

THE AMERICAN ARCHITECT

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PROSCENIUM, THE MAJESTIC THEATRE, FORT WORTH, TEXAS

INDIRECT ILLUMINATION FOR CHURCHES AND AUDITORIUMS

By AUGUSTUS D. CURTIS



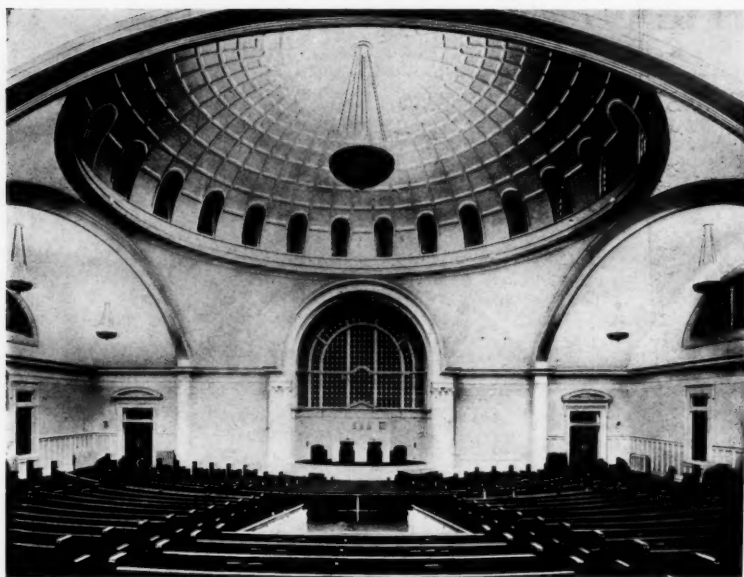
ARCHITECTS have for years realized the shortcomings of the systems commonly in use for lighting interiors. Workers in the lighting field have apparently not kept pace with the advancement in other lines of endeavor. Heretofore "lighting" has accurately expressed the matter. Of very recent years, however, there seems to have been an awakening, as a result of which "illumination" is the word that now describes the work of the advanced practitioner. Many technical schools have added illumination to their curriculum—even

though it be but a few lectures and a small amount of work along this line added to the electrical course. Illuminating engineering societies exist in practically all the larger cities. Many men now print "Illuminating Engineer" on their cards—yes, and most of them are busy—busy at least in keeping track of the many advancements made in the appliances for the handling of light and its proper diffusion.

Books on the subject but recently off the press are obsolete. Those of two years ago scarcely mention indirect illumination, while now this method of lighting in certain localities is so usual as to scarcely excite comment. At the Annual Convention of the Illuminating Engineering Society held in

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EIGHTH CHURCH OF CHRIST, SCIENTIST, CHICAGO, ILL.

MR. LEON E. STANHOPE, ARCHITECT

Chicago, September 25th to 28th, indirect illumination received a large amount of attention.

Installations in many prominent places in that city excited favorable comment. The Eighth Church of Christ, Scientist, recently erected at Michigan Boulevard and 44th Street, Leon E. Stanhope, architect, is thought to be the most beautifully illuminated of any church interior in this country.

The main auditorium consists of the centre rotunda adjoined by four arches, one at each side and two at the rear. The dimension from wall to wall is 92 feet, the central dome being 60 feet in diameter, the side arches 16 feet deep with 60-foot span. The main dome, 50 feet from the floor, is illuminated by one large composition bowl type of fixture containing 20

concentrating type of reflectors with 250-watt lamps. This fixture is 7 feet 6 inches in diameter, weighs 800 pounds and is probably one of the largest lighting fixtures in use. Its size is not apparent, the proportion and decoration being such that it harmonizes perfectly with its surroundings. The impression on one entering the auditorium is so striking as to make this fixture and the lighting effect the feature of the church.

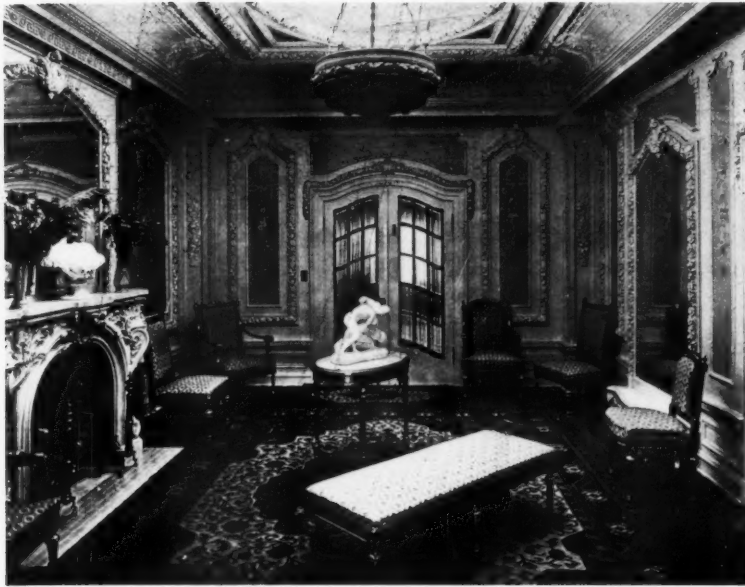
Fixtures of corresponding design smaller in size, three to each arch, containing 100-watt lighting units, illuminate the remainder of the auditorium.

The entire church is lighted by this system, Sunday school room, reading rooms, offices and lobbies. Good effects are obtained at low wattage as ideal ceiling and wall conditions exist for indirect lighting.



THE PLAZA THEATRE. CHICAGO, ILL.

