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INTERIOR OF THE PANTHEON OF AGRIPPA, ROME

THE INTELLIGENT USE OF MARBLE

By PATRICK CALVERT

IN the selection of a building material, the appropriateness of the use of marble will depend upon the unique qualities which it possesses, if we may consider it for the time being independently of cost. In order to bring out its various merits and defects, let us compare it first of all with the other building stones most frequently employed, that is, with granite and limestone.

When used for exterior work it is true that it lacks the sober and severe dignity

of granite, which through uniformity of color and hard, durable composition is preëminently the material for the grandest type of monumental buildings. Its very character suggests permanence and nobility while its intractability repels the addition of unnecessary detail. Limestone from the best quarries is a material that compares favorably with both marble and granite in dignity and softness of color although it possesses both of these qualities to a limited degree. The

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universal distribution of its deposits and the ease with which it may be worked have made it always the most used of building stones. It is, however, soft and absorbs dirt and moisture with more or less readiness so that it is most satisfactory when first cut and set in place, and is subject to disintegration, gradually streaking and weathering in an unhappy manner, at least in our climate, until its pristine distinction is exchanged for a dull and dirty patina.

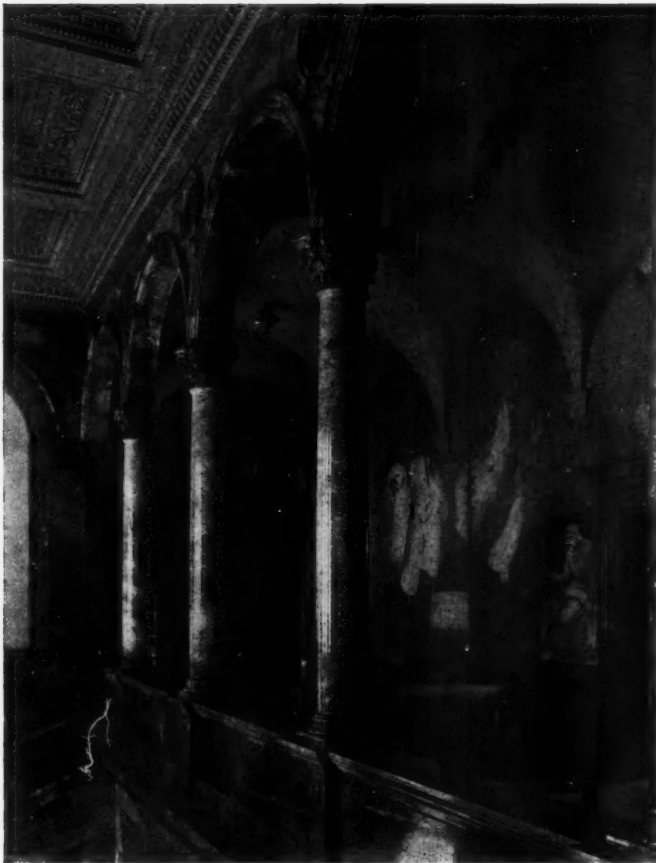
On the other hand, marble is of soft but firm and refined texture, lending itself readily to the sculptor's or carver's chisel, while in its color values, warm and mellow tints prevail. These qualities suggest it as the ideal material for smaller and more refined structures, where delicacy is sought for rather than

restrained dignity. Omitting from the argument any considerations of its prime importance to the art of sculpture, its appropriateness for the use of pedestals and exterior accessories is manifest. These latter are the only places where colored marbles are permissible in exterior use, with the exception of ornamental columns or panelled slabs, and the comparison has so far taken up only the use of white marbles.

The weathering of exterior marbles is worthy of consideration at this point. In the climate of North America, or in the climate of that particular part of the Middle and Eastern States which includes the larger American cities, white marbles do not attain to the yellow patina of age that the warm and sunny air of Greece and Italy give, but instead tend to be-

come blackened and discolored. Their freshness can only be retained by occasional washings with soap and water. It is obvious that the calcareous structure of marble should not be submitted to the deleterious action of any cleansing fluid containing acid, although this lesson has been sometimes learned only in the painful school of experience. Exposure of colored marbles to the weather tends greatly to soften their coloring and many cases might be cited where through fading and discoloration the original decorative value has been entirely lost. Architects will do well to err on the side of boldness and trust to the absolutely sure action of the elements to produce the final desired result. Few heavily veined marbles are able to withstand the constant action of frost, while the use of brecciated marbles on exterior work had best be avoided.

It is, however, only in interior work with its advantages of protection from the weather and the extreme



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variations of temperature of northern latitudes that ideal conditions for the use of the greater number of marbles are to be found. Its toughness and firmness make marble unsurpassed as a material to withstand wear, while the beauty of surface is best studied and appreciated at close range and under the diffused lighting of interiors.

The most important and most general use of marble in interior work is that of floors. No other material can equal its suitability for this purpose; it offers great resistance to wear and usage

McKim, Mead & White, architects, where they are laid sixteen by thirty inches with the joints running in the direction of the longer dimension of the room. Laying floor tiles in this direction tends to emphasize the shape of the room, while the French method of carrying the joints across the shorter dimension of the room is confusing to the eye. For interior work the use of Pink Tennessee is confined to floors, since its cold color makes it unsuitable for any walls but those of vestibules and exterior loggias; in general, the



FLOOR OF VESTIBULE, LIBRARY OF COLUMBIA UNIVERSITY
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Yellow and Red Verona, Sienna and White Marbles. Connemara Marble Columns

and its quality of practical non-absorption renders it easily cleaned, while at the same time its color may be made to harmonize readily with the decoration of walls and ceilings.

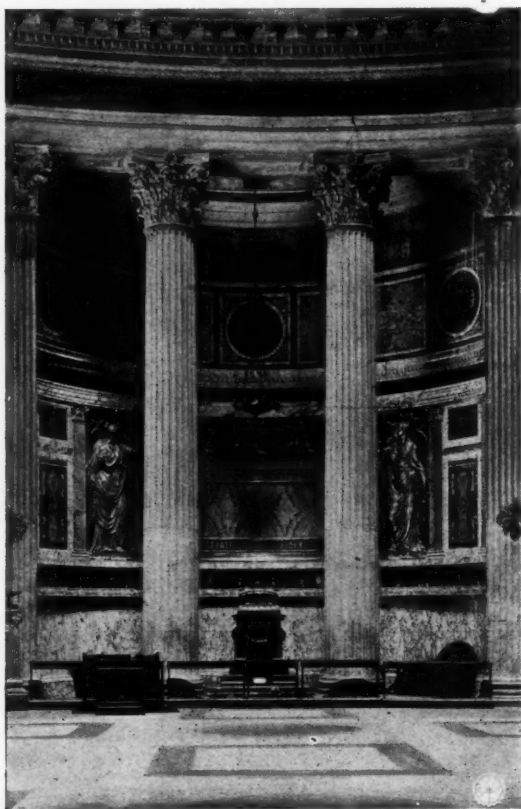
First in importance as a floor marble in point of serviceability is Pink Tennessee. In its simplest form it is best laid in rectangular tiles, as in the galleries of the Metropolitan Museum of Art, Messrs.

grayer and more neutral shades of this marble are the most desirable and any veining had best run along rather than across the piece.

Another floor marble in frequent use is Hauteville, the firmest of the yellow marbles and therefore the most suited for floors. This may be similarly laid in rectangular form or used as a body in combination with other harmonizing marbles.

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One of the well-known examples of this is in the vestibule of the New York Public Library, Messrs. Carrere and Hastings, architects, where a field of this mar-



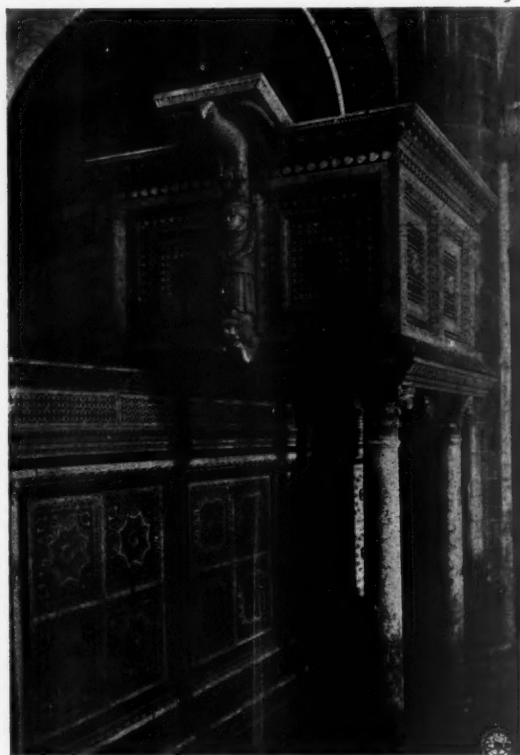
TOMB OF UMBERTO I, PANTHEON, ROME.
GIALLO ANTICO COLUMNS

ble is accented by bands and spots of Gray Sienna.

One finds many distinguished precedents for the use of diagonal floor patterns of black and white squares, principally in the elegance of the French styles. Its characteristics are those of an intimate refinement rather than severe grandeur, and as a floor for entrance halls and vestibules it provides a suitable transition from the outside life to the salons of the house. In its most usual form it is made up of squares of Belgian Black and a Norwegian or Vermont marble, preferably one that is slightly clouded with blue to relieve the intensity of the contrast. The vestibule of Mr. Chas. A. Platt's office

is laid in these diagonal squares, the materials here being Black and Gold and Istrian marbles, a combination that softens still further the harshness of the contrast. A narrow border strip of Istrian in this instance terminates the pattern at the wall base.

