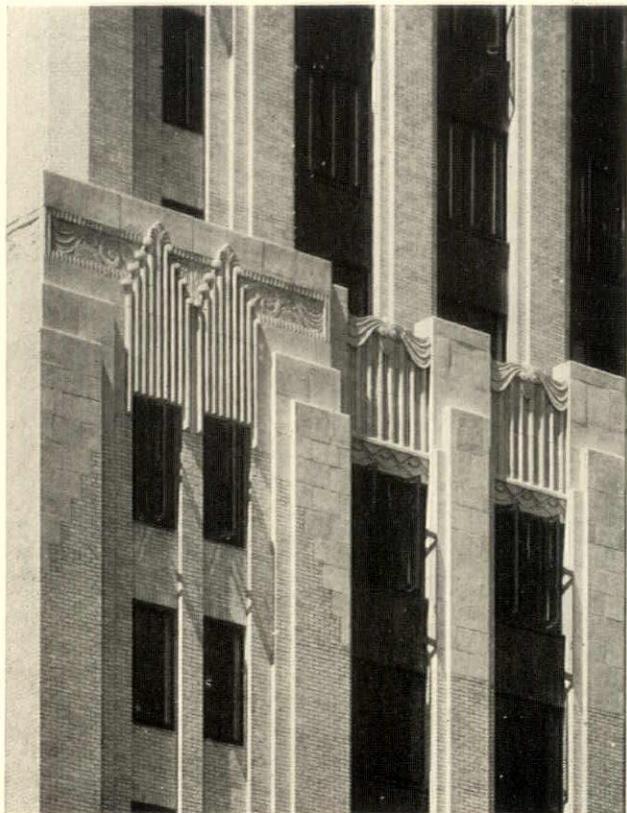


Terra-cotta. John and Donald B. Parkinson

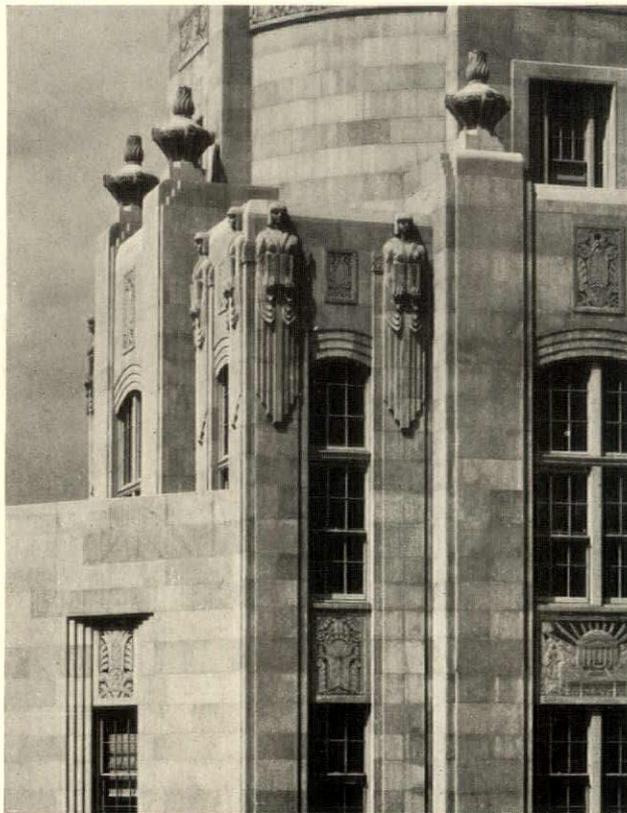
Stone. Lancelot Sukert

Terra-cotta. Lang & Witchell





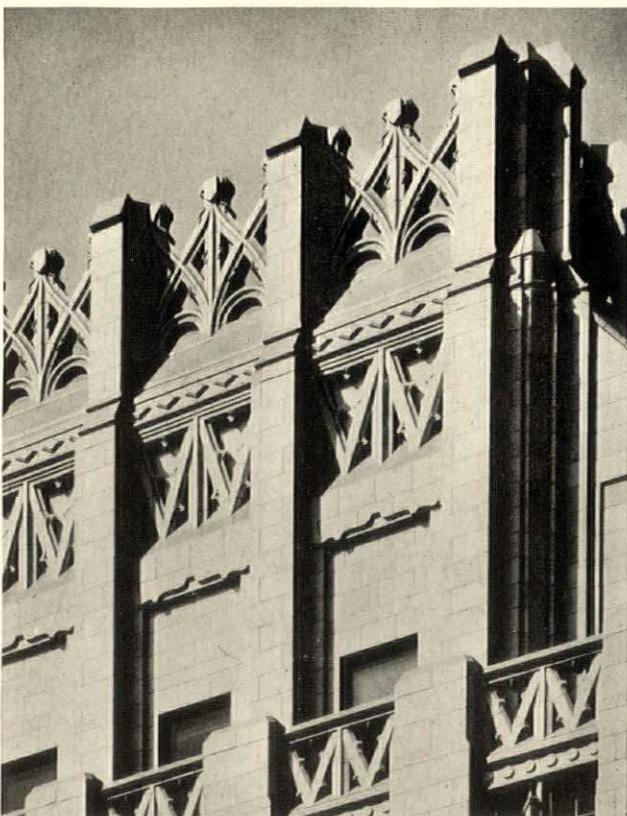
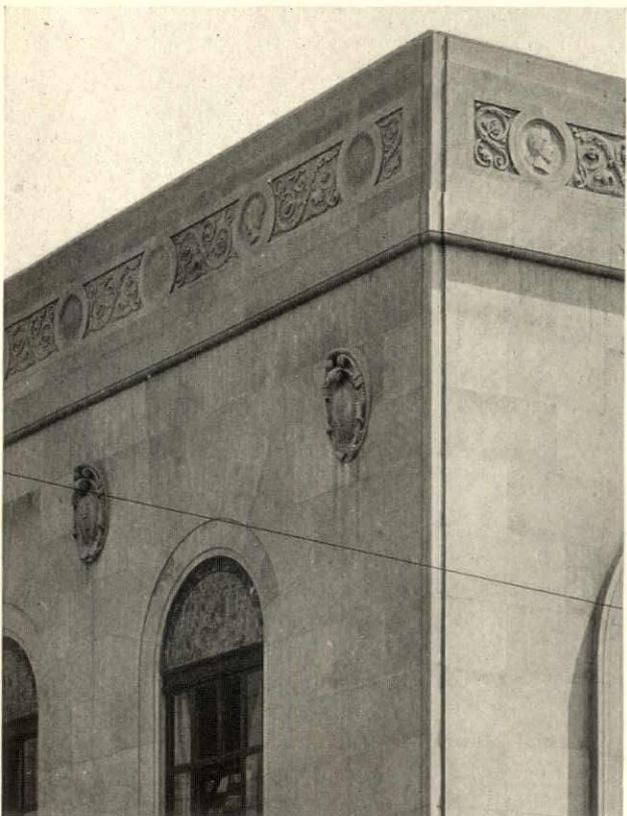
Terra-cotta. Mark Lemmon