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LADIES' PARLOR, THE MAJESTIC THEATRE, FORT WORTH, TEXAS

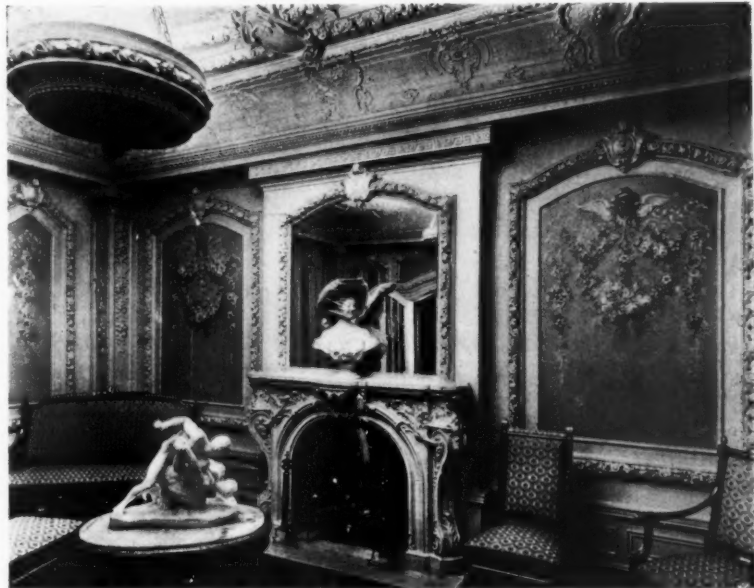
Churches and auditoriums where public gatherings are held have heretofore proved difficult problems for the architect to handle properly with the means at hand.

While it has been generally recognized such interiors should receive careful consideration along the line of rational, comfortable illumination, until recently the appliances for lighting have not been entirely satisfactory. Direct lighting units in range of vision not only are irritating, distracting attention from the forum or stage, but at times are almost hypnotic in their effect. Besides the many self-evident annoying features of exposed direct lighting units one fault of paramount importance to architects was recently concisely stated by Mr. James Knox Taylor, Supervising Architect of the U. S. Government, who said in substance:

"For years architects have been devoting their time and talent to the designing of interiors combining all the beauty of design possible with utility for their particular requirements. After painstaking effort, disappointment frequently results when, on fixtures hung in the center or around the sides of such interiors, direct lighting units are mistakenly placed.

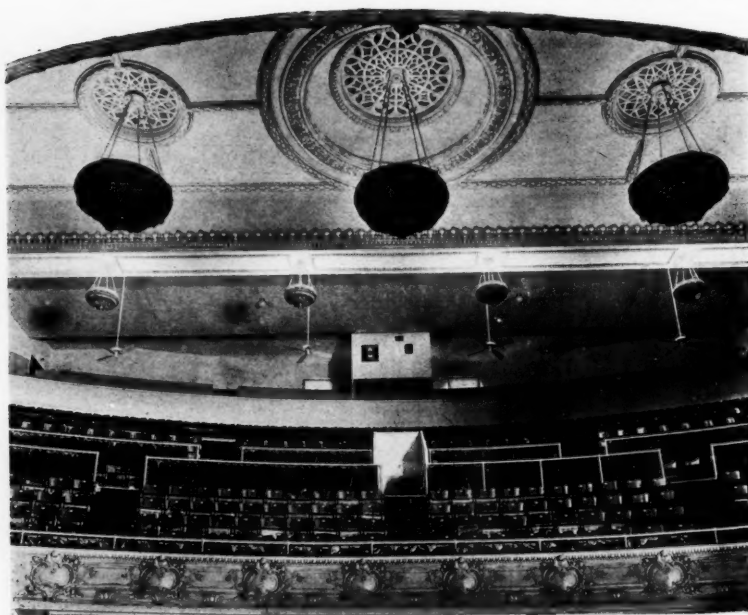
"Lumps of lights—irritating, blinding light sources, that lower the ceiling, shorten the room, destroy the lines, and ruin the effect the architect has striven."

The beauties of indirect illumination for churches and auditoriums, the great eye comfort to be derived from sitting under its soothing influence, must be experienced to be appreciated. It is probably the nearest approach to daylight ever secured by artificial means. It has a softness and rich



LADIES' PARLOR, THE MAJESTIC THEATRE, FORT WORTH, TEXAS

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GALLERY, MAJESTIC THEATRE, FORT WORTH, TEXAS

quality which make it particularly appropriate to places of worship.

The pastor of a New York church in which indirect illumination had been installed states:

"The time will come when an exposed light unit in a house of worship will seem as much out of place as a coarse word loudly spoken."

The North Chicago Hebrew Congregation's new edifice of which Alfred S. Alschuler was architect, has several unique features of indirect and projected illumination. Means of reaching fixtures for cleaning are incorporated in the lighting arrangements of this edifice.

The main auditorium, which is lighted entirely by concealed tungsten units, is 70x88 feet. Its ceiling is divided into a central barrel arch 50 feet from floor to crown, 48 feet wide, and two flat ceilinged panels 20x70 feet each—30-foot ceilings.

The central span is lighted by 26 100-watt lamps enclosed in Helmet reflectors concealed behind the two girders.

The side panels are indirectly lighted by three indirect lighting fixtures to each panel. Each bowl type of fixture contains four 100-watt tungsten lamps contained in powerful reflectors designed especially for such use.

The outsides of the bowls are tinted ivory color with gold trimmings to harmonize with the interior decorative treatment of ivory for the ceiling and dark cream for the sidewalls.

A total of 7,600 watts is used to illuminate this area of 6,200 feet.

Besides the necessity of reflectors of correct design for the required purpose, those of great intensity are of course necessary. To secure reflected light of sufficient intensity on the working plans after allowing for the necessary absorption in the ceiling, it stands to

reason indirect illumination would not be a success unless the first reflection from the lighting unit is made with little loss. Thus more modern and more scientifically designed reflectors seem necessary.

As to the cost of lighting in this way by the use of proper appliances, generally speaking, it is little or no more than by direct lighting units. While this particular case shows a considerable increase of wattage over the amount ordinarily used for such interiors, of the numerous churches and auditoriums lighted by indirect methods, it is safe to say 0.90 watt per square foot would be the average. The cost of installation and operation is found to be approximately the same as that of any direct lighting system. In the wiring layout for many exteriors the expense is oftentimes reduced. Mr. Christy, City Architect of New Orleans, in planning the Boys' High School, is stated to have made a very substantial saving in wiring for indirect lighting (less outlets being required) from the amount it was figured it would cost for direct lighting, this being based on the cost in that city of about \$5.00 per outlet. In other words as originally planned 650 outlets for direct lighting against 165 outlets required for the indirect scheme used made the saving mentioned. This practically

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purchased the indirect lighting fixtures, which were of a design to harmonize with the interior.