A general tendency in the taste of the twentieth century towards delicacy and restraint in interior architecture has brought architects to look with disfavor upon the use of the bolder and more variegated stones for wall decoration and to get their effects more by the employment of monotone marbles. In this connection, the vogue of Botticino and other similar yellow marbles may be mentioned as not being unmerited. The surface of these



MARBLE AND MOSAIC PULPIT, S. MINIATO,
FLORENCE

marbles is not highly crystalline and they are not susceptible of a high degree of polish. When laid up as ashlar or combined with some soft colored marble, such as Gray Sienna, they provide a warm, neu-

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tral background that is unobtainable with a crystalline marble whose surface is brilliant rather than quiet. It is scarcely necessary to cite examples of their use, which is widespread.

In the choice of a material for structural forms, viz., columns, pilasters, arches, etc., monotone marbles are to be preferred over those containing decided patterns or veining, unless the pattern runs vertically from floor to ceiling as in the interior Cipollino columns of the

been cut from one block, first of all, then halved vertically and cored. In the interior of the Tiffany store, the same architects have used for columns and pilasters



CIPPOLINI COLUMNS, PORCH OF CHURCH OF
ST. BARTHOLOMEW, NEW YORK
MESSRS. MCKIM, MEAD & WHITE, ARCHITECTS

Columbia Trust Co., formerly the Knickerbocker Trust Co., Messrs. McKim, Mead & White, architects. Since these columns surround a core of steel, they have



GRAND ANTIQUE MARBLE ENTRANCE, CLEWS
BUILDING, NEW YORK
MESSRS. STARRETT & VAN VLECK, ARCHITECTS

the rich, neutral Famosa marble; gradation of color rather than decided veining characterizes this marble and its use in this instance is most appropriate. It is difficult to do more than roughly suggest other marbles suitable for structural forms but the most important ones may be mentioned as Verde Antico and its substitutes, Sienna marbles, as used in the entrance hall of the Boston Public Library, Yellow Numidian, etc. The richly veined marbles, for example, Pavonazzo, Fleur de Peche, etc., when used as decorative panels or inserts are most fitting where the beauty of pattern

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may be seen to the best advantage. They are of sufficient richness without the addition of ornament, and the color variation is apt to confuse rather than to be en-

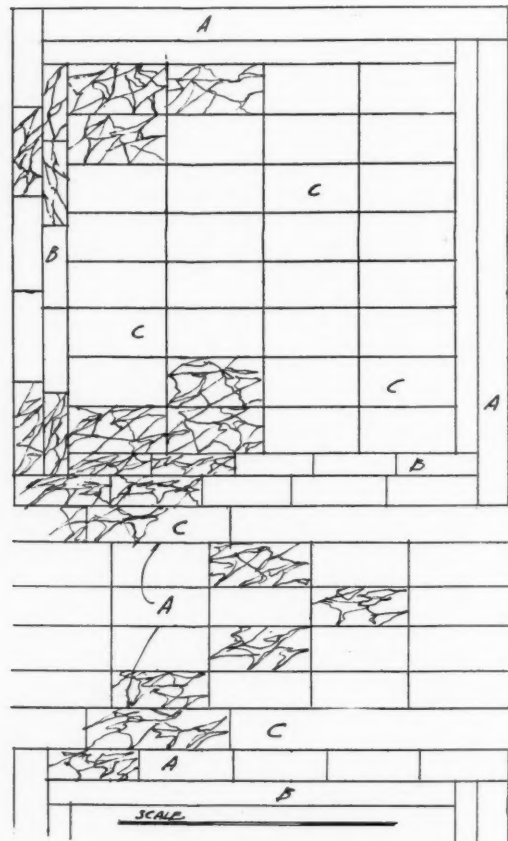


RENAULT'S, FIFTH AVENUE, NEW YORK

hanced by detail. This being true, it is evident that their surface should not be disturbed by small or complicated moldings and that carving may better be entirely omitted. A brecciated marble is entirely unfitted by its loose structure for the carver's chisel so that esthetic considerations are here backed up by practical ones.

Probably no other interior feature is of more importance or has received more study than the fireplace opening. As the central motive of the room, radiating heat and warmth, the richest and most decorative treatment is usually reserved for it. As a principle of design this may be said to be true of any interior from the humblest to the most magnificent. Marble suggests itself as the material which

most amply fulfils the utilitarian as well as the artistic requirements; the first demands a fire-resisting material as protection and the second requires interest of surface and color in this focal spot of the room. Some suggestions of suitable marbles for the facing of the fire opening are Yellow Numidian, Old Convent, Red Numidian, Famosa, Black and Gold. For elaborate mantel treatments there are an infinite variety of combinations; one that

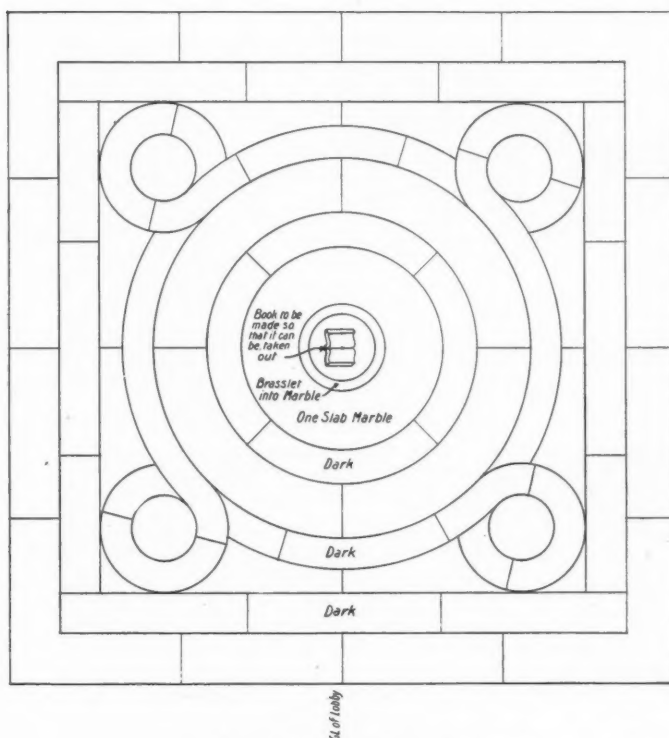


A SECTION OF THE MARBLE PAVEMENT IN THE BASILICA TULIA, ROME

- A. African black, red, rose, grey.
- B. Pavonazzo white, purple.
- C. Giallo Antica yellow.

comes most readily to mind is in the mantels designed by the Adam Brothers, many of which are of Carrara marble with inserted panels of Gray Sienna.

The particular color of marble to be selected will of course depend largely



DETAIL OF A MARBLE FLOOR
MESSRS. MCKIM, MEAD & WHITE, ARCHITECTS

upon the accompanying wall treatment; if of oak or walnut, a dark marble, possibly Levanto Black and Gold or Famosa will be chosen; if treated in stucco or painted panelling, Sienna, Botticino and the like. These suggestions hold true for the marble bases and wainscots as well.

The illustrations are suggestive of the infinite range of the subject, and while necessarily limited in number and space it is hoped will open up a fascinating but somewhat neglected field of study.

Dublin's City Plan

It has been recently decided to authorize the immediate judgment of the competition plans for the City of Dublin. The judges are Professor Patrick Geddes, Edinburgh; Charles J. McCarthy, the City Architect of Dublin, and John Nolen of Cambridge, Mass.

It was originally intended to judge these plans on September 1st, but owing to the immediate necessity for rebuilding cer-

tain sections of Dublin, to repair the devastation worked during the recent rebellion, it has been decided to proceed with the judging at once. The prize of \$2,500 is to be given to the author of the design placed first.

The plans are to be comprehensive in their character, covering communications by road, railway and canal system, main thoroughfares and streets, housing both central and suburban and metropolitan improvements. The public buildings include the proposed new government and administrative buildings, the Catholic cathedral, modern art gallery, national theater, etc.; also parks, and gardens, parkways and boulevards.

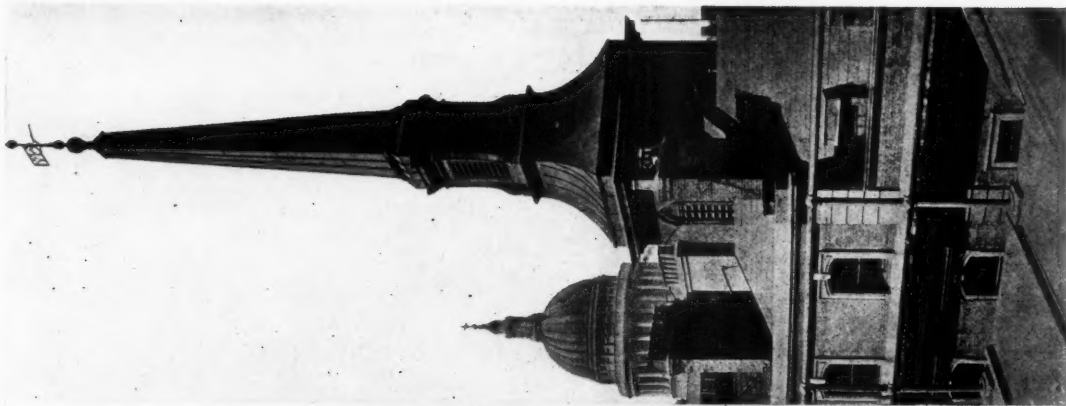
The plans are to be sent later to the United States, and will probably be first exhibited in Boston.