Stone and terra-cotta. Walter C. Martin

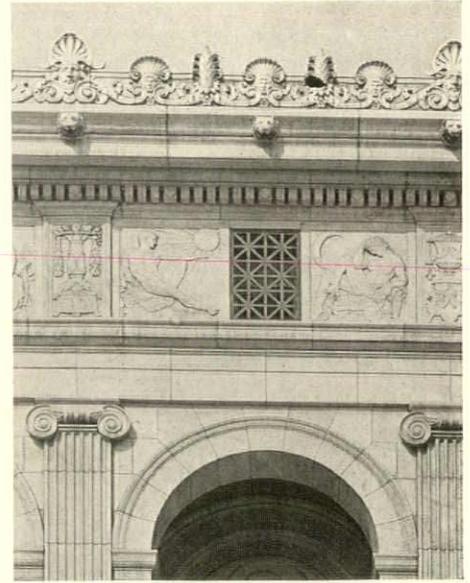
Stone. William E. Lehman

Terra-cotta. H. Craig Severance

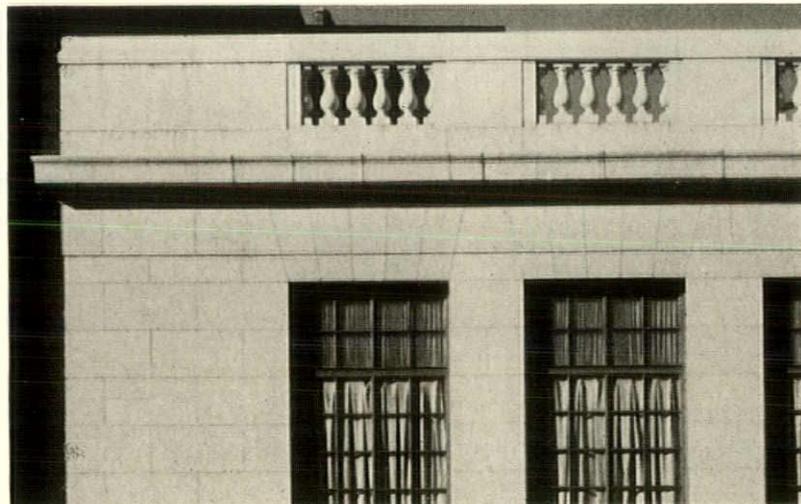




*Terra-cotta
McKim, Mead &
White*



*White marble with
cresting of white-
and-gold terra-cotta
Cass Gilbert*

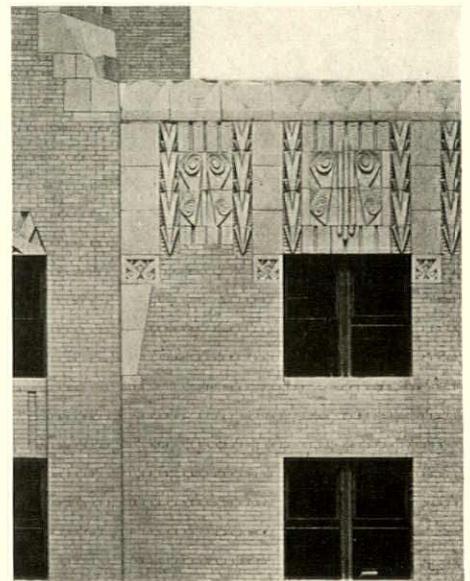


*Brick and
cast stone
Guilbert & Betelle*

*Stone
Henry & Richmond*



*Brick and
terra-cotta
Sugarman & Berger*





*Polychrome
terra-cotta
Edward L. Tilton
and Alfred Morton
Githens*



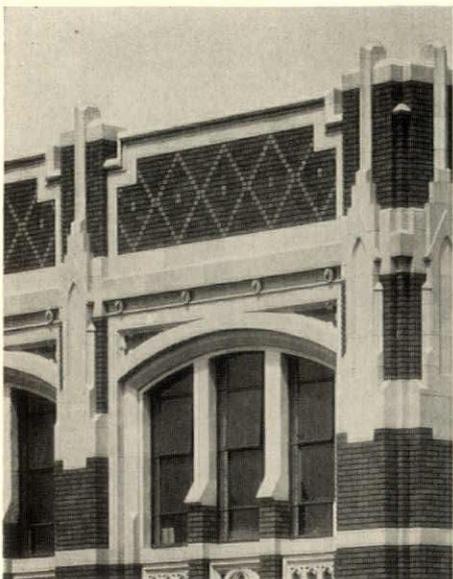
*Terra-cotta
M. B. Adler*

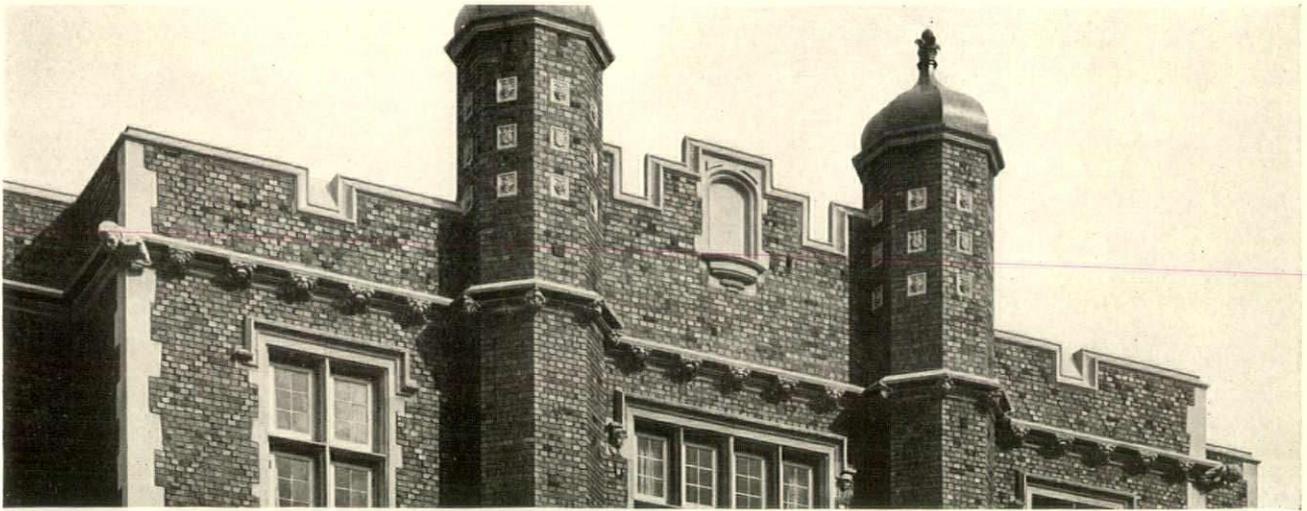


*Polychrome
terra-cotta
McKim, Mead
& White*

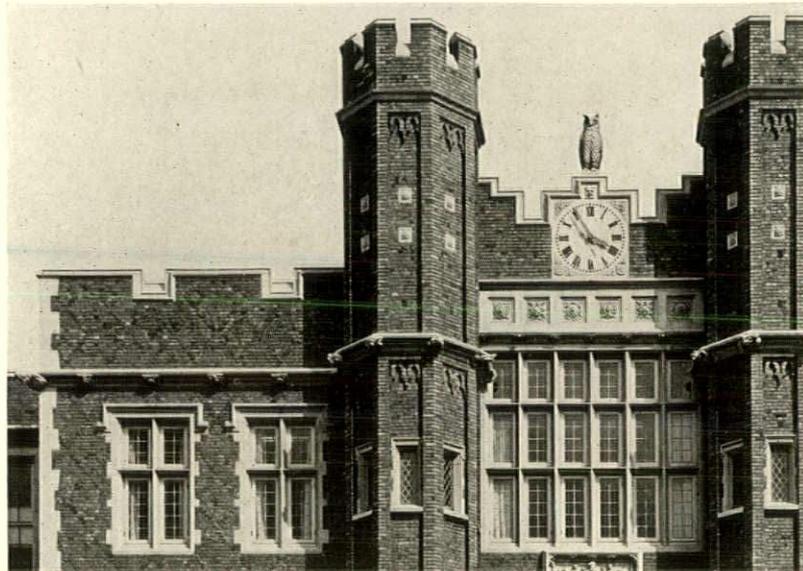
*Brick and
terra-cotta
Harry B. Wheelock*