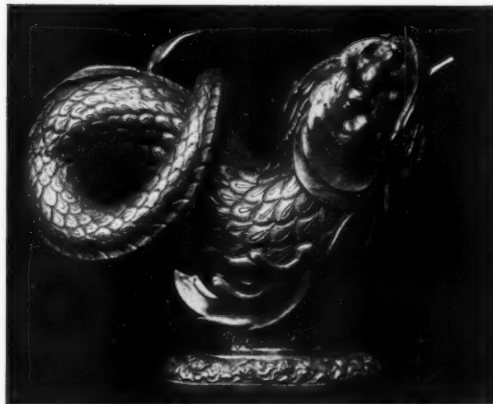
Not only for the larger interiors for public use does this method of lighting seem to meet with favor; but as well for hotel and other lobbies, restaurants, banks and counting rooms.

Among the most interesting recent installations in the East are the John Hay Memorial Library at Providence, R. I., The Whitehall Club, New York City, and the entire new building of the Curtis Publishing Co., Philadelphia. There has been less of this lighting to be found in stores heretofore than perhaps in any other class of interiors. One chain of stores company has adopted indirect lighting as a feature in its establishments, owing to the great advertising feature. It is reported that this system has been specified for a department store being erected in Boston. This will be the first large mercantile establishment of its kind using indirect lighting methods.

The disagreeable conditions of exposed

direct lighting sources have for a long time been recognized by theatrical men and architects employed on theatre work. As shown by the handling of stage lighting, men in that business realize perhaps more than any others that where there are direct lighting units in range of vision the seeing effect is greatly diminished and in consequence an exposed light is seldom seen on the stage. Exposed lights anywhere in the auditorium are nearly as objectionable. The illustration of the interior of Plaza Theatre, Chicago, whose lighting conditions have been greatly improved since the installation of indirect lighting, show the elimination particularly of the disagreeable side-lights so commonly experienced in theatre interiors.

The Pabst Theatre, Milwaukee; The Majestic Theatre, Fort Worth, Tex.; The Blackstone, Orpheum and Auditorium (lobby), Chicago, and The Orpheum Theatres of Duluth, Minn., and Peoria, Ill., are among interiors of this character using indirect lighting.



THE IVY QUESTION

IT is stated that the Society of Antiquaries have passed the following resolution unanimously:—"That, in the opinion of the Society of Antiquaries, any proposal to restore the ruined church of Overstrand is undesirable, and would result in the disappearance of much of the evidence of antiquity which still remains. A preferable course would be to secure the ruins as far as possible from the ravages of ivy and weather, and not to attempt to graft new work on to them." Evidently the Society is distrustful of ivy, and probably this insinuation against it will call forth the indignant protests of those lovers of the picturesque who esteem ivy as one of their chief joys. In their eyes, ivy is sacred; and because it is consecrated by painter and poet, any allegation against its propriety, or any assertion of its destructiveness to buildings, is always hotly challenged by those who have a sentimental regard for it. Probably they form a very compact majority, to whose emotionalism it were vain to oppose reason. Nevertheless, we believe that the number of those who prefer to admire a building for its own integral beauty rather than to see its features obliterated by an overgrowth which they believe will in time sap its strength is steadily increasing; and these purists very reasonably ask, "What is the use of building beautifully if the work is to be covered up by an overgrowth of some creeping plant? Why go to the trouble and expense of carefully erecting fine stonework when almost any sort of rough walling is good enough to carry a creeper or climber?" In fact, we have known buildings in which this theory has received practical application. Between the rival schools of extremists for and against ivy there has arisen a third or half-way house party, who like to see ivy, but not too much of it. It should, they say, be kept thin, and should not be allowed to go beyond a certain height, so that, at all events, the lines of the building will not be obliterated, while beyond the prescribed limits of the growth the material and texture of the walling will be sufficiently revealed. This middle school meets with the usual fate of mediators, and is heartily abused by both the others. We have al-

ways thought that the vexed question as to whether or not ivy really destroys masonry or brickwork should be made the subject of exhaustive enquiry. If it were indubitably found to injure them to the extent often alleged, sentimentality could hardly survive the shock of the proof; and if, on the other hand, its innocence were established, the fact could not affect the objection of those who feel that it is in any case a disfigurement.—*The Architects' & Builders' Journal*.

THE WIDTH OF ROADS

M^R. RAYMOND UNWIN, F.R.I. B.A., in his fourth lecture on town-planning at the Birmingham University, dealt with the question of roads and the relation of the frontage of the individual building to the total length of road usually required per house, allowing for the necessary waste at street corners, road junctions, public buildings, minor open spaces. He said that the amount of road per house required for the development of an estate on proper lines to cover all allowances would usually be from fifteen feet to twenty feet, that is from thirty feet to forty feet of individual frontage on one side of the road. It is obvious that even taking the lower figure, when laying out land for small cottages, the cost of the road must necessarily bear a very high proportion to the cost of the cottage, and that in order to give adequate frontage for cottages to be properly designed without unhealthy projecting backs it was very important that economy in the cost of roads should be attained.

In the past in this country the width of roadway had been the most ready means within the power of municipalities for regulating the amount of open space to be left in front of the building, and wide roads had been required partly on this account. Under the Town Planning Act, however, other means were provided for restricting the amount of building which might be put upon an acre of ground, and therefore it would become possible to grade the widths of the roads according to the purpose which they served. It is just as important to

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ILLUSTRATIONS:—

SOME RECENT EXAMPLES OF THE WORK OF
WILLIAM ADAMS, ARCHITECT.

FRONTISPIECE:—

MAIN ENTRANCE DETAIL, CHURCH OF THE CAR-
THUSIAN MONASTERY, PAVIA, ITALY.

THE NATIONAL ACADEMY OF DESIGN

ALTHOUGH it is not difficult to understand that there may be causes for a certain degree of dissatisfaction, it seems regrettable that any faction or association of artists should undertake to found a society in New York in opposition to the National Academy of Design. It is conceivable that under certain conditions a rival organization would be justified and its establishment result in benefit to art in this city, but it would not seem that such conditions exist at the present time. Apparently the chief cause for dissatisfaction arises from the fact that there is no building in New York, available for such purpose, that provides adequate space for all the worthy works of art to be properly displayed at annual or semi-annual exhibitions. How this condition will be

remedied by the organization of a rival society is not apparent. The National Academy of Design now has in hand a scheme that promises to result in a building of adequate size and design to provide for the needs of New York artists for years to come and it would seem that greater good would follow concentrated action looking to the early fulfillment of the Academy's plans than from any insurgent movement.

