THE AMERICAN ARCHITECT

VOL. C. WEDNESDAY, NOVEMBER 22, 1911 No. 1874

MAURY HIGH SCHOOL, NORFOLK, VA.
NEFF & THOMPSON, ARCHITECTS
Showing large fluted columns where the vertical joints are closely fitted by rubbing. Ivory matt and polychrome Terra Cotta.

ARCHITECTURAL TERRA COTTA CONSTRUCTION

By EDWARD H. PUTNAM

PART II

THE cornice of the State Educational Building (Plate 8) at Albany is an example of the use of architectural terra cotta in connection with other standard materials, and shows how harmoniously terra cotta may be combined with marble. A light cream matt glazed terra cotta was used for all the ornamental features, matching the marble of the plain surfaces in color. The reduction in cost from what it would have been had marble been used throughout was a large proportion of the entire cost of the building. The greatest item of saving occurred in the use of architectural terra cotta for the column and pilaster capitals. In terra cotta each column capital cost $400; the cost in marble would have been something like $2,400 each, and there were twenty-eight free column capitals, twenty-eight engaged column capitals and four pilaster capitals. In terra cotta but three models were required, one for each class, and from the moulds taken from these models every capital was pressed. The method of construction employed, shown by Fig. 7, was to cut the model in small pieces and take a mould of each piece. In this way the difficulty of handling heavy pieces was avoided, and as all joints were concealed by ornament the result was thoroughly satisfactory.

Here again the construction was changed to suit the individual requirements, but

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the general method employed is the same. It will be noticed, particularly in the architrave, that the terra cotta on account of its light weight requires less bond than the bond the proportionate weight is less than it would be in any other suitable material.

The Brotherhood of Locomotive Engineers building, at Cleveland, Ohio, is a

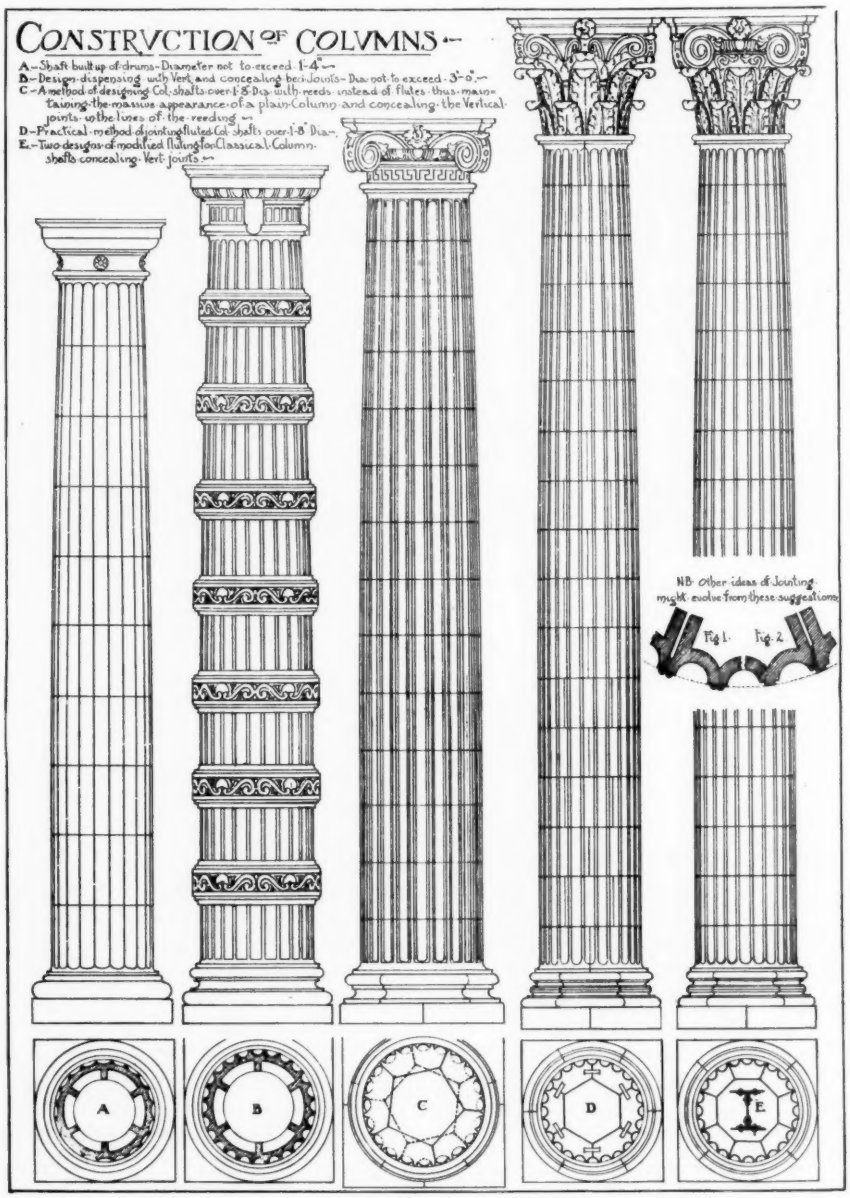


PLATE 3

marble. It is this property that makes terra cotta particularly valuable for skyscraper construction; not only is the material light, but on account of the short typical modern office building, entirely of architectural terra cotta from sidewalk to roof. The construction shows how ashlar, when properly filled by masonry, becomes

WARD COMPANY'S BAKERY, BROOKLYN, N. Y.

C. B. COMSTOCK, ARCHITECT

Large pieces are used in the panels of the pilasters on the first story, because any inaccuracies are hidden by the frame moulding. In the upper story piers, large pieces of rusticated ashlar are used, following the method shown on Plate 2, Design B. This building is entirely of lustrous glazed, white Terra Cotta with the exception of the gray Terra Cotta used for the basement.

an integral part of the structure. The cornice construction in this building may be considered typical of the small cornice, with adjustable outlookers and rods fastened to fixed "I" beams. Designed from the beginning for terra cotta the elevation drawing gives an idea of how often the pieces repeat, and the resultant saving in mould making.