*Stone
Laurence H.
Fowler*





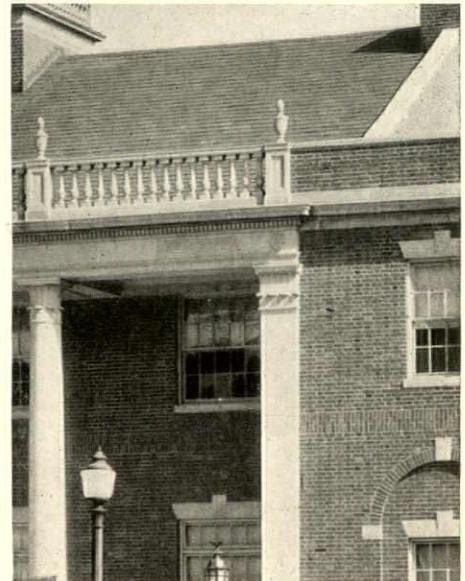
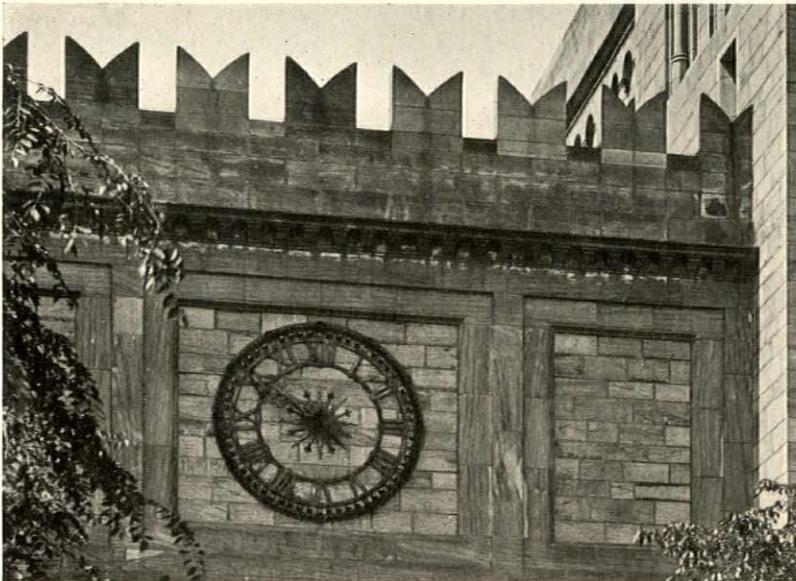
*Brick and
terra-cotta
Hacker & Hacker*



*Brick and
terra-cotta
Hacker & Hacker*

*Stone
Egerton Swartwout*

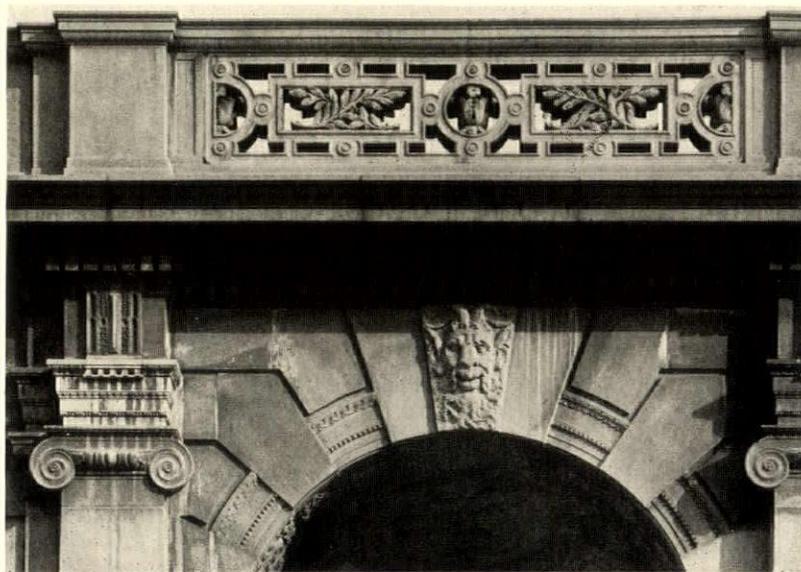
*Brick and marble
W. O. Bartlett*





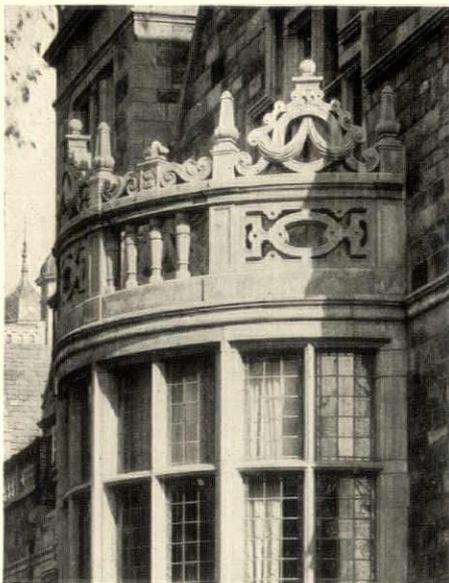
*Brick and
terra-cotta
Andrew J. Thomas*