Perhaps until the completion of a new building as proposed by the Academy, it would do well to revise the rules which have governed exhibitions by the Academy heretofore and suspend the one providing for "exemptions," which seems to be responsible for the very large number of paintings for the hanging of which, space is not available. If all works submitted were required to pass the Jury, standards could be fixed that would result in limiting the accepted paintings to the space available.

The situation is one of which New York and New York artists cannot be proud. Many smaller cities of this country afford greater opportunities for exhibitions of paintings and art objects than New York. The time has come when every effort should be made by artists and patrons of art alike to secure a building, the need of which has probably proven a greater handicap to the production and development of art in the metropolis than any other single factor. It is a time for unity of purpose and action, not for dissension and strife. To artists more deeply interested in the future of their art than in the accomplishment of personal ends this fact must be apparent.

THE PENNSYLVANIA CAPITOL AGAIN

FORMER Governor Pennypacker has issued a most extraordinary statement to the people of Pennsylvania, which he calls "The Desecration and Profanation of the Pennsylvania Capitol." Starting with the text "Cursed be he that maketh the blind to wander out of the way," he comes out squarely in defense of the convicted Capitol Commission and architect, and excuses the colossal cost of the building by lavish praise of its artistic and structural excellence and the statement that it was paid for without an increase in the tax rate

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or any serious impairment of the treasury surplus. Unfortunately for this argument, it is generally conceded by those of "taste and experience" that the limits of architectural mediocrity in modern public work have been reached in this building, in spite of the Governor's statement that "The weight of the dome is 52,000,000 pounds." The excellence of the work of "Abbey and Violet Oakley and the tile floor of Mercer" is fully recognized, but the tasteless placing of some of this work and the brutal and vulgar detail of the building generally are not in dispute among competent judges. In the matter of cost the Governor makes comparisons with other buildings, most of which have been notoriously expensive, and says, "You may at various times have paid too much for a ton of coal and it may even have been short in weight, but I take it you have never understood that you were in consequence guilty of a crime." To say nothing of the boot-blackening stand, which will no doubt go down in history, or of the gigantic and innumerable lead-filled light fixtures, at \$5.00 per pound, there is considerable difference between an overcharge

on a ton of coal and paying more than \$3,500 each for fireplace facings that can probably be duplicated anywhere for \$25.

The Governor avers that the Capitol convictions were due to public clamor worked up for political effect, and that people were ready to believe any charges against those responsible for the Capitol building, but to the impartial reader who is willing to inform himself of the circumstances, the conviction is inevitable that, at least as far as the Capitol is concerned, the Supreme Court of Pennsylvania has not erred, Mr. Pennypacker to the contrary notwithstanding. Regarding Sanderson, the contractor for furnishings, the ex-Governor states: "I knew that he had successfully furnished the county courthouse in Camden." In reply to this positive statement, those in charge of the erection and furnishing of the Camden County Courthouse deny absolutely that Sanderson had anything whatever to do with that building, and declare that he did not supply directly or indirectly an article of furniture in it. Is it any wonder that one cannot take Mr. Pennypacker seriously?

THE WIDTH OF ROADS

(Continued from page 30)

secure greater width for some of the main roads as it is to secure less width and less costly construction for minor roads which serve no purpose but to give access to a few cottages.

A COMMENDABLE EXCEPTION

In strong contrast with the usual unintelligent and often grossly inaccurate comment on architecture and allied subjects that finds its way into the popular or even semi-technical press, is an editorial paragraph printed in a recent issue of *Collier's*. In it the writer not only displays an accurate knowledge of the subject discussed, but also a keen appreciation of those forms in architecture that are the foundation and the essence of the art. Journalism of this kind is what the country needs—We read:

In one of the catalogues of the Chicago Architectural Club some years ago appeared an interesting article on the

art and craft of the machine, in which the author, recognizing the harm that the machine had done to art so far, nevertheless predicted for it a future higher artistically than the world has yet seen. The riddle of the machine, he held, must be solved if art is to live. The machine is removing drudgery from the earth and increasing the margin of leisure and strength. It is the universal educator. Some of those who see in it the inspiration of coming art are sometimes severe about the architecture which imitates the past. We ourselves, for instance, are strong admirers of the Marshall Field wholesale building in Chicago and the Pennsylvania Terminal in New York, but we can sympathize nevertheless with those architects, especially enthusiastic perhaps in the Middle West, who feel that architecture will not come into her own as long as it contains any large amount of the imitation of one material in terms of another; as long as granite blocks lean upon an inner skeleton of steel. The old structural necessity is a necessity no longer, because the machine is now doing what the hand then did. There is every reason for enthusiastic interest and confidence in the art which we shall work out when we have thoroughly and sympathetically understood the machine.

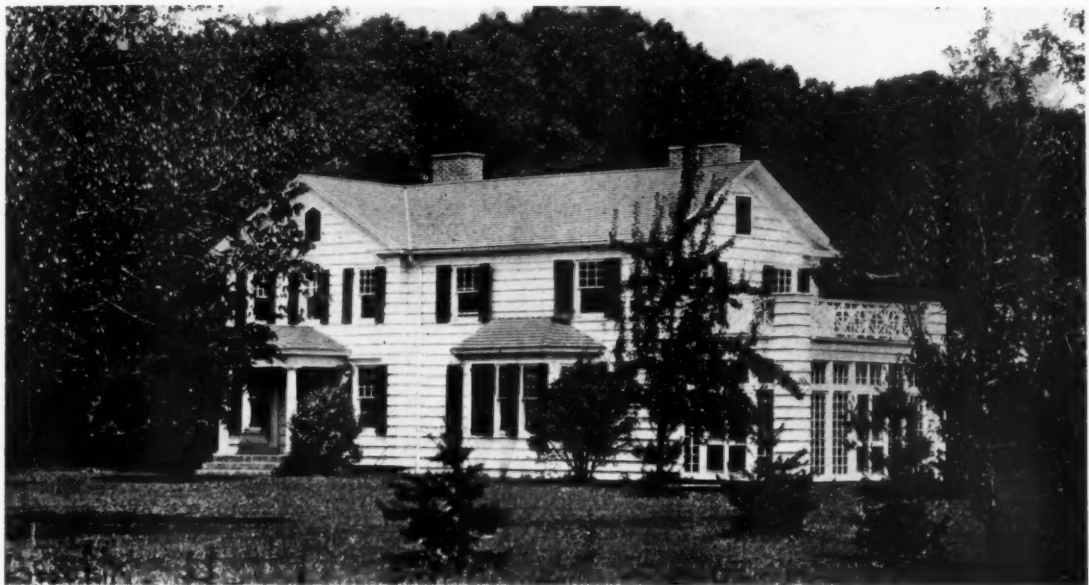
VIOULET-LE-DUC, declared that the locomotive had its peculiar physiognomy, not from caprice but from necessity.

