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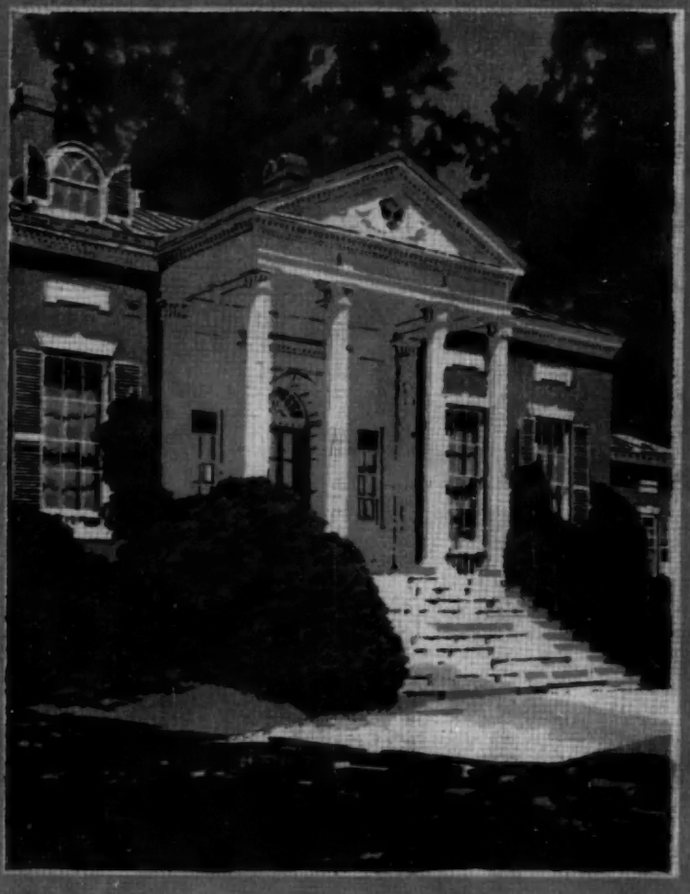

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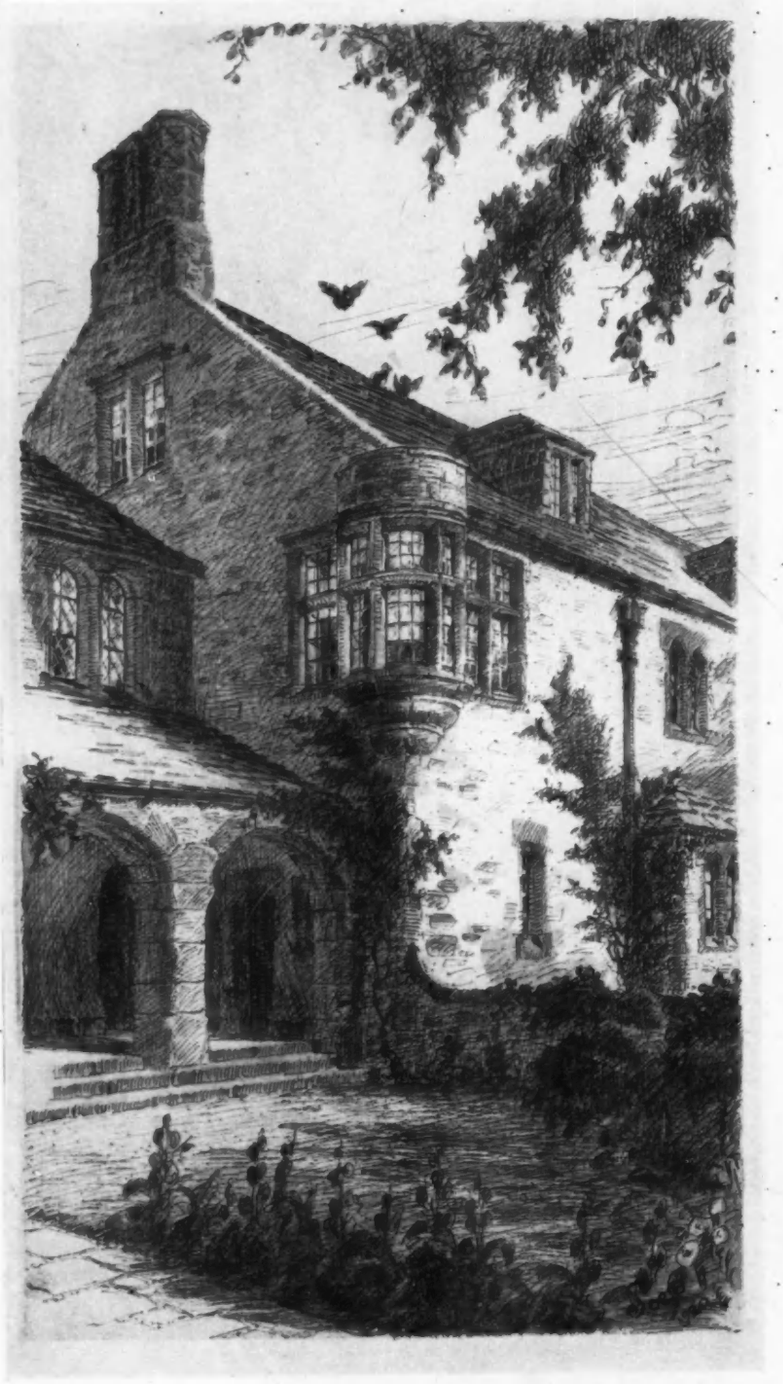


CARLL TUCKER HOUSE, MT. KISCO, N. Y.
WALKER & GILLETTE, ARCHITECTS
FROM SKETCH BY O. H. TORP

The
ARCHITECTURAL
FORUM

Volume XLII JANUARY 1925 Number 1

St. James' Church, Lake Delaware, N. Y.

CRAM & FERGUSON, Architects
By JOHN TAYLOR BOYD, JR.

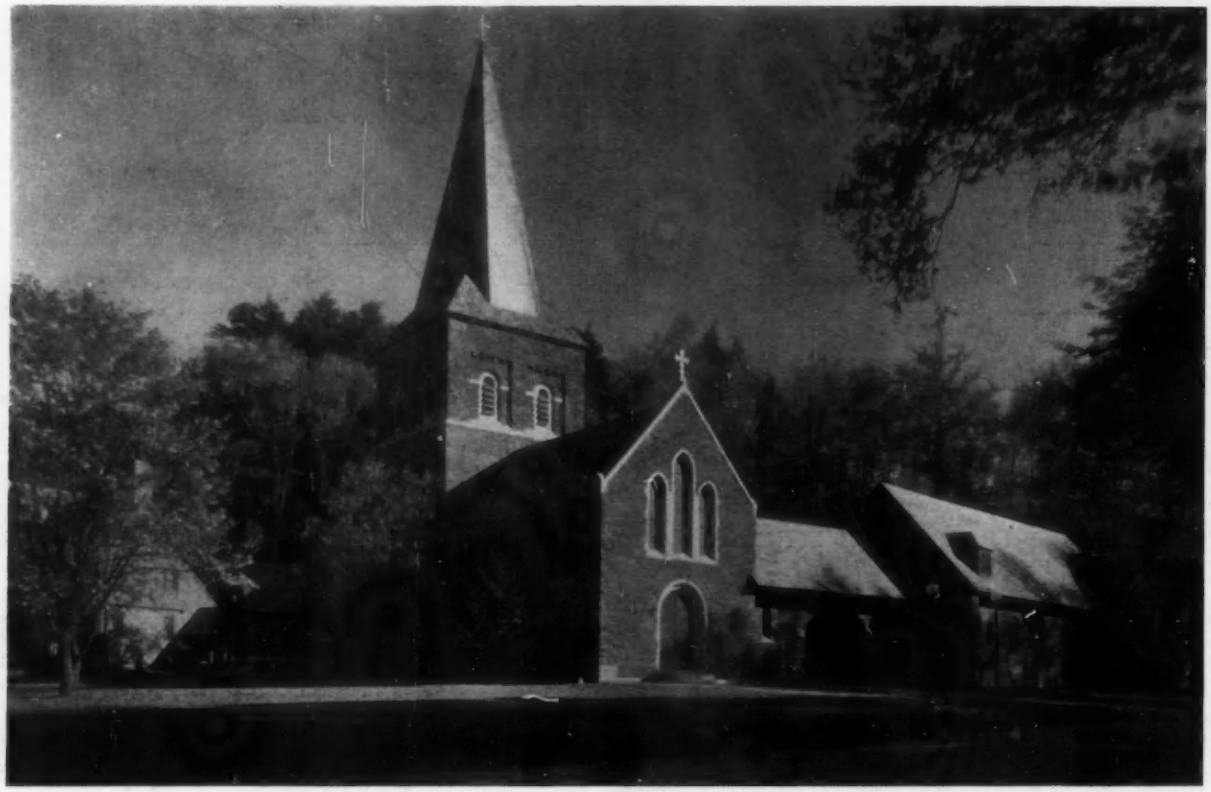
TO bring out a large idea in a small work,—this is one of the hardest feats in architecture, and when this feat means the welding of many varied picturesque motifs together into a simple unity, the result is close to a masterpiece.

For these reasons, this little rustic church group at Lake Delaware is significant. Its significance is all the greater, moreover, because the attempt at picturesque, informal design is coming to be more characteristic of contemporary architecture each year, and this bit of architecture succeeds strikingly where other architecture so often fails. Mr. Cram has the secret of knowing how to achieve originality, warmth, color and humanness, expressed architecturally in the beauty inherent in structure, and in the evident touch of the human hand on building materials. It is the ancient ideal of master building and craftsmanship, and now that American art is turning eagerly towards it, let us not forget that Mr. Cram has been preaching and practicing it with rare success for over a generation. The fact that he can achieve the ideal in greater perfection than most artists makes him today seem strangely new.

The ideal of master building is noble. It is worth every sacrifice, because its attainment will mean the arrival of a truly great architecture. Since it is so difficult, the ideal deserves the most earnest study and effort. Unity versus variety, originality versus design, interest versus form,—here is the oldest dilemma in art. It has eddied the current of style at every bend in the stream, and it has bedeviled every artist since prehistoric man took up mural decoration. If so well known, why make so much fuss over it?—one may ask. Because, like many well known qualities—as for instance, honesty—it is the hardest to attain in practice. In art, as in other activities, often the worst failures occur through overlooking the obvious. Where the workmen in a situation are in doubt, the master often comes along and astonishes everyone by perceiving the obvious!

Mr. Cram is one of the rare few who grasp this truth. He takes many divergent elements of the picturesque, conjured out of a rich imagination, and binds them together into a bold, simple mass, with all surplus form pared away until it is almost gaunt; and he does this in an effect so dramatic and so transcendently obvious! Because of his mastery, Mr. Cram has been a splendid leader in American architecture in this formative period, the significance of which we can only guess at. In fact, he has shared leadership with Charles F. McKim. Both men have been indispensable to American architecture, McKim insisting on perfect form, on balance, poise, maturity, perfection of detail and exquisite taste; and Cram on freedom and directness according to conditions of site, the expression of structure, the poetic touch of the human hand on building materials, carried out in perfect unity. Two great idealists, they compassed between them most of the many-faced truths of architecture. One belief they held in common,—one which should be better understood. This was the insistence on unity, on perfect form. In McKim's case the unity was spoken of as the "monumental tradition," the "one big dominant," while with Cram it is known as the "dramatic effect." Essentially the meaning is the same, namely, a large, simple unity, in which some idea predominates to give an overwhelming single impression. This single impression is built up in the design by forcing each different element to enhance the impression, in a series of rhythms and balancings, culminating in the dramatic climax. This is design. The process is the opposite to that which is too often practiced, in which design is felt to be a stringing together of motifs and details, charming in themselves, but whose very charm has been the downfall of the designer, who has worked on each one by itself, without regard to the others, until he has made it inharmonious or over-emphasized, or else has put it in the wrong place. He has not felt its true importance.

