

THE AMERICAN ARCHITECT

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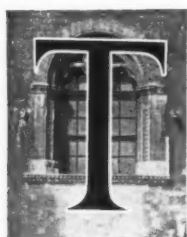
NEW YORK CITY'S TERRA COTTA LINE

More than fifty per cent. of the visible building material is Architectural Terra Cotta. When the Municipal and Woolworth buildings are completed, the proportion will be largely increased.

ARCHITECTURAL TERRA COTTA CONSTRUCTION*

By EDWARD H. PUTNAM

PART I.



THE advance of architectural terra cotta during the past thirty years has been steady, consistent, normal and eminently "safe." Of late years it has developed so remarkably in architectural availability, however, that it has forced itself

into unusual notice in the building field. The fact that architectural terra cotta was specified for fifty-two stories of the mammoth Woolworth building may perhaps be accepted as an indication of what may be expected in its future development.

And yet the growth of terra cotta has been so unobtrusive and unheralded until very recently that the "general public" and possibly even a considerable number of architects and builders know less about it than would be helpful to them. Moreover, many architects who have used terra cotta widely are not entirely familiar with

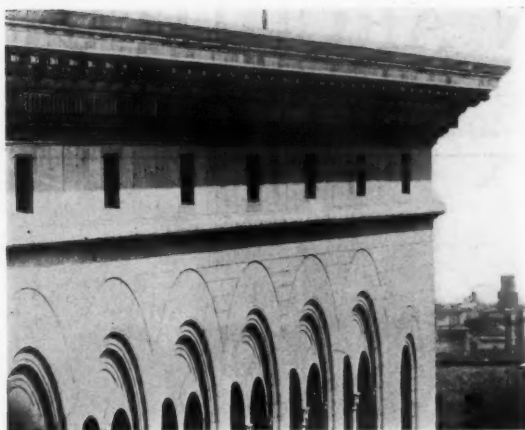
the properties which necessitate certain individual forms of construction, despite the fact that terra cotta is among the most adaptable and versatile building materials available.

At the present time all the better terra cotta manufacturers maintain complete construction departments where the architects' drawings are redrawn to terra cotta shrinkage scale and the construction drawings prepared, showing the exact size and location of each piece and its attachment to the frame. Consequently, the architect's work on a terra cotta contract may be reduced to a minimum if he will place the responsibility upon the manufacturer. Difficulty arises when the architect, who of course passes upon the drawings, insists upon some apparently minute change, which may involve an inadvisable form of construction. It is with the idea of eliminating this trouble that this series of articles has been prepared from the point of view of the manufacturer.

To this end, it is necessary that the architect should appreciate the physical

*We are indebted to the Atlantic Terra Cotta Company for the illustrations accompanying this series of articles.

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CORNICE OF THE WANAMAKER BUILDING
PHILADELPHIA, PA.

D. H. BURNHAM & CO., ARCHITECTS

Gray Terra Cotta matching the limestone used for the façade.

limitations of architectural terra cotta. These are:—Slight variation in the shrinkage the material undergoes in the course of manu-

facture; the impossibility of making pieces beyond a certain size and a proportionate relation of dimensions; the slight variation of tone to which some colors are liable.

The shrinkage is more consistent than would naturally be supposed in view of the fact that terra cotta is burned for two weeks at a temperature that at the apex closely approximates 2300 degrees Fahrenheit; it is almost exactly one inch to the foot. Slight variation is due to thermal variations in the kiln, and, in less degree, to the size and shape of the piece. The manufacturers of the highest grades of terra cotta take care of the variation to a great extent by making the pieces larger than necessary and grinding to exact size by machinery, and, where this is impossible, by making the construction adjustable to some degree. Adjustability is obtained by allowing a little latitude in the position of the anchors, etc.; and, if bolting in an exact position is necessary at one end of a hanger, by allowing it to be