Competition for Cleveland Public Library

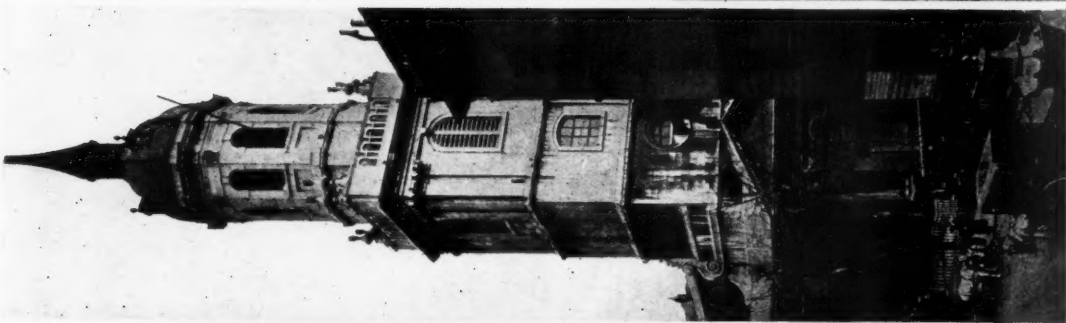
The following men and firms have been invited to submit designs in competition for the proposed library building at Cleveland, O.: Abram Garfield, Hubbell & Benes, Walker & Weeks, all of Cleveland, and Allen & Collens, Boston; Holabird & Roche, Chicago, and Robert D. Kohn, John Russell Pope and Edward L. Tilton, New York.

Each of the eight competitors will receive an honorarium of \$1,000, this payment to the successful competitor being considered a payment on account of his services.

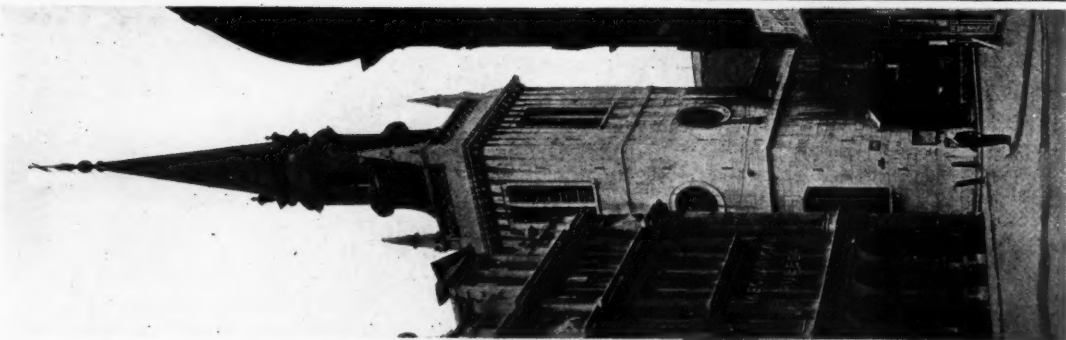
The competition began June 29 and closes Sept. 28. The new library building, without furnishings, is to cost \$1,800,000. The library board has \$2,000,000 available. The new library must harmonize with the group plan and the library board contemplates a building capable of accommodating 2,000,000 books.



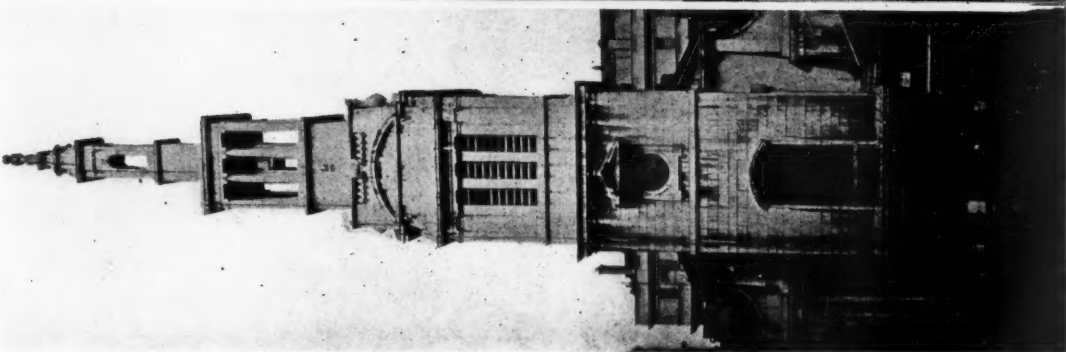
ST. MILDREDS



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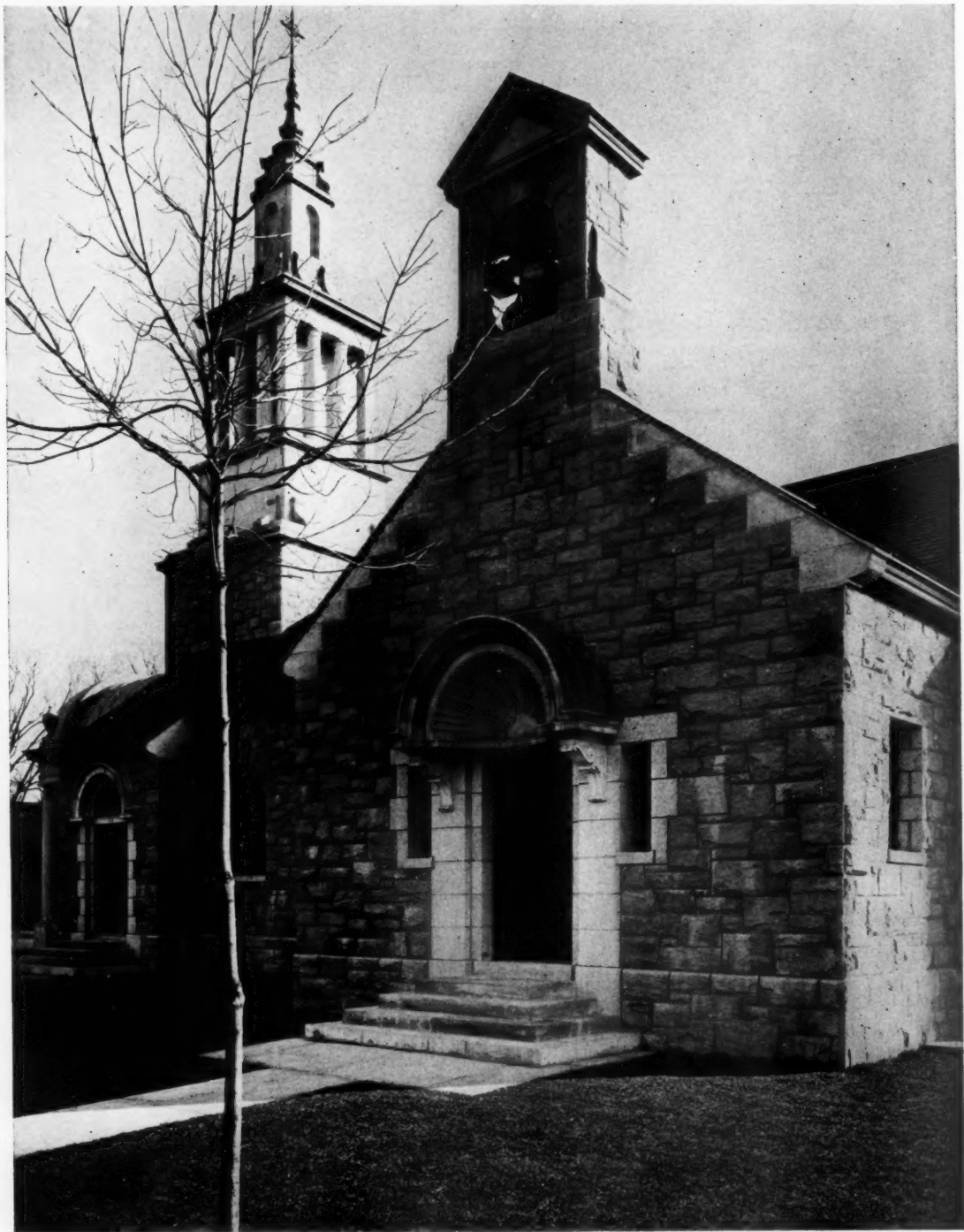