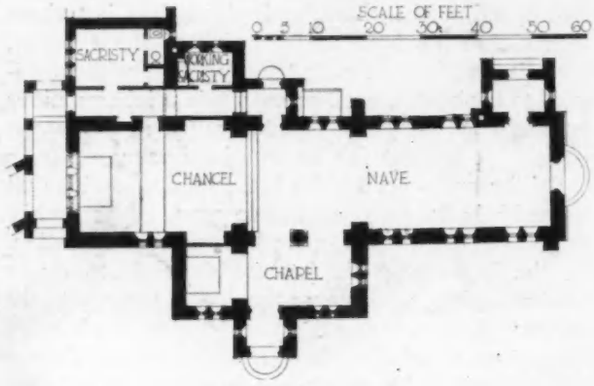
Of the two processes the first is design, and is that more likely to result in a true work of art, while the other is significant, more like surface decoration. In the latter type architecture descends to clever draftsmanship. Whenever the decision comes to the designer as to whether a given detail be made more interesting or whether it be made more harmonious with the whole, he will choose to make it more inter-



General View

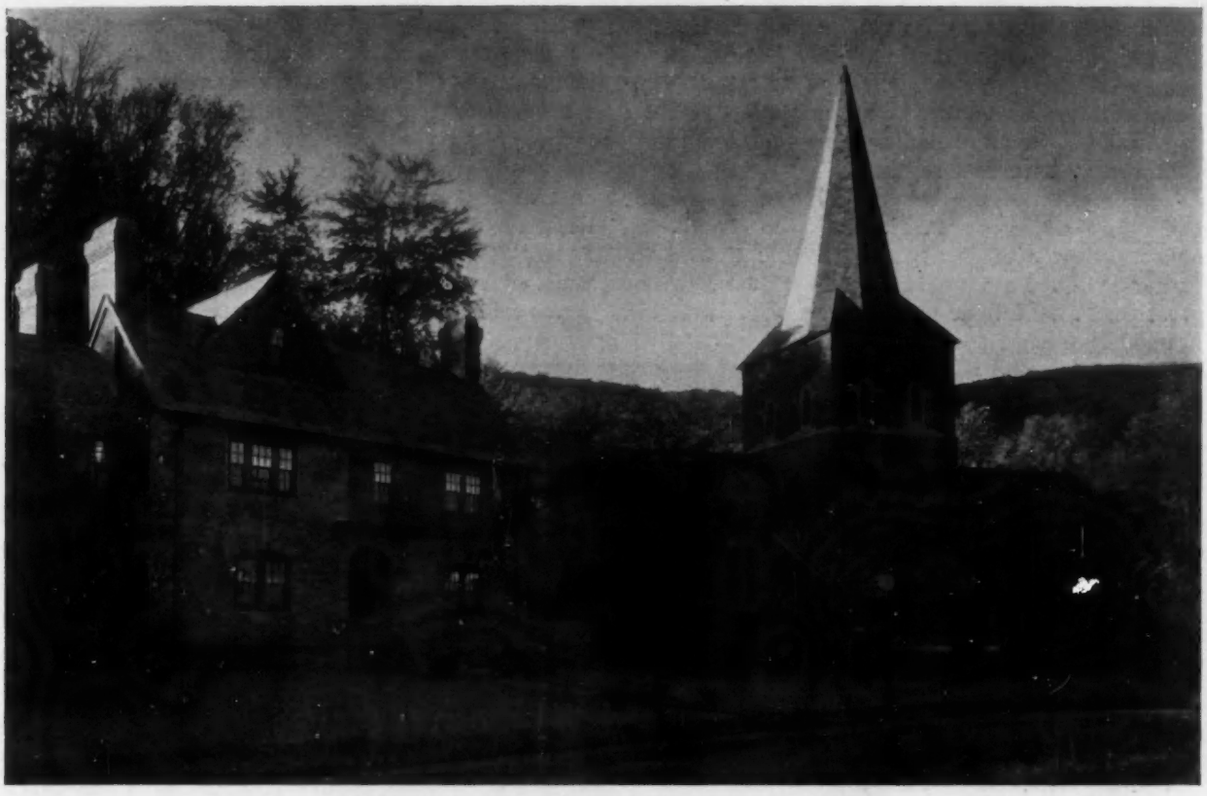
esting, not realizing that, to the clever hand, the path of the charming is likely to be the easiest way. The real and hard part of design—the coördination—is shirked.

Mr. Cram's example is particularly vital today, now that architects all over the country are striving for picturesque, informal effects. To say this is not to imply the formal revival of the Gothic style as, at one time, many people thought Mr. Cram was advocating. Mr. Cram's ability is too true and too inspiring to be crystallized in such a sweeping generalization. He has too many works to his credit, which, like this little rustic church at Lake Delaware, are free, direct masterbuilding, rather than archæological Gothic. In any case, they are at least as free as many of the contemporary designs of the "English" type, which pass for modern, but which stick close to their mediæval origin. Unfortunately, intimate knowledge of the Gothic technique is so rare today that people do not appreciate Mr. Cram's perfect mastery of it, and how far he can successfully depart from its historic conventional forms when it suits him. A few minor details do not make architecture, nor do they determine whether a work is living, inspired, or dead, belonging to another age. Mr. Cram is the true architect, because he thinks in three dimensions, in mass structure and building materials, and some of his works at least are so integrally adapted to the conditions of their situation, that they seem in many ways modern.

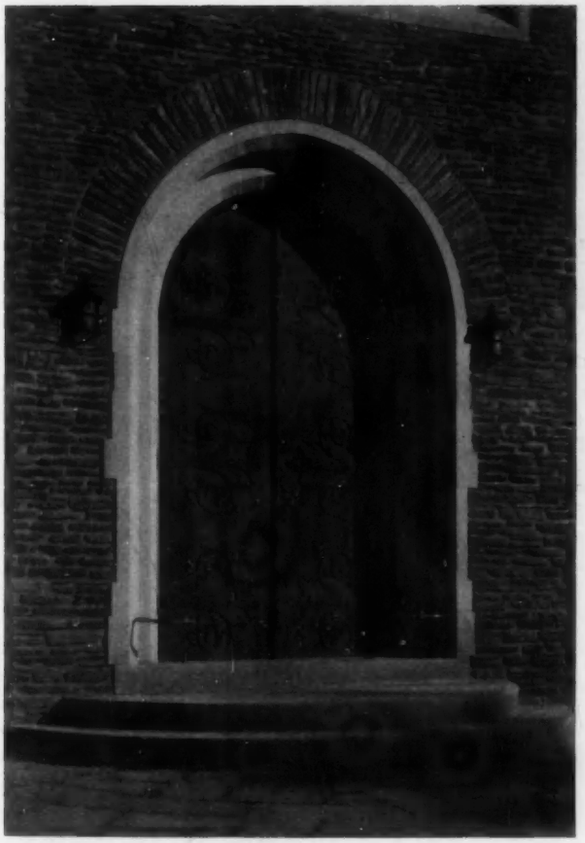


Plan of Church

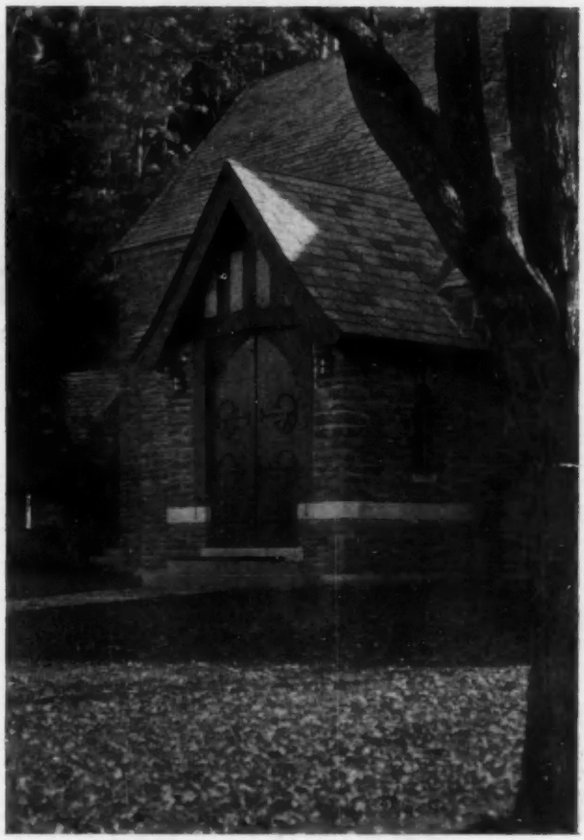
This church group is an example. Details are so few and so simple that they seem entirely pertinent. The effect is almost that of pure form. Notice how the elements of design have been built together in one bold, squarish mass, resting on a comparatively flat site, and thrown up boldly against the encircling crests of hills with magnificent screens of trees. A striking contrast of buildings with their natural setting, yet there is no discord. The buildings seem to "belong" to their site, so perfectly are they fitted to it. In the mass itself, so severely plain, the large, almost unbroken, planes of wall and roof sweep up in a progression of angles, to the pyramidal peak of the tower. This tower is the "one great dominant" for both architecture and landscape. How different is this bold effect of simple unity from the shapeless, haphazard, sprawling mass of many informal designs,



VIEW OF CHURCH AND RECTORY FROM THE NORTH



DETAIL OF MAIN ENTRANCE DOOR



ENTRANCE TO LADY CHAPEL

ST. JAMES' CHURCH, LAKE DELAWARE, N. Y.

Photos. Paul J. Weber

CRAM & FERGUSON, ARCHITECTS

Additional Illustrations on Plates 7 and 8

in which the basic idea has not been discovered, but for which instead has been substituted the false exaggeration of one or more details of no intrinsic importance! Often one sees picturesque architecture in which two or more motifs compete for primacy, with a most discordant result.

The interior of the church indicates use of the same vigorous, sure method. The plan contains an unusual variety of elements apparently thrown together in a loose way, but which combine in one great contrast of light plaster walls with dark, oak beamed ceilings, oak floors, benches and other church furniture. Principally, the church consists of a long, narrow nave, having a single row of benches on each side the one center aisle, with much emphasis of chancel, as befitting the sanctity of the Holy of Holies. On one side of the nave, towards the chancel, is attached a small chapel, in the shape of a long rectangle, whose axis is parallel that of the nave, and on the other side are placed sacristy and offices. There are several corridors of circulation and four entrances. Altogether Mr. Cram has arranged much of interest in a very narrow compass. But the interest is in the solid geometry, and in the contrast of plaster walls with oak woodwork. Detail is subordinated, except in two places. One is the dramatic climax of the emphasis of the chancel, where the three tall pointed arches of the east window, combined in one motif with the altar, form a splendid architectural dominant at the point where the religious interest is centered; the other is the single column which separates nave from chapel, and which, in a simple, forceful way, gives interest and a touch of charm to bare flat walls, which would otherwise be too monotonous. The daylight is cut down by using small windows,—another factor in the result. These small openings make the interior more restful, in our strong sunlight, but not gloomy, because of the light walls; and they also serve to preserve almost unbroken the ample wall planes.

Detail of Door and Wall Penetration at the Main Entrance to the Church

In this result, so harmonious that one forgets its apparently easy mastery rests on perfect handling of building materials, some details of the craftsmanship are worth recording. At this point, I shall interpolate two paragraphs from a letter written by Mr. Cram to the Editor of THE FORUM which are valuable not only because they concern the church at Lake Delaware, but also because they are Mr. Cram's. "There is very little to say about the materials of the church except the general stonework. When I first looked over the grounds with a view toward designing the new buildings, the question was raised as to the material to be used. I pointed to the stone walls all around the place, and said 'We will use that.' I was told that this was quite impossible, and asking why, received the reply that it 'simply wasn't done.' This answer failed to satisfy me, and after much argument it was decided to go ahead and try the experiment. The result more than justified my confidence. The stone is a curious, thin sort of brown shale, many of the stones running not more than an inch or an inch and a half in thickness, and so up to about 6 inches. Many experiments were made in the laying up of the stone, and there was finally produced a most admirable result.

"The trimming stone, such as there is, is Indiana limestone. The roofs are covered with rough, variegated slates. All the plaster of the interior is hand-troweled, that is to say floats, straight edges and everything of the sort are discarded and the whole thing done with a brick mason's trowel, so obtaining a slightly wavy surface that is smooth in texture but irregular in effect. All the woodwork is stained gray-brown. The reredos is carried out in full color and gold. The reredos for the lady chapel is also done in color and gold; in the center is a small and most exquisite picture by Pietro Lorenzetti, and the rest of the design has been built up to enshrine it."

These few words help explain the secret of Mr. Cram's method, but only in part. The rest is the work of his own supreme ability to combine the poetry, romance and history of architectural achievement with the practical requirements of modern civilization. Not only in the adaptation and revival of the noblest examples and finest details of Gothic architecture, but also in the use of precedents from the Georgian and the Italian Renaissance, has Mr. Cram shown consummate versatility and genius.

The Greek Revival Capitol at Columbus, Ohio

By THOMAS E. O'DONNELL

Assistant Professor of Architecture, University of Illinois

ONE of the finest examples of the Greek Revival in America is the capitol at Columbus, Ohio. At the time of its completion it was considered, both in this country and in Europe, the most imposing state capitol in the United States. Today it is one of the few public buildings of its period and style which are still standing, unchanged, and serving their original purposes.

Whatever criticism may be brought to bear against the Greek Revival, it was a phase of that classicism in America which gave us what may be considered our first national architectural expression. It possessed all the attributes of a style suitable for important public and monumental edifices. That this borrowed style could, when properly interpreted, be made thoroughly applicable to American needs is proved by the Ohio state house, which has served a rapidly growing state for nearly 70 years, and that it is still considered serviceable is evident from the fact that it has been recently proposed to enlarge the structure by building a tower of offices over the central rotunda portion, in a manner similar to that adopted for the Boston custom house.

The erection of the Ohio capitol came at the time when the style of the Greek Revival was generally accepted for public buildings. Some of the finest public edifices in America were under construction at this time. Two structures in this style were being built in Washington, the Treasury Building, and the Patent Office, both by Mills. These seem to have established a precedent for public buildings generally, and no doubt influenced the commissioners of the proposed Ohio capitol, who, in their program for the competition, made it a requirement that the building should be in the Greek style.

The history and events connected with the construction of this unusual building are as interesting as is its architecture. In January, 1838 the General Assembly of Ohio passed an act to provide for the erection of a new state house at Columbus. In March, following, a board of commissioners was appointed by the legislature. The next month the commissioners met to formulate plans for carrying out the work and, following the custom of the time, "advertised for plans, offering premiums." In response they received between 50 and 60 sets of plans from different parts of the country.

In October the commissioners met again to consider the plans submitted, and awarded three premiums. Those submitting the successful designs were: Martin E. Thompson of New York, Henry Walter of Cincinnati, and Thomas Cole of Catskill, New York. Thompson was of the firm of Town, Thompson & Davis, and all were well known "Greek Revivalists." Walter was a recognized Greek Revivalist of the middle west and had done important work in Cincinnati. Cole, strangely enough, was not an architect but a landscape painter. However, his training had evidently included a thorough grounding in Classical architecture, and for that reason he was able to present an attractive design. The commissioners claimed that they had combined the "best ideas of the three prize designs," in the modified plan which they recommended and which was adopted. Although Thompson's design was given first place in the awards, it seems that Walter was employed as supervising architect to execute the work. Just how complete were the drawings which came to Walter's hands is not definitely known, but since the scheme adopted was a "combination" of the best ideas of three sets, it is quite evident that many changes and adjustments must have been necessary. What part Walter may have played in making these adjustments is not clear, but it is likely that he tried to introduce many of his own ideas. At any rate, the way of the supervising architect was not easy, and his services ended with the laying of the foundation and the cornerstone.