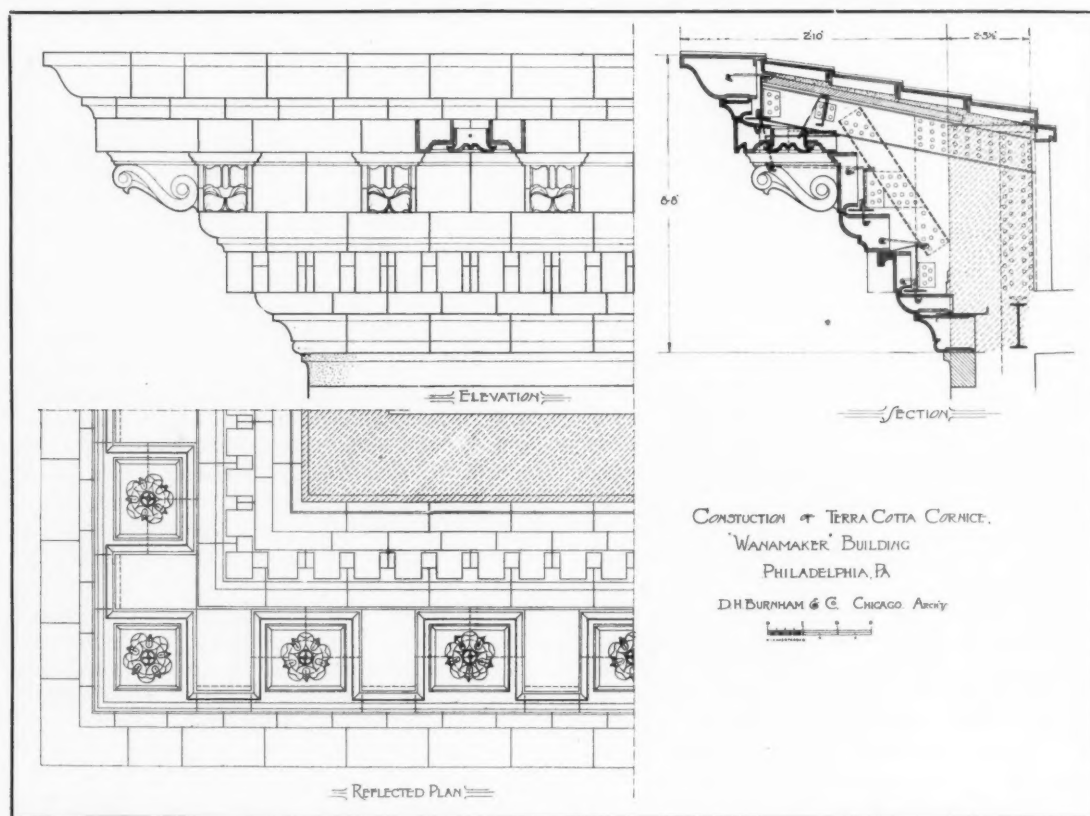


PLATE 1

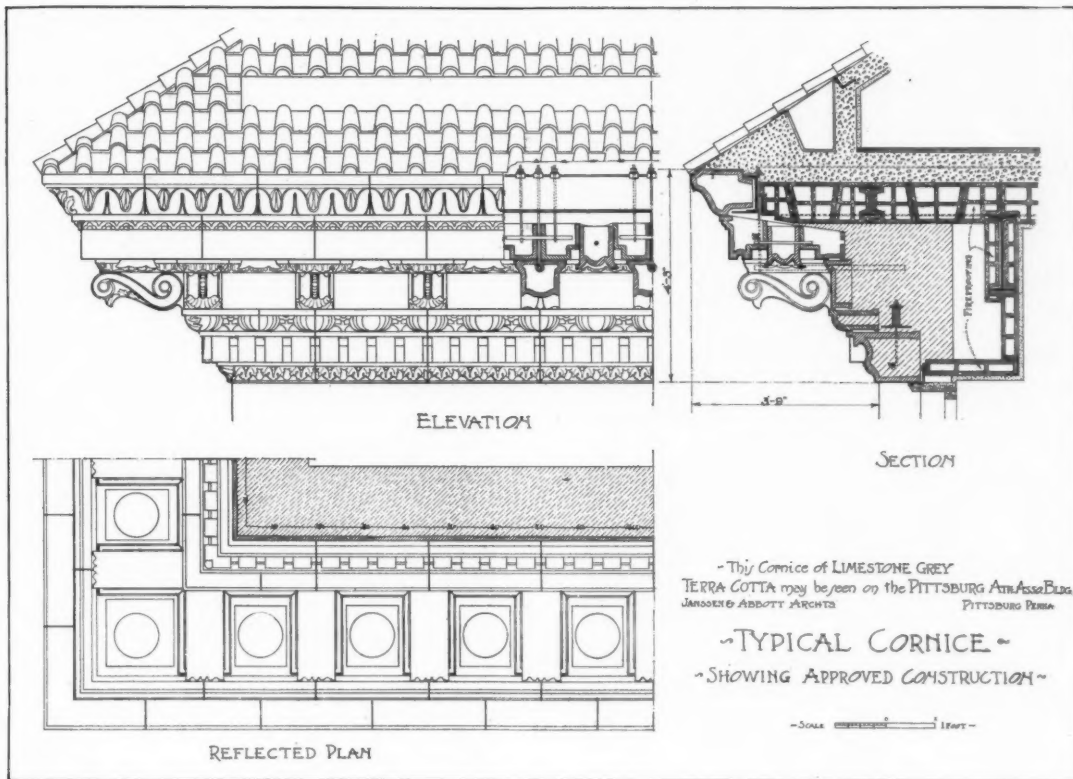


PLATE 2

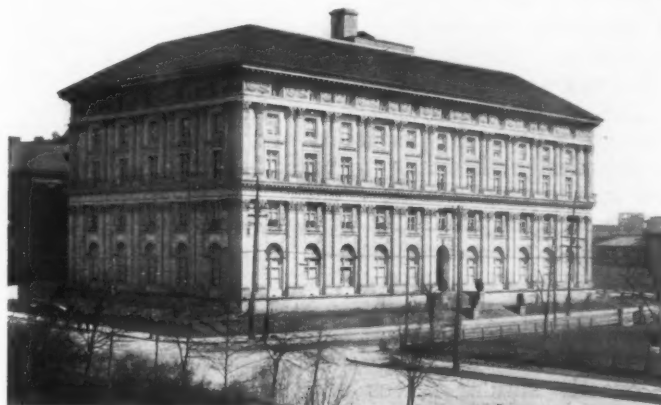
fastened by bending or clinching at the other end.

In plain ashlar work where accurate alignment is necessary pieces not exceeding two feet in any one dimension for the rusticated material, and one and a half feet for the flush surface, will be found most satisfactory. In some forms of ornamental work the pieces may be made quite large, although by making the joints follow the ornament they can be hidden and the desired monolithic effect obtained with small pieces.

The color variation, also caused by temperature variation, is generally negligible. In the building it is not apparent in detail, and it gives life to the façade. It is seldom as distinct as the variation found in natural.

To offset these limitations

there are many physical advantages possessed in combination by no other material, and in some cases peculiar to architectural terra cotta alone.

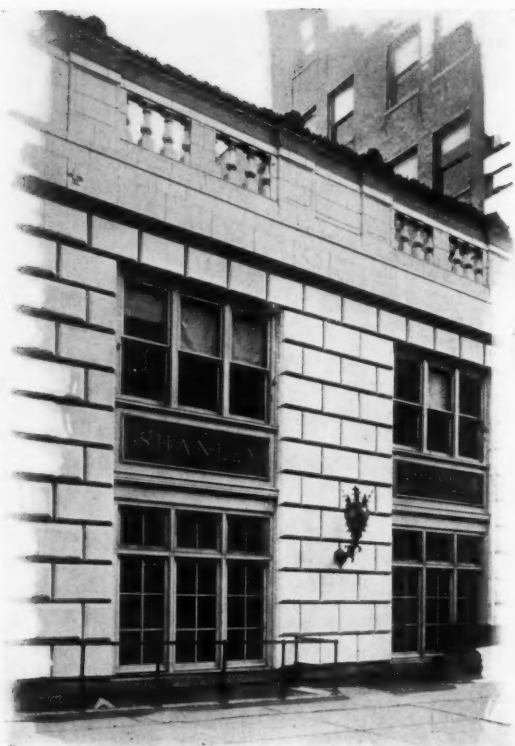


PITTSBURGH ATHLETIC ASSOCIATION

JANSSEN & ABBOTT, ARCHITECTS

Gray Terra Cotta with the exception of the shafts of the pilasters and engaged columns, which are made of Indiana Limestone.

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SHANLEY'S RESTAURANT, NEW YORK

MR. CHARLES A. PLATT, ARCHITECT

An example of the effective use of large pieces of rusticated ashlar. Vertical and horizontal joints hidden in the rustication. White matt Terra Cotta.

Among the more practical of these advantages are the facts that terra cotta is absolutely fireproof, permanently durable, impervious or so slightly pervious that it is unimpaired by weather, and able to bear any necessary crushing strain when properly constructed.

The artistic qualities of architectural terra cotta lie in the possibility of modeling in any design, from figure work in heroic size to the most simple architectural motive, and the possibility of treatment in solid color or the most varied polychrome.

The economy of terra cotta is due to its comparatively light weight—permitting a somewhat lighter form of frame construction—and the fact that a large number of exactly similar pieces can be pressed from one mould. The saving in the case of intricate modeling will be readily appreciated. The light weight of terra cotta permits low freight rates, and the fireproof

quality frequently reduces the cost of insurance.

There can be but a few hard and fast laws in terra cotta construction. The very fact that every piece is designed and manufactured for the building in which it is to



THE LIBERTY TOWER, NEW YORK

MR. HENRY IVES COBB, ARCHITECT

A typical modern skyscraper. Cream matt Terra Cotta from sidewalk to roof.

be used (and no two buildings are exactly alike) precludes any such possibility.