UNFINISHED MODEL FOR THE CAPITAL OF THE STATE EDUCATIONAL BUILDING AT ALBANY

MESSRS. PALMER & HORNBOSTLE, ARCHITECTS

The fluted column requires the very nicest care in manufacturing to preserve the continuity of the flutes; every piece must fit exactly. There are various ways of obtaining this result. A shaft to be built satisfactorily of solid drums must not exceed one foot four inches in diameter at the base. (Plate 3, Design A.) Exact shrinkage cannot be maintained in a drum of greater diameter. However, if the continuity of the flutes be broken by bands (Design B), the variation will be imperceptible, and the drum can be safely made with a diameter of three feet. Another method of designing column shafts over

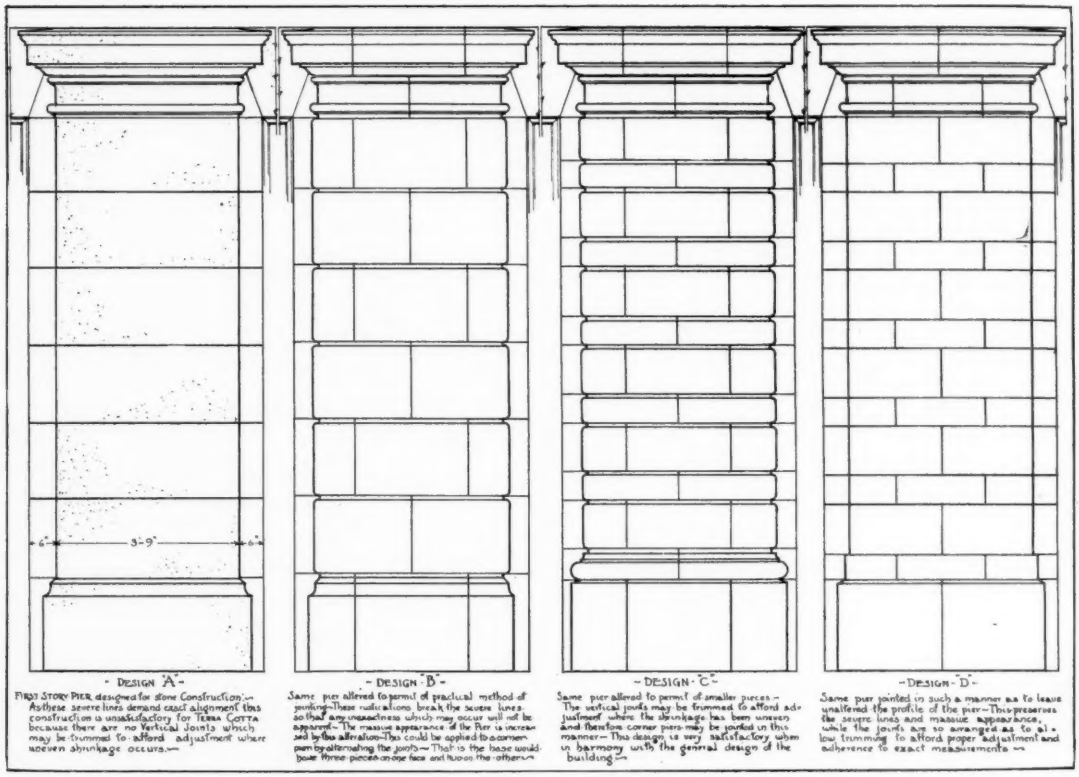
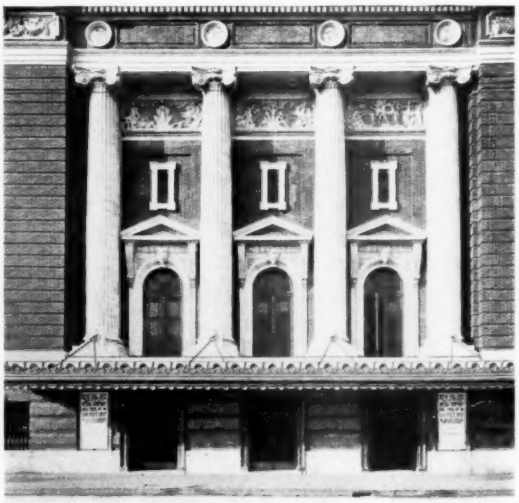


PLATE 4

one foot four inches in diameter is with reeds instead of flutes (Design C). In this case the necessary vertical joints can be concealed in the lines of the reeding. Design D and Design E show practical methods of jointing fluted columns of large size. The appearance is thoroughly good if the manufacturer takes every possible precaution. The best way of doing so—and practically the only way—is to make the pieces larger than necessary and grind to actual size on a "rubbing bed." The most advanced factories have the proper equipment, and in these factories it is the invariable custom to grind both the horizontal and the vertical joints of columns. The close and even joints effected in this way do not mar the massive impression of the column as a whole.

The principles of column construction apply in large measure to the construction of piers. In Plate 4 Design A shows the common form of stone construction of a three foot nine inches pier. The impossibility of burning large pieces of terra cotta to exact dimensions makes such a pier impracticable in terra cotta. Design B



BOSTON OPERA HOUSE
WHEELWRIGHT & HAVEN, ARCHITECTS

The reeding in the lower part of the columns obscures the vertical joints. The Terra Cotta is white matt glaze. The figures in the panels (molded by Bela Platt) are matt white against a background of light green.