It is also difficult to determine what the composite design was like. None of the drawings seem to be in existence. There is a perspective drawing preserved in the state house which is said to set forth the building as originally designed. There was also a design published in the "Report of the Plan Commission of the City of Columbus," in 1908, which is said to be the "original design, submitted in 1850." From the date it is evident that this was not one of the original drawings, for the building had been under construction since 1839. It is probable that the exterior design was largely the idea of a single designer, and the combining of the "best ideas of the three designs" was confined to planning interior arrangements. Whatever the original scheme may have been, the plan and the exterior, as it was finally proposed, are preserved for us in an illustrated article published in the London *Builder* in 1852. A contemporary perspective view, evidently taken from the same source, was also published in Vol. II of *Gleason's Pictorial Drawing Room Companion*, Boston, 1852. In both journals a brief description of the building was included, and the name of the architect in charge was given as William Russell West.

In the original competition, architects' estimates accompanied the plans submitted. As usual, some estimates were very low, while others reached nearly $1,000,000. The commissioners took an average of all estimates furnished, and reported that the building could not be built for less than $450,000. These estimates were based in part upon use of convict labor, which was to be procured from the state penitentiary located at Columbus. The commissioners

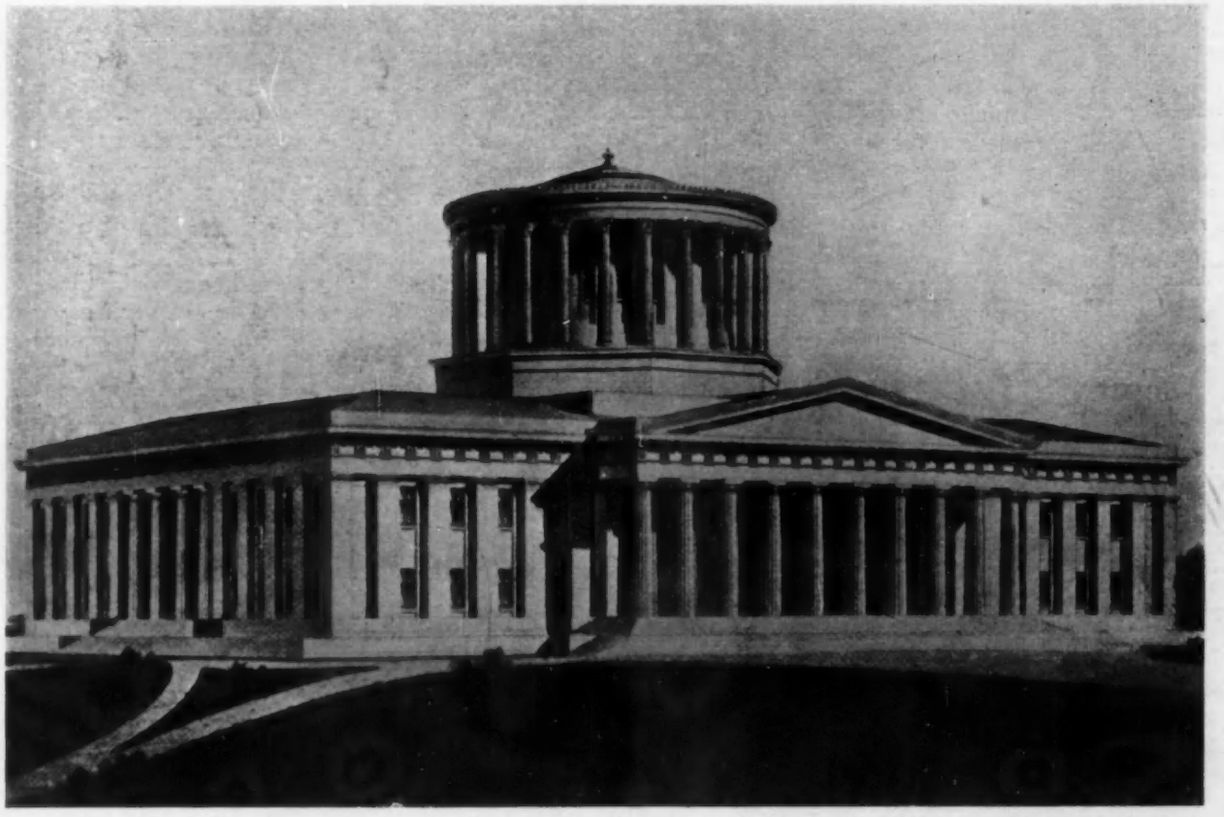
asked for an appropriation of $50,000 to start the work. This was made, and in April, 1839, active preparation for the work began. The excavations were made, stone was brought to the site from a quarry a few miles away, and the foundation was begun under the superintendence of Henry Walter. Work on the foundations progressed rapidly, and on July 4, 1839 the cornerstone was laid with appropriate ceremonies.

At the next session of the legislature an additional appropriation of $30,000 was asked for by the commissioners; but, due to political disturbances, instead of providing the necessary funds the legislature repealed the act for the erection of a state house, and the work ceased. Six years passed, and it was not until February, 1846 that the General Assembly passed a second act to provide for the erection of a capitol. A new board of commissioners was appointed and a small appropriation made, but the work had to be again suspended in 1847 because of lack of funds.

In the early spring of 1848 the commissioners determined to push the work forward. The former architect, Henry Walter, had resigned, and William Russell West was appointed architect, and J. O. Sawyer was made general superintendent. Under these men the basement walls were completed, a railway was built from the quarry into the city for transporting stone, and labor-saving machinery was installed. In 1850 a more substantial appropriation was made. The railway was extended from the quarry all the way to the capitol grounds, and the stone was transported by steam. Hoisting machinery operated by steam was also provided, and skilled stone cutters were employed for the more finished work. The work progressed so rapidly that by 1851 the exterior walls were raised to a height of about 40 feet from the ground level.

Apparently changes had been made in the design as the work progressed, especially in the upper portions of the structure. The design of the main mass of the building, up to cornice line, seems to have been well determined before the basement walls were completed. It is certain that changes were made in the pediments and particularly in the cupola, most of them being effected for purposes of economy. By 1852 the final design was fully determined, which is shown by the illustrations published in the *Builder* and in *Gleason's*. These show the building in exactly the same form as it stands today, even to the crowning of the cupola. These perspective views were, no doubt, taken directly from the drawings of William Russell West, the architect in charge of the major part of the work from 1848 to 1854, and differ from his design of 1850 only in that the portico is not projected and that the peristyle is omitted from the cupola.

These views, published before the actual construction of the cupola was begun and nearly ten years before it was completed, are of particular value and



One of the Original Designs for the Ohio Capitol, Submitted in 1850, and Published in the Report of the Plan Commission of the City of Columbus in 1908

interest because of the light they throw upon the design of the cupola. This feature has been much criticized because of its bare and unfinished appearance; in fact the cupola is often referred to as the "cheese box." It has been the contention of many that the "original" design called for a dome instead of a conical roof. This perhaps is due to the fact that in recent years it has been thought that every state house must have a dome, which has led to the general conclusion that, in this case, a dome was intended but never added. The competitive designs have not been preserved. It is even likely that one or more of the prize designs included a dome. But since the design adopted for execution was a "composite," it is evident that the completed and accepted design for the building dates from a time considerably later than the competition and that none of the competitive designs can really be considered as the "original" design. Whether the first supervising architect, Walter, contemplated a dome in his early working plans is not known; but he must have carried the design of the crowning feature far enough to determine the areas of the foundations which he constructed. However, as already said, he resigned shortly after the laying of the foundation and the cornerstone, and West was appointed to the position. The latter served from 1848 to 1854, and carried the building from the footings up to the construction of the roof, and it is probable that it was he who fully determined the exterior design in most of its details, as shown in the views published under his name in the *Builder* and in *Gleason's*. The latter journal attributes the design of the cupola to West, at least so far as the conical roof of stone is concerned.

The design shown in the "Report of the Plan Commission of the City of Columbus," and said to be the original design, was submitted in 1850. Since West was the architect in charge at this time, it may be reasonably assumed that this was the design as he proposed to carry it out. In this design there appear two features which were not executed in the final work: the extended portico and pediment on the front, and the peristyle around the cupola. These were probably omitted for reasons of economy.

Although Mr. West had determined the final scheme and had carried the building from the foundation to the roof, he did not remain to complete the work, for he too resigned, in May, 1854, and N. B. Kelly was appointed to succeed him. By the end of the season all the stonework on the building was completed except the cupola. Kelly seems to have been something of a structural engineer as well as an architect, and his work had to do principally with the roof and cupola construction, the necessary arrangements for the heating and ventilation of the building, and the construction of the floors and stairways. Shortly after Kelly took charge of the work, he reported to the commissioners, in 1855, that he had found in the building no means provided for

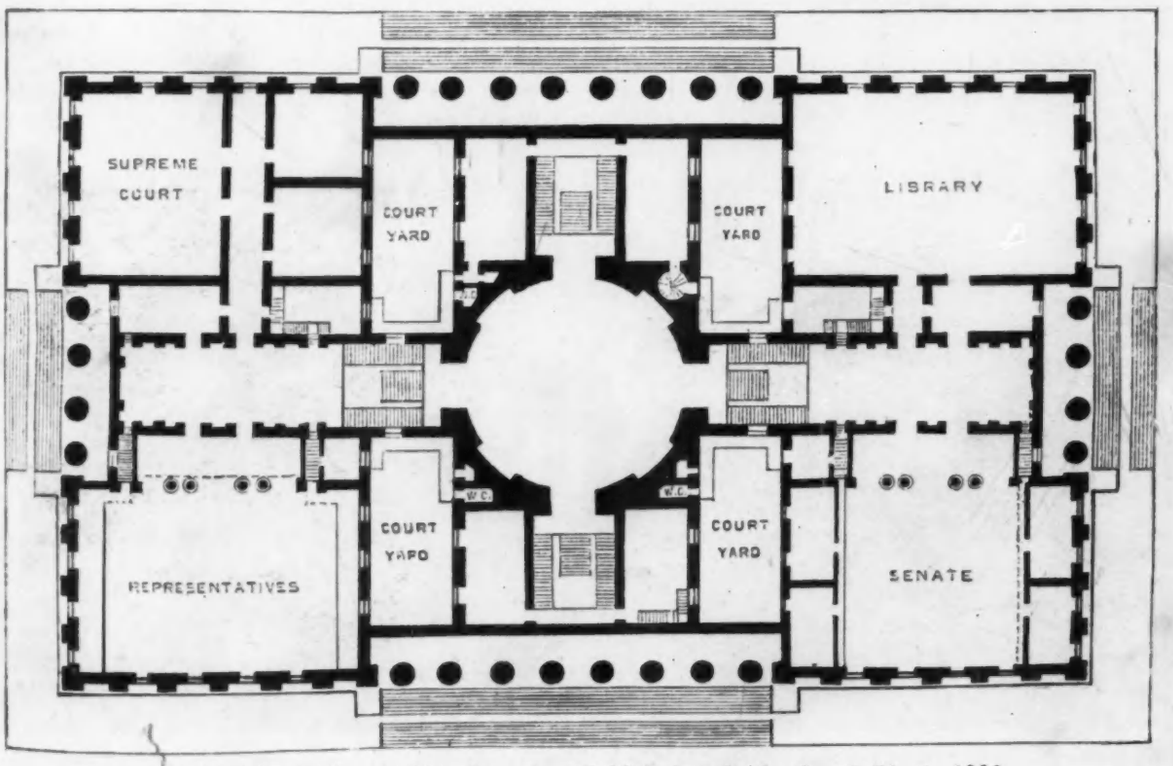
Perspective View of Ohio Capitol, Published in the London *Builder* in 1852, Under the Name of W. Russell West, Architect, Which Shows the Building as Finally Completed in 1861

ventilation, no provision for heating the rotunda and passages, and that a very inadequate plan of warming the rooms by means of hot air furnaces had been adopted. Kelly was responsible for the building in of an extensive system of wall flues, connected by means of brick ducts under the basement floor with two large vent stacks which he constructed in the light courts.

A new board of commissioners was appointed in 1856, and as a means of checking up on the work it was ordered that the plans be submitted to Thomas U. Walter and Richard Upjohn, as consulting architects. These men passed upon the work and did not make "any material change in the general plan or design of the building." Since the structure was nearly completed, it is difficult to see how they could! By January, 1857, the building was far enough advanced for it to be occupied, at which time there was a grand formal opening. Although occupied, there was still much work to be done upon the interior, and this was carried on steadily. For some time Isaiah Rogers, of Cincinnati, had been employed upon the detail drawings, and in July, 1858 he succeeded Kelly as supervising architect. Rogers was a well known Greek Revival architect of Boston and New York and still later of Cincinnati. At the time of his appointment the building was complete except for finishing the roof of the cupola, some of the interior finish, the steps, the grading of the grounds about the structure, and the erection of the monumental enclosing fence, all of which he entirely completed by 1861.

The building of the state house thus covered a total period of 22 years, although actual building operations were under way only 15 years of that time. Although the estimate of the first board of commissioners was less than a half-million, the final cost was over three times that amount. For its time it was one of the largest and most costly of the state capitols, and was distinguished not only for its style and beauty but also for its advanced type of construction, for it was practically a fireproof building, which was not a common thing at that period.