The Pittsburgh Athletic Association illustrates the general method adopted in the bonding and anchoring of a moderately small cornice (Plate 2). In this case the structural steel beams are used for the main support of the entire member and sustain the hangers, which in turn sustain the pipes. The adjustability of the anchors simplifies the construction materially by taking care of any slight unevenness that might occur (as mentioned above). The dowel and pin construction of the rosettes corresponds with the most approved method. Formerly, the rosettes were not made independently and in case of faulty workmanship or careless handling were apt to become detached. The present method is absolutely safe.

The cornice of the Wanamaker building, in Philadelphia, (Plate 1), presented quite a different problem on account of its size.

The plate shows shelf supports formed by angle irons bolted to channel irons set parallel with the face of the building. These have separators to allow space for the hangers and if any inaccuracies occur in their position the horizontal joints in the terra cotta may be increased or decreased in size to correct such inaccuracies. The steel supports are strong enough to carry all the weight imposed, and bolted so that all parts are rigid, but the parts are placed to give sufficient opportunity for adjustment to inaccuracies which may occur in the exact measurements of either the iron or the terra cotta. The terra cotta is firmly anchored to the steel, and all the joints are carefully cemented to prevent the entrance of water. The space behind is left open to the wall line, for it is not necessary to fill with masonry or concrete when there is no imposed weight, and the open air space insures the evaporation of any moisture.

GROOTE SCHUUR, THE RESIDENCE OF THE LATE CECIL RHODES

THE accompanying description and illustrations of Groote Schuur, the residence of the late Cecil Rhodes, are reprinted in part from *The Architectural Review* of London.

Groote Schuur is situated on the side of Table Mountain, at Rondebosch, about four miles from Cape Town.

The original house, together with the beautiful estate, was acquired by Mr. Rhodes shortly after he became Prime Minister of Cape Colony. Its name signifies "Great Barn" or "Granary," the building having been a grain depot for the colony and the ships on their journey to the East.

The old granary had in the early days been converted into a house, but this had been modernized when the old thatched roof was burned in a bush fire, so that much of its original character had been lost at the time Mr. Rhodes acquired it.

Mr. Herbert Baker was employed to restore it, this work having been carried out gradually from 1893 to 1895. Later, in

1897, the building was almost wholly destroyed by fire, but was rebuilt and restored very much upon the old lines.

The house is set in the midst of charming gardens, to which the public have unrestricted access, as they also have to every part of the estate, which includes some of the most beautiful spots upon the mountain-side, many miles in extent.

The thick brick walls are plastered and whitewashed within and without like the Colonial Dutch houses. The ceilings under the main roof are covered in concrete.

The somewhat peculiar plan is partly due to the retention of the old foundations and partly to an arrangement by which the windows of the principal rooms obtain an uninterrupted view of the surrounding scenery, in accordance with the ideas and wishes of the owner, to whom the mountain and the old oak trees were of much more importance than any considerations of personal comfort.

The woodwork throughout, both decora-

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GROOTE SCHUUR, RONDEBOSCH, CAPE TOWN: VIEW FROM GROUND ABOVE HOUSE

HERBERT BAKER, F.R.I.B.A., ARCHITECT

tively and constructionally, is of teak, and the floors are supported by massive beams. The staircase is also constructed out of solid teak blocks built into the walls. The rooms generally are finished in whitewash, with the exception of the main living rooms, which are panelled up to the ceiling. Java teak was used in the old Colonial houses at the Cape. Employed with white plaster, and kept away from the grey or yellow oak, teak is a very beautiful wood, and is especially appropriate for wide panelling. There was no suitable South African wood available for general building, or it would have been used.

Two thatched roofs having been burnt off, prudence demanded a tiled roof. A specially thick rough-textured hand-made English tile was used.

Nearly all the metalwork, including the bronze railing to the cornice of the stoeps, was made by an artisan in Cape Town.

The house is rich with old brasswork, glass and Oriental china—such as were the household utensils of the old Colonists, and these things are largely used for their original purpose at the present day.

Cecil Rhodes's ideas in architecture were—a massive simplicity of design, the em-

ployment of local hand-craftsmanship when possible and the putting of everything to use, old or new.

THE REBUILDING OF ST. MARK'S CAMPANILE

THE two principal architects for the rebuilding of St. Mark's Campanile at Venice, Signori Piccentini and Del Piccolo, promise that the work shall be completely finished by the end of April next year. The tower fell on July 14th, 1902, and the work of its re-erection was commenced in April of the following year. Cardinal Giuseppe Sarto, now Pius X., was present at the beginning of the reconstruction, and when he became Pope he presented a magnificent set of bells for the Campanile. The belfry has just been finished. Great pains have been taken by the architects to reproduce the antique beauty of the tower. The famous logetta of Sansovino, an architectural gem of sculptured marble, crushed by the fall of the tower, is being reproduced under the personal supervision of Signor Del Piccolo. It is expected that King Victor Emmanuel will open the new tower.

—*The Architects & Builders' Journal*

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HOUSES AT SHORT HILLS, N. J., AND CHEVY
CHASE, MD.

FRONTISPIECE:—

THE BASILICA PALLADIANA.

AN INSTITUTE COMMITTEE ON PUBLIC INFORMATION

ALTHOUGH it seems in a sense unfortunate that the initiative in any movement of importance affecting the professional welfare at large should not be taken by The American Institute of Architects rather than by one of its subsidiary bodies, it is, nevertheless, gratifying to note that the Philadelphia Chapter has taken a definite position on the question of public enlightenment and through its secretary has recommended to the Board of Directors of the Institute the appointment of a National or Institute Committee on Public Information. Among the most important of the duties which would devolve upon this new committee are the following: "To have a watchful eye for erroneous

statements appearing in the public press affecting the work of the architect, and to see that the same are promptly and authoritatively rectified; to correct popular misconceptions with regard to the practice of architecture and to keep before the public of this country in a dignified manner and at all times the aims, aspirations and accomplishments of the profession through its organized body, The Institute."

This is in practical accord with the plan which has been advocated by THE AMERICAN ARCHITECT in recent issues and if adopted would undoubtedly produce results of greatest importance and value to the profession throughout America.

It is hoped that other Chapters will add their recommendations to that of the Philadelphia organization and also follow its example in applying the plan to the conduct of Chapter affairs.

It is obviously impossible for an individual or the public to appreciate anything not understood. That the public does not understand the aims, aspirations and accomplishments of the profession we have ample evidence on every hand. It would therefore appear to be incumbent upon the profession to support a campaign of education, if it desires public appreciation of its work. Unless a more dignified, more effective and more desirable plan than that now recommended by the Philadelphia Chapter, can at once be devised, the one suggested should be promptly accepted and energetically pursued.