ST. AUGUSTINE & ST. PAUL



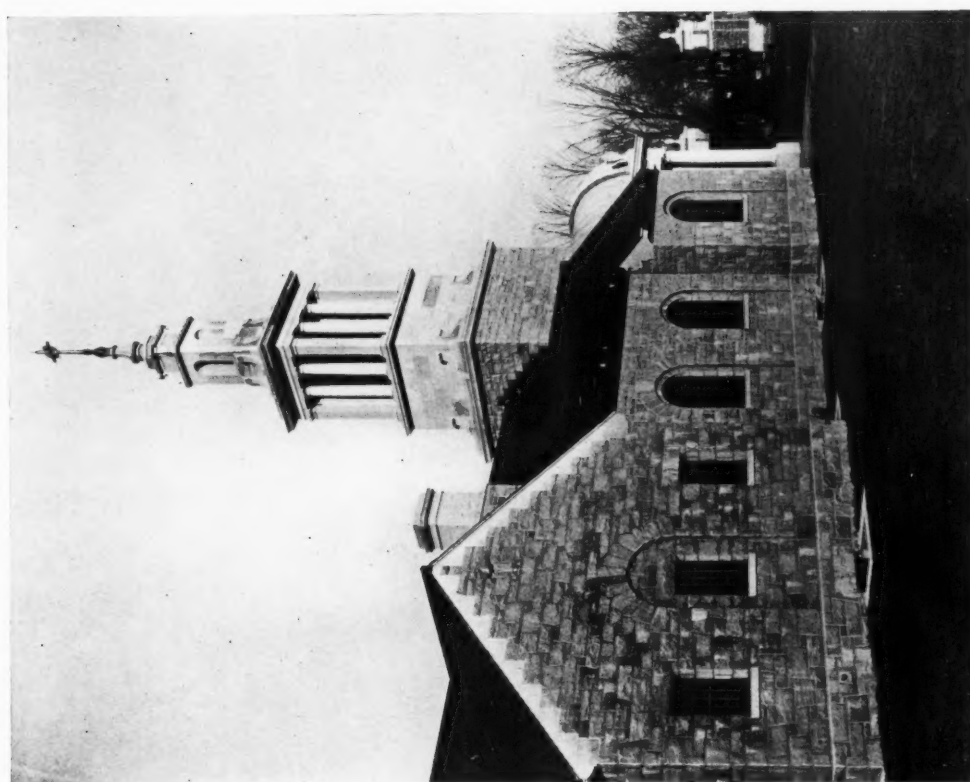
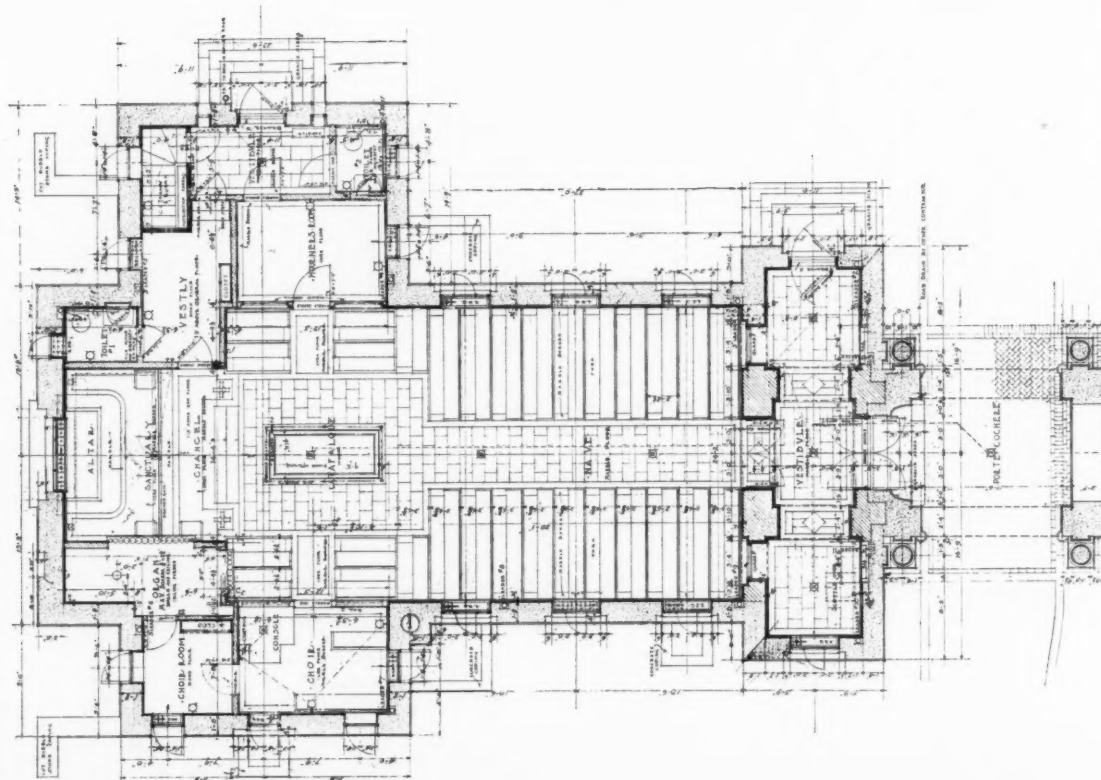
CHRIST CHURCH

LONDON STEEPLES AND SPIRES BY SIR CHRISTOPHER WREEN
FROM THE ARCHITECTURAL REVIEW (LONDON)



MORTUARY CHAPEL, MOUNTAIN GROVE CEMETERY, BRIDGEPORT, CONN.

MR. DONN BARBER, ARCHITECT



MORTUARY CHAPEL, MOUNTAIN GROVE CEMETERY, BRIDGEPORT, CONN.

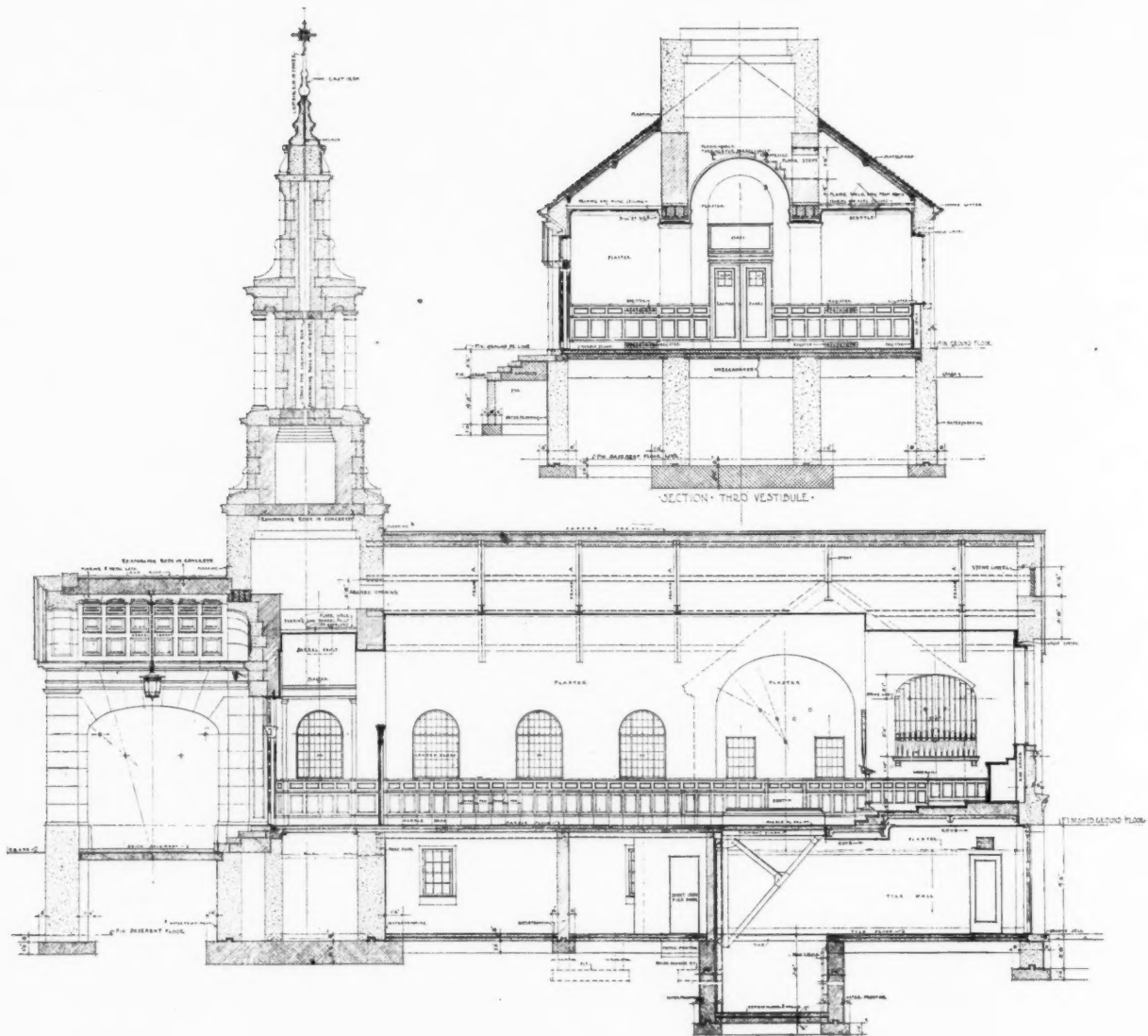
MR. DONN BARBER, ARCHITECT



ENTRANCE GATEWAY

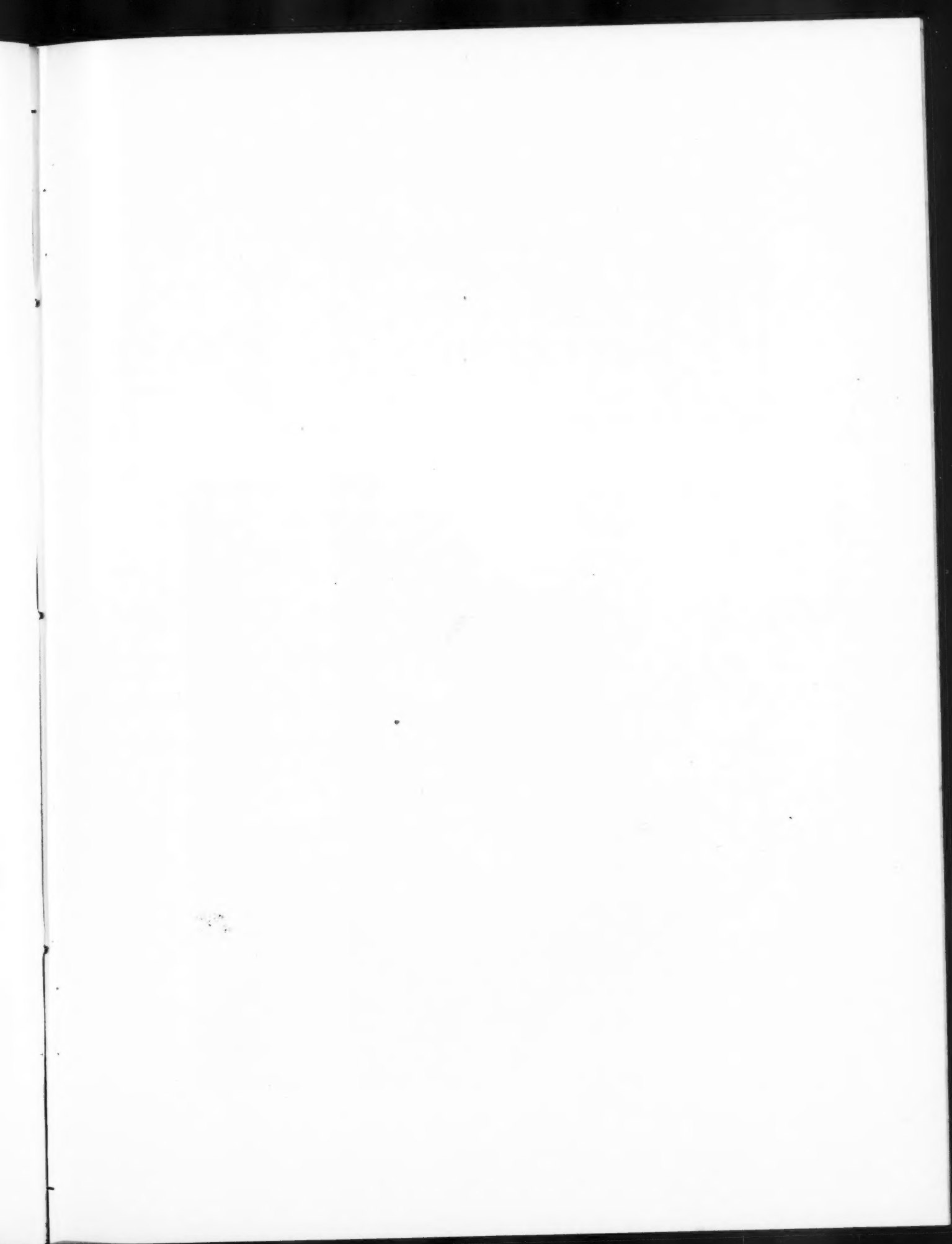
MORTUARY CHAPEL, MOUNTAIN GROVE CEMETERY,
BRIDGEPORT, CONN.