Since it is now but a matter of time until a new or enlarged structure will be necessary to house the many state offices in connection with the capitol, it will be of special interest to the architectural profession at large to see what disposition will be made of the old building. It is hoped that the state officials will endeavor to preserve the old structure so far as may be possible. As it is one of the few good examples left of the Greek Revival, this building should be preserved, intact, as a state monument and a worthy example of one phase of our national architecture. No addition or alteration to meet increased requirements of state officers and their departments can be made without ruining the simple, balanced plan of this severely restrained and dignified design. The architects of Ohio should unite to save this relic of our history from any changes or radical alterations. Why not erect a state office building, of necessary size and height, opposite the old capitol, in the design of which Greek Revival spirit could be consistently followed and preserved?



Plan of Main Floor of Ohio Capitol, as Published in the London *Builder* in 1852

House of Carll Tucker, Esq., Mt. Kisco, N. Y.

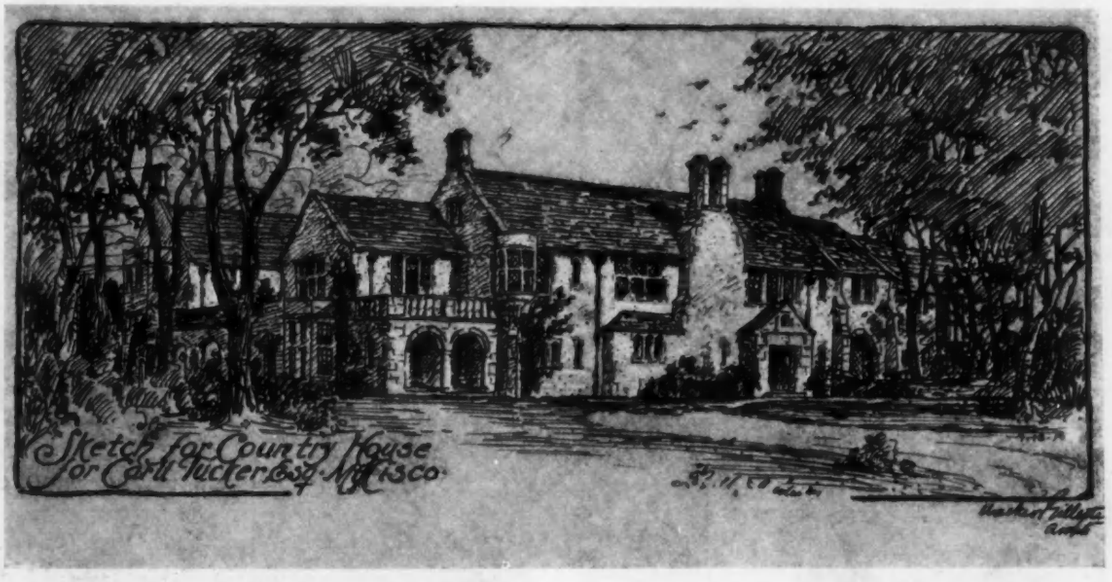
WALKER & GILLETTE, Architects

TO the three or four splendid examples of modern manor houses in the Tudor style, built in this country during the past few years, has been added one more, which in importance as well as quality of design equals any of its predecessors. In the country house of Mr. Carll Tucker at Mt. Kisco, New York, the architects, Walker & Gillette, have achieved a signal success in the modern interpretation of this fascinating English style. The main building, which is two stories in height, has been planned in the shape of a letter U, to which is attached a long servants' wing.

Although a plan of this shape is seldom found in the old Tudor houses of England, it adapts itself exceedingly well to the requirements of the modern American country house, permitting rooms in each of the two sides of the letter U to have windows in three walls. This fact makes it possible to have exceedingly light and sunny rooms. Another advantage of a plan of this kind is the sheltered court, enclosed on three sides by the house itself. In this case the orientation is such that every room has direct sunlight during some part of the day. The entrance front of the house is towards the southeast, so the garden court, with its covered cloister or loggia has a southwestern exposure.

Entering the house, spacious coat rooms and toilets are located on each side. The men's coat room on the left of the entrance connects with an ample study room for children. Beyond this study is a sport room, the walls of which are lined with built-in lockers. This room opens onto the eastern porch, adjacent to which is the large library with a fine bay window on the southwest. This library, located at the end of a gallery, is quite shut off from the rest of the house, giving it a pleasant isolation and privacy. Doors from this room open onto the eastern porch as well as the west cloister. From the library, the gallery, off which opens the children's study and sport room, leads to the central entrance hall. Off this hall is an octagonal breakfast room, connected with the large butler's pantry and servants' department. A long arcaded passage, which parallels the south cloister of the court, leads to the dining room on the north, the dining porch on the northwest, and the great living room on the south. This room, which is 52 feet long by 30 feet wide, has two large bays and a fireplace on the west side, while on the south side casement doors open onto the living porch.

Although the dining room and breakfast room are on opposite sides of the house, both connect with the butler's pantry, which adjoins the kitchen. This excellent arrangement permits the location of the breakfast room on the east, where it receives the morning sun, and the dining room on the west where the late summer sunsets may be enjoyed during dinner. The service portion of the first floor contains, besides the kitchen, the flower room off the breakfast room, the service stairway and elevator, as well as large pantries, store closets, servants' hall with its own pantry, and spacious servants' porch. A more interesting or better thought out plan for the main floor of a large country house can hardly be imagined. No detail which could add to the convenience or efficiency of operation has been omitted. The main stairway is attractively located off the arcaded gallery leading to the dining and living rooms, giving



Pen and Ink Sketch of the Carll Tucker House, Mt. Kisco, N. Y.

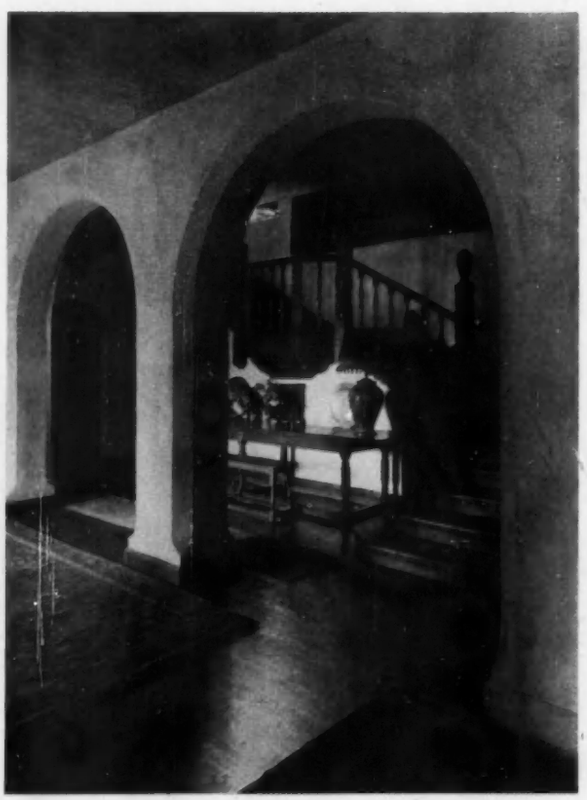
it proper subordination to the main elements of the plan, rather than making it a chief and conspicuous feature of the main floor of the building.

The second floor contains a number of bedroom suites, each with its own bath. Some of these suites include dressing rooms, boudoirs and sleeping porches. Altogether there are nine master bedrooms. Each of the wings of the house, enclosing the garden court, has a spiral staircase, in one case opening off the library, and in the other connecting with the living room. These small staircases, so characteristic of English Tudor houses, make accessible from the main floor the bedroom suites in the east and west wings without the necessity of using the main stairway located in the center of the house. The plan of this floor shows an unusually successful arrangement of rooms, baths, and large and small clothes closets. Although the arrangement in many cases is quite irregular, the rooms have been so planned as to be rectangular in almost every case. The two exceptions show a balanced effect of cut-off corners, which in no way detract from the pleasant proportions of the rooms. Above the breakfast room on the east is one of the sleeping porches, while the other two are in the west wing of the house, located in one case over the living porch and in the other over the dining porch. The second floor of the service wing contains the bedroom and bath for the housekeeper, the linen room, the seven maids' rooms and baths. Each of these rooms has a set bowl and clothes closet as part of its equipment.

The design of the exterior has been carried out in local stone laid up in rough random ashlar, with limestone trimmings, except for the interesting walls of the south court and the service wing, where stucco and beams have been used. The posts, arches and cornices of the south cloister are of wood, stained brown, showing an interesting use of tooth and zigzag patterns in piers and cornices. Heavy key blocks with pendant rosettes break the curve of the arches with a heavy note characteristic of the Tudor style. The interior of the cloister has a flagstone floor and vaulted stucco ceiling, which heavy plaster-covered ribs break into individual groined vaults. Two steps add importance and interest to the doors leading from this cloister into the house, except at the door leading from the west end of the cloister into the living room, where no steps are needed, as the floor of this room is on the same level as the cloister. Above the cloister, the wall is broken by two delightfully proportioned oriel windows supported by brackets hewn out of the upright beams which divide the plaster wall into panels. These panels are decorated in quaint raised plaster known as parge work. The whitewashed surface of the stucco walls on the three sides of this court break the monotony of the stone walls of the house and add a sense of restraint, repose and light to this court. The circular stair towers break the sharp line of demarcation between the stucco walls of the court and the stone walls at the ends of the two wings. Leaded glass, used in all windows of the house, add to the charm and quaintness of the design. The leadwork varies in design according to