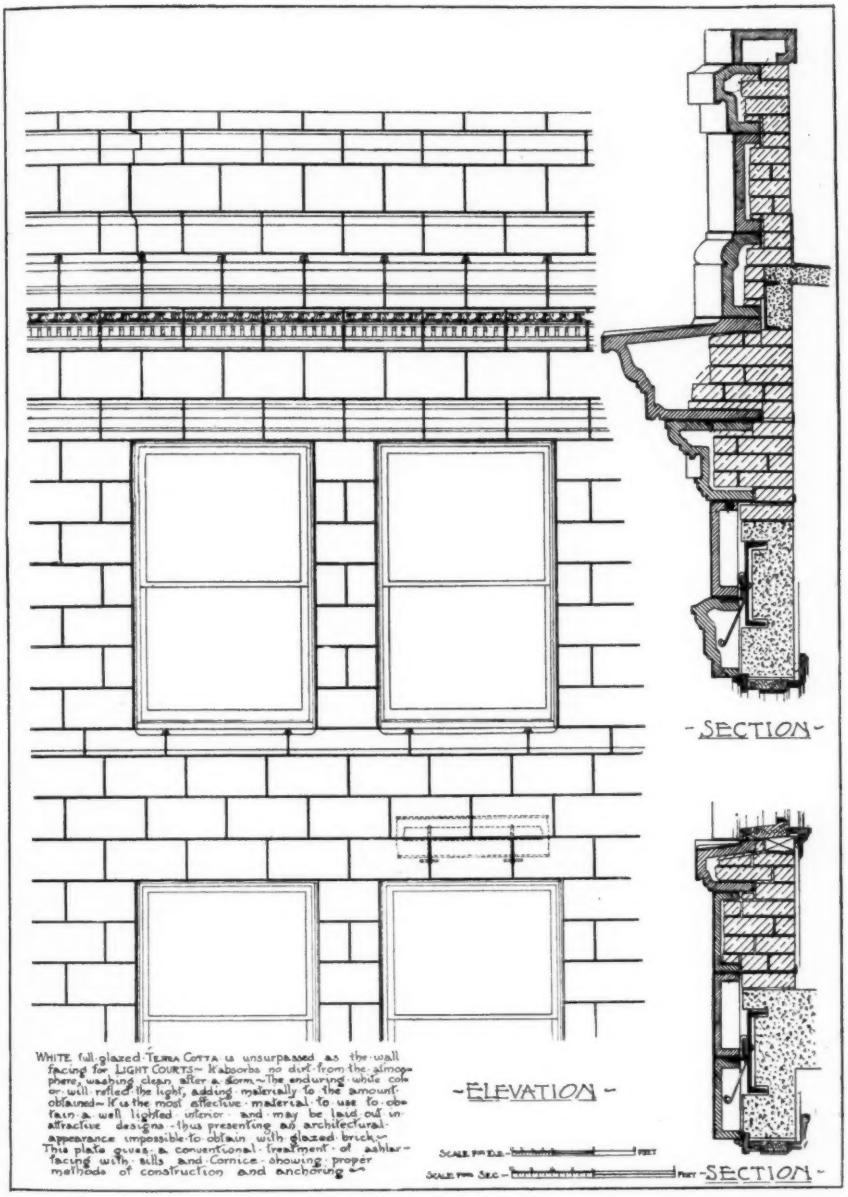


PLATE 5

shows a method of retaining the same dimensions by the introduction of vertical joints, but the pieces are still too large to preserve entire accuracy in the severe line, so rustication is necessary. Design C presents a very simple form of construction but one that is consistent with but few accepted architectural styles. Design D affords the best solution if it is desired to maintain the severe lines; the pieces are still large enough to give a massive impression. Designs B, C and D all allow grinding of joints, but in the case of rustication only the vertical joints would need grinding. In Design D the horizontal joints might also need it. Frequently a pier design calls for modeling in low relief —which in white glaze gives an exceptionally good effect. The variations are always minute and quite invisible if the severe lines are broken even very slightly.

Plate 5 shows a conventional design for a light court, illustrating the decorative and practical properties of terra cotta. Bright glazed white terra cotta is the best material for this purpose because it is impervious, will not catch the dirt, and is easily cleaned. It reflects the light perfectly and is better than glazed brick, both because of its architectural potentiality and because the many joints in brickwork soon become dark and tone down the whole wall. The larger pieces of terra cotta always give a clean, white, sanitary appearance, for the joints are too far apart and too few in number to have any darkening effect.

(To be concluded)

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

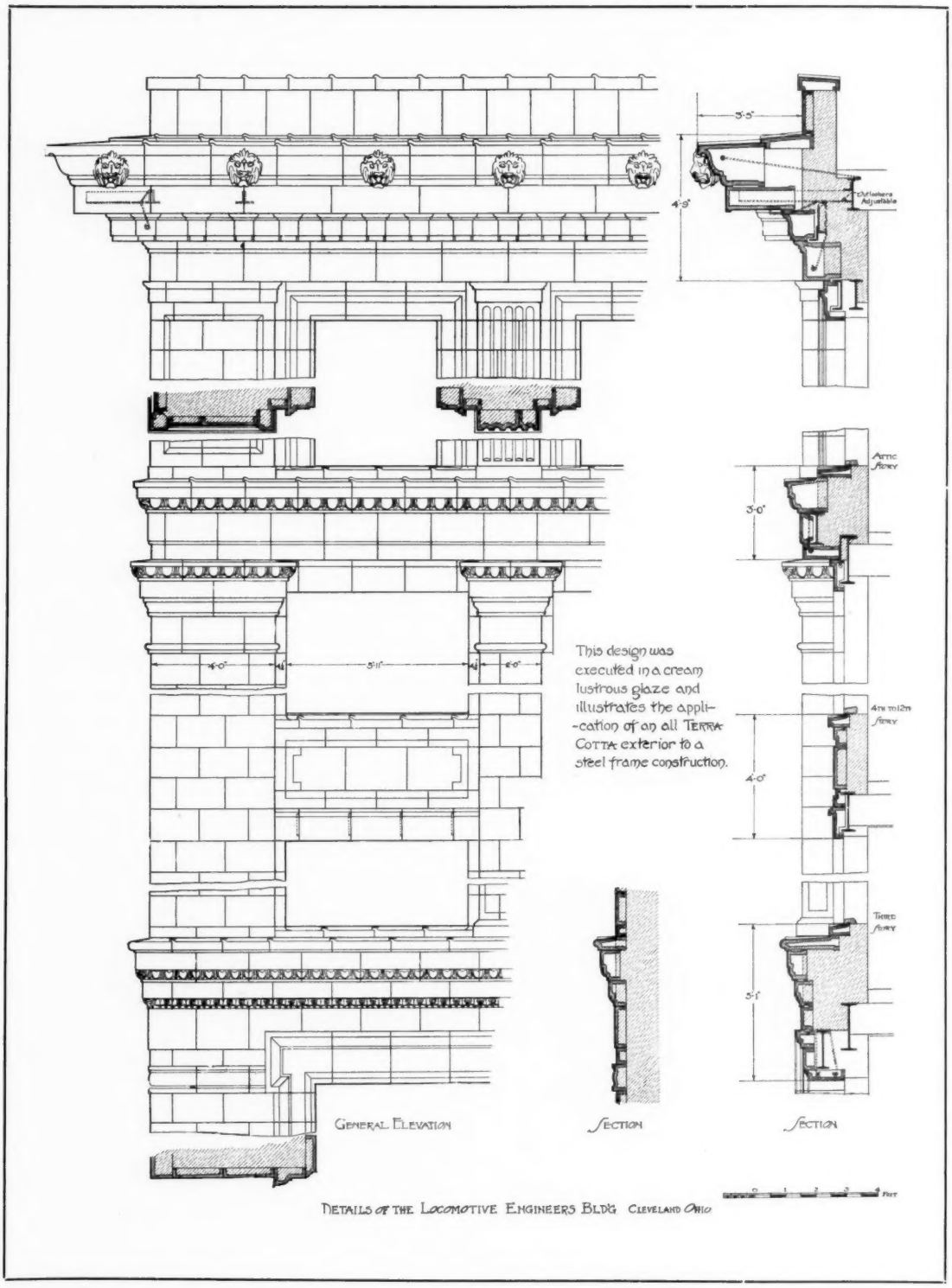

3'-5"
4'-9"
Adjustable
Attic Story
3'-0"
4th to 12th Story
4'-0"
Third Story
3'-1"
4'-0"
5'-11"
4'-0"
This design was executed in a cream lustrous glaze and illustrates the appli--cation of an all Terra Cotta exterior to a steel frame construction.
General Elevation
Section
Section
Details of the Locomotive Engineers Bld'g Cleveland Ohio