PERMANENT EXPOSITION BUILDINGS

TO architects generally and that portion of the public interested in art it has always been a source of regret that the beautiful buildings erected for exposition purposes in Chicago, Buffalo and St. Louis, within the last twenty years, were of such perishable materials that with one or two exceptions they passed with the year that saw their completion. It is therefore a satisfaction to note that in the opinion of those in charge of the Panama-Pacific Exposition, to be held in San Francisco in 1915, the scheme should contemplate something more than the ephemeral features that have characterized its predecessors in recent years. If properly planned, it

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would seem to be entirely feasible to construct the more important buildings in a manner that would render them not only permanent, but make them of utilitarian as well as artistic value in the years to come.

We believe that popular support will be more easily gained if it is known that all the money invested in buildings will not be expended for the merely temporary housing of exhibits.

RECENT LEGAL DECISIONS

An architect was hired to supervise all contracts let for a certain building and a sub-contractor was informed by his contract with the general contractor that the latter was a general contractor as well as in the architect's employ. The sub-contractor was informed by the general contractor's agent that he could not be allowed for certain work, because, under his contract with the owner, he could get no allowance therefor without a written order from the architect. The work was performed by the sub-contractor without any written order from the architect and it was held, not to show an estoppel by holding out the architect as having further authority than that limited by the contract. The sub-contractor was not permitted to recover from the owner on the theory that the latter had held out

the architect as possessing authority to direct the work.

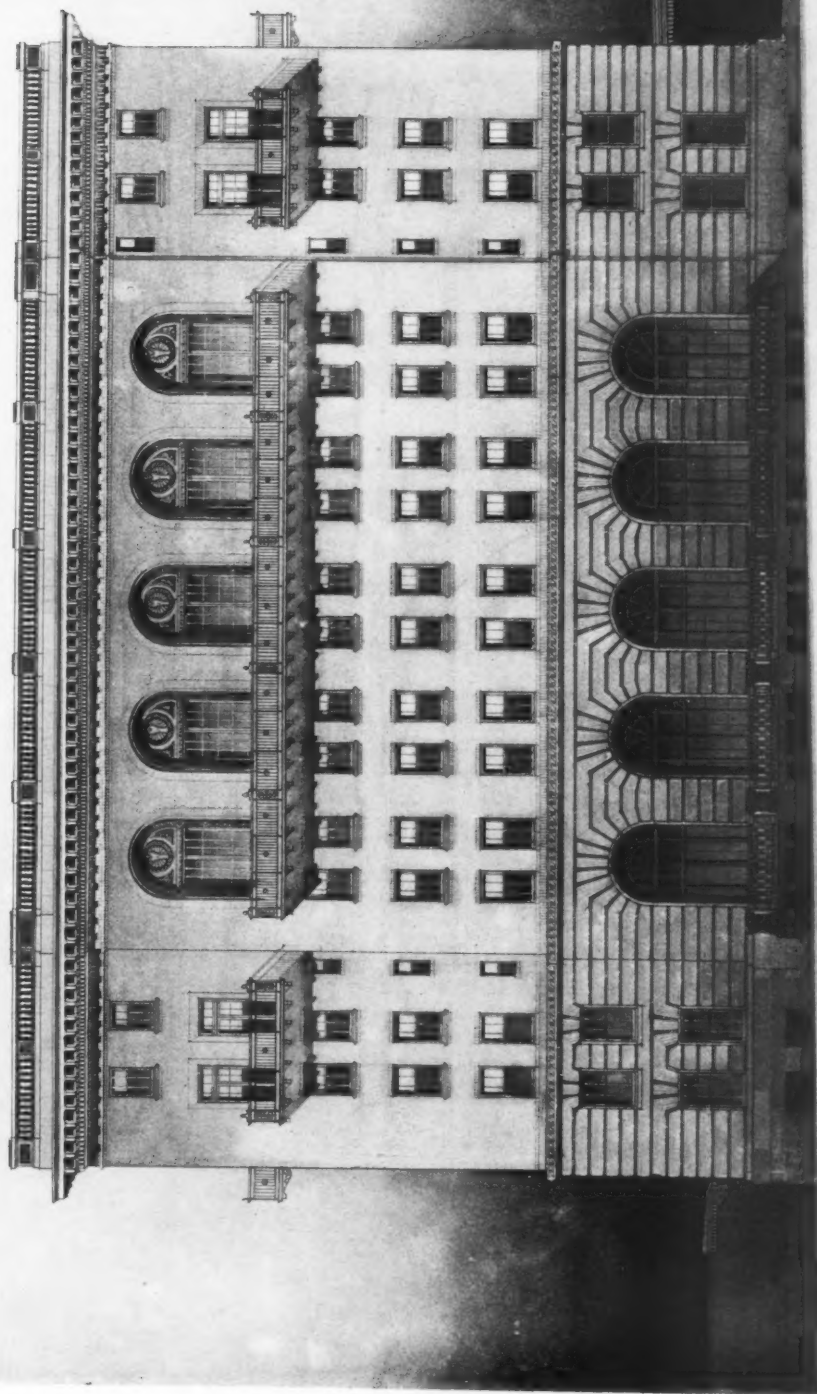
McNulty v. Keyser Office, etc., 76. Atlantic Reporter, (Md.) 1,114. H.CL.

In a written contract between an architect and a contractor for the erection of a house it was originally provided that the contractor was not to be paid except on the certificates of the architect. The contractor was relieved of the necessity of obtaining such certificates by subsequent contracts for enlarging the building by the addition of a cellar and another story which did not mention such certificates. Held that the contractor's request for a certificate to obtain final payment did not make it necessary to his recovery on refusal of payment.

Sweatt v. Bonne et ux., 110 Pacific (Wash.) 617. H.C.L.