Photos. John Wallace Gillies

Octagonal Breakfast Room

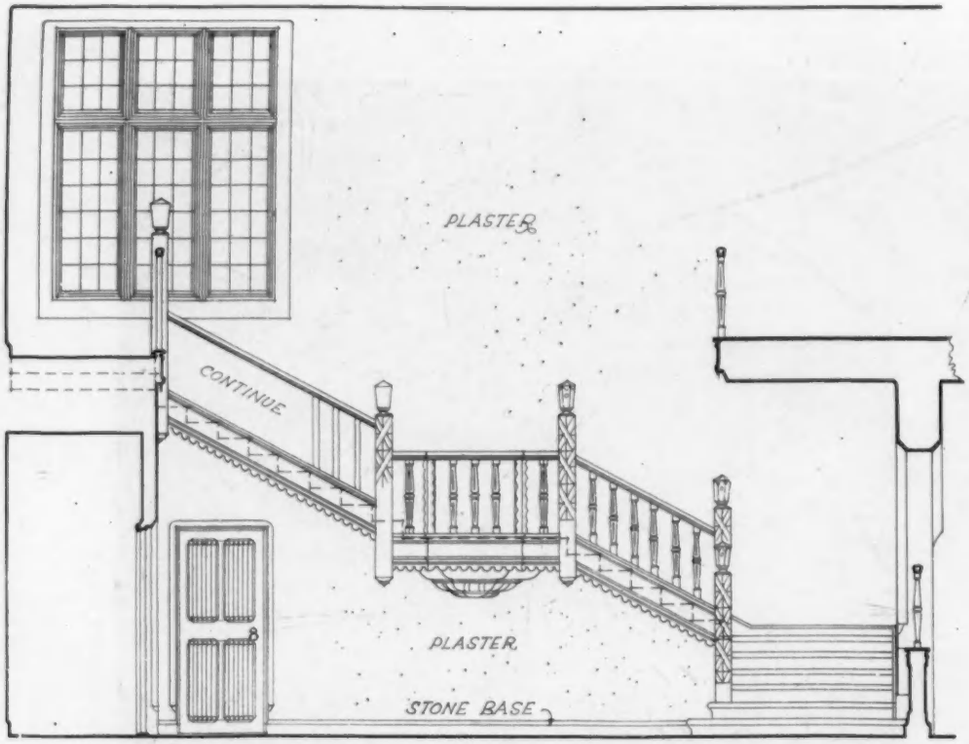


Stairway from Main Hall

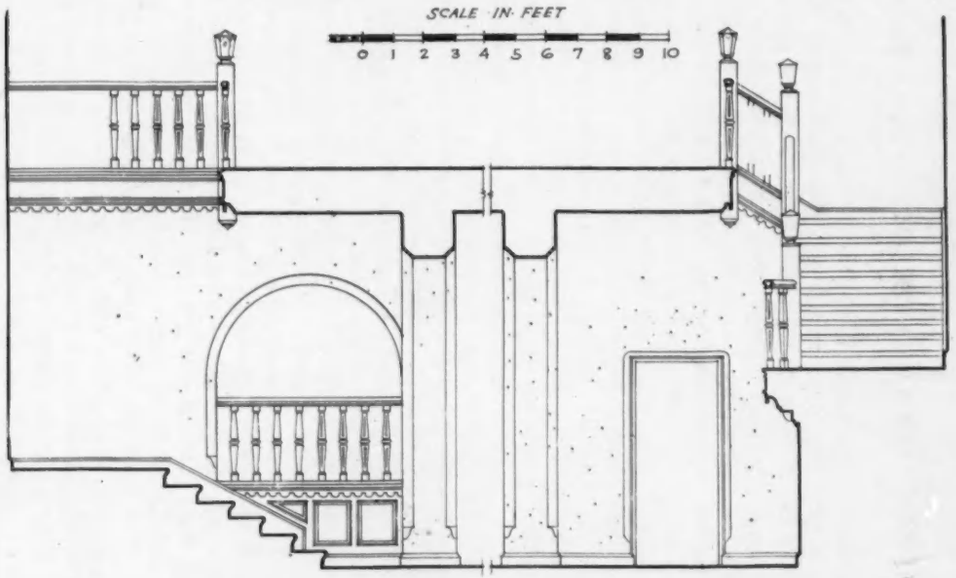
STAIR HALL ELEVATIONS

CARLL TUCKER HOUSE

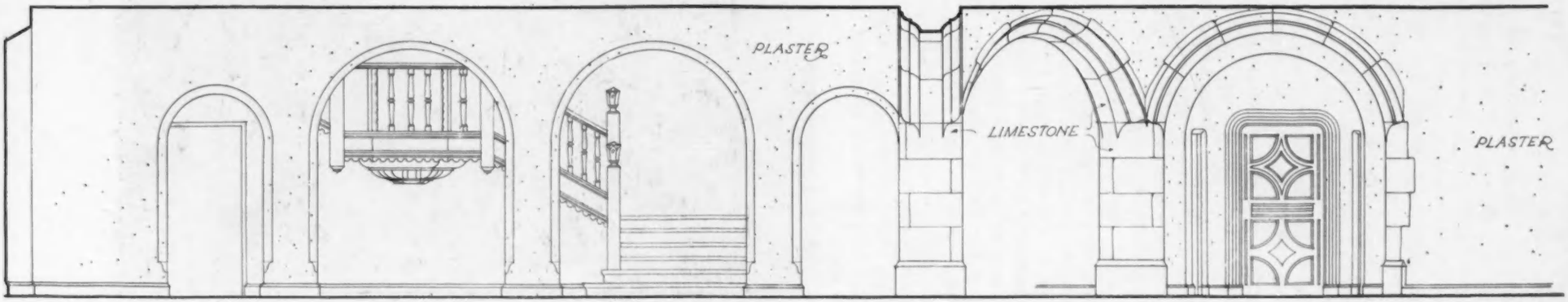
WALKER & GILLETTE ARCHITECTS



· NORTH ELEVATION ·



· EAST ELEVATION · · WEST ELEVATION ·

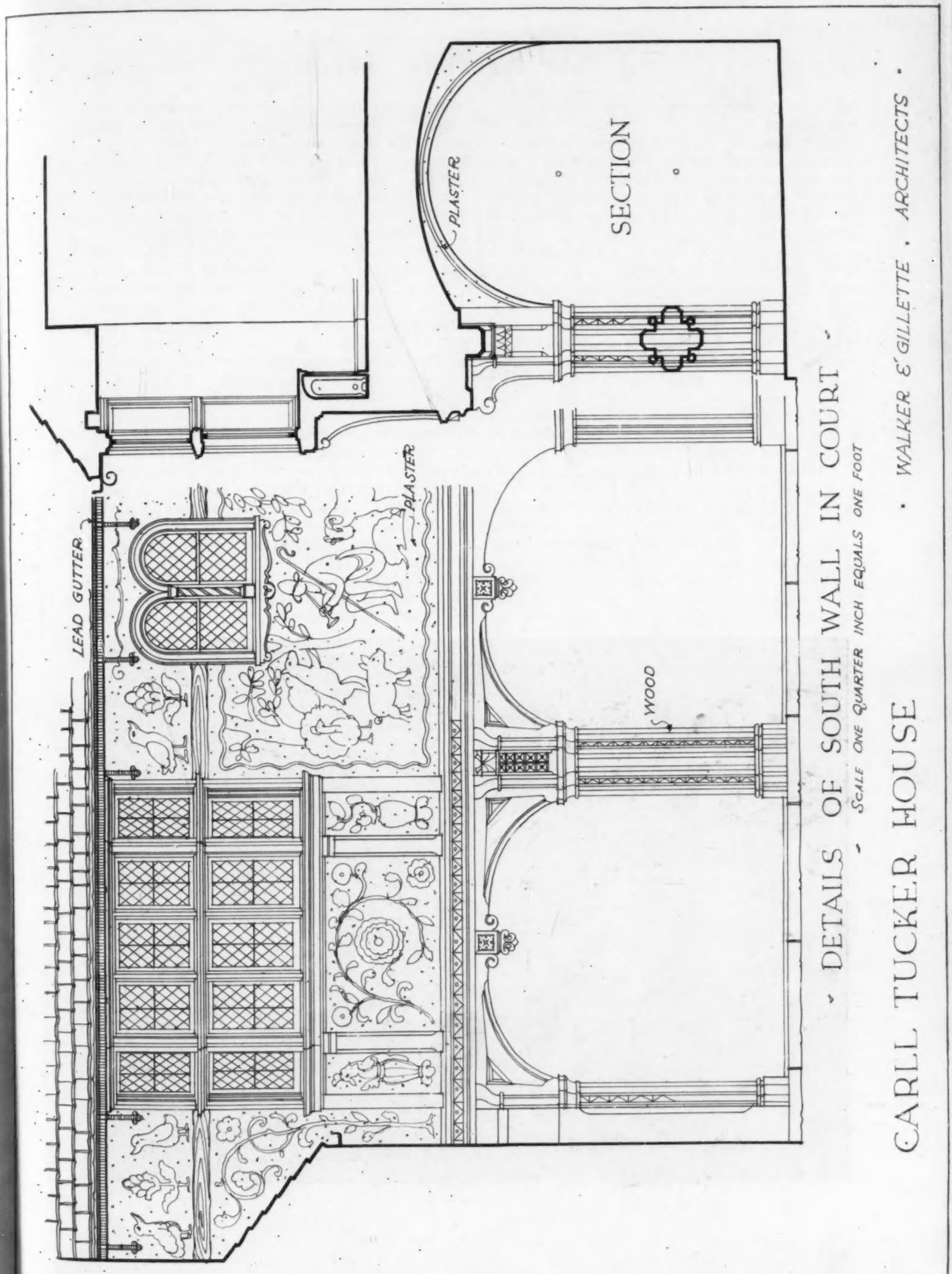


SECTION THRU CENTER HALL LOOKING NORTH

location. In the windows of the first floor the leading is in the form of diamonds and lozenges, while in the windows of the second floor the leading is simpler in character showing only a plain, rectangular pattern. A variation of the English custom of using casement windows throughout is found in the windows of the second floor, where for the most part they are double-hung. Heavy English slate, varying in width and color, as well as thickness, gives fine texture and character to the many roofs. The chimneys, which are also worthy of note, are excellent examples of the style popular in England during the Tudor period.

Although in the design of the Carll Tucker house, many liberties have been taken with the Tudor style of architecture, these variations in no way detract from the picturesque charm and consistency of its design. In this splendid manor house, among the many carefully treated features, the sleeping porches are perhaps the most successful. These special second story porches, which have become an almost indispensable part of the modern country house, have here been so admirably made an integral and consistent part of the structure of the house itself, that they are in no way noticeable as a modern detail grafted onto an ancient style of architecture. The sleeping porch above the living room porch appears like a small and natural gable at the end of that wing. The sleeping porch above the dining porch is so completely built into the second story of the building, that, except for the number and size of its mullioned windows there is no suggestion of a porch. Above the entertaining little octagonal breakfast room, the sleeping porch with its mullioned windows has been built under a continuation of the roof of the service wing, in such a way that here also there is no suggestion of a porch. The long low roofs of this house are inconspicuously broken by a few small slate-covered dormer windows. Where the main walls of the house are carried up above the eaves to form important gable dormers, stucco has been logically used for the sides of these dormers and slate for their roofs. Each of the principal elevations shows unsymmetrical and dissimilar elements, which is one of the characteristic features of Tudor design. This dissimilarity in the elements of the design adds much to the picturesqueness of the building, especially where such care is used in the proportion and scale of the various masses and details, as is the case here. The entrance porch, a one-story gabled structure, in limestone, is the strong and dominant note in the elevation of the entrance front. In close connection with this porch entrance, a massive chimney breaks the roof line in picturesque fashion. The windows on the first floor of the entrance front are small in scale, thus logically indicating the lesser importance of the rooms within, as well as emphasizing the

The Entrance Hall



DETAILS OF SOUTH WALL IN COURT

SCALE ONE QUARTER INCH EQUALS ONE FOOT

CARLL TUCKER HOUSE

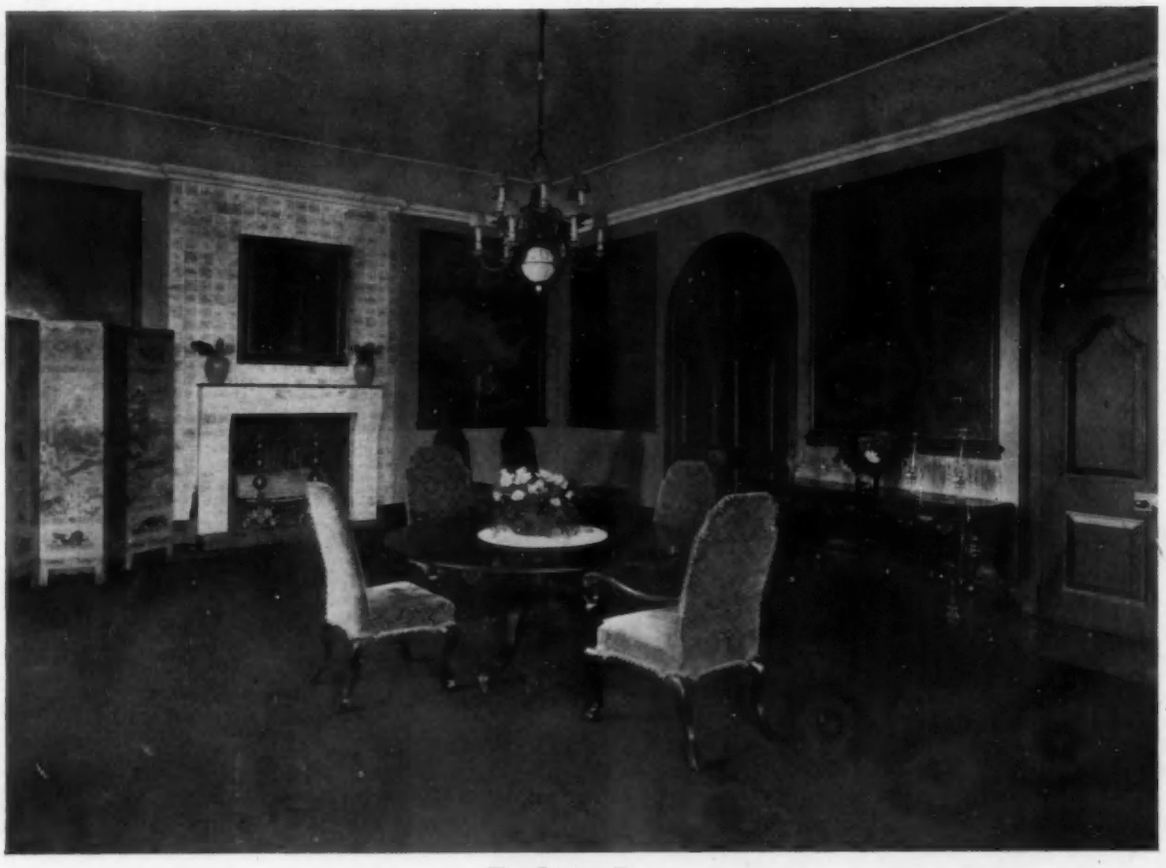
WALKER & GILLETTE . ARCHITECTS

larger and more important windows of the principal bedrooms on the floor above. Practically all of the windows have cut stone lintels, mullions and sills, except in the service wing, where they are treated in a simpler manner. The second floor of this wing, the walls of which are covered with stucco, projects over the stone walls of the first floor in typical Tudor fashion, giving a strong, virile effect.

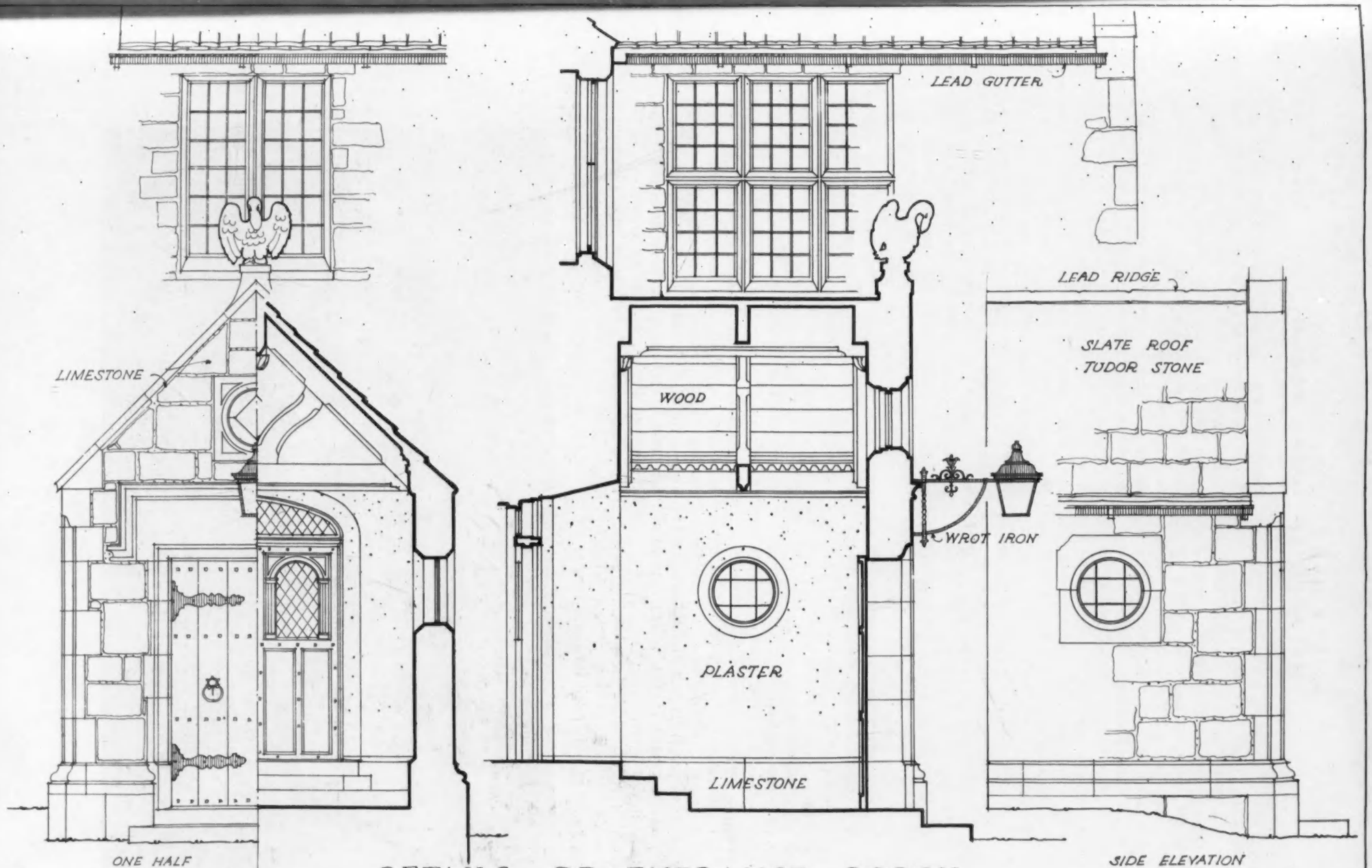
From every point of view the house presents interesting roof lines broken by picturesque chimneys, which give the necessary vertical note in contrast with the horizontal lines of the eaves and window groups. The diversity of Tudor details used for the various elements of the exterior design gives a refreshing vitality and interest to the several facades of the house. Although the building looks large and rambling from almost any point of view, the very carefully studied scale and location of window and door openings, and chimneys produce a domestic quality in the design which relieves it of all effect of ostentation and pretension.