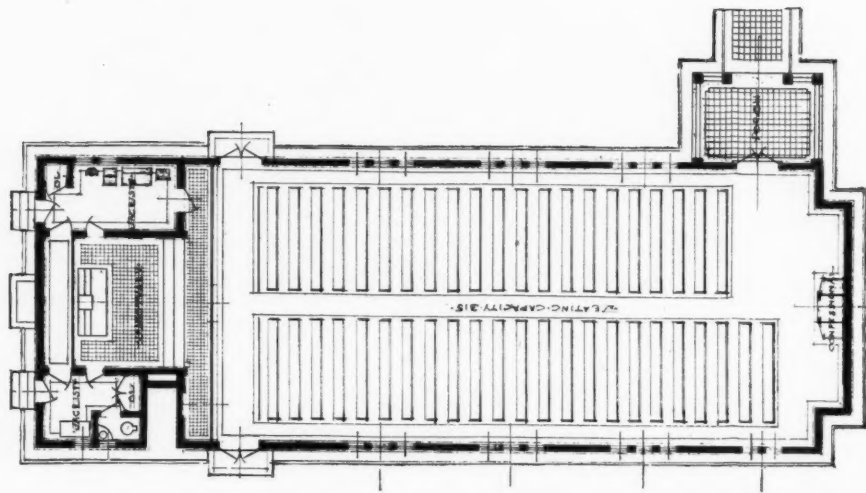
MR. DONN BARBER, ARCHITECT



MORTUARY CHAPEL, MOUNTAIN GROVE CEMETERY, BRIDGEPORT, CONN.

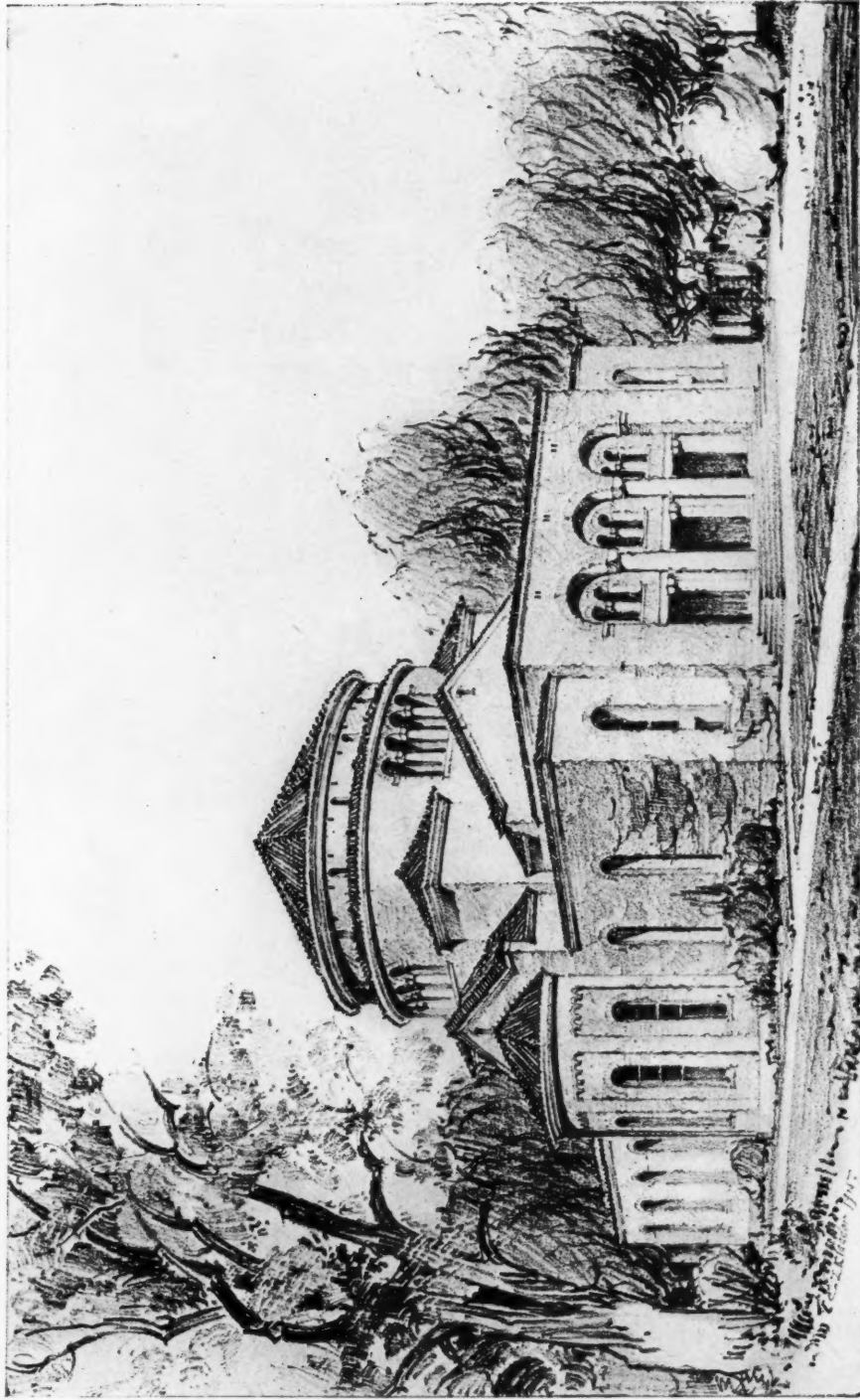
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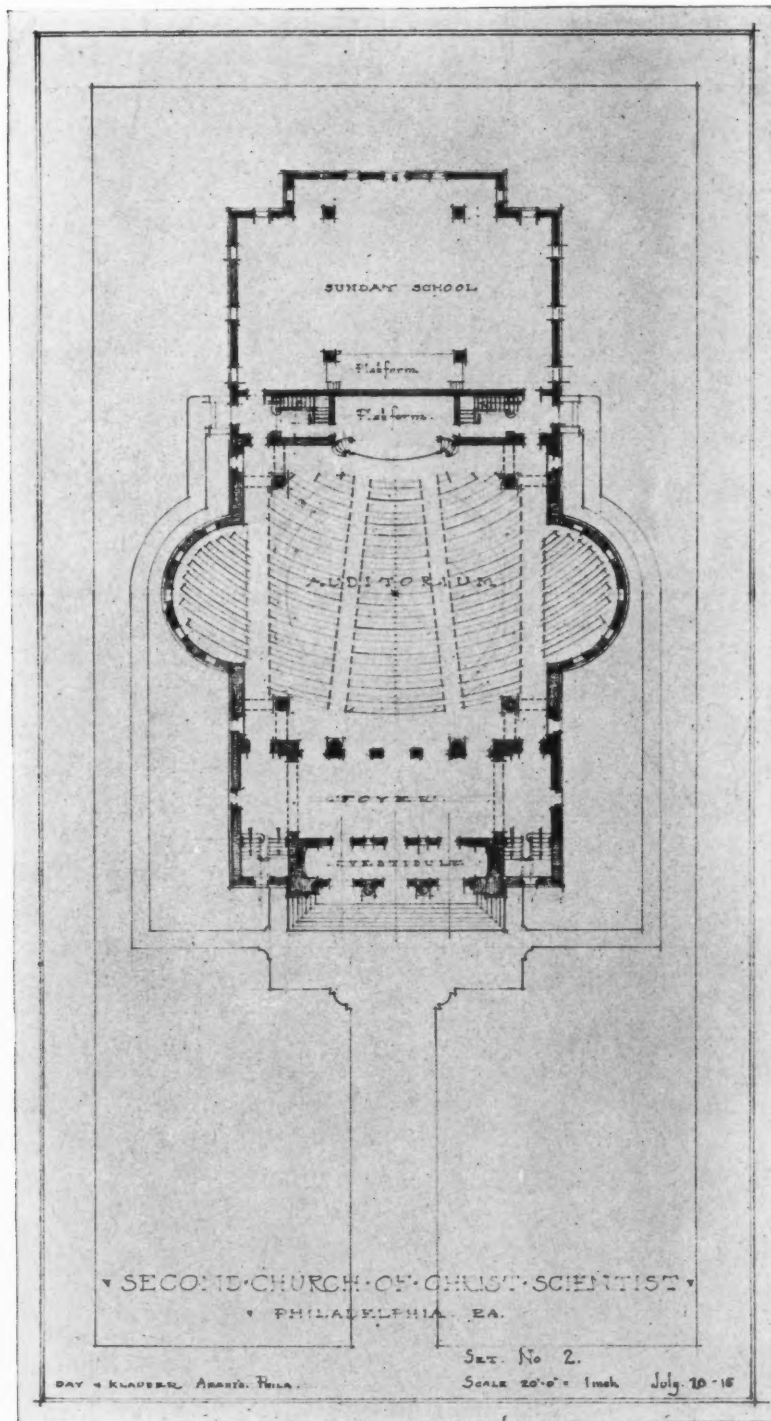
ST. GERTRUDE'S R. C. CHAPEL, EDGEHURGH, L. I., N. Y.