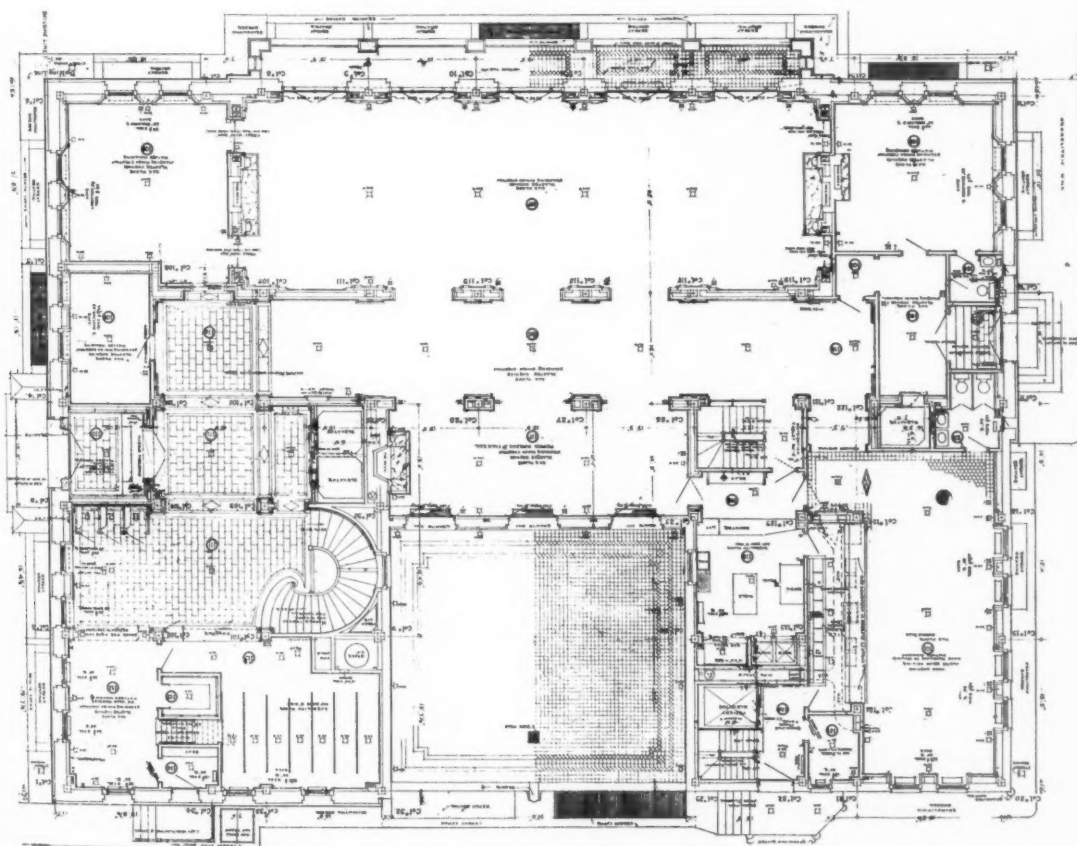
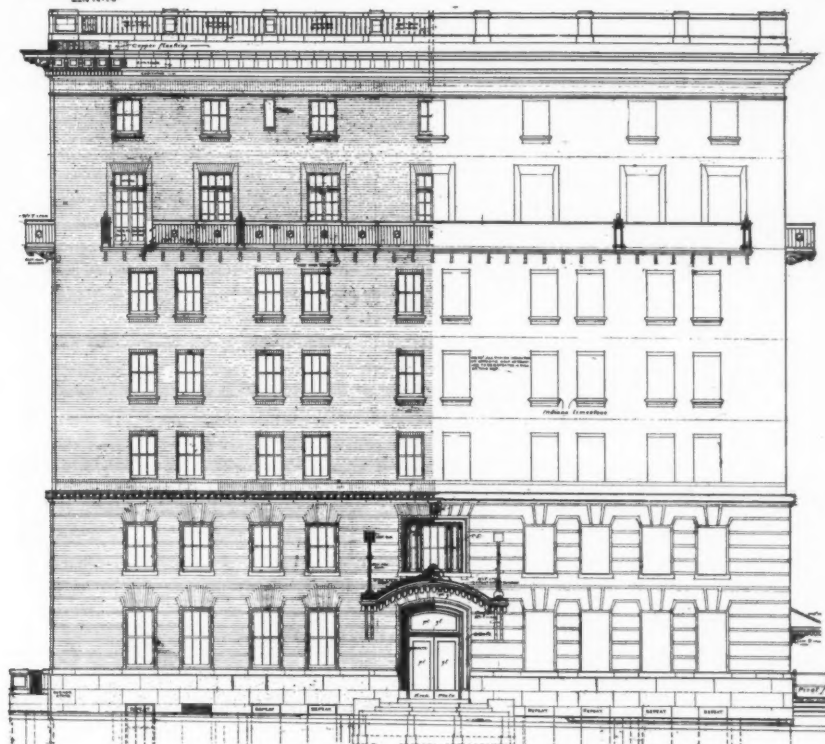


GROOTE SCHUUR: VIEW FROM REAR OF HOUSE



ARMY AND NAVY CLUB, WASHINGTON, D. C.

MESSRS. HORNBLLOWER & MARSHALL, ARCHITECTS

DETAILS OF MAIN STAIRWAY
Scale 1/4" = 1'-0"

ARMY AND NAVY CLUB, WASHINGTON, D. C.

MESSRS. HORNBLOWER & MARSHALL, ARCHITECTS

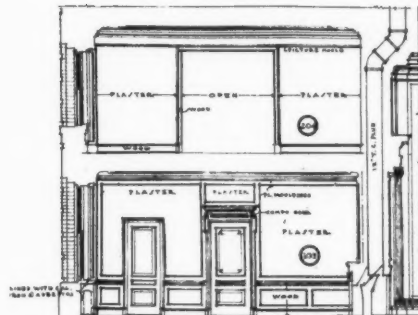




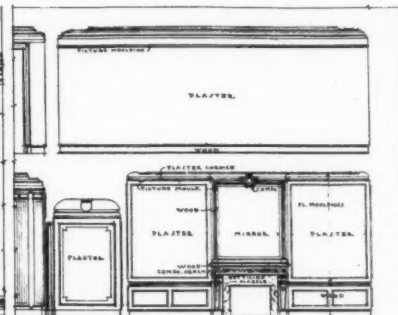
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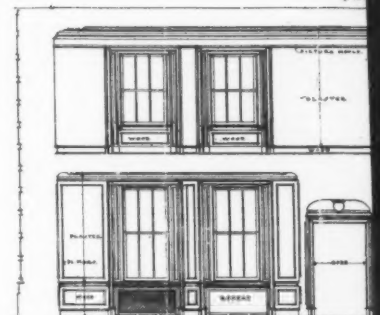
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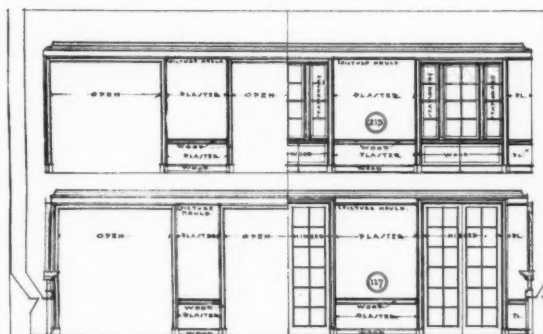
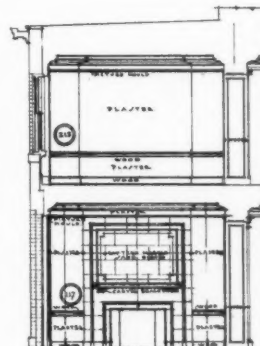
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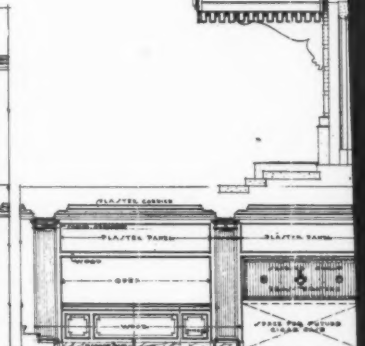
SOUTH ELEVATION ROOM #105 @ #204