PLATE 6

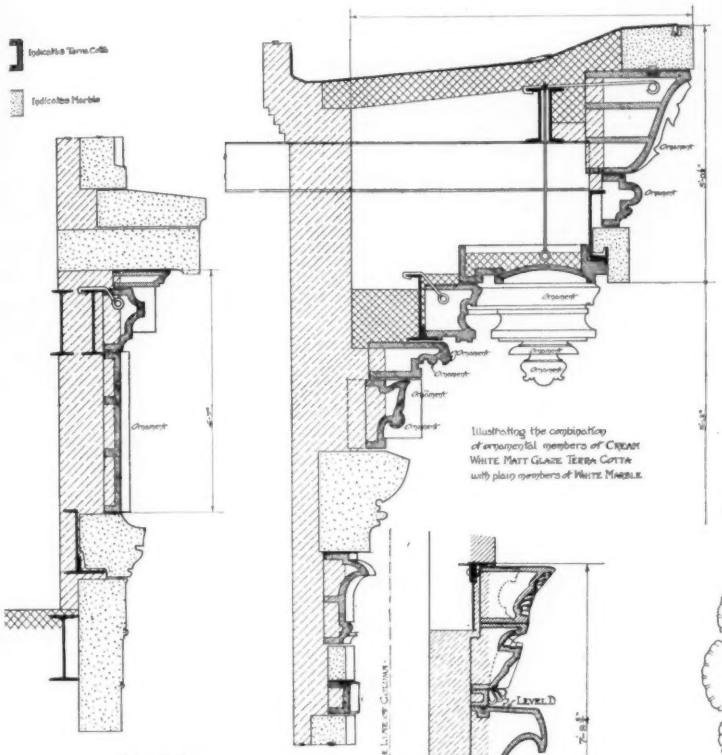


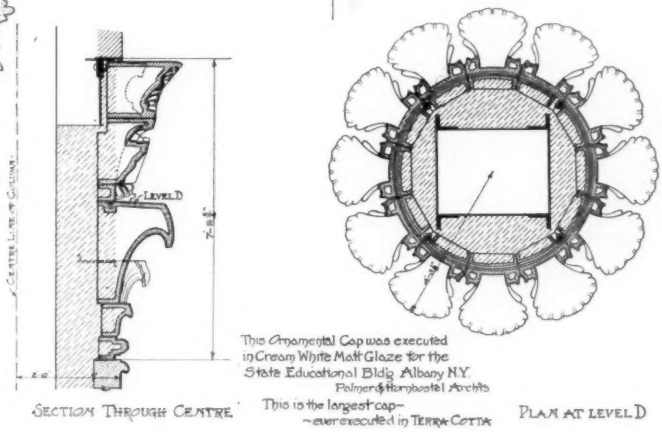
PLATE 8

DETAIL OF CORNICE, NEW YORK STATE EDUCATION BUILDING

MESSRS. PALMER & HORNBOSTEL, ARCHITECTS

STREET NAMES

THE Paris Municipal Council has decided to teach the population history through its street names. The sign in the Rue de Rivoli, for example, will bear this superscription: "French Victory, 1797." On the sign Avenue Victor Hugo will appear this subtitle: "French poet and novelist, 1802–85"; while another street sign will run: "Rue Lincoln famous President of the United States, 1809–65." Street names reminiscent of local or national history ought to be cherished, not discarded in favor of numerals. Some of the streets of Paris date from the days of the old régime, but more of them suggest Revolutionary enthusiasm: Gambetta has his *avenue*, his *place*, his *rue*, and his *boulevard;* Garibaldi has given his name to one thoroughfare, Benjamin Franklin to another. In New York, there are Stuyvesant Square, and Jackson and Washington and Madison no less—to say nothing of the Battery and Bowling Green and the Bowery. The idea of a Chicago alderman to change the present names of principal thoroughfares, substituting numerals will not it is hoped be approved.



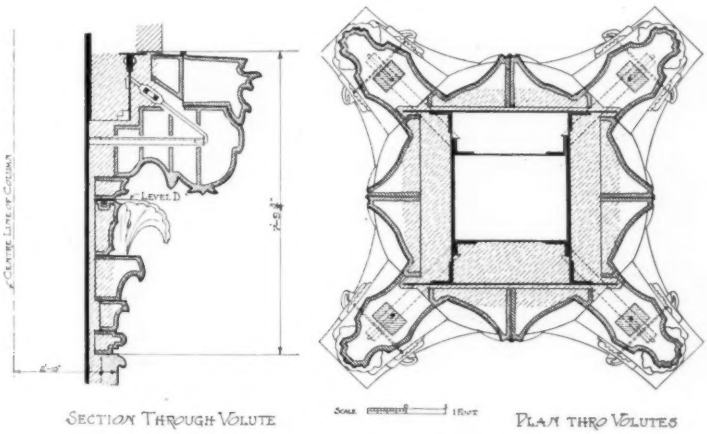
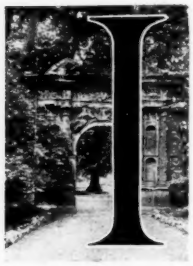


PLATE 7

CO-OPERATION IN HOSPITAL PLANNING

By M. E. McCALMONT, R.N., Former Supt. Civil Hospital, Manila, P. I. Chief, Division of Hospital Construction and Equipment, Bureau of Health, Philippine Islands.



IN this practical age the ultimate test of every proposition is, not so much what does it cost; is it the newest thing; or what do the critics and others think of it; but how does it work; is it practical; does it stand for the essentials of efficiency and economy of service?

And this is the working test to which our modern hospital planning and construction must be submitted. The architects are giving us smooth interiors and artistic exteriors. Many of them are becoming indeed expert on the subject of rounded corners and angles, flush surfaces and a general absence of projections, and yet we feel that these institutions are not yet all that might be desired.