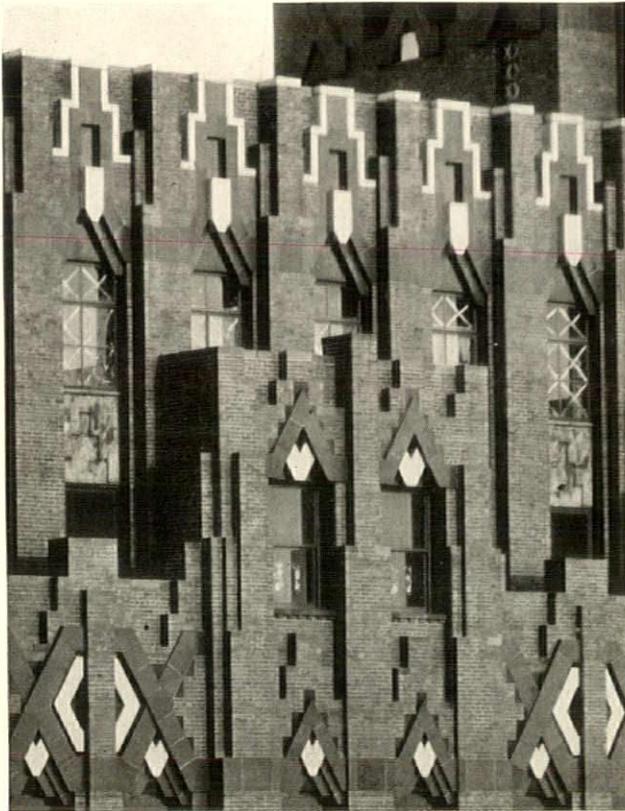
*Stone
Carrère & Hastings*



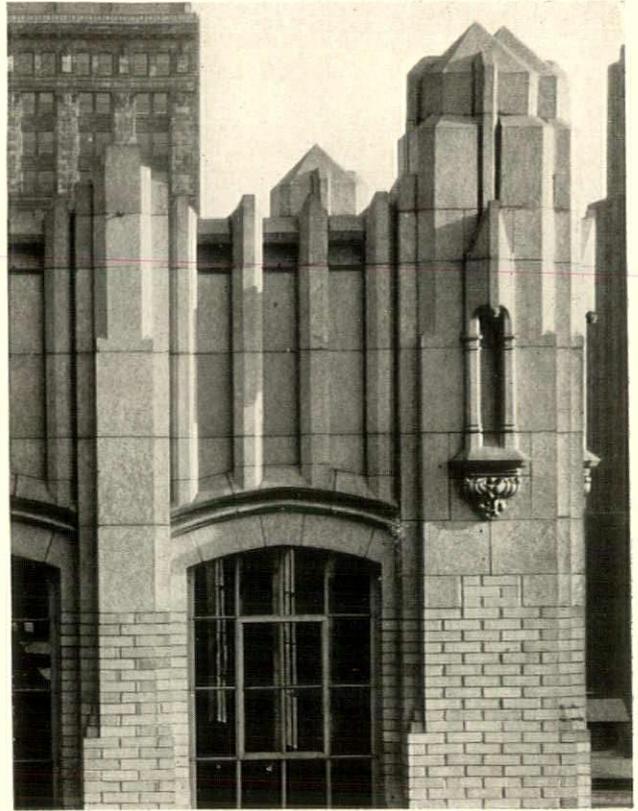
*Stone
York & Sawyer*

*Stone
Roger H. Bullard*





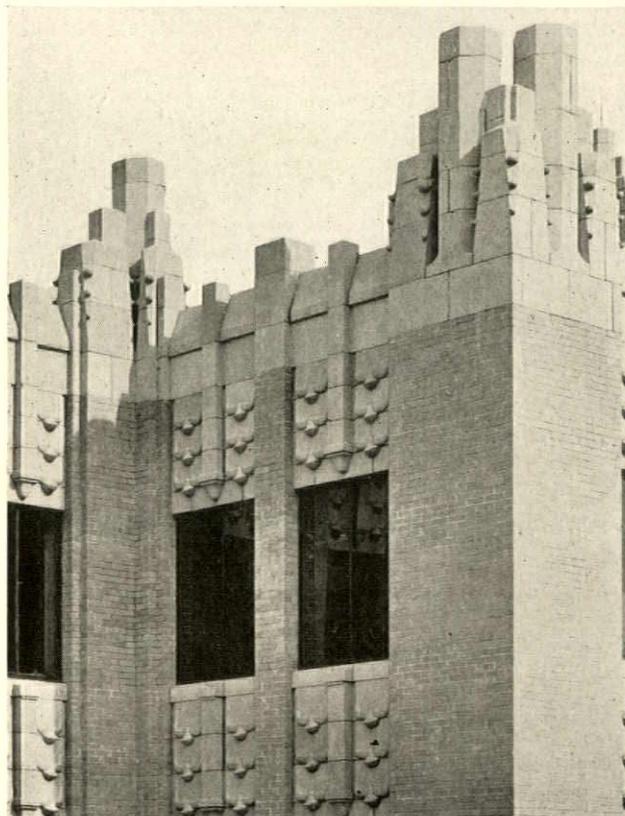
Brick and terra-cotta. Smith, Hinchman & Grylls



Terra-cotta. Bernard H. Prack

Terra-cotta. Lang Witchell; I. R. Timlin, associate

Aluminum and black terra-cotta. Sugarman & Berger



TODAY'S HOME OWNERS PLACE A PREMIUM ON CONVENIENCE



ONCE, Americans were content with homes made pleasant to *look* at. Now they ask also for homes that are easy to *live* in. Every added convenience, every contribution to living comfort, increases their valuation of a house and raises their estimate of its architect.

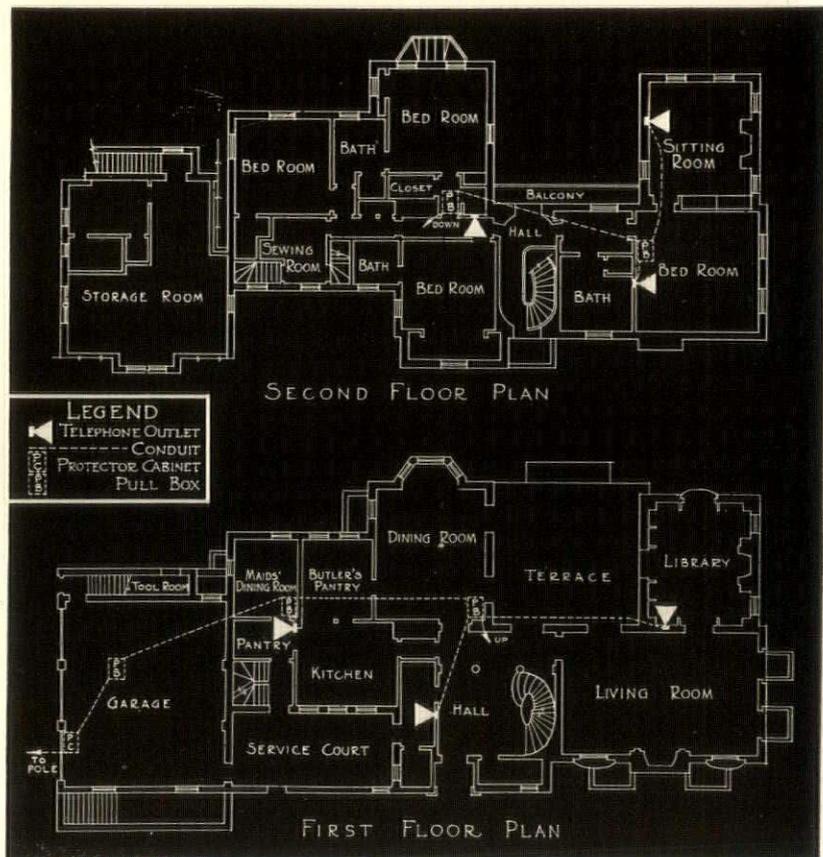
One of the modern and most welcome of these conveniences is the provision for *enough* telephones. Architects everywhere have found that adequate facilities for telephones pay handsome dividends in owner-satisfaction—in time and energy saved for entire households.

By planning for telephone conduit in walls and floors, it is easy to provide telephone outlets at the most desirable locations in all the important rooms. With an abundance of outlets, telephones can be moved from place to place as occasion demands . . . all wiring is concealed . . . and there is much greater freedom from service interruptions.

You can assure full and flexible telephone convenience to your clients by consulting the local telephone company. Their advice and assistance is given gladly, without charge. Just call the Business Office.



Built-in telephone conduit and six outlets provide for telephone convenience in the residence of Mr. Herbert I. Lord, 107 Touraine Road, Village of Grasse Pointe Farms, Detroit, Michigan.
ROBERT O. DERRICK, Architect, Detroit





ARCHITECTURE'S SERVICE BUREAU FOR ARCHITECTS



ARCHITECTS AND EVERY ONE INTERESTED WILL FIND HERE THE LATEST AND MOST UP-TO-DATE INFORMATION ON BUILDING EQUIPMENT AND ACTIVITIES IN THE INDUSTRY. THESE PUBLICATIONS MAY BE HAD BY ADDRESSING ARCHITECTURE'S SERVICE BUREAU FOR ARCHITECTS, 507 FIFTH AVENUE, NEW YORK. OUR SERVICE BUREAU WILL OBTAIN ANY OTHER CATALOGUES OR DATA YOU REQUIRE.

STEEL KITCHENS

The ultimate in economy of apartment floor space would seem to have been reached in the placing on the market of the "Pureaire" Kitchen by the Parsons Company of Detroit. "Pureaire" is a steel cabinet including a stove with oven, a sink and drainboard, a refrigerator for either electric or ice operation, and generous storage space. It occupies a floor space of less than ten square feet. It is built throughout of steel and finished in lacquer. Connections are provided for gas, electricity, water, drain, and ventilating shaft. When not in use, its doors may be closed and so become to all appearances a part of the wall. The company reports an active demand for new and remodelled apartments. Details will gladly be furnished by the company on request.

HUMIDIFYING RADIATOR

The Timken-Detroit Co. announces the Timken-Airlux Humidifier. It is a humidifying radiator, completely automatic in operation. It is adaptable to water, steam, or vapor heating systems. Quiet and trouble-free operation is assured by the absence of sprays and moving parts. Tests show that the negligible cost of water used is more than offset by fuel savings. The Timken-Airlux is designed primarily for residential use, but can be used in all buildings. Once set to give the desired relative humidity, it requires no further attention. The injurious effects upon health, furnishings, and the house itself due to the average dry winter air in homes should be largely overcome through the proper humidification made possible by this new development.