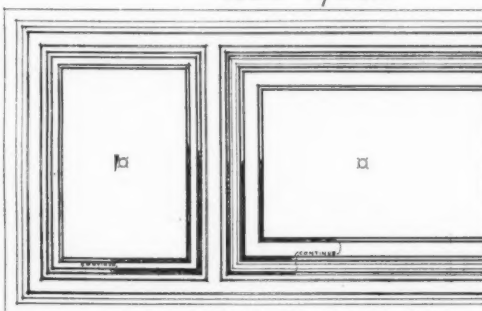
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HALF WEST ELEVATION HALF EAST ELEVATION
ROOM #117 @ #213

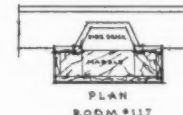
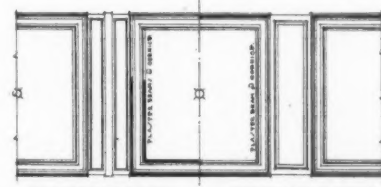
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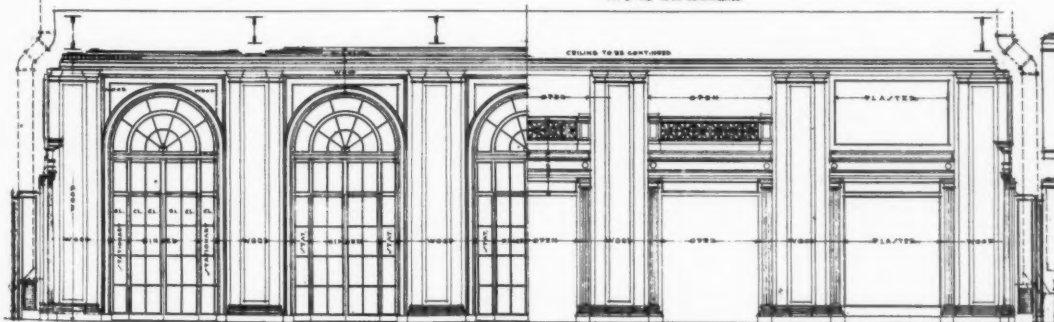
HALF-CEILING-PLAN ROOM #107

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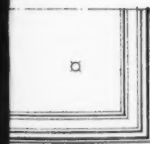
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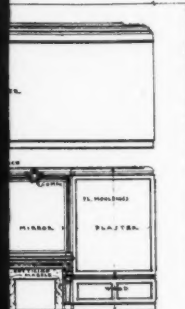
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ARMY AND NAVY CLUB, WASH

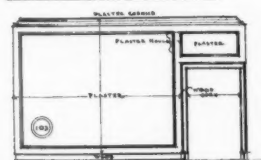
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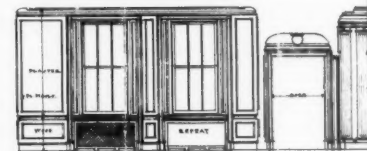
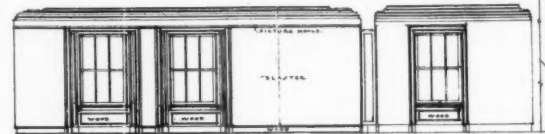
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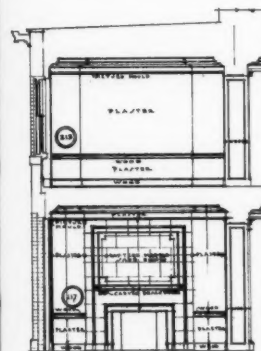
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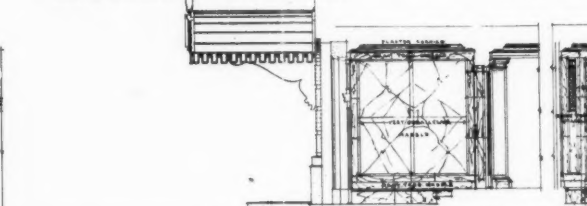
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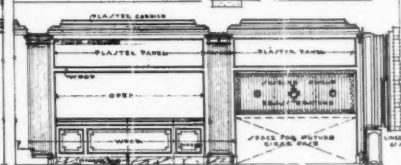


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WEST ELEVATION #110

HALF NORTH



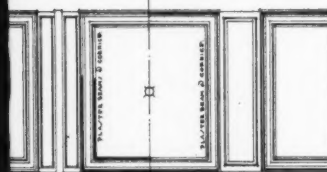
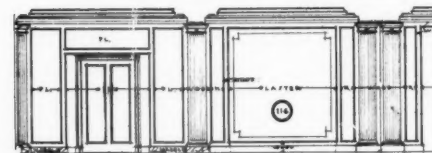
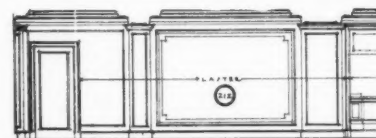
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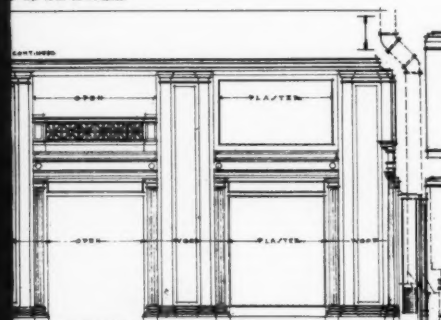


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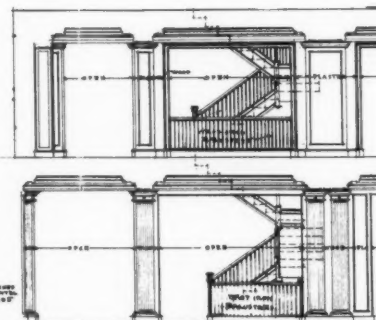