MESSRS. EDWARD A. LEHMANN & THOMAS O'KANE, JR., ARCHITECTS



SECOND CHURCH OF CHRIST SCIENTIST, GERMANTOWN, PHILADELPHIA, PA.

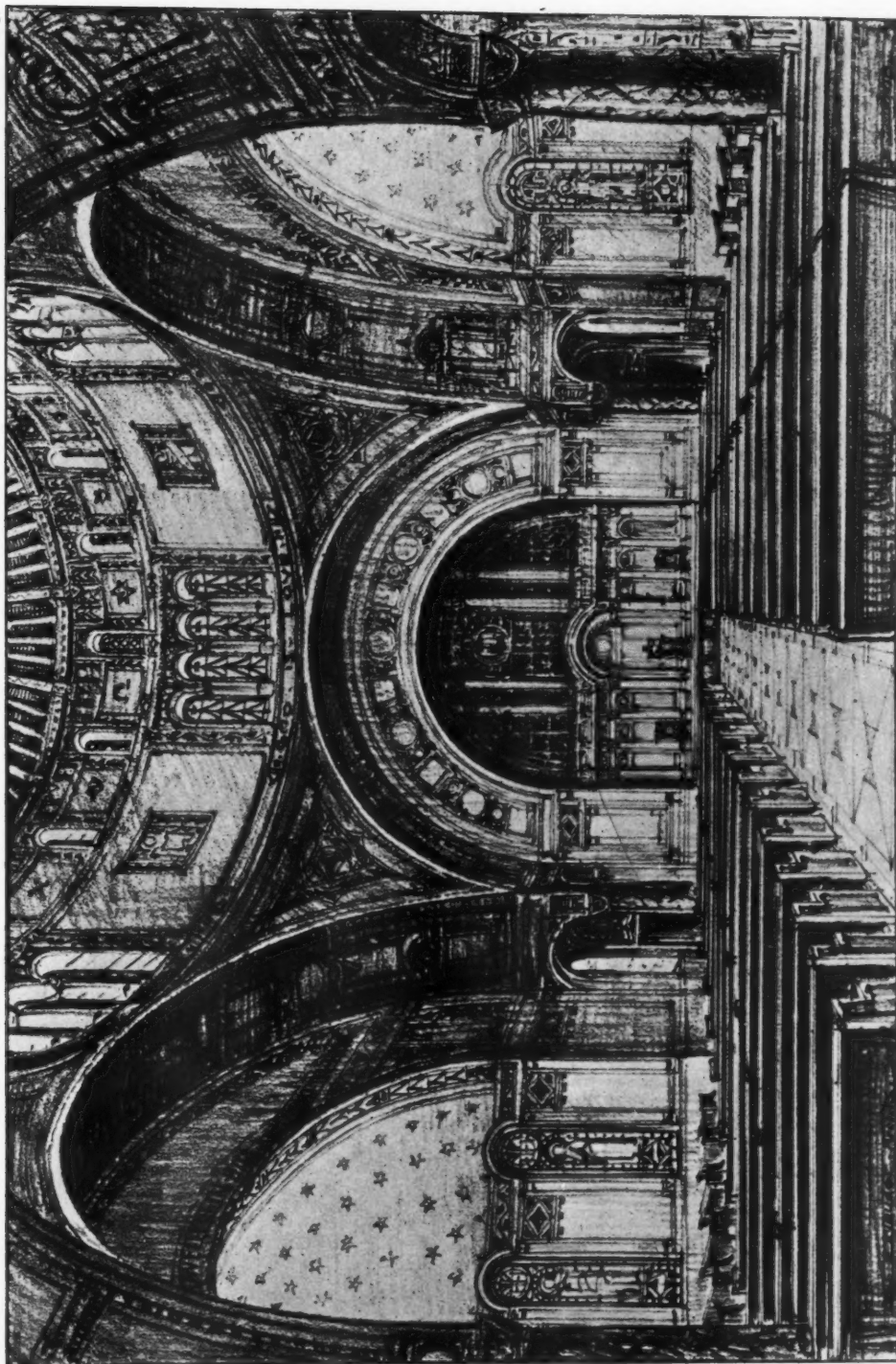
MESSRS. DAY AND KLAUDER, ARCHITECTS



PLAN

SECOND CHURCH OF CHRIST SCIENTIST, GERMANTOWN,
PHILADELPHIA, PA.

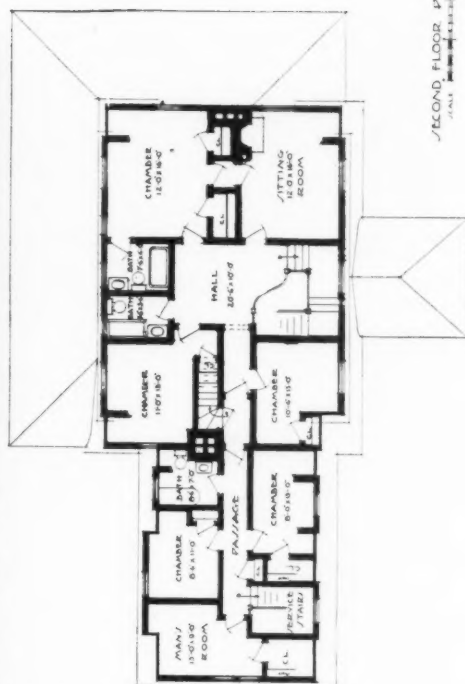
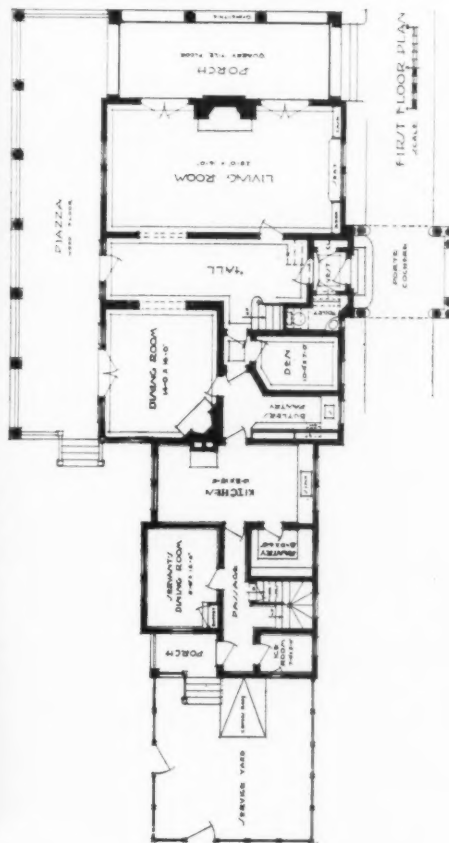
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INTERIOR

SECOND CHURCH OF CHRIST SCIENTIST, GERMANTOWN, PHILADELPHIA, PA.

MESRS. DAY AND KLAUDER, ARCHITECTS



HOUSE OF FRANK R. MACKENZIE, ESQ., NARRAGANSETT PIER, R. I.

MR. ELEAZER B. HOMER, ARCHITECT



LIVING ROOM



DINING ROOM

HOUSE OF FRANK R. MACKENZIE, ESQ., NARRAGANSETT PIER, R. I.
MR. ELEAZER B. HOMER, ARCHITECT

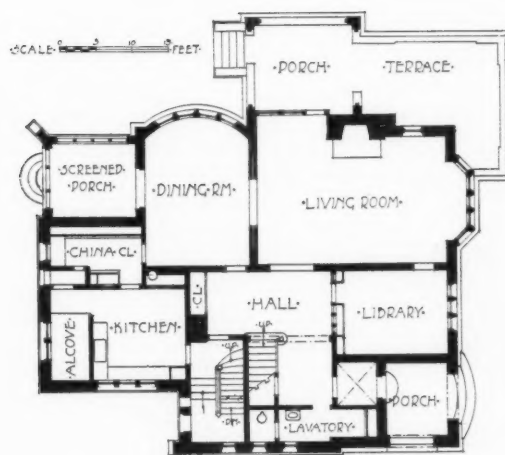


HOUSE OF E. R. WAGNER, ESQ., MILWAUKEE, WIS.
MESSRS. SCHUCHARDT & JUDELL, ARCHITECTS

Non-fireproof construction. Tile roof, exterior walls, brick veneer, foundations concrete. Interior walls and partitions wood. Interior finish oak and mahogany. Hot water heating system, electric light. Cost, per cubic foot, 30c.



LIVING ROOM



•FIRST FLOOR PLAN•



•SECOND FLOOR PLAN•

HOUSE OF E. R. WAGNER, ESQ., MILWAUKEE, WIS.