ELECTRIC FURNACES

Direct-heat, metallic-resistor, electric furnaces—greatly improved upon—is the announcement of the General Electric Co. The extended use of electric furnaces in various fields of industrial heating has made possible a large increase in the types and sizes available. A well-illustrated and well-charted booklet, handsomely published, is now ready for those interested in this type of equipment. Uniformity of heating, low heat losses as proved by innumerable tests, and accurate automatic control are some of the characteristics. The meeting of rigid specifications on mass production is one result of electric heating.

FOR VENTILATION

Profuse with illustrations, diagrams, capacity and performance tables, and dimensional charts, are the catalogues of the De Bothezat Impeller Co., Inc., of 1922 Park Avenue, New York City—file literature on multi-stage and disc-pressure fans. The data here compiled for your use should be exceedingly helpful in solving the problems of ventilation. The applications shown are numerous. Description of the equipment, directions for use, and engineering data on its various applications are fully given.

SIDEWALK ELEVATOR

The Warner Elevator Co. of Cincinnati has issued an A. I. A. file folder giving architects' specification data for Warner's All Steel and Iron Standard Hand-Operated Sidewalk Elevator and for their Electric Sidewalk Elevator. The folder also contains plan and dimensions at the lower floor and at the sidewalk. They are standard-sized units adaptable to any class of building. This specification file will be furnished upon request.

DOUBLE-DECK ELEVATORS

For the first time in the history of building construction double-deck elevators are being installed—those by the Otis Elevator Co. in the new sixty-seven-story building for the Henry L. Doherty and Cities Service Companies now under construction at Cedar and Pine Streets, New York City. A special provision in the new elevator code permits this new step in vertical transportation. Eight, high-rise, double-deck Otis elevators will serve all floors from the twenty-ninth to the sixty-third, seven will serve from the sixteenth to twenty-ninth, and eight for the remaining floors. Escalators are also being installed to handle rush-hour crowds between the sixth floor and basement. Each compartment of the elevators will have a capacity of 2,500 pounds and each will be operated by an attendant. Emergency access between the compartments is provided. Saving in floor space and economic service are features involved. These and other interesting details are included in a recent news release.

CLASSICAL ROOF TILES

For the interest and use of architects who design buildings of a monumental nature, the Atlantic Terra Cotta Co., of 19 West 44th Street, New York City, has issued a pamphlet on the subject of classical roof tile. Made according to typical Grecian design with modern improvement in construction, the roof tiles of the Atlantic Terra Cotta Co. meet the requirements of buildings needing a tile of more than average dimension. They are permanently weather-proof—no penetration of joints—no mortar in setting—contraction and expansion provided for without strain on tiles. Color range is limited only by your choice—gold and silver included. Further details on request.

AIR-CONDITIONER

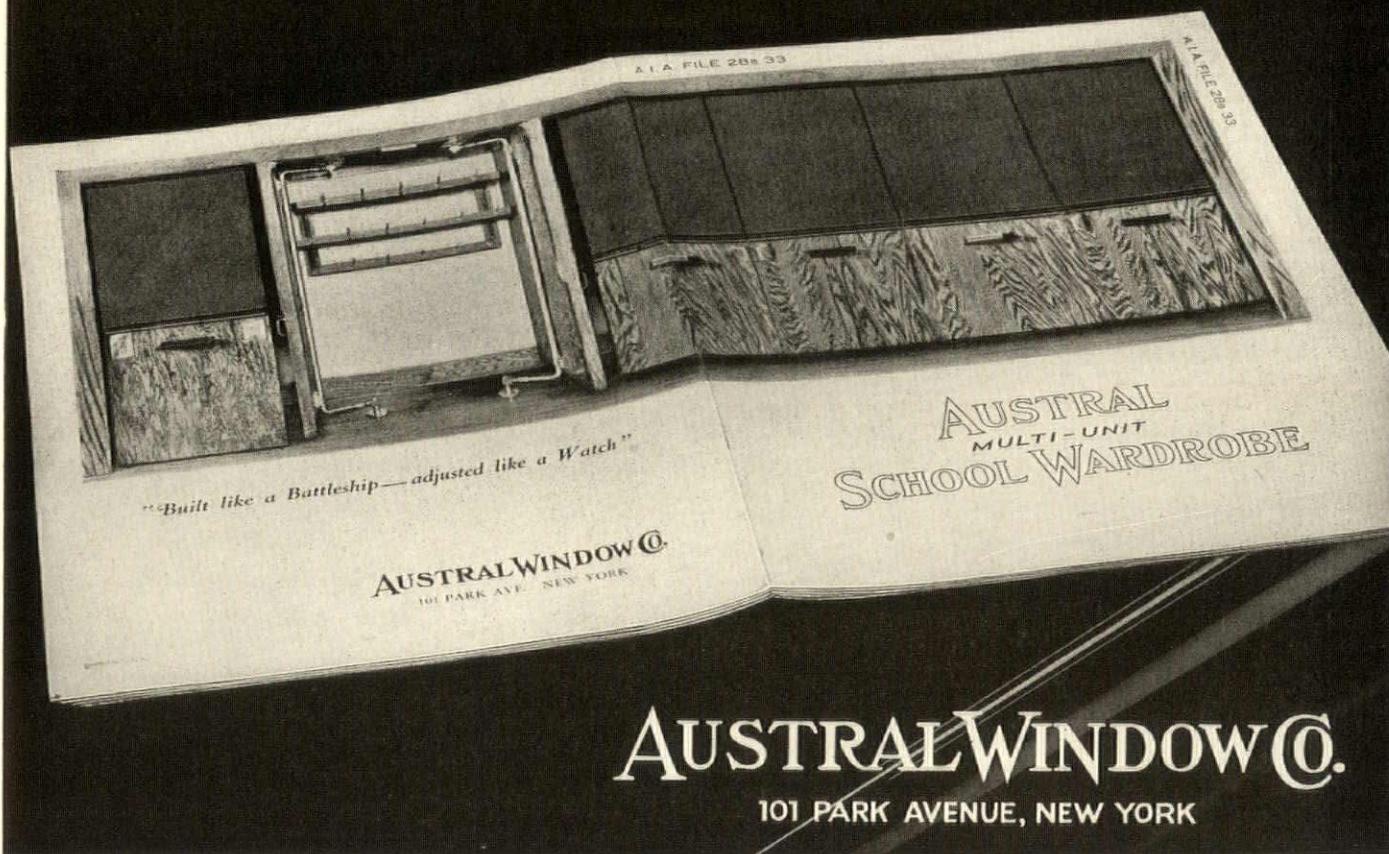
A unique and theatrically produced folder of the Hexel Radiator Co., of 241 East Erie Street, Milwaukee, Wis., announces an "all year-all season comfort unit"—the new Hexel Air-Conditioner. Whether used as a heater or cooler, it keeps the air circulating. It weighs less than fifteen pounds, is of compact construction, and so permits of easy transportation. There are no exposed heating elements or fans. It is a dual-purpose electric appliance. Details on request.

(Continued on page 21)

THE NEW AUSTRAL MULTI UNIT SCHOOL WARDROBE

ANOTHER STANDARD FOR SCHOOLS . . . DEVELOPED AND PERFECTED BY AUSTRAL ENGINEERS WHO PRODUCED THE AUSTRAL WINDOW . . . MODERN, PERMANENT, ECONOMICAL, CONVENIENT . . . COMPLETE DESCRIPTION, DRAWINGS, SPECIFICATIONS IN THIS NEW BOOK.