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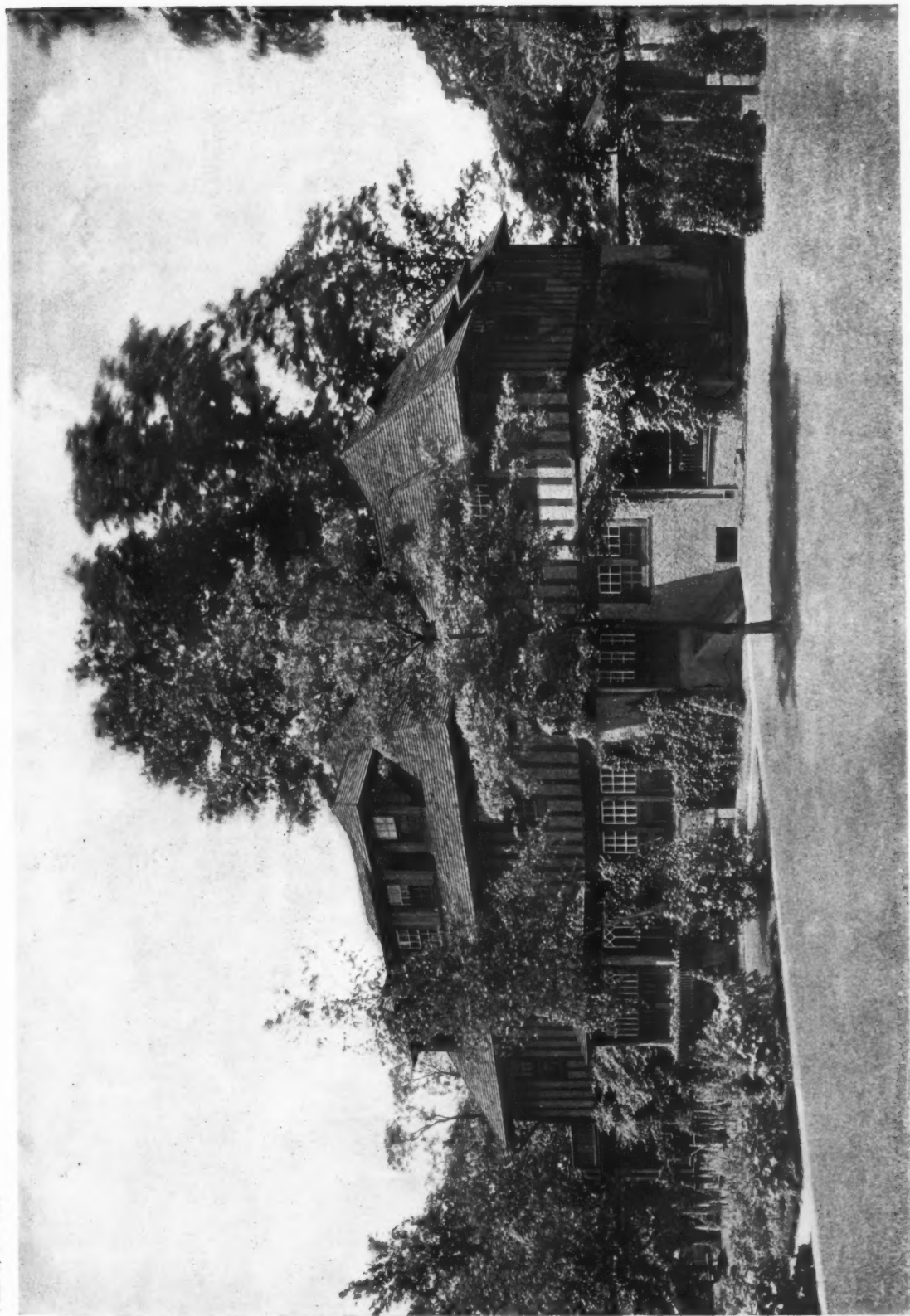