Some say it is but an ugly machine. But why ugly? Does it not have the true expression of brutal energy?

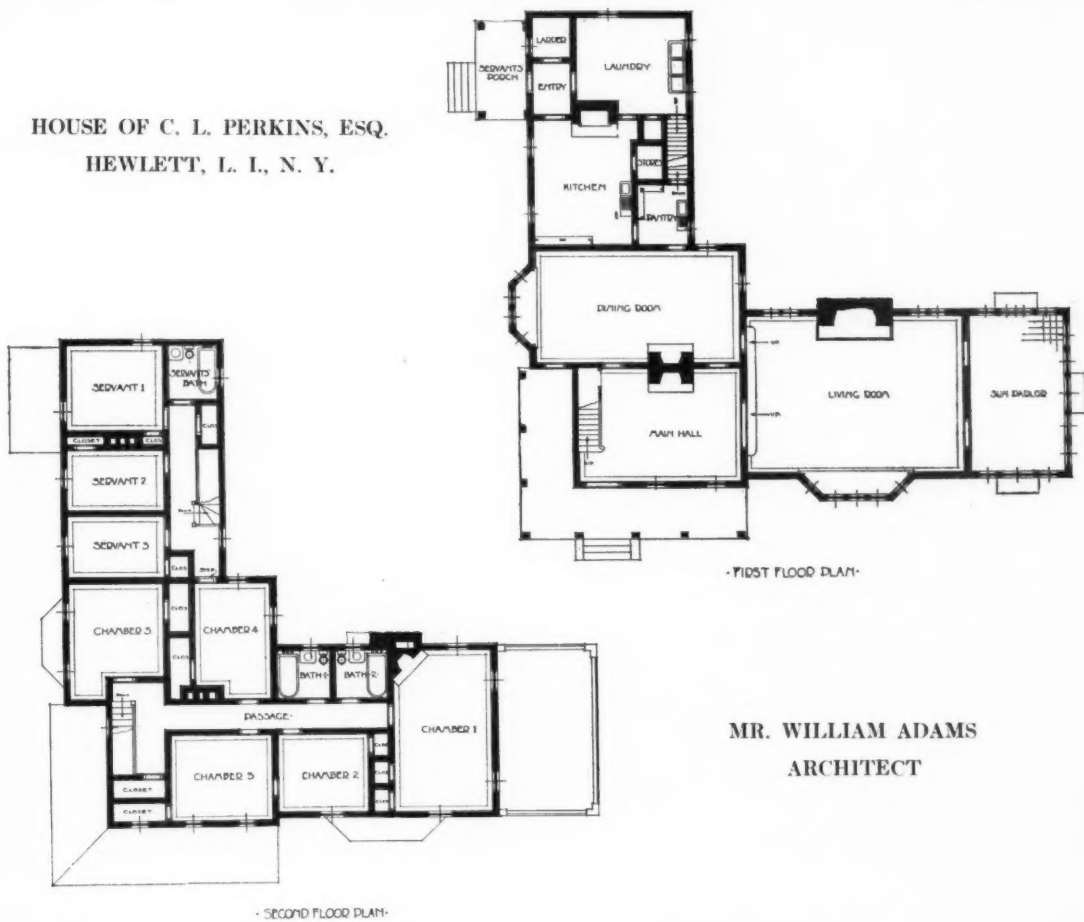


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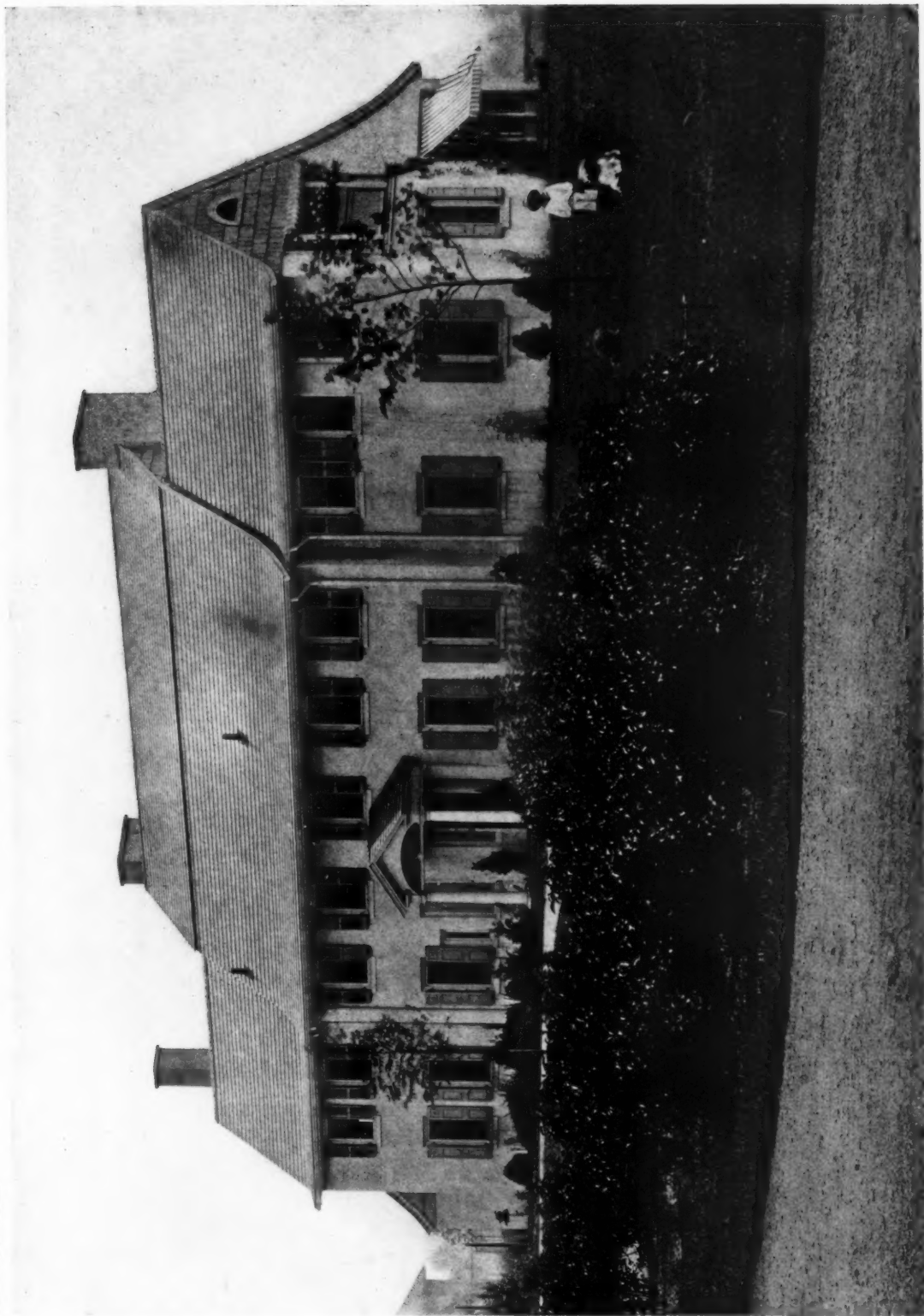