SEND FOR YOUR COPY



SET *Fancy* FREE when you plan the floors

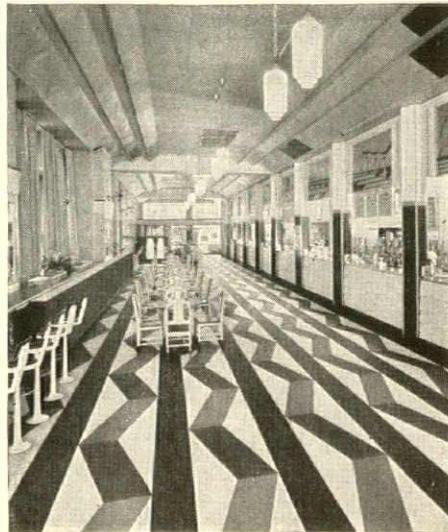
**Linotile offers full freedom
of expression in a resilient,
foot-easy floor**

WANT to create a floor that doesn't exist? With Armstrong's Linotile, floor designs can be entirely a product of your own imagination. You can create effects of quiet charm or formal dignity, patterns quite whimsical or boldly modern. The tiles come in thirty plain and marble colors and various sizes and shapes . . . but it is your own ingenuity that creates the design.

This freedom makes Linotile practical for every type of interior and scheme of decoration. Office, fine home, bank, store, hotel, hospital . . . all can use it. While Linotile is resilient, heavy traffic



Gray, black, and white Linotile make up this stunning modern floor in the studio of Robert E. Locher, New York designer.



Another unusual Linotile floor—in the H. P. Hood Restaurant, Boston. Designed with navy blue, black, jade-green, and ivory Linotile.

will not mar its surface. Tracked-in dust and dirt is easily removed, and colors do not fade—giving permanence to the beauty of your design. Even should an unusual accident damage a few tiles, they can be easily replaced.

Design Suggestions Offered Free

While you probably have many ideas of your own for hand laid floor designs, the book "Custom-Built Floors of Cork" suggests a number of possible patterns. It also tells about cork tile, another useful Armstrong Floor. Just address Armstrong Cork Company, Floor Sales Division, Lancaster, Pa.



Armstrong's CUSTOM FLOORS

LINOTILE ASPHALT TILE CORK TILE

MADE BY THE MAKERS OF ARMSTRONG'S LINOLEUM

THE "SNAPON" METHOD

Of constructing tile walls and floors is the subject of a folder from the Mortenson Engineering Co., of Chicago. This new method of tile setting is said to save labor cost and avoids the litter and débris generally accompanying remodelling jobs. The trade name of "Snapon" has been applied to the metal lath which is a punched sheet of metal with special mechanically formed fingers or grippers projecting at right angles. This affords a functional grip to the material centering the tile in a predetermined position.

CARNEGIE STEEL SHEET PILING

For sumptuous format and typography the new catalogue on steel sheet piling of the Carnegie Steel Company of Pittsburgh cannot be beat—nor, do we believe, its complete and instructive contents. The whole is a lesson in first-class catalogue production. Aside from that it should be in your files. It describes the series of Carnegie Steel Sheet Piling sections in both straight and arch web types for subaqueous and underground construction. In addition to its use in deep cofferdams, trenches, and excavations where it is to be pulled and redriven on other work, its application has been widely extended to a variety of permanent types of construction. Among these are cut-off and core walls for dams, wharves and slips, sea walls and jetties, and retaining walls around bridge piers or foundations to eliminate scour or the lateral movement of materials below foundations. In this book, Carnegie Steel Sheet Piling sections are described in detail and in addition to tables and data bearing directly on piling, there has been included information on earth and water pressures useful for the determination of loads.

CURB-GUTTERS

Are the subject of a leaflet from the American Curb-Gutter Block Co., Inc., of 499 Seventh Avenue, New York City., showing how property can be improved through the use of proper curb blocks. American Curb-Gutter Blocks are portable, made in a one-piece section combining both a gutter and a curb. Each block is one foot long, and forms a gutter one foot wide with a five-inch curb and weighs approximately seventy pounds.

WALL ASHLAR

For interiors having large wall surfaces, Federal Seaboard Wall Ashlar is offered to provide the ultimate in fire resistance and permanence. The hard glazes require no maintenance. They are easily washable with soap and water. Depicted in a new booklet published by the Federal Seaboard Terra Cotta Corporation, of 10 East 40th Street, New York City, are typical installations. Colors are available in a wide range of high-fired ceramic finishes in multi-chrome and solid glazes. Their laboratories will gladly tackle any problem requiring special color effects. Federal Seaboard Wall Ashlar is particularly suitable for schools, armories, subways, laboratories, bakeries, restaurants, stores, hospitals, and banks. Inquiries receive prompt attention.

FOR GARAGE DOORS

The Barber-Colman Co., of Rockford, Ill., announces an addition to its line of garage door operating equipment in the Model M operator, for use on overhead type of doors only. It is designed to eliminate service calls, and to meet the increasing demand for a low-priced substantial door operator. Complete information on their entire line will be sent on inquiry.

(Continued on page 23)



Equipment is Modern

When there is no guess work about its operation, the results it will give or its dollar value represented in length of life and freedom from repair.

You can assure constant removal of stale air . . . constant circulation of fresh air and your ventilator specifications will be modern if Swartwout Ventilators are indicated.

Swartwout Rotary Ball Bearing Ventilators take the guess work out of ventilation.

The Armco Iron Construction . . . the oilless ball bearings of hard bronze . . . the simplicity of design . . . the new damper locking device are a few modern characteristics of the Swartwout Ventilator.

Competent Swartwout Representatives are located in many cities. Their practical experience is available to you on request. Also a free copy of "The Gospel of Fresh Air" will be sent on request.

THE SWARTWOUT COMPANY

18527 Euclid Avenue

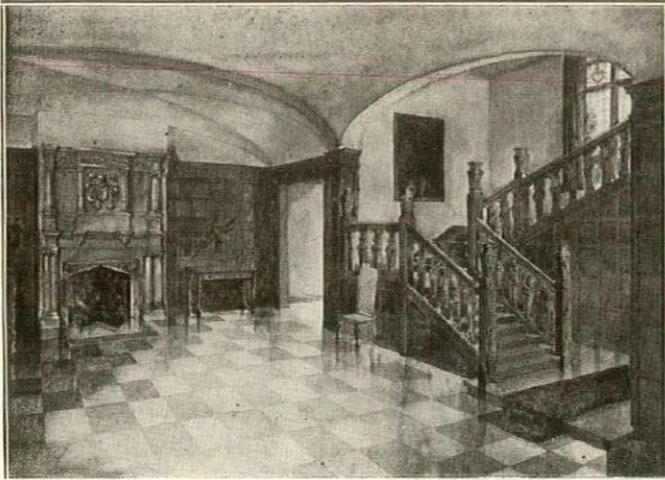
Cleveland, O.

Swartwout Ventilators



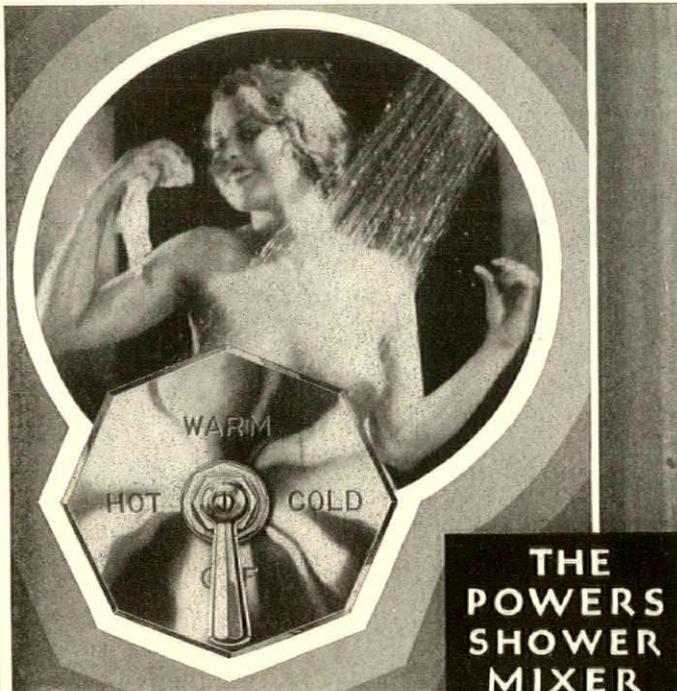
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34 EAST 65th ST., N. Y. C.