The detailed drawing on page 11 shows the elevations of the entrance hall, corridor and stairway. The treatment of this hall and staircase, unusual as it is, is characteristic and in keeping with the Tudor style in which this house is designed. The stone arches and massive round stone piers of the octagonal entrance hall are rugged and stern in character, and the carving of the newel posts and balusters of the stairs is of the same simple and heavy type. The drawing on page 13 shows details of the cloister and south wall of the court. Here the heavy piers, formed by engaged colonnettes, suggest Gothic influence often found in Tudor designs. The parging of the wall above the cloister is exceedingly interesting in pattern as well as appropriate to this style, forming a pleasant contrast to the severity of the plain plaster walls of the two other sides of this south court, balanced in design as it is by high, mullioned casement windows over the two end arches, and contrasting with the small double-arched window above the center arch. Page 15 shows details of the entrance porch, a free-standing, gable roofed little structure, possessing charm in its fine proportions and interesting details. It serves as a weather-break for the inner door, and opens directly into the main entrance hall. This detail also shows the characteristic stonework and the slate roof.

The architecture and decoration of the interior are carried out in a manner admirably consistent with the exterior design. Rugged simplicity and dignified restraint are the dominating qualities of all the principal rooms. The octagonal entrance hall has massive limestone piers and arches of such size as to suggest the interior of some old Norman castle or convent. The baronial fireplace in this entrance hall as well as the main staircase which opens into the arcaded corridor leading from this hall to the



The Dining Room



DETAILS OF ENTRANCE PORCH

SCALE ONE QUARTER INCH EQUALS ONE FOOT

CARLL TUCKER HOUSE

WALKER & GILLETTE ARCHITECTS

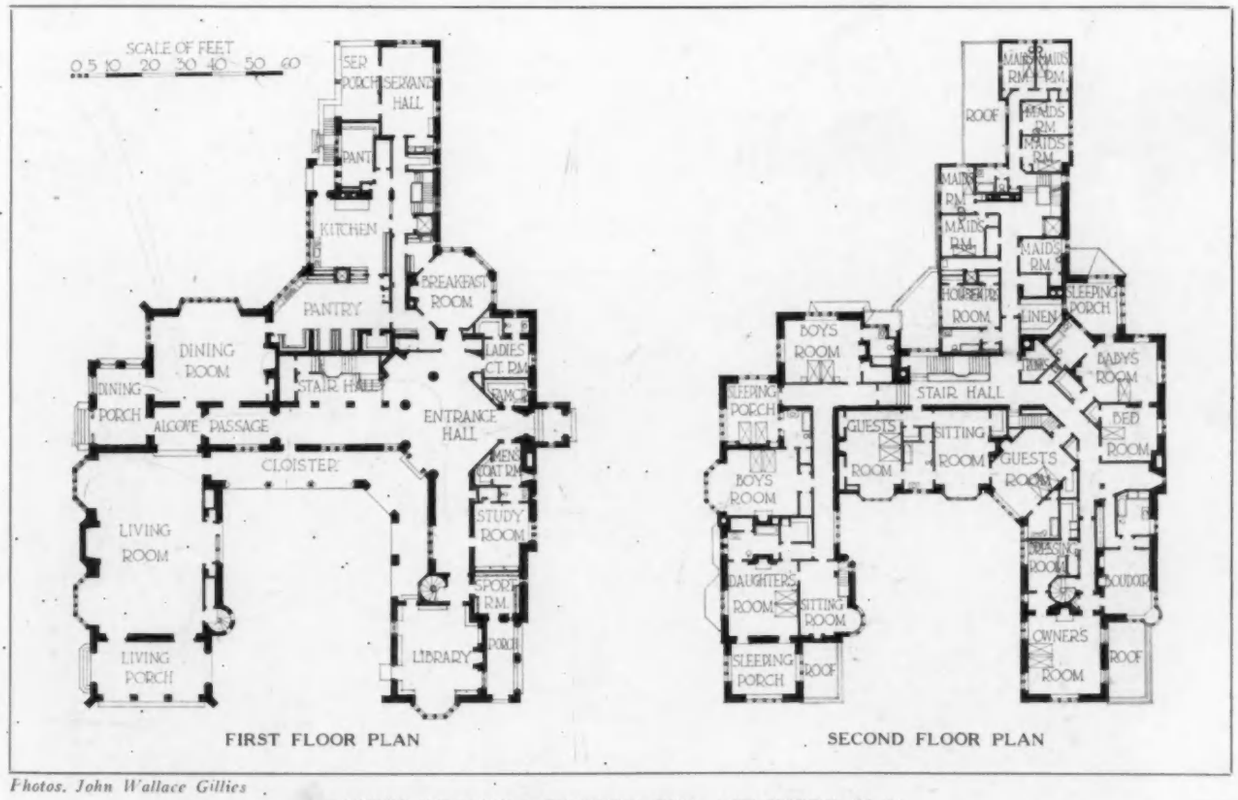
January, 1925 13 The Architectural Forum

living and dining rooms, show the same ruggedness and strength of detail. The antique plaster of the walls of both entrance hall and corridor still further adds to the effect of severe simplicity and stern restraint of the interior architecture. Each of the principal rooms is designed with individual care and study. The main living room, with its antique plaster walls, beamed ceiling and massive stone mantelpiece, repeats the strong character of the entrance hall. Strong color notes are introduced in this room by antique tapestries on the walls, the rich tones in the large rug on the floor, and in the various materials used for the upholstering of the furniture. Chairs and tables of different periods, such as Elizabethan, Queen Anne, and William and Mary, give a pleasingly varied and personal touch to the furnishings of this great room. In the library, on the other hand, is found a delicately executed example of the interior architecture of the early English Renaissance period, carried out in pine, or deal, as it is called in England. The coloring in the gay printed linens, used for the hangings and furniture coverings, tremendously brightens and relieves the formality of this dignified room. Shelves for books are built into the paneled walls on all sides of the room, the books themselves adding another colorful and decorative note. The rich tones of the rug also contribute much to the color comfort of the room. A happy realization on the part of the architects that the proper and fearless use of color adds greatly to the subconscious pleasure and comfort of the occupants of a room, is seen in the treatment of every room in this house.

The dining room, which is splendidly proportioned, is decorated in an unusual and delightful style suggestive of old Dutch interiors, such as are often found in the paintings of Vermeer. Large decorative landscapes of Dutch origin have been set as panels in all of the large wall spaces. Antique Dutch tiles in varying shades of blue are used for the interior trim of the windows, as well as for the facing of the fireplace. The use of Dutch tiles for fireplace facings has been popular in this country and England since the seventeenth century, but the use of such tiles for the enframement of window is very rarely found in this country. The Dutch feeling is still further carried out in the furnishings and woodwork of this room. The chairs and long sideboard show strong Dutch influence, which is again noticeable in the interesting shape of the panels of the arched doors leading into the main hall. The plaster of the walls as well as the ceiling has been painted in colors harmonious with the decorative wall panels and floor covering. Another room which must not be overlooked in any complete description of this house is the delightful octagonal breakfast room, with its umbrella-vaulted ceiling and antique doors of varying design. This room also has Dutch atmosphere, not only in the flagstone floor, but also in the unusual chairs and interesting old dresser. Whether or not it was the conscious intention and purpose of the architects to produce in these interiors of this country house of Mr. Carll Tucker an adaptation of some of the delightful English rooms in which Dutch influence strongly predominates, this impression has been most successfully and pleasingly accomplished. The Dutch influence on English architecture, which was brought to England by William of Orange in 1689 was more or less felt not only throughout his reign but even in later years, when it strongly affected the early work done in the Georgian period of English architectural design.

The Living Room

ENTRANCE FRONT



Photos. John Wallace Gillies

HOUSE OF CARLL TUCKER, ESQ., MT. KISCO, N. Y.

WALKER & GILLETTE, ARCHITECTS

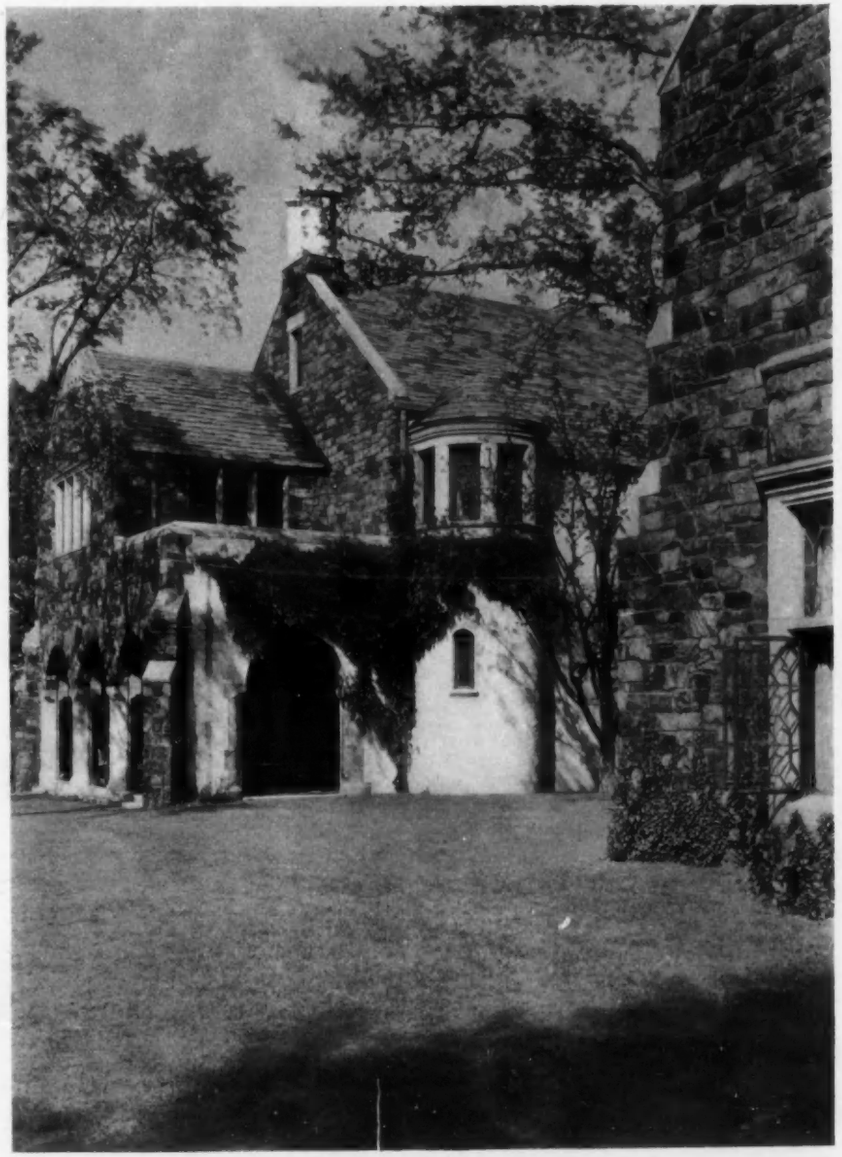
NORTHWEST ELEVATION

SOUTHWEST ELEVATION

HOUSE OF CARLL TUCKER, ESQ., MT. KISCO, N. Y.