That "the hospital is for the patient" has become an axiom beyond dispute. But no hospital is successfully constructed for the benefit of the patient unless *also* constructed for the comfort and convenience of the entire working personnel. No patient is receiving fair play from a hospital which has faulty working machinery; where jars, breakdowns and confusion are liable daily.

In view of this, the question is pertinent—*are our hospitals practical from a working standpoint?*

Who is to answer this, the architects, trustees and doctors, or the superintendents, and working staffs?

The architect may be an excellent judge of the durability of the latest flooring, and competent to pass upon all the technical details of hospital construction and finish, but can we expect him to know the details of hospital management sufficiently to cope with its peculiar and practical needs?

The trustees or boards of managers may be able to see that a hospital is clean and quiet, and be able to recognize, in practice, smoothly running hospital machinery, or its opposite—but can they, from their casual visits to the hospital, be in a position to locate an inconvenience of arrangement which may be the occasion of daily confusion?

The doctors, through visits to their patients, may know whether orders are being carried out or not; whether patients are improving; or whether they are satisfied with their surroundings and treatment. But if their patients are uncomplaining, can they know that a lack of improvement may be due to sleepless nights caused by noisy, banging doors; crying babies who should always be in sound-proof rooms; the too near proximity of utility rooms, bath-rooms or diet kitchens? Can they know that their patients are getting cold meals because a diet kitchen is not adapted or planned for efficient service; that a complaint of lack of attention may not be because there are not enough attendants, but because very often hospital planning necessitates an unwarranted expenditure of time and effort in the way of service?

These persons, doctors, trustees and architects, are obviously not in a position to fully appreciate all the working needs of a hospital for the simple reason that, usually, they have never worked in one. Yet they are the persons upon whom we must depend for the planning of our hospitals. Where there has been co-operation good results are generally noticeable, but very seldom is a superintendent seriously consulted in matters concerning which often he or she alone knows. Yet this same superintendent will be expected to find a way out of the difficulty after the error is committed and the building completed. Rarely, if ever, are the various heads of departments called in for an expression of opinion concerning subjects upon which they are sure to have practical, if not technical, knowledge.

Never has the writer known of hospital plans being submitted to the student nursing body for suggestion and discussion. Yet it is almost certain that such a procedure

(*Continued on page 210*)

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COUNTRY HOUSES BY MESSRS. ALBRO & LINDEBERG, BOHNARD & PARSONS AND JAMES E. WARE & SON, AND TWO WASHINGTON, D.C., HOUSES BY MR. ARTHUR B. HEATON.

FRONTISPIECE:—

PALAZZO BONIN, VICENZA, ITALY.

COMPETITIONS

WHILE still furnishing a means, perhaps the best available under certain conditions, for selecting an architect, there are numerous indications that the institution of architectural competitions is gradually declining in popularity in this country. Where, a few years since, competitions were sufficiently numerous to provide almost continuous employment for some firms of architects, who secured the major portion of their work in that manner, they are to-day, at least when the immense amount of important work for which architects are annually chosen is considered, comparatively infrequent.

The causes for unpopularity are probably numerous and it would be difficult to assign one chief reason for the change that seems to be taking place. Perhaps the difficulty in devising any method or plan of competition that affords satisfactory assurance of the winner's ability to secure the faithful execution of his design, without committing proprietors to considerable expense, is having its long-looked-for effect. There have been notable instances of architects lacking in practical experience and even ability to discriminate in the selection of assistants or superintendents who are adepts in the preparation of competition drawings and whose dexterous draftsmanship has enabled them to carry off the prize in many a warmly contested but open-to-all competition. The results in these cases have probably had the very natural effect of somewhat impairing confidence in this method of selecting an architect. Of course, there are instances, and many of them, where satisfactory results have been obtained from the adoption of the competition method, but they have ordinarily followed where the competitors were carefully chosen from the ranks of competent and thoroughly experienced practitioners and were adequately paid for their sketches. Exceptions might be noted perhaps in the case of government work and possibly some municipal and private work of sufficient size and importance to induce experienced architects to enter an unpaid contest, but, even under such circumstances, the competitors are usually limited in number and carefully selected.

One serious difficulty with the system seems to be that it has been found inexpedient, if not impossible, to carry on many of the more important competitions on lines prescribed by best practice, owing to the general desire on the part of owners to secure the greatest possible amount of free advice in the form of numerous competition sketches.

If the profession generally would adhere strictly to the rules and conditions under which competitions may properly be conducted as prescribed by the American Institute of Architects, the objectionable and unsatisfactory features would be reduced to a minimum and the benefits correspondingly increased. It is worthy of note that a majority of the few competitions of importance held during the past year have been conducted in accordance with the Institute requirements and the sentiment seems fortunately to be growing that, unless

these requirements are complied with by those having the conduct of competitions in hand, satisfactory results can hardly be expected.

Bureau of Fire Prevention

THE establishment of a Bureau of Fire Prevention in the city of New York is unquestionably a movement which should receive the endorsement and support of the profession and the public generally, but it would appear that there might reasonably be some difference of opinion as to the wisdom of making this an adjunct of the Fire Department rather than of the Department of Buildings. There is a general impression, founded more or less upon experience with the Fire Department, that its knowledge of ways and means best adapted to the extinguishing of fires is perhaps greater than its knowledge of the proper methods of constructing and equipping buildings for preventing fires. The Building Department, on the other hand, is familiar with the reading of plans, forms of construction, strength of materials, etc., and already has the examination of plans for sanitation, construction and other features thoroughly in hand. Why this department cannot also pass with accuracy upon the proper construction, arrangement and equipment for the prevention of fires is not apparent. Placing the Bureau of Buildings in charge would make it possible to secure necessary permits by the filing of but one set of plans and dealing with but one department. Under the proposed plan it will apparently be necessary to file a set of plans with the Bureau of Buildings and also with the Fire Department. In the case of apartment buildings a third set must be filed with the Tenement House Department. These will be passed on in order by the various departments, consuming much time and sometimes leading to conflict between the examiners or officials of the various bureaus. This cannot fail to result in annoyance, delay and expense on the part of the architect and owner and a considerable duplication of work on the part of the city. It would seem to be to the interest of all concerned if one department might be given jurisdiction over all features for which permits must be secured before beginning the construction of a private building.

Co-Operation in Hospital Planning

(Continued from page 208)

would draw forth many excellent suggestions. I am confident that fewer diet kitchens with their inevitable noise would be placed next to the wards, as is so often done, if nurses or superintendents were consulted about the arrangement. I am also sure they would ask for a reasonable number of sound-proof isolation rooms with properly guarded windows. Theirs is the personal responsibility for delirious patients, and such a request would have to be heeded. Yet, lamentably, few of such rooms exist!