MESSRS. SCHUCHARDT & JUDELL, ARCHITECTS

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THE VALUE OF ARCHITECTURAL SERVICES

THESE is no longer question in the minds of the majority of people regarding the value of architectural services in connection with urban buildings. The necessity for someone who can take charge of a building operation, prepare necessary plans for filing with various municipal departments, meet objections from these *quasi* authorities, and generally conduct the work in the interest of the owner, is now well recognized. In suburban and country work, however, conditions are quite different and it may be said that the building of architecturally satisfying farm houses, in particular, is still in the early dawn of what it is hoped will be a brighter day. At the present time but few of these farm buildings with the exception of those which may be considered estates, usually developed by an owner from the city, are so built or maintained as to either please the eye or entirely meet the modern requirements of convenience and efficiency. This is not wholly due to the fact that the farmer is not financially able to con-

struct a house on pleasing lines or to maintain it in proper style. He is not infrequently financially independent, and as a rule the cost of the house constructed by the local carpenter is sufficient to make it attractive. The difficulty lies in the fact that he does not possess either knowledge or appreciation of architecture, and hence neither realizes the ignorance and wastefulness displayed in the construction of his house and other buildings, nor recognizes the value of architectural services that would prevent this condition.

The problem that now requires solution apparently is to convince the farmer or dweller in rural communities of the actual and positive value to be derived from the employment of an architect. If this can be demonstrated from a practical viewpoint, it seems probable that results will be sooner attained than by the slower process of educating the owners of these buildings to an appreciation of the esthetic value possessed by well-designed buildings. It would appear, therefore, that emphasis should be placed on the practical services rendered by architects, services that are seldom recognized and probably even more infrequently enumerated among the advantages to be derived from their employment. One of these which will readily be understood by any houseowner is the ability of architects to construct buildings which tend to retard fires and make their spread difficult and slow, even in frame buildings. The National Board of Fire Underwriters has recently given attention to this matter, and has issued a booklet of 115 pages devoted to an explanation of methods of increasing the fire-resisting qualities of dwellings. It is obvious that most of these methods are familiar to architects, and in localities outside the control of building ordinances, where the majority of the buildings to which reference is here made are located, the ability to make houses reasonably safe from fire is something the value of which will appeal to an owner who may not appreciate the difference between good architecture and the buildings to which he is accustomed. Such subjects as the proper construction of floors and roofs, chimneys, fireplaces, fire-stop-

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ping walls, and similar precautions, which can be taken with little expense against the occurrence or spread of fire become of very great value where means for fighting fires are limited and the safety not only of property but life is to be considered. This is but one of the services of real practical value which architects habitually render, and others no less important might readily be enumerated and presented to the farmer or rural inhabitant in a manner that would appeal to his business sense, which is usually more acute than his appreciation of art.

THE ANATOMY OF ARCHITECTURE

IT was Sir Ernest George, a distinguished English architect, who said: "No beauty of color or design will justify a building faulty in construction, or any presentment of the human form without indication of bones and muscles." The truth of this statement is now generally conceded by authorities, and its acceptance is gradually eliminating the mere decorator from the practice of architecture. Looking back over the work that has been accomplished in this country during the past quarter of a century, it cannot be denied that a considerable portion of it has lacked the suggestion of anatomy so necessary to true art. Greek sculpture, which ultimately reached the highest

expression to which art has ever attained, was only developed when Greek artists began studying the anatomy of the human figure. Previous to that time Greek art was so devoid of any suggestion of the figure beneath the garments or of bone and muscle beneath the surface, that it possessed little artistic value.

It is probably safe to assert that a building that does not clearly express in its exterior design, both its use and its structure will never be regarded as an example of the best architecture. It may be contended that the design of structure lies within the province of the engineer, and that it should follow the design of mass, proportion and arrangement. To some extent this contention is justified, but composed without a knowledge of structural requirements and regard for them, a design will seldom, if ever, stand the test of analysis. The accepted forms of architecture are almost without exception founded upon the necessities of structure quite as much as upon esthetic requirements, and a designer who does not fully appreciate this fact, expressed by the maxim, "The line of beauty is the line of duty," can never hope to achieve distinction in his calling. Honest expression is as necessary to success in architecture as in any line of endeavor to which an artist can devote himself, and this honesty should extend as much to the structure of a building as to its use.



SMALL ENGLISH HOUSES OF THE LATE GEORGIAN PERIOD

THE *Architects and Builders' Journal* of London is performing a service of much value in the publication of a series of illustrations of small houses built during the Georgian period in England. In the majority of instances these houses are so replete with good suggestions that, with due acknowledgment to our English contemporary, we republish, reduced in size, a number of examples.

The general view and detail of the Paragon, Blackheath, London, are re-

ferred to in *The Architects and Builders' Journal*, as follows:

"The frontage of the Paragon at Blackheath follows the line of the outer walls of the grounds on which formerly stood the mansion built for Sir Godfrey Page. This house was pulled down in the latter years of the eighteenth century, when the present buildings were erected. Documents in the possession of the Cator Estate, to which this property belongs, suggest that an architect named Searle was responsible for the design; whether this was so or not the work is evidently that of an accomplished artist with a good deal of creative force. The treatment of the different blocks linked up with the Doric

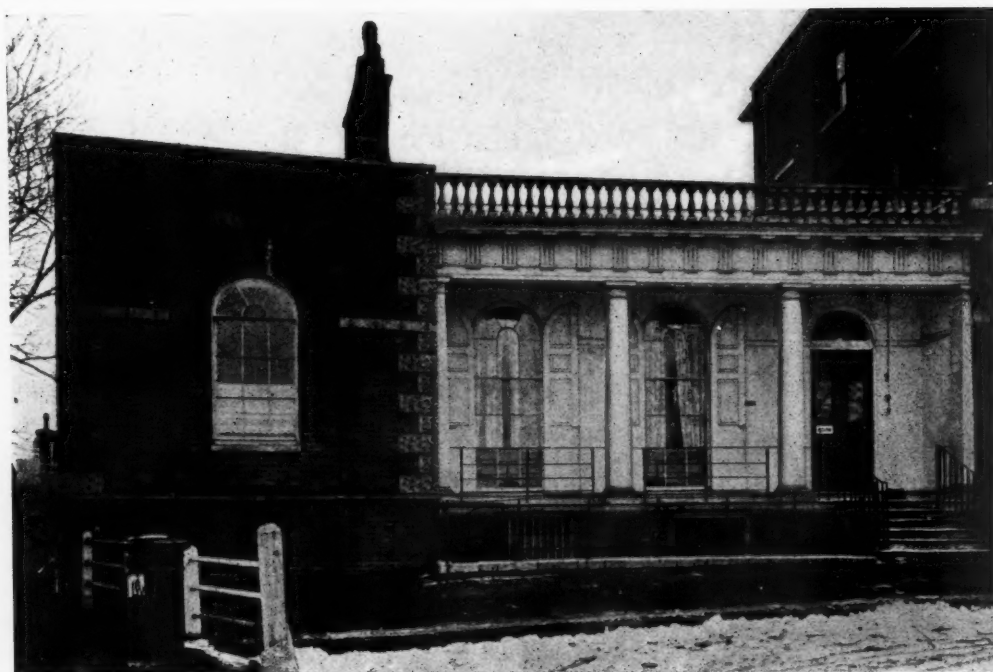


A DOCTOR'S HOUSE, NEW CROSS, LONDON, S. E.



HOUSE AT HAMPSTEAD

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DETAIL OF WING, THE PARAGON, BLACKHEATH, LONDON, S. E.

arcades is most original, preserving as it does the continuity of the design, whilst indicating the individuality of the separate houses. The detail throughout, though



THE PARAGON, BLACKHEATH, LONDON, S. E.

delicate in execution, is extremely masculine and direct in character. The Paragon was originally built with the idea of



HOUSE ON HOLYWILL HILL, ST. ALBANS

providing accommodation for naval officers stationed at Greenwich, or for those who had retired from the service."

MARACAIBO VERA, A SUBSTITUTE FOR LIGNUM VITÆ

VERA is an important Venezuelan timber that is now being exploited and shipped in large quantities into the United States as a substitute for lignum vitæ. The wood is exported chiefly from Maracaibo and is called Maracaibo vera in order to distinguish it from other West Indian timbers locally known as vera. This Venezuelan wood is obtained from a tree referred to by botanists as *Guaiacum arboreum*, which is not only very closely related to, but in general appearance resembles the true lignum vitæ of commerce. The latter is derived from *Guaiacum officinalis* and *Guaiacum sanctum* of tropical America. It seems likely that the supply of the genuine lignum vitæ will soon approach exhaustion and it is believed that the demand for vera, which constitutes a satisfactory substitute, will greatly increase.

The vera tree may be said to be large, but it does not vie in height and diameter with the majority of other trees in the tropical forests. It seldom develops a long trunk, which is rarely over 2 ft. in diameter 4 ft. above the ground, and only from 10 to 20 ft. to the first branches, which are usually spreading or partly ascending, forming a broad, irregular or round depressed crown. While the tree often attains a total height of from 50 to 70 ft. in the forest, in the open it seldom grows so tall, but its crown is more spreading. The trees are said to grow rather abundantly in the dense forests some distance back of the rivers.

The inhabitants of these regions cut the trees down, haul the logs to the rivers and transport them down stream to Maracaibo where they are loaded on steamers for export. The logs which are brought to the markets here are on an average not over 15 in. in diameter, and from 8 to 12 ft. in length. While they are straight, cylindrical, of good size, and produce a relatively small amount of waste as compared with those of the true lignum vitæ, the brokers and dealers familiar with vera have not un-

til recently been very anxious to accept a consignment of the logs, because the material is considered by some wood users as considerably inferior to that of the true kind. Practically all the logs exported from Venezuela come to New York where they are sold generally for from \$10 to \$20 per ton, whereas the genuine lignum vitæ usually brings much more than twice this amount.