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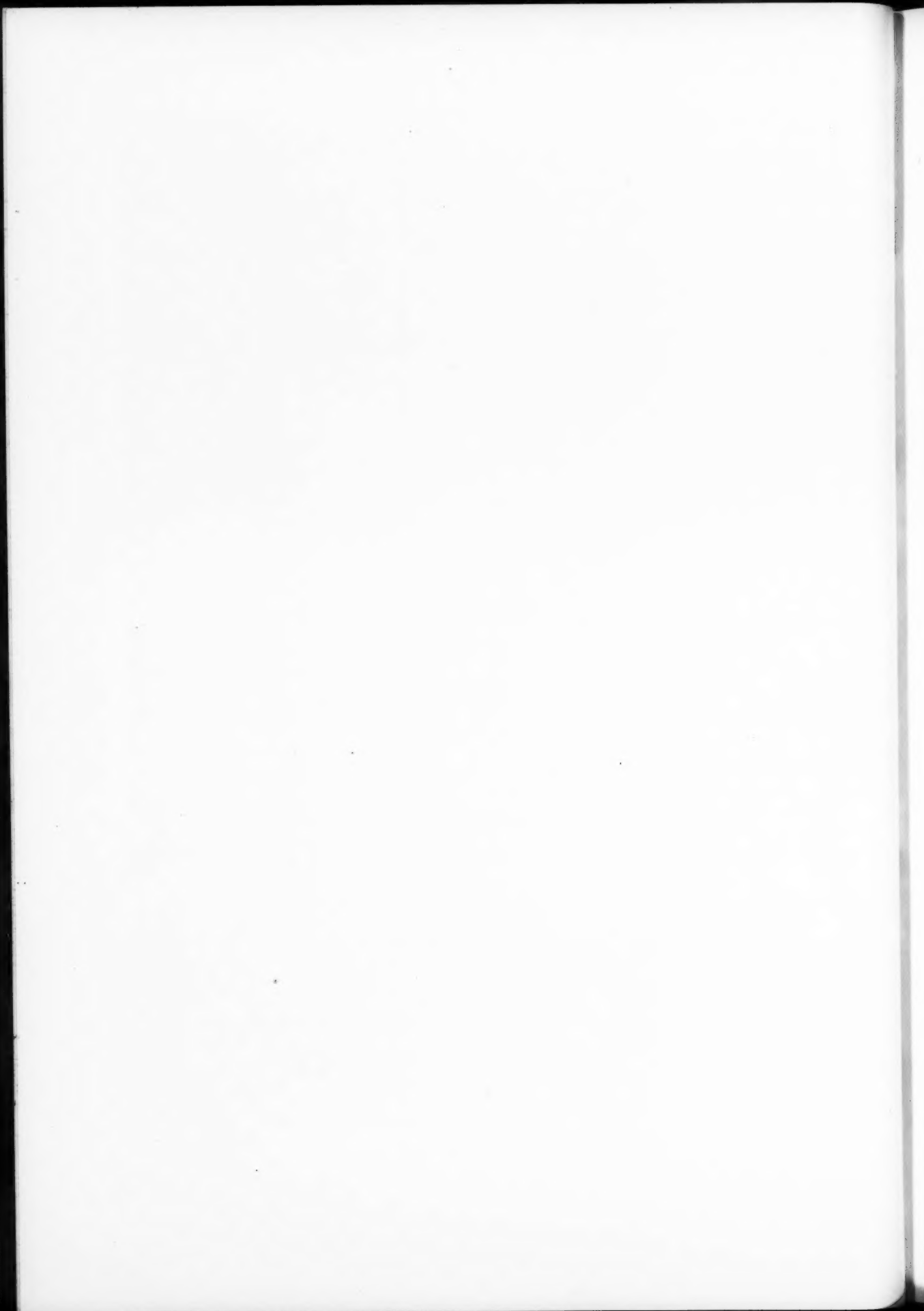