Would it not be as well to ask a dietist what is to go into her diet kitchen, and plan accordingly, rather than label a four-walled room "diet kitchen" and attempt to place the manifold necessities there after the building is completed? It would seem that such lack of co-operation is largely responsible for a not unusual arrangement of gas stove and ice-box side by side, with a necessary serving table or drain-board for the sink omitted altogether for want of room. Who but the dietist would be liable to think of the convenience of having her meat blocks placed near the cold storage, and her kitchen so arranged that food trucks might be expeditiously loaded without disturbing the personnel or working machinery of the kitchen itself?

Can not the pharmacist best tell us of arrangements which would facilitate his work; of the most convenient relation of sinks, working tables, tablet machines, dispensing counters, etc., etc.? Would it not be better to allow him a voice in such matters, rather than have them arbitrarily arranged by persons who could not be expected to have a working knowledge of the facts, and, incidentally, would never have to suffer from the inconvenience and annoyance which follow a thoughtless arrangement or choice of equipment and facilities?

If a superintendent of nurses were consulted in the matter of a nurses' home, is it not probable that night nurses would be provided with sound-proof rooms located in a section of the building farthest removed from dining rooms, lecture rooms, baths, etc.?

The doctors always have adequate dressing rooms, lockers, shower baths, etc., in an operating pavilion, while a similar provision is seldom if ever made for nurses. Yet nurses may be perspiring through two or three operations to the doctor's one, and would have even greater appreciation of a proper dressing room and shower than he. If the chief operating room nurse were asked for suggestions in the planning of an operating pavilion, is it not probable that she would ask that these things be provided for her staff as well as for the doctors? Also, would she not protest against having her instrument cases placed in the sterilizing room, as is so often done? Would not her supply room be much more convenient and accessible than the usual *last space to be utilized* which is labelled "supplies," and then left to its sad and unsatisfactory fate?

The foregoing errors and many similar ones are actually found in the plans of some of our best hospitals. They are not necessary, and it is believed that a friendly co-operation between architects and heads of hospitals and heads of the various departments of the hospitals would see fewer and fewer committed. Such co-operation would undoubtedly develop a most wholesome esprit de corps among hospital trustees, officials and employees. *All* would then be working for the completion of an institution both beautiful and serviceable; intelligent in detail; and adapted in its every requirement to the great purpose of efficiently caring for the world's afflicted.

Does it not seem worth the experiment?

A Prehistoric City Being Restored

ONE of the most remarkable of the monuments under control of the national government, the Casa Grande, near Florence, Ariz., has been restored and repaired as far as possible and an effort will be made next year to provide facilities for persons wishing to visit it.

Discovered in 1694 by Padre Kino, one of the missionaries sent to the new world by Spain, the Casa Grande is considered a typical structure of the aboriginal natives of the Southwest, and it is the only structure mentioned by the early Spanish explorers that can be checked and interpreted down to the present day.

It was originally an extensive group of buildings and no doubt served a considerable community as a place of defense against the wandering tribes of the desert —ancestors of the warlike Navajos and Apaches. The name Casa Grande, in Spanish meaning "great house," was applied originally to the large single structure standing in the southwest corner of the area covered by the entire collection of buildings. The total area at one time covered with buildings is about sixty-five acres. Mounds and scattered débris show where the buildings stood.

The building known as Casa Grande was one of the smallest of the structures. The walls rise to a height of twenty-five feet. The area covered and enclosed by the standing walls is forty-three feet by fifty-nine feet. Evidently the building was three stories in height. The main building rose to two stories, but a central tier rose another story.

The construction of this house is not of adobe, but is what is known as "cajon," or puddled clay molded into walls. The cajon, in huge blocks from three to five feet long, two feet high and from three to four feet thick, was manufactured on the spot, much as concrete workers manufacture the material for modern concrete houses. Without a protecting roof the cajon will wear down gradually.

After an extended investigation and report by scientists in the employ of the government, it was decided to brace up the tottering walls with brick. The northeast and southeast corners had fallen, and large blocks of cajon were strewn about the ground. Other walls were tottering.

Masons were set at work and braced up the walls, detracting somewhat from the appearance of the building, but preserving the remains for future generations.

The construction of the Casa Grande is exceedingly primitive. The building is

not exactly rectangular. The exterior walls rise to a height of twenty to twenty-five feet, while the interior walls are from twenty-eight to thirty feet high. The exterior of the building is in the rough. but the interior is smoothly finished. The outer walls are from three and one-half to five feet thick, and undoubtedly were used for defense. The interior walls are from three to four feet thick at the base. At the top all the walls taper to a thickness of two feet.

The floors were made of timbers three inches in diameter, covered with a layer of rushes and then clay.

The buildings of the Casa Grande must have presented an imposing sight, rising from the sterile Arizona plain. It is believed that this region was at one time well watered, but the gradual encroachment of the desert led to its abandonment. like many other aboriginal communities in the Southwest.

BROTHERHOOD OF LOCOMOTIVE ENGINEERS' BUILDING, CLEVELAND, OHIO

KNOX & ELLIOTT, ARCHITECTS

Entirely of cream lustrous glazed Terra Cotta. (See article, "Architectural Terra Cotta Construction.")

Recent Legal Decisions

A building contract provided that the owner might make alterations, subject to the architect's approval, without breaking the contract, and it was also provided that the architect should issue a final certificate which should be conclusive evidence of the performance of the contract. His decision was to be binding. Held, that his final certificate was a conclusive determination that the duty of the contractors had been properly performed according to their contract.

Wiggins *et al. v.* Columbian, etc., Co., 76 Atlantic Reporter (Penn.) 742. H.C.L.

A building contractor is entitled to do his work and earn his payments in the order prescribed by the contract, except as the necessities of building require him to do in some part the work for which compensation is provided in the later installments. In an action by a building contractor for work done and materials furnished, evidence held insufficient to sustain a finding that the abandonment of the work by plaintiff was without cause.

Jones *v.* Dodge, *et al*, 122 N. Y. Supp. 815. H.C.L.

Plaintiff who contracted with defendant to furnish the granite work for Andrew Carnegie's house in New York, sued for balance due and damages for alleged breach. Defendant contracted with the owner for the construction work under the architect's directions. Held, defendant not liable for losses claimed by plaintiff to have been suffered by reason of architect's delay in furnishing the necessary drawings. "When parties have made their contract, it is the duty of the court to enforce it, as they have elected to make it, without regard to the fact that in the light of subsequent events a hardship may be worked." A clause in the contract that the architects shall furnish to plaintiff "such further drawings as may be necessary to detail and illustrate the work to be done" was not a covenant and read with the rest of the contract meant that plaintiff was to look to the architects as agents of the owner for the delivery of the drawings.