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SPECIALIZING TO ARCHITECTS

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In thousands of schools, clubs, hotels, and homes this remarkable SAFETY mixer is replacing ordinary mixing valves because it prevents sudden "shots" of cold or scalding water due to the use of nearby faucets, flush valves, etc. *Write for Book.* The Powers Regulator Co., 2741 Greenview Ave., Chicago — also 38 other cities.

IT'S THE *SPECIAL FEATURES* THAT USUALLY SPEED THE SALE, CLINCH THE LEASE OR GAIN THE OWNER'S FINAL APPROVAL

You've noticed it—how some incidental feature in a plan or finished structure will often absorb the prospective buyer's or renter's interest to the exclusion of many of the more fundamental points of excellence.

ROLSCREENS of Pella . . . there is nothing you can put into a job that will demonstrate the above more forcefully. Let Rolscreens help secure approval of that plan, speed that sale or clinch that lease. Be sure they're Pella-made. Fifteen patented features. Designed for every size and type of window and every type of construction. Provide adjustments for "settling," window-frame shrinkage and other contingencies. They work!

ROLSCREENS of Pella have seven years of fast-growing acceptance for small and large homes, hotels, hospitals, clubs, office, apartment and other buildings. Write for latest literature giving complete mechanical, construction and installation details. Rolscreen Company, 14121 Main Street, Pella, Iowa.

Rolscreens
TRADE MARK
OF PELLA, IOWA

BEAUTIFUL and exceptionally well adapted for exterior use is the slate spandrel, giving to the modern building that vivid contrast of black and white so important in present day architecture.

THE STRUCTURAL SLATE CO.
Department A-12 Pen Argyl, Pa.

DOMESTIC SERVICE EQUIPMENT

The International Nickel Co., Inc., of 67 Wall Street, New York City, has just issued an interesting and well-published file manual on the applications of modern white metals to domestic service equipment. Many of the illustrations of kitchens, pantries, and laundries show splendid arrangement and should stimulate modern service-room design. The properties of monel metal, tables of weights, and standard specifications for custom-built equipment are given.

ANTI-VIBRATION PADS

The new Waldorf-Astoria is built over the tracks of the New York Central Railroad. Protection against vibration was therefore most essential in the erection of this famous hostelry. It is provided by the use of a lead-asbestos anti-vibration pad under each of the column footings. They prevent the transmission of vibration from the tracks up through the building steel. About 160,000 pounds of eight-pound sheet lead were required for this purpose in the construction of the Waldorf-Astoria. Lead Coving Pressure Relieving Joints were also used to prevent disfiguration of the stone façade and eliminate future maintenance. This is just one of the interesting items in recent issue of *Lead*, published by the Lead Industries Association of the Graybar Building, New York City. Receive this interesting periodical regularly and become familiar with the possibilities of lead.

FROM TRUSCON

Comes a new catalogue on Truscon Steel Liner Plates. The cover design is intriguing, if one may stop to mention the "get-up." The contents contain engineering data, formulæ for determining the proper thickness of metal to be used under various conditions, properties of three standard types of Truscon Steel Liner Plates, and graphic illustrations of their use in construction. Catalogue is from the Pressed Steel Division of the Truscon Steel Co. at Cleveland, Ohio.

FOUR-WAY FLOOR PLATE

The Inland Steel Co., of Chicago, has just issued a leaflet describing the new Inland Four-Way Floor Plate. Its name is derived from the fact that it is non-skid in all four directions. The pattern, composed of short lineal projections placed alternately at right angles to each other, has been designed to assure ready drainage and easy sweeping. It also permits lighter weight per square foot with no loss in strength or safety. The folder includes a table of weights and dimensions. Installation may be made end to end, side to side, or side to end.

WESTERN ELECTRIC

Has for your file a splendid manual of data and specifications on its systems for public address, music reproducing, announcing, and programme distribution. The contents include applications, acoustical considerations, examples of systems, apparatus required, and installation details. In this age of marvels in what is done with the human voice, this catalogue is exceptionally interesting. If for no other reason at all, you should have this publication for its insert on "Acoustic Materials and Their Applications." Trade name, description, suitability, coefficient of absorption, manufacture, and other pertinent data are given on forty-five different types.

Fire-Proof AWNING FABRICS of Woven Asbestos Yarn

No more burnt awnings, due to carelessly thrown cigarette stubs, or lighted matches. Here at last, are *fire-resisting* awning fabrics which are not only heat-resisting, but colorful and artistic.

AWNBEST STRIPES AND TINTS

are painted on fabrics woven of *genuine* asbestos yarn. This

means that fire hazards are eliminated and repairs reduced. Think of the savings in costs for new awnings as well as the added factor of safety.

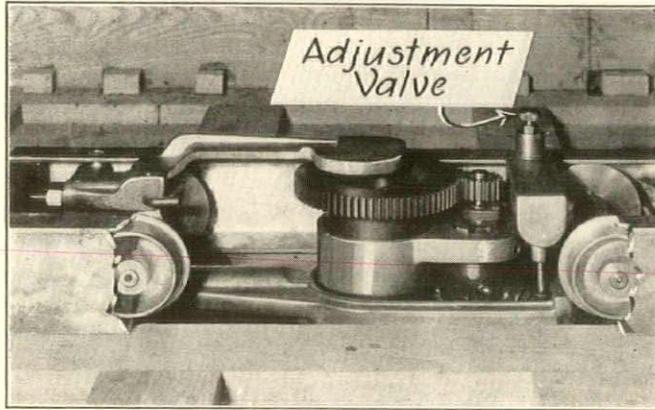
These handsome stripes and tints take their place on any residence, apartment, hotel, commercial building, or public building. Why bother with ordinary awning fabrics that burn? Save time, labor and trouble with **AWNBEST STRIPES AND TINTS**

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Awning Manufacturers*

AWNBEST STRIPES AND TINTS are sold by leading awning manufacturers. In the event that your manufacturer does not carry these fabrics in stock, write us for address of nearest distributor.

AWNBEST CORPORATION
CHARLESTON, S. C.





Van Kannel Mercury Traffic Adapter (Patent pending)

Your Revolving Door CAN BE REGULATED

for large or small crowds—young or old people—by a Van Kannel Traffic Adapter. Positively prevents spinning. Easily and quickly installed on new or old revolving doors.

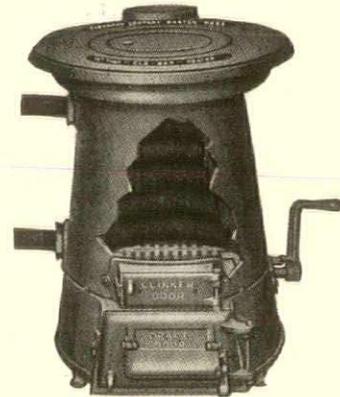


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Special
Copper
Coils
for
Rustless
Water



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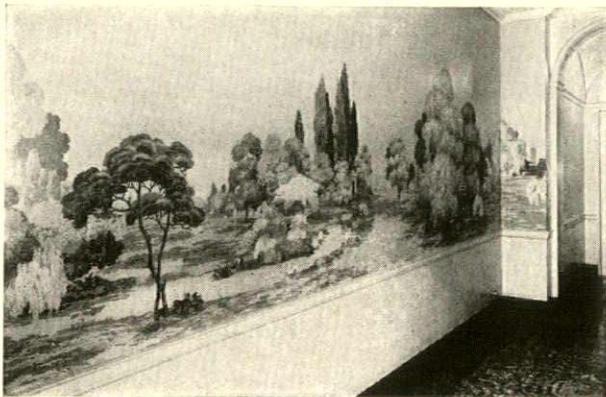
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CLE-BAR WATER HEATER

"Good for a Lifetime"

And you'll hear no more complaints about cracked sections, rusty water, or no hot water.