WALKER & GILLETTE, ARCHITECTS

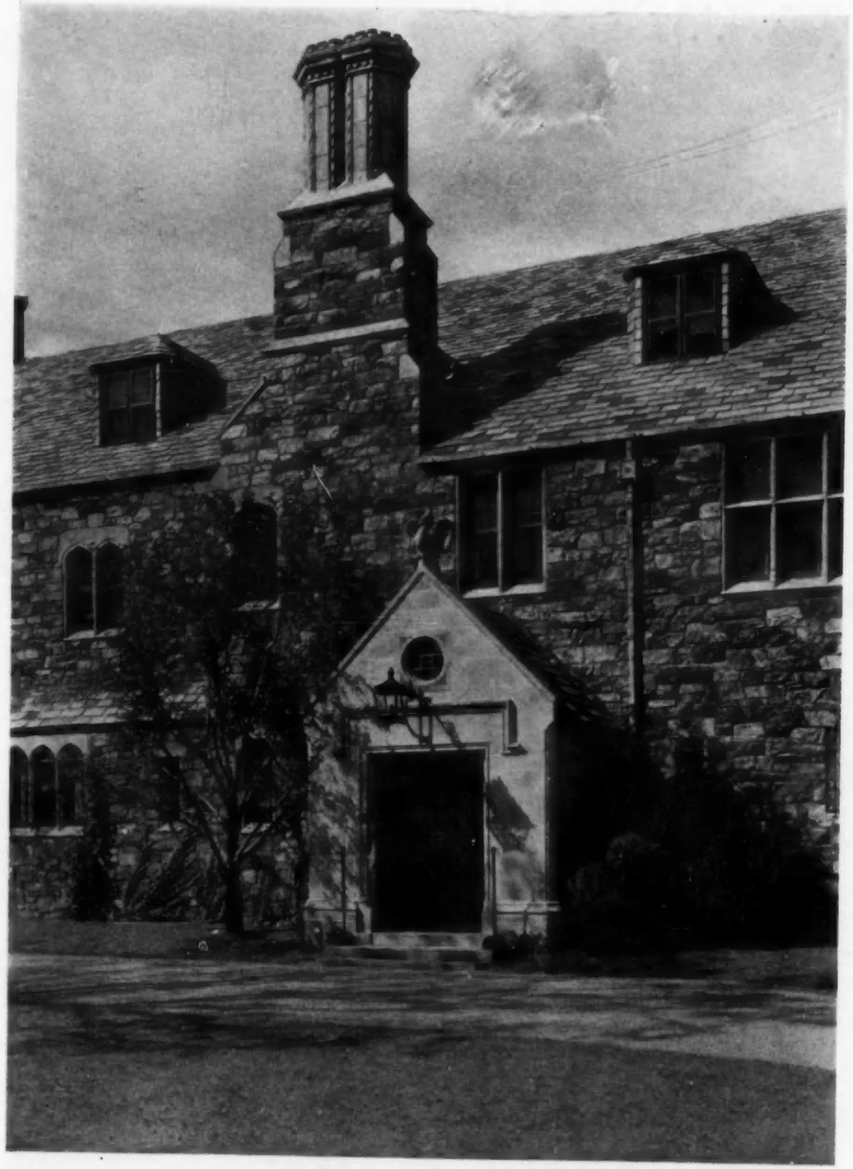
SOUTHEAST PORCH



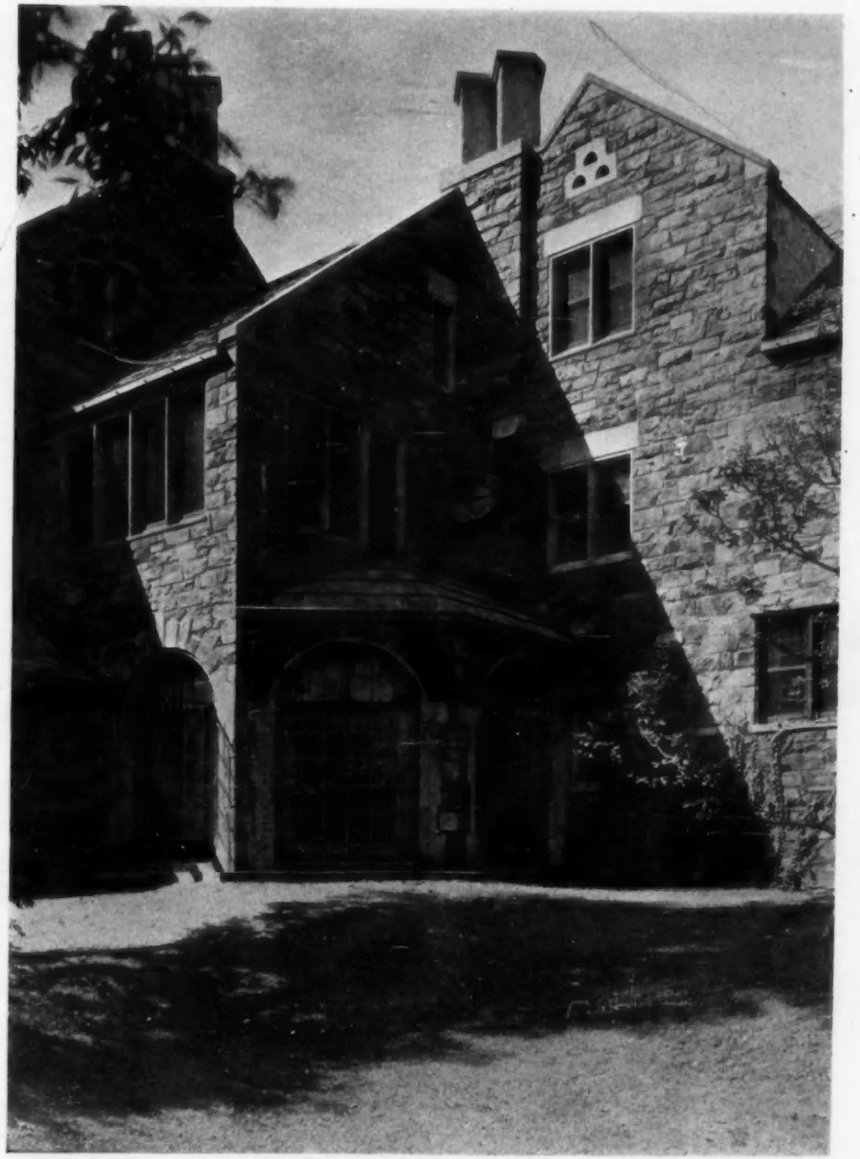
LIVING ROOM PORCH

HOUSE OF CARLL TUCKER, ESQ., MT. KISCO, N. Y.

WALKER & GILLETTE, ARCHITECTS



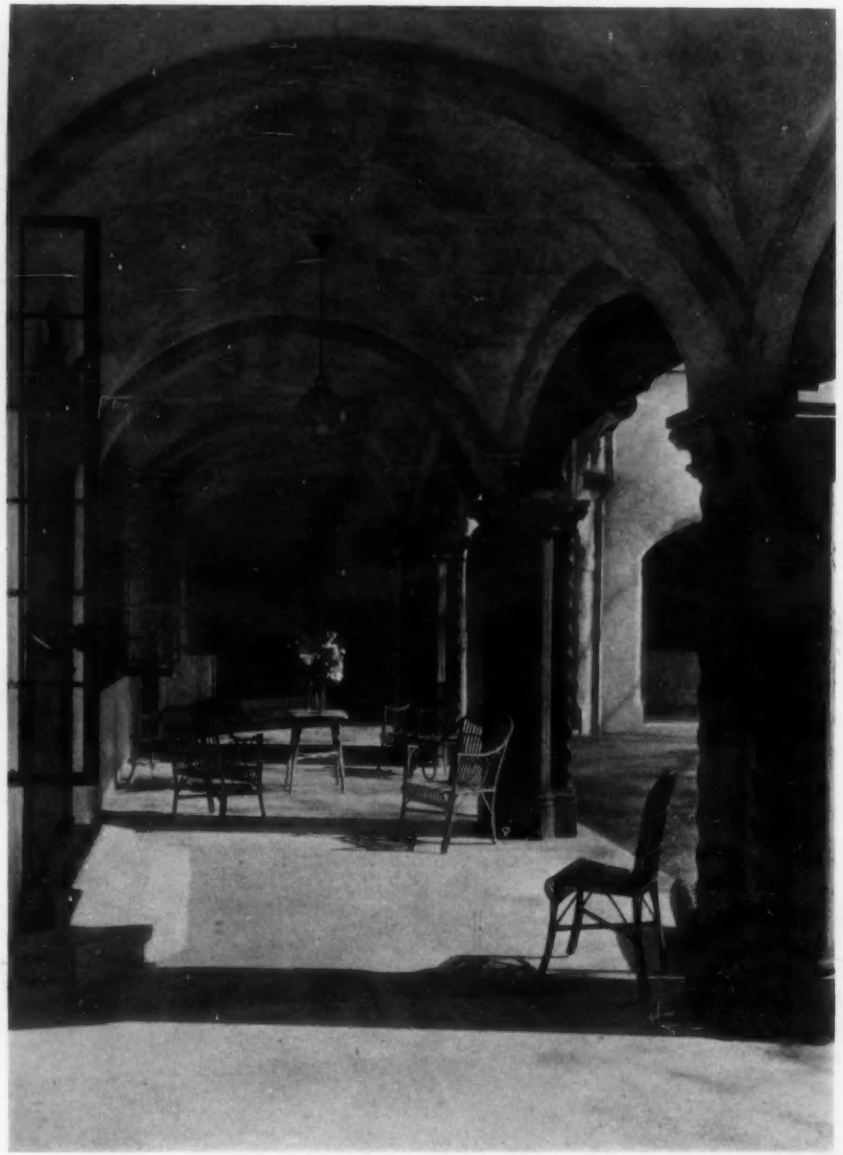
DETAIL OF ENTRANCE DOOR



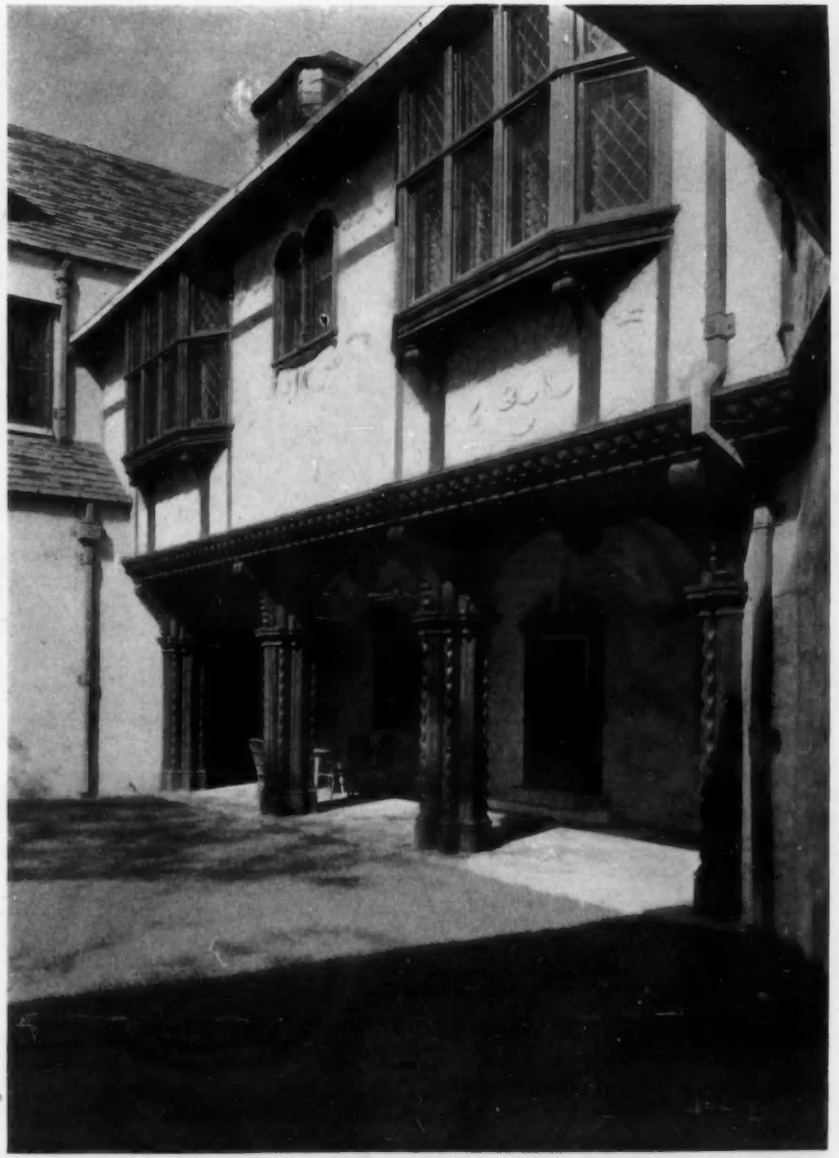
DETAIL OF BREAKFAST ROOM BAY

HOUSE OF CARLL TUCKER, ESQ., MT. KISCO, N. Y.

WALKER & GILLETTE, ARCHITECTS



INTERIOR OF SOUTH CLOISTER



EXTERIOR OF SOUTH CLOISTER

HOUSE OF CARLL TUCKER, ESQ., MT. KISCO, N. Y.