Norcross *v.* Wills, 91 N. E. (New York) 803. H.C.L.

NORTH ELEVATION

HOUSE OF TRACY DOWS, ESQ., "FOXHOLLOW FARM," RHINEBECK, N. Y.

MESSRS. ALBRO & LINDEBERG, ARCHITECTS

For floor plans and working drawings of this house, see issue No. 1737, April 7, 1909

XUM

SERVICE GATE

HOUSE OF TRACY DOWS, ESQ., "FOXHOLLOW FARM," RHINEBECK, N. Y.

MESSRS. ALBRO & LINDEBERG, ARCHITECTS

XUM

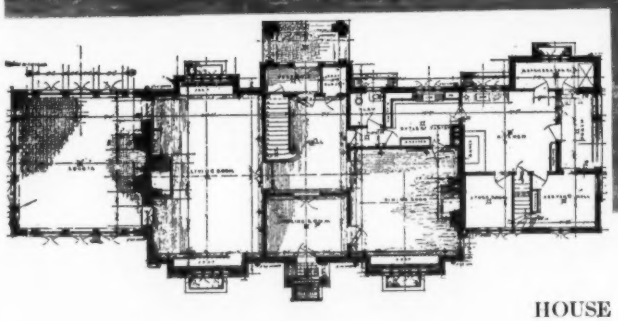
WEST ELEVATION

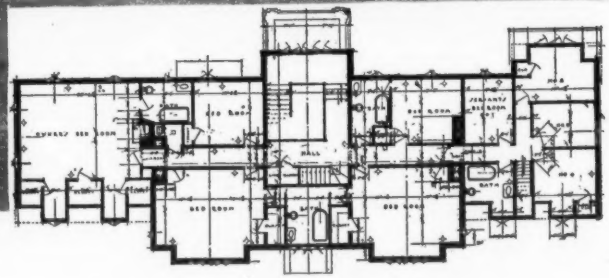
HOUSE OF H. L. BATTERMAN, ESQ., NASSAU, L. I.,

MESSRS. ALBRO & LINDEBERG, ARCHITECTS

(Floor plans are withheld at request of owner)

THE AMERICAN ARCHITECT

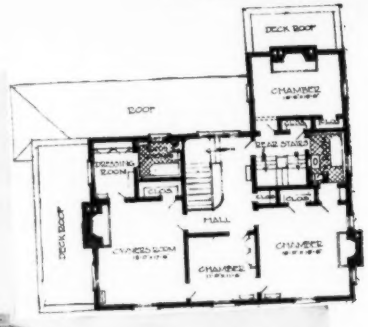




NORTH ELEVATION

HOUSE AT HEWLETT BAY, HEWLETT, L. I.

MESSRS. ALBRO & LINDEBERG, ARCHITECTS



HOUSE OF WALTER R. HINES, ESQ., SHORT HILLS, N. J.

MESSRS. JAMES E. WARE & SON, ARCHITECTS

XUM

VOL. C, NO. 1874

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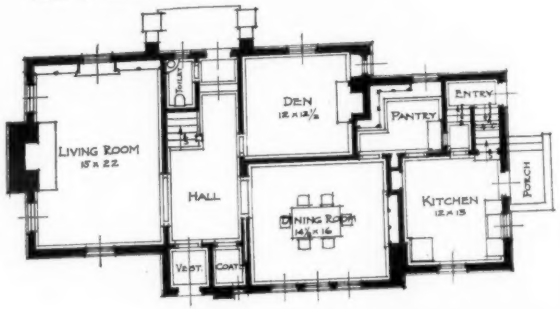
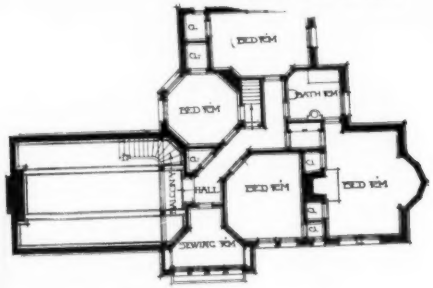


HOUSE OF MRS. ZAHNHEISER, CLIFTON PARK
LAKEWOOD, O.