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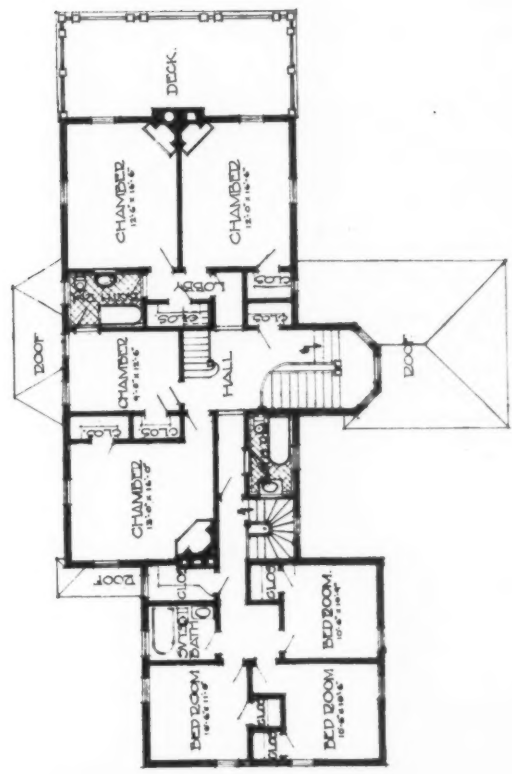
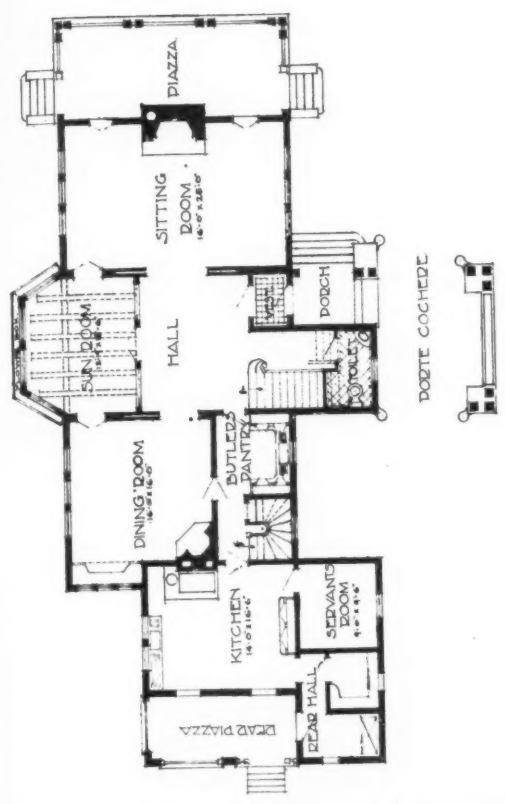
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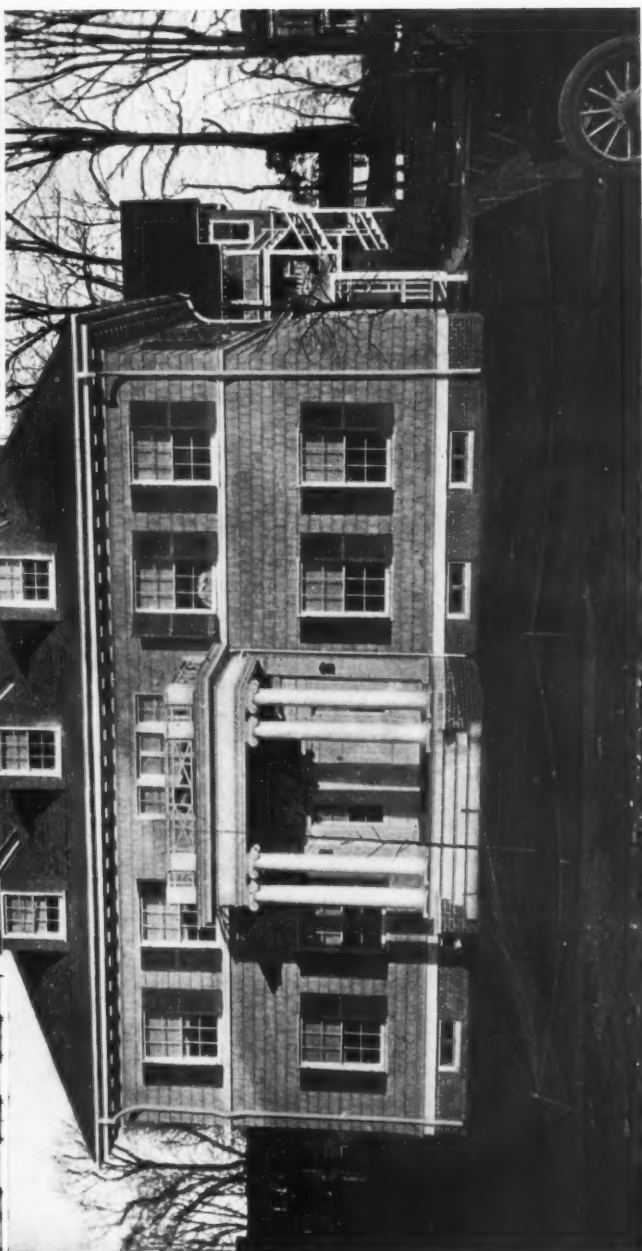
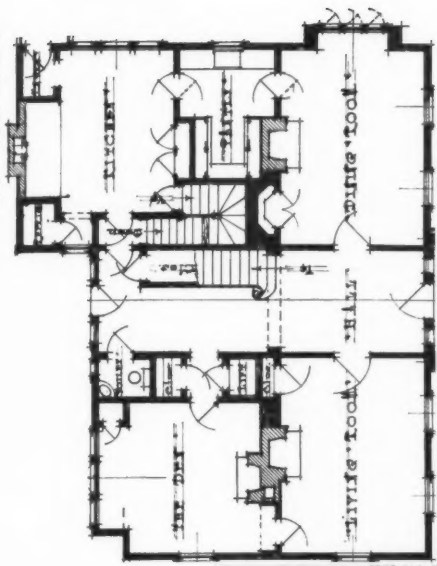
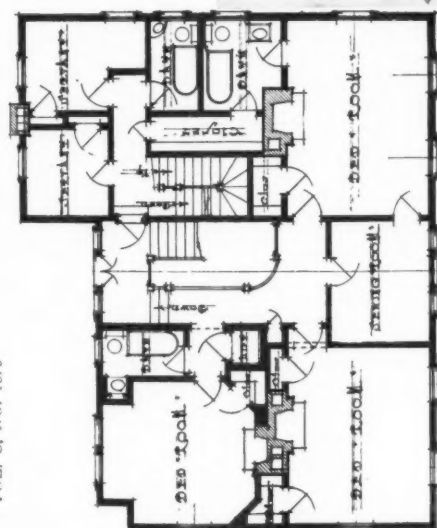
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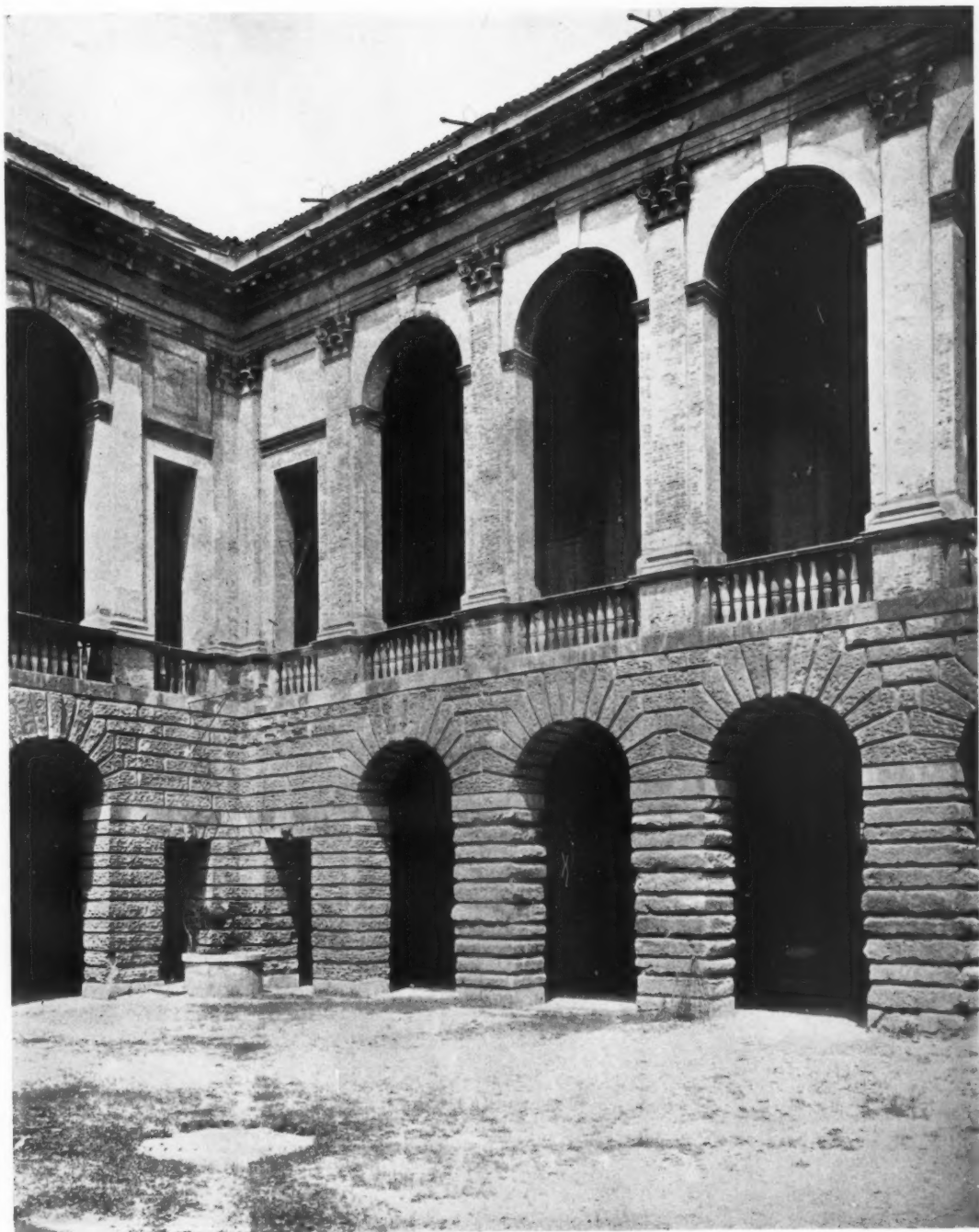
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RESIDENCE OF C. F. R. OGILBY, JR., ESQ.,
CHEVY CHASE, MD.

MR. ARTHUR B. HEATON, ARCHITECT



THE AMERICAN ARCHITECT



COURTYARD, PALAZZO BONIN, VICENZA, ITALY

ANDREA PALLADIO (1518-1580), ARCHITECT