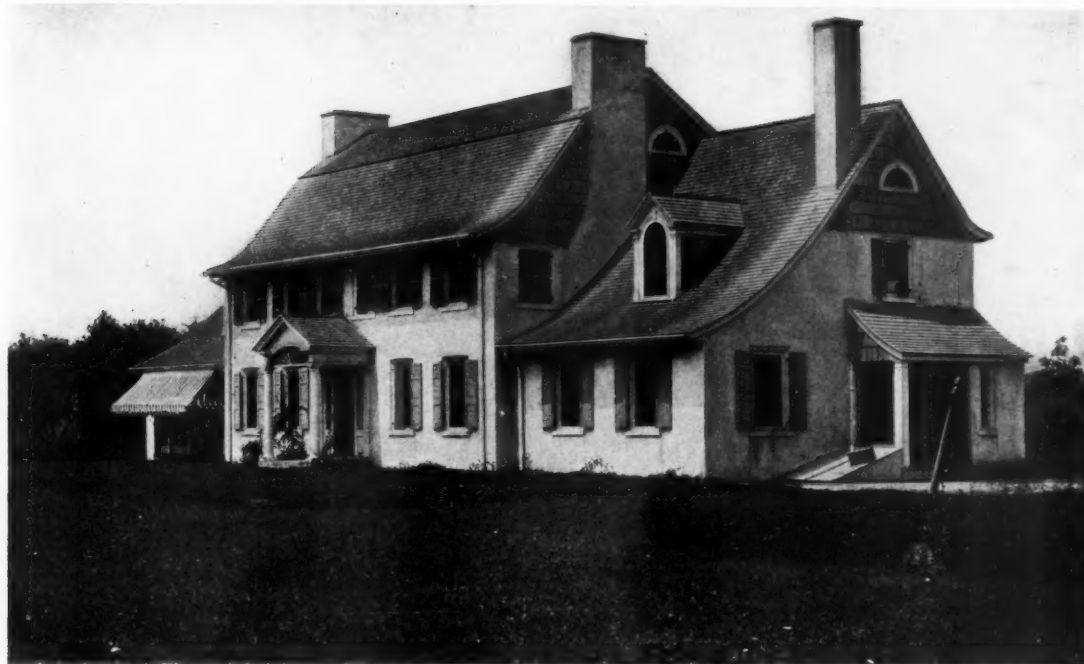
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ARCHITECT



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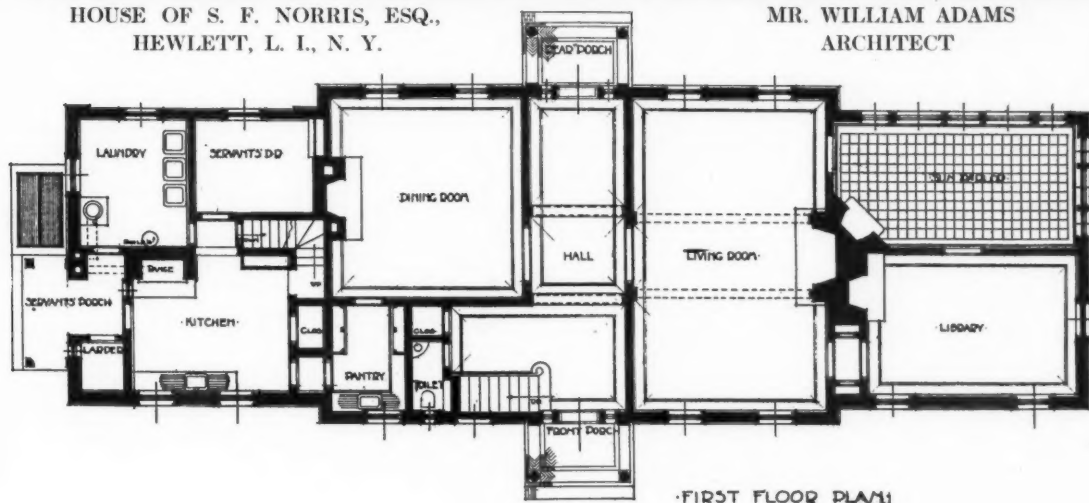
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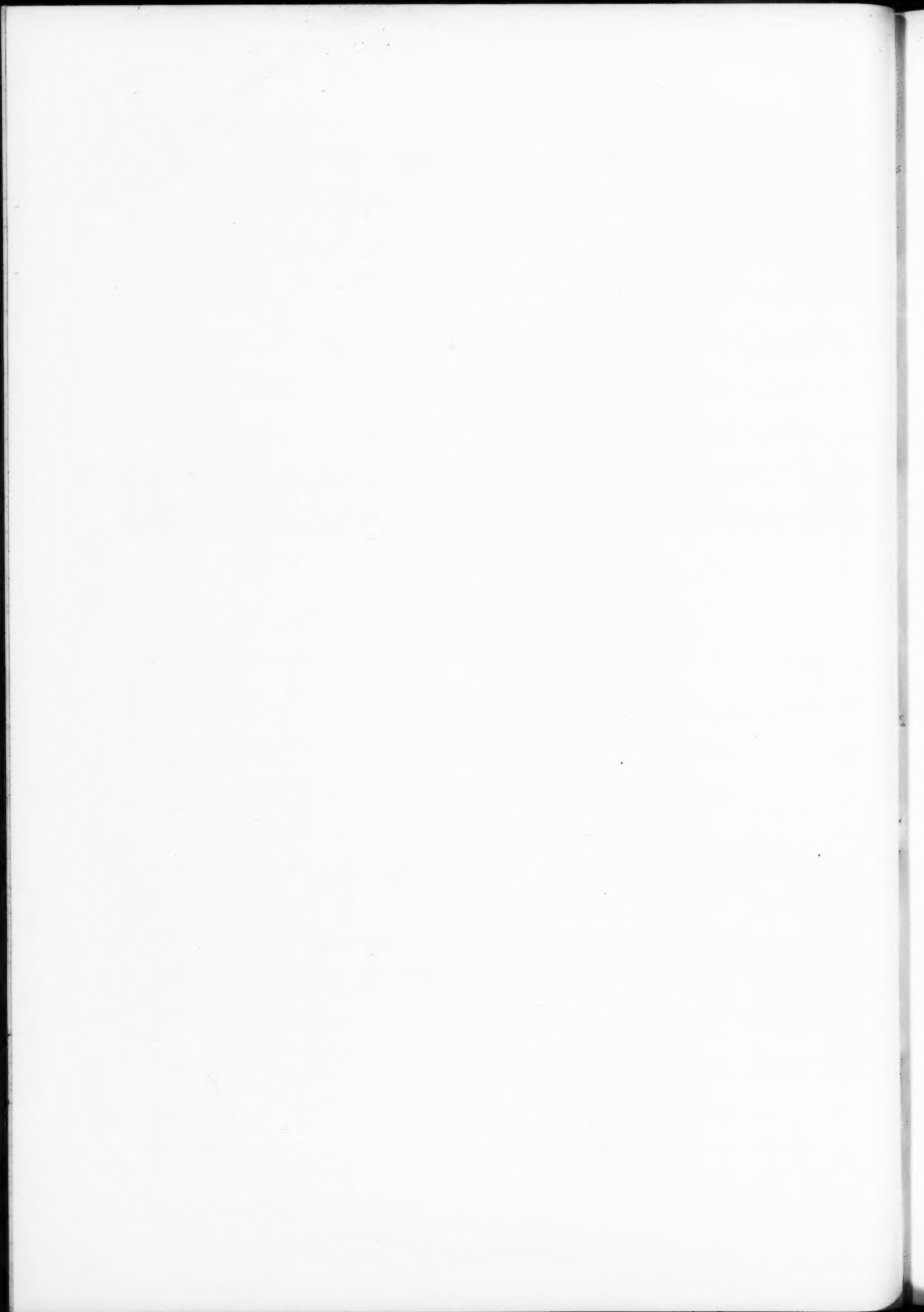