MESSRS. BOHNARD & PARSONS, ARCHITECTS



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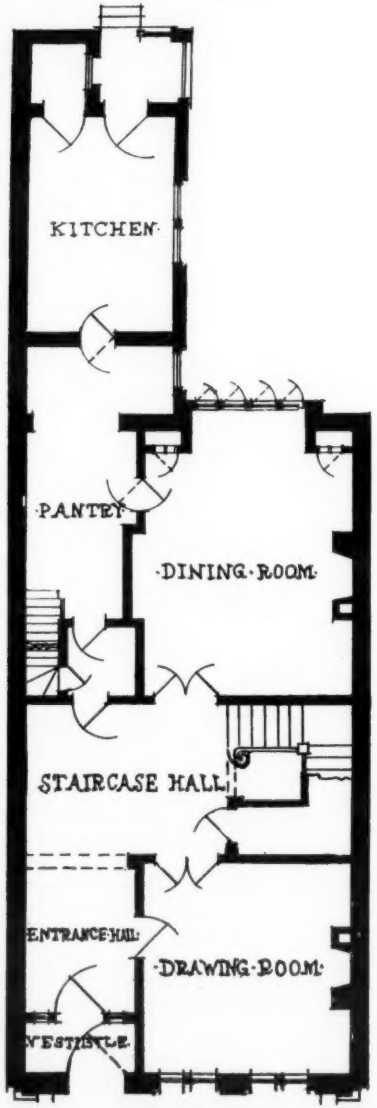
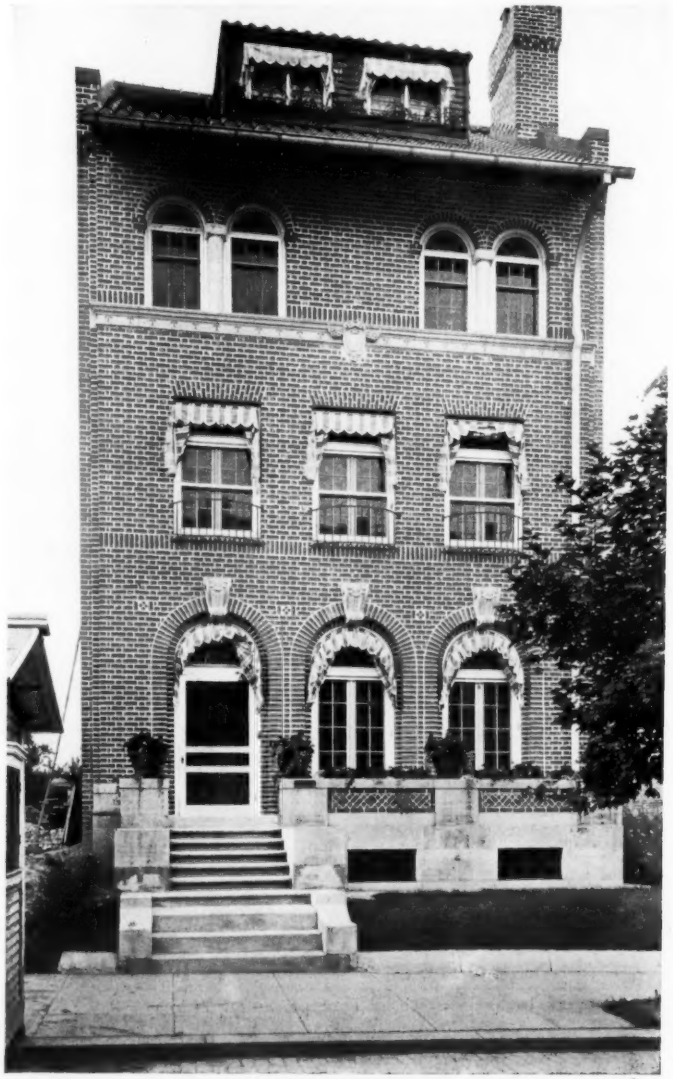
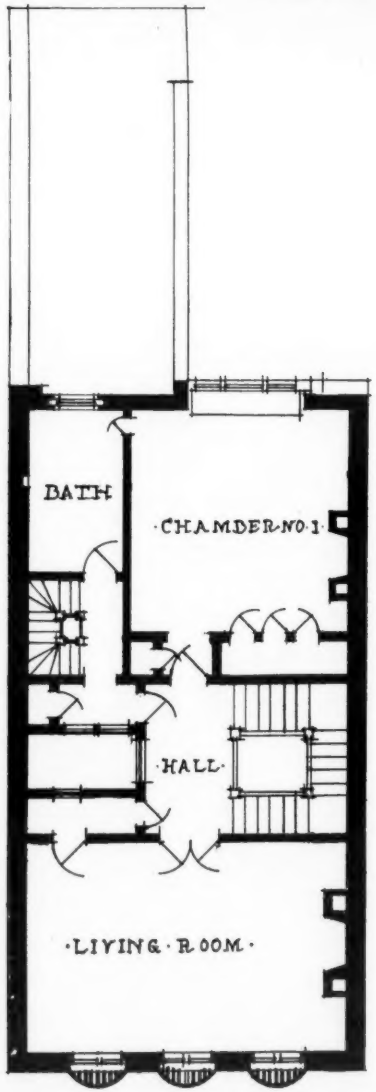


FIRST FLOOR PLAN

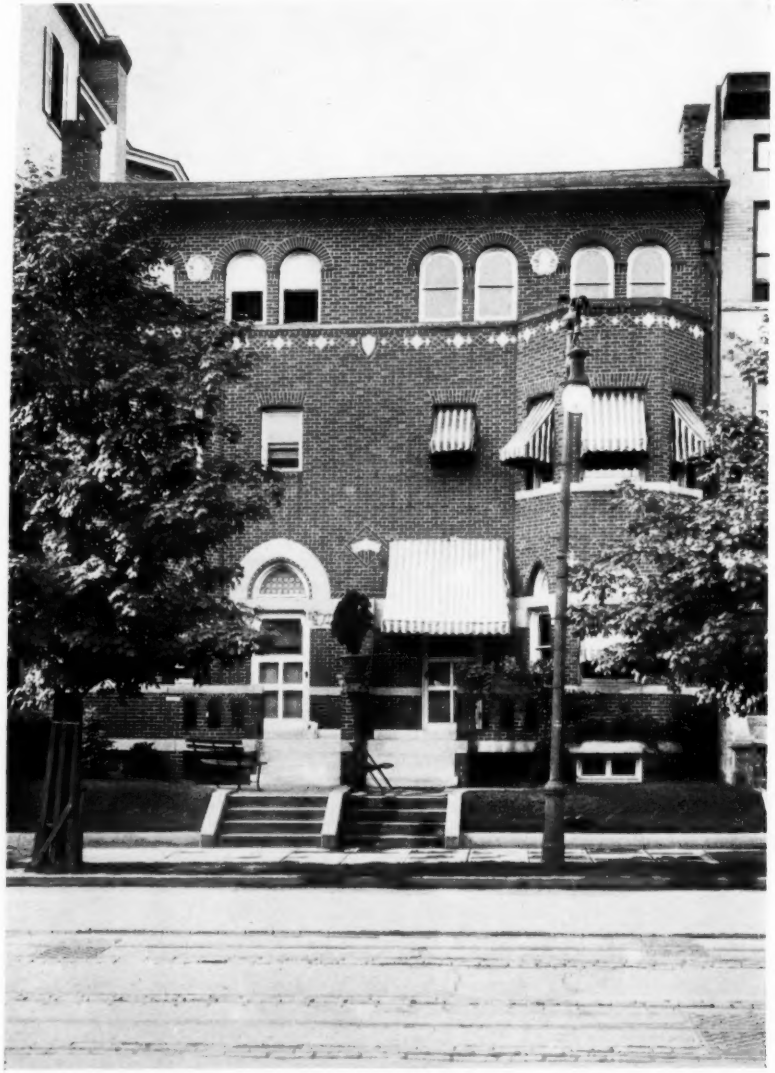


HOUSE FOR WM. HAHN, ESQ., WASHINGTON, D. C.

MR. ARTHUR B. HEATON, ARCHITECT



SECOND FLOOR PLAN



TWO HOUSES ON CALVERT ST., WASHINGTON, D. C.

MR. ARTHUR B. HEATON, ARCHITECT

HOUSE FOR R. V. BELT, ESQ., BILTMORE ST., WASHINGTON, D. C.

MR. ARTHUR B. HEATON, ARCHITECT

PALAZZO VALMARANO, VICENZA, ITALY

ANDREA PALLADIO (1518–1580), ARCHITECT

XUM