Vera is slightly softer than true lignum vitæ and contains a good deal more resin, which oozes out at the ends of the logs in great abundance. The color of vera is nearly similar to that of lignum vitæ and the interlacing fibers render it exceedingly tough and difficult to split. The wavy character of the grain, together with the peculiar coloration of the wood, produces a beautiful figure. The wood is susceptible of a very high polish but on account of the resinous gum which is diffused throughout the heartwood, it seldom retains its smooth, glossy appearance a long time, and for that reason it may not be considered suitable for all purposes for which the true lignum vitæ is now so extensively used.

Its principal uses are for castor wheels and for pulley block sheaves, but it has also been employed satisfactorily for wooden cogs, mortars, hubs of wheels and for practically all work requiring great strength and hardness. It has also been used to a smaller extent for all classes of machinery and for small articles of furniture. It is believed that its uses will soon be multiplied both in this country and in Europe.

Vera possesses great power of resistance to mechanical wear and decay and for this reason it has been used rather extensively for railroad ties in the tropics. This same tree, which grows also in Colombia under the name of polvillo, supplied a good many of the railroad ties which were laid in the original track of the Panama railroad, as it existed in 1885, before being disturbed in any way by canal operations. The greater part of these ties were procured

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from the northern coast of Colombia, and were shipped to Colon from the port of Barranquilla. There are many of these old ties still in the roadbed and they are, generally speaking, in very good condition. There are little, if any, signs of decay, but in a number of cases, especially with the smaller ties, they are badly worn at the rail seat, no tie plates being used on the ties.

Personal

Mr. M. H. Westhoff, architect, Saranac Lake, New York, has opened an additional office in the Stearns Building, Springfield, Mass.

The University of Michigan, during the recent Commencement Exercises, conferred upon Mr. Cass Gilbert of New York City, the honorary degree of Doctor of Laws.

Mr. Clark Wright Evans, architect, announces the removal of his office from 117 West River Street to 905-6 Coal Exchange Building, Wilkes-Barre, Pa.

Messrs. Richard A. Kerns, Jr., and John J. Carroll, Architects, have formed a co-partnership for the practice of their profession, and have opened offices in the Pennegar Building, Coatesville, Pa. They will be glad to receive manufacturers' catalogs and samples.

Mr. Richard F. Wessell, architect, with whom Mr. Carl L. Linde has recently become associated, has removed his offices from 204 E. 15th Street, to the Pittock Block, Portland, Ore., where he will be glad to receive manufacturers' catalogs and samples.

Mr. Louis G. Carlisle, architect, has recently acquired the architectural practice of Mr. H. H. Havis and opened an office for the conduct of same at 806 First National Bank Building, Vicksburg, Miss. He would be pleased to receive manufacturers' samples and catalogs of building materials.

Department of Architecture, University of Southern California, Los Angeles

The University of Southern California, located at Los Angeles, announces the formation of a four years' course in Architecture, leading to the degrees of Bachelor of Science in Architecture.

Detailed statement of courses offered and requirements for admission may be had by addressing the registrar.

Newark (N. J.) Anniversary Memorial Building

The committee in charge of the competition for a design for the proposed Newark (N. J.) Anniversary Memorial Building announces the selection of the following architects to participate in the final competition:

John H. & Wilson C. Ely and Helme & Corbett, associated; Guilbert & Betelle and Donn Barber, associated; Hughes & Backoff and Dennison, Hirons & Hood, associated; William E. & D. J. Lehman and J. H. Freedlander, associated; John T. Simpson and Clarence W. Brazer, associated. The rules of the contest permitted the local men to associate themselves with outside firms, providing the names of associates were mentioned.

The jury will be composed of Francis H. Kimball, John C. Van Pelt and John Wyncoop. Prof. Warren Powers Laird of the University of Pennsylvania is the professional adviser to the committee.

The final program, it is expected, will be ready early in July, and the award, it is hoped, will be made in the early fall of this year.

Washington State Chapter, A. I. A., Regular Meeting, June 7, 1916

The report of the Educational Committee covering the courses along architectural lines in the public schools was read and after some discussion the report was adopted. Mr. Cote recommended that architectural supervision of the schools be changed to craftsman supervision in order

that the very elementary architectural training given in the schools be not confused with the regular architectural course such as the universities would give.

It was recommended that lectures along architectural lines be given in the various public schools if possible.

Book Note

THEATERS AND MOTION PICTURE HOUSES.

A practical treatise on their planning and construction. By Arthur S. Meloy, architect. Full cloth, 120 pp. 7 x 10 in. Price \$3.00.

New York: Architects' Supply and Publishing Co.

While we shall probably always have the spoken drama, and there will always be demand for theaters in which to present it, the moving picture play for the nonce, at least, has usurped the place of the "legitimate."

The large amount of capital invested in moving picture enterprises is the natural result of a widespread and popular demand for this form of entertainment. There has probably been greater activity and a more radical change of architectural and mechanical requirements in theater construction during the past decade than in any other type of building in architectural practice. The make-shift of a converted building as at the outset has grown to pretentious structures devoted entirely to the presentation of film plays. The many complications of lighting and stage machinery back of the proscenium arch are no longer problems to be dealt with except in rare instances. The major problems now are sight lines, the arrangement of seating and of aisles to accommodate a constantly changing audience. Questions of projection angles and the lighting, heating and thorough ventilation of auditoriums are more than ever before the vital things to be considered.

The collation and grouping of these essentials in book form, by Mr. Meloy, an architect who has specialized on recent theater design and construction, forms a volume that will have considerable reference value.

INDUSTRIAL INFORMATION

Hard Wall Plaster

The Empire Gypsum Company, of Rochester, N. Y., manufacturer of hard wall plaster, has issued an attractive brochure, descriptive of its product. Attention is called to the improvement in both methods and materials used in building construction during recent years and to the fact that the experimental stage may now be considered as entirely passed. It is no longer so much a question of the extra cost of a product in the original outlay, but one of durability.

The Building Codes adopted by the Municipalities, throughout the country, reflect this attitude. They are framed with more stringent requirements than formerly, and are enforced more rigidly.

It is stated that hard wall plaster, now so widely used in building, has gypsum in varying degrees as a base, and it may be considered therefore an essential material.

The advantages of hard plaster are said to be less weight, quick setting, ease of application, and harder and firmer walls. The brands of hard wall plaster manufactured by this Company are "Reliance Wood Fiber," and "Empire Neat Cement and Excelsior Sanded."

General directions for the use of these materials are given in the booklet referred to, and photographic reproductions of a number of buildings in which hard wall plaster has been used are shown.

Copy of the brochure, or any desired information, will be furnished upon request.

Sash Balances

The Pullman Mfg. Company, Rochester, N. Y., has recently issued Catalog No. 29, illustrating the Pullman Unit Sash Balances.

Reasons for the adoption of these balances for windows in place of ordinary box frames and sash weights, are stated as follows:

It balances the sash perfectly at all points; it gives more lighting area; it is more economical—replacing the expen-

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sive box frame with a plain plank frame; makes a tighter window; eliminates weights, cord or chain, and pulleys; it saves space by permitting narrower mullions; it requires less inside trim to cover; it is easier to install; it is dependable in any service—apartment house, residence, office, factory or school, and it is practically indestructible.

This balance is put forth as a general solution of window sash problems. It is composed of four members—a housing of pressed steel, a revolving drum, a coil spring of clock-spring steel, and a tape of rustproof steel which connects to the sash.

A number of buildings, belonging to almost every type in which these sash balances have, it is stated, been used, are shown in this catalog, which includes also a blue print, giving detail of window frame required for sash balances, and showing the construction that is recommended.

Copy of catalog may be had by making application.

Steel Frame Greenhouses

The King Construction Company, North Tonawanda, N. Y., has issued Bulletin No. 51, illustrating and describing the King Improved Steel Frame Green Houses. The bulletin, besides illustrating details of this construction, shows a number of views of greenhouses of both large and small size. It is stated in the preface that this company, in addition to building greenhouses of the King type, has the equipment and facilities to build as desired, and will undertake construction of greenhouses of any design preferred, not limiting its work to the patents which it controls.

Copy of this bulletin will be supplied upon request.

Permanent Concrete Roads

The Trussed Concrete Steel Company, Youngstown, Ohio, has recently issued a new handbook on concrete roads. While this is a line of work in which architects do not take as great a part as engineers, yet they do, in connection with the development of estates, parks, etc., have occa-

sion at times to consider the type of road best adapted to particular requirements and also the methods proper to use in its construction.

The book referred to, consisting of 128 pages, is devoted to information concerning, and illustrations of, permanent concrete roads. Brief specifications of concrete highways are given. Diagrams covering templates, bridges, etc., are also included. Of interest in connection with pavement construction are concrete curbs with methods of protecting the edges. Tables giving quantities of materials for concrete mortar and much other miscellaneous data is to be found in this book, which makes it valuable as a work of reference.

To those interested, a copy will be sent upon request.

Molby Boilers

The Molby Boiler Company, Inc., 101 Park Avenue, New York, has issued a new catalog of the Molby Down Draft Boilers, for steam, vapor and hot water heating. It is stated that these are manufactured under the Surrell patents.

The claims of superiority for this boiler include the following: Great economy, ease of operation, simplicity, compactness, durability and low cost. In selecting a boiler it is stated that the following points should be kept in mind: The kind and price of fuel to be used; construction of the boiler, from which may be judged its durability; kind of combustion had in the boiler; are heating surfaces sufficient? Are they largely direct fire surface or flue surface? And what is the action of the fire on those surfaces? What labor is necessary for the operation of the boiler, both as to firing and as to cleaning? How many times does it require attention in twenty-four hours? What is the stack temperature? What kind of grates are used? Is the smoke consumed? The pages of this catalog are devoted to consideration of these various points, illustrations of the Molby Boiler and tables of capacities, ratings, dimensions, etc.

Copy of the catalog may be had by addressing the manufacturer.

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