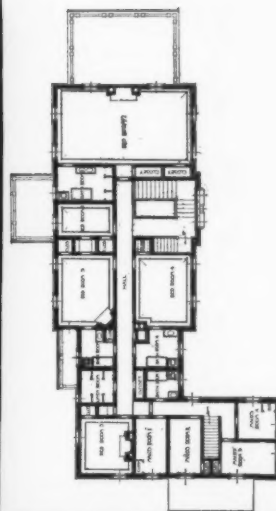
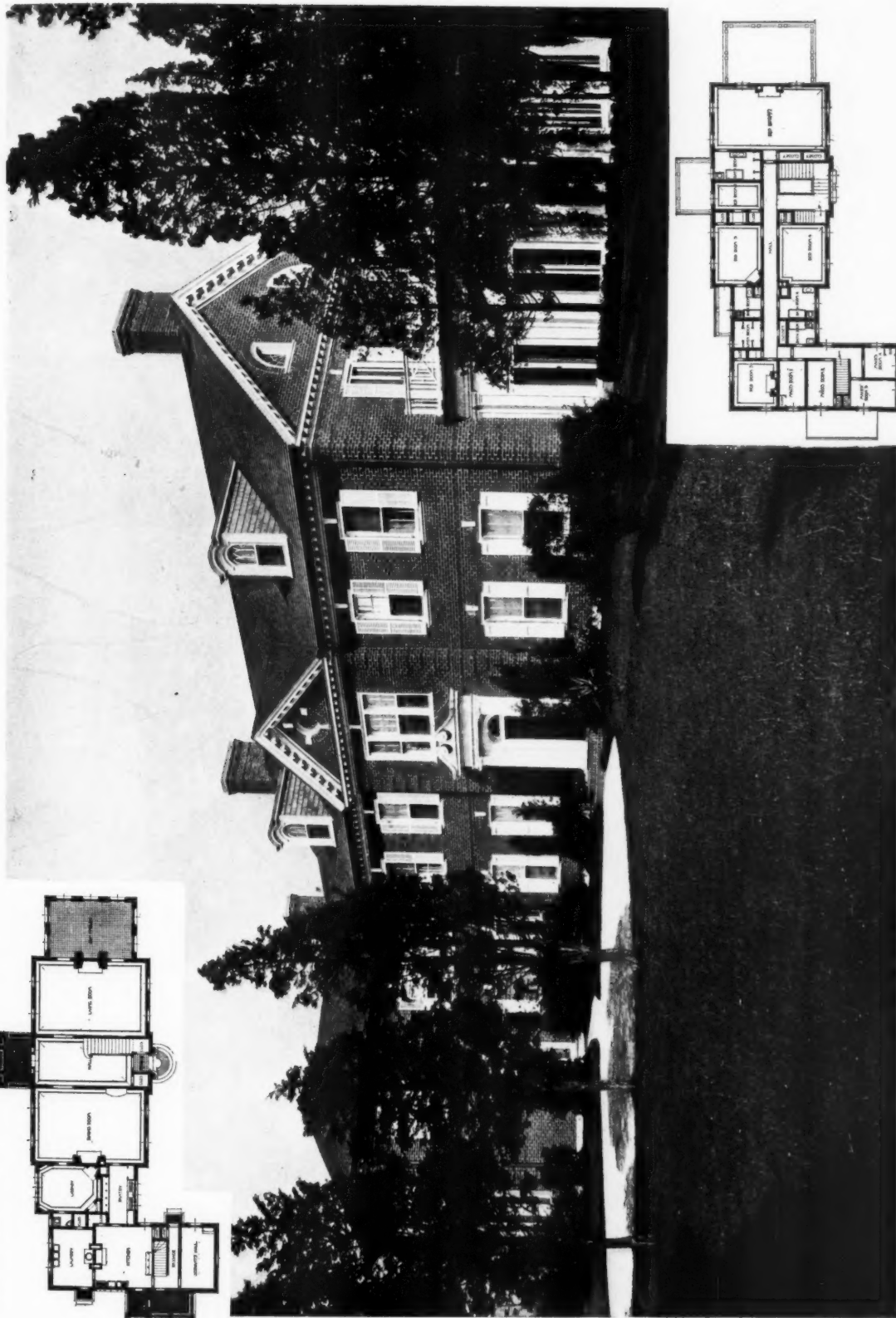
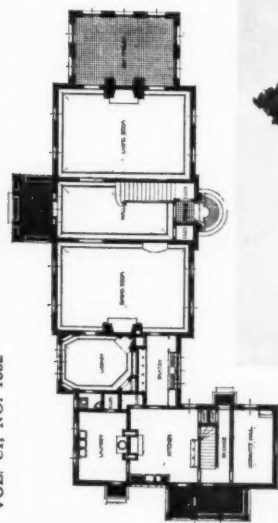


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DETAIL OF A PILASTER (EARLY RENAISSANCE) IN THE CHURCH OF THE CARTHUSIAN MONASTERY, PAVIA, ITALY