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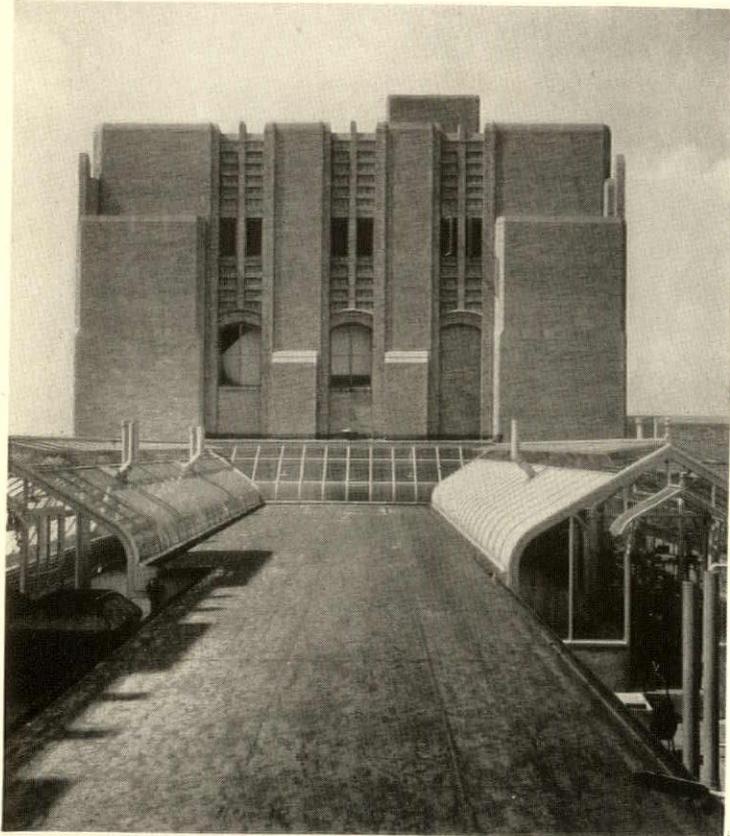
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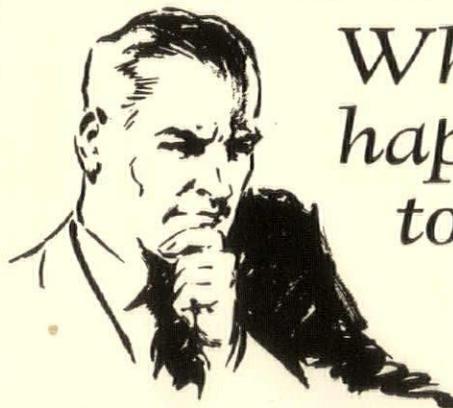
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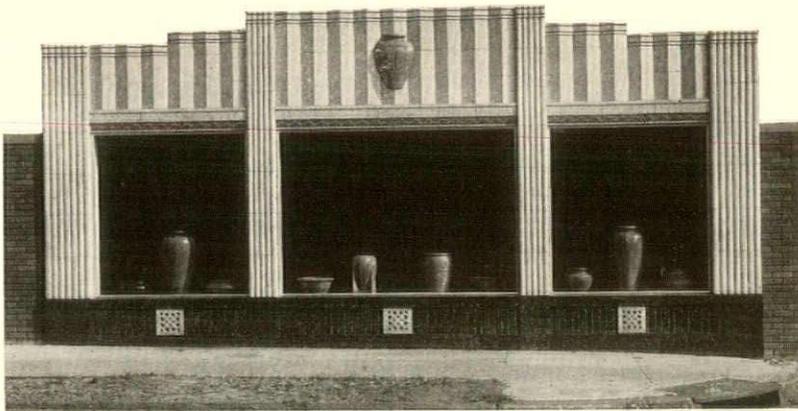
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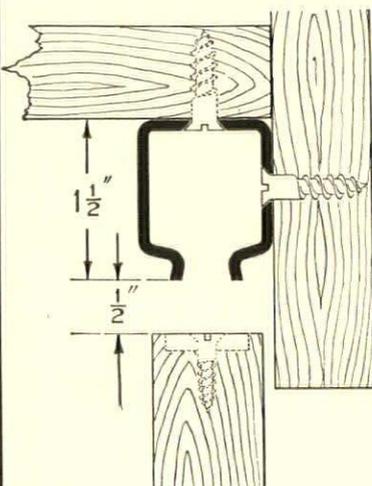
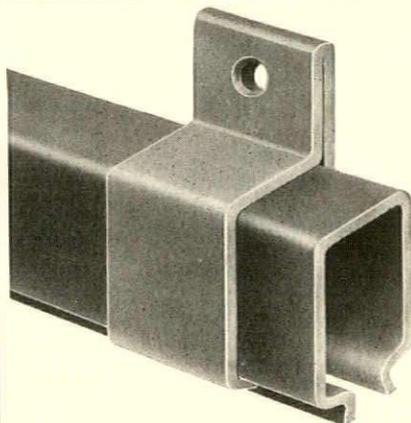
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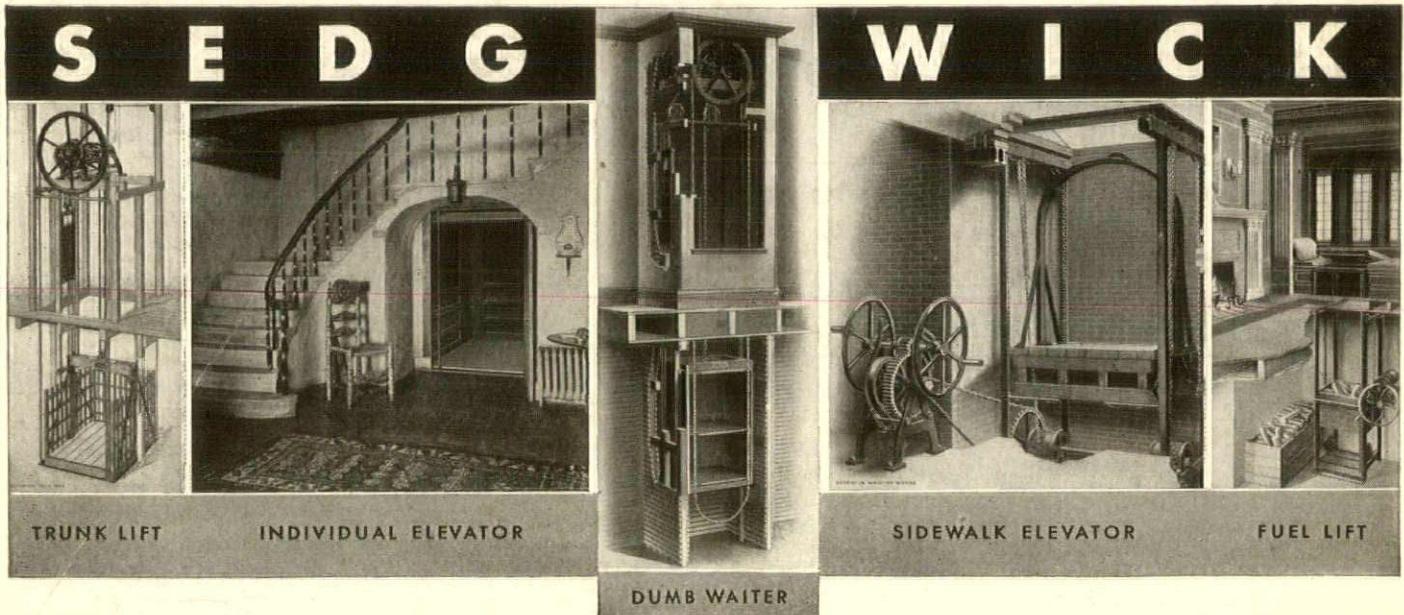
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