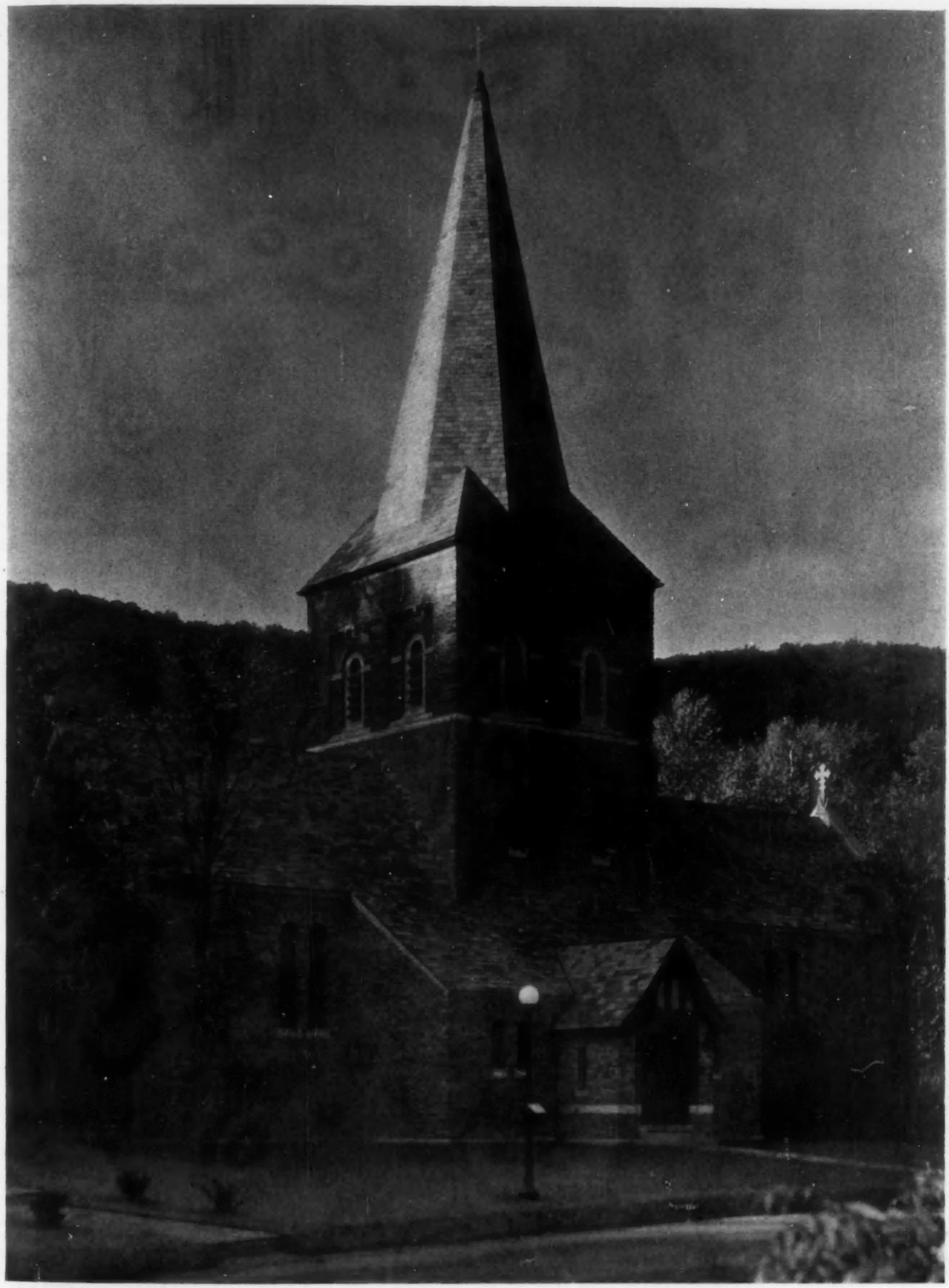
WALKER & GILLETTE, ARCHITECTS

THE LIBRARY

THE DINING ROOM

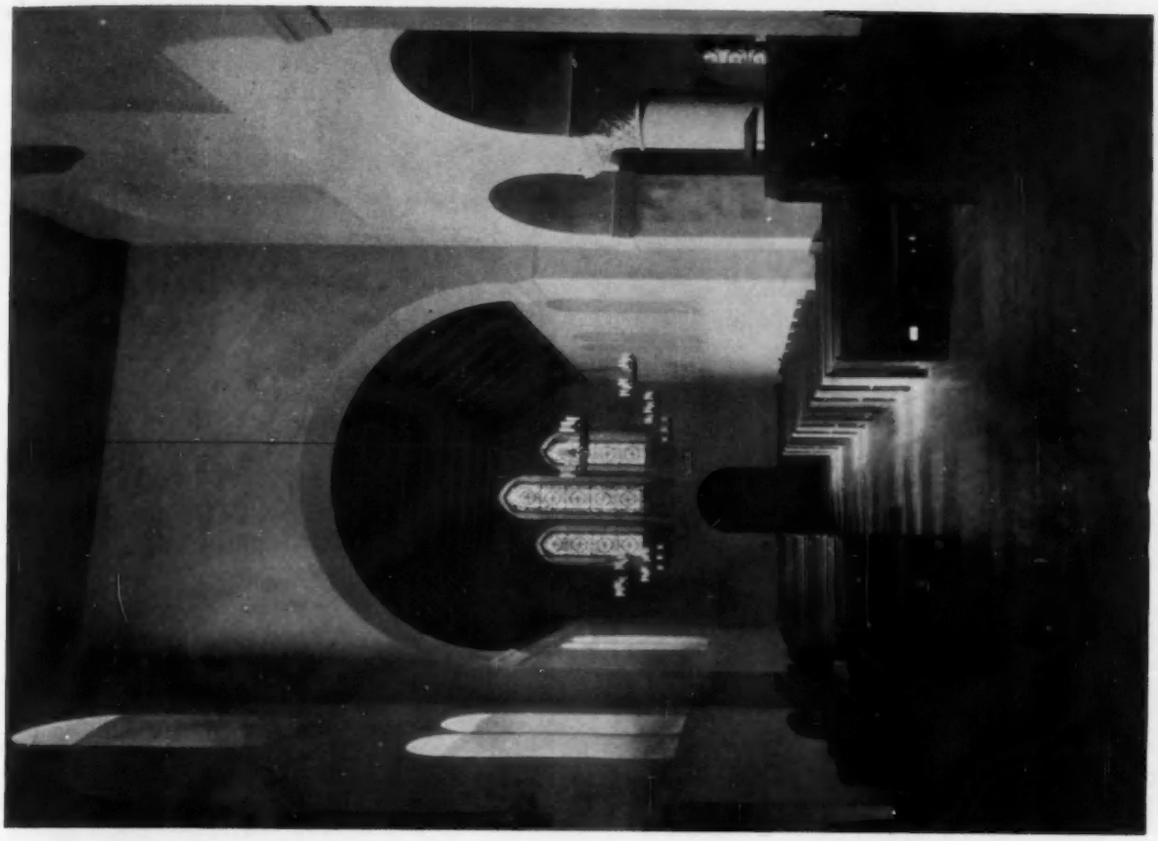
HOUSE OF CARLL TUCKER, ESQ., MT. KISCO, N. Y.

WALKER & GILLETTE, ARCHITECTS

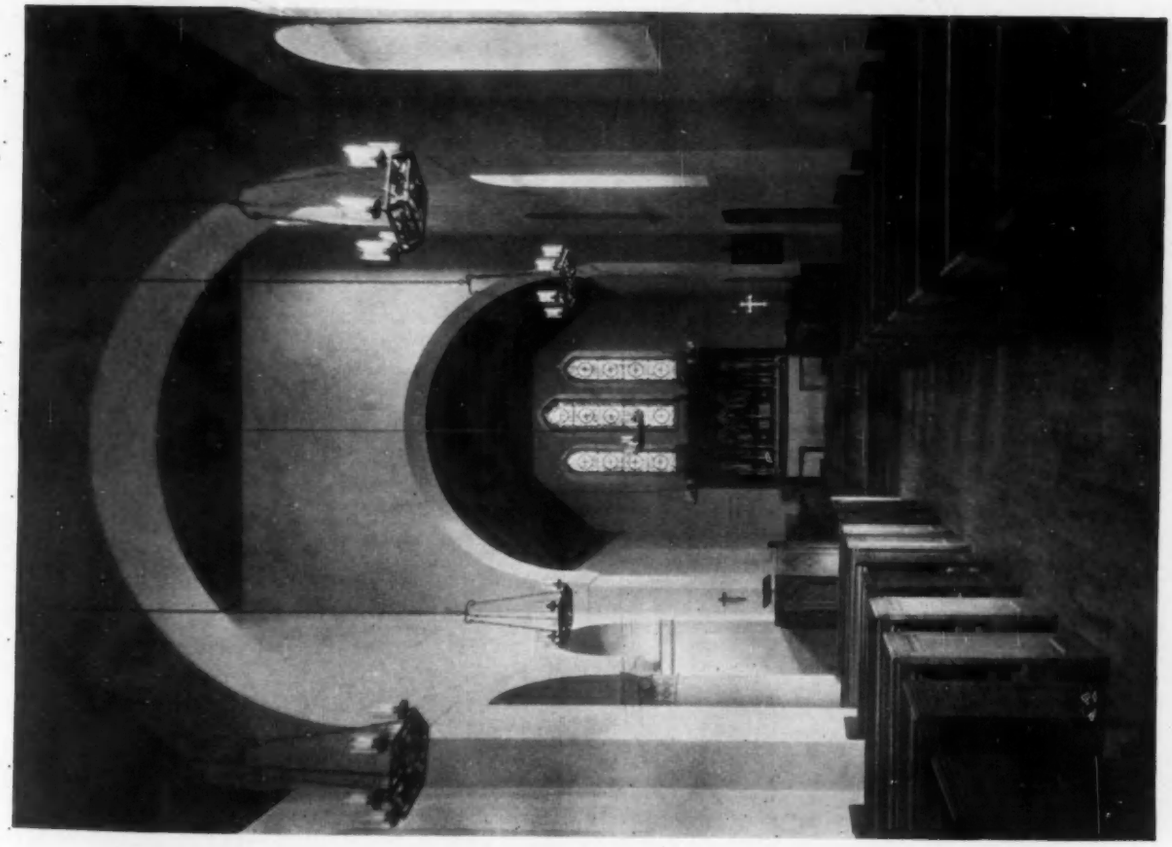


Photos. Paul J. Weber

ST. JAMES' CHURCH, LAKE DELAWARE, N. Y.
CRAM & FERGUSON, ARCHITECTS



NAVE SEEN FROM THE CHOIR



VIEW OF NAVE AND CHOIR

ST. JAMES' CHURCH, LAKE DELAWARE, N. Y.
CRAM & FERGUSON, ARCHITECTS

The Mosaic Flooring of Santa Prassede, Rome

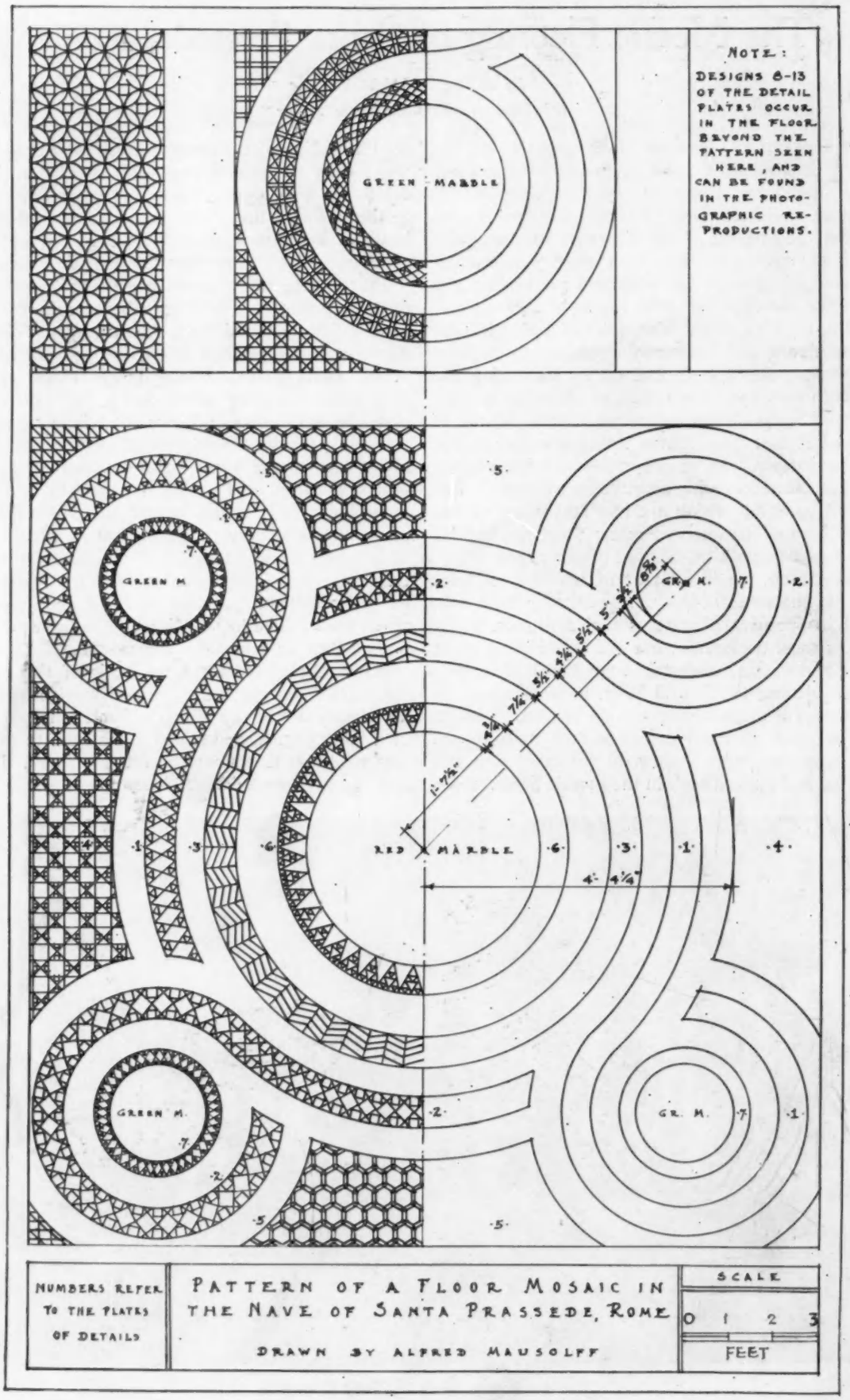
By ALFRED MAUSOLFF
With Measured Drawings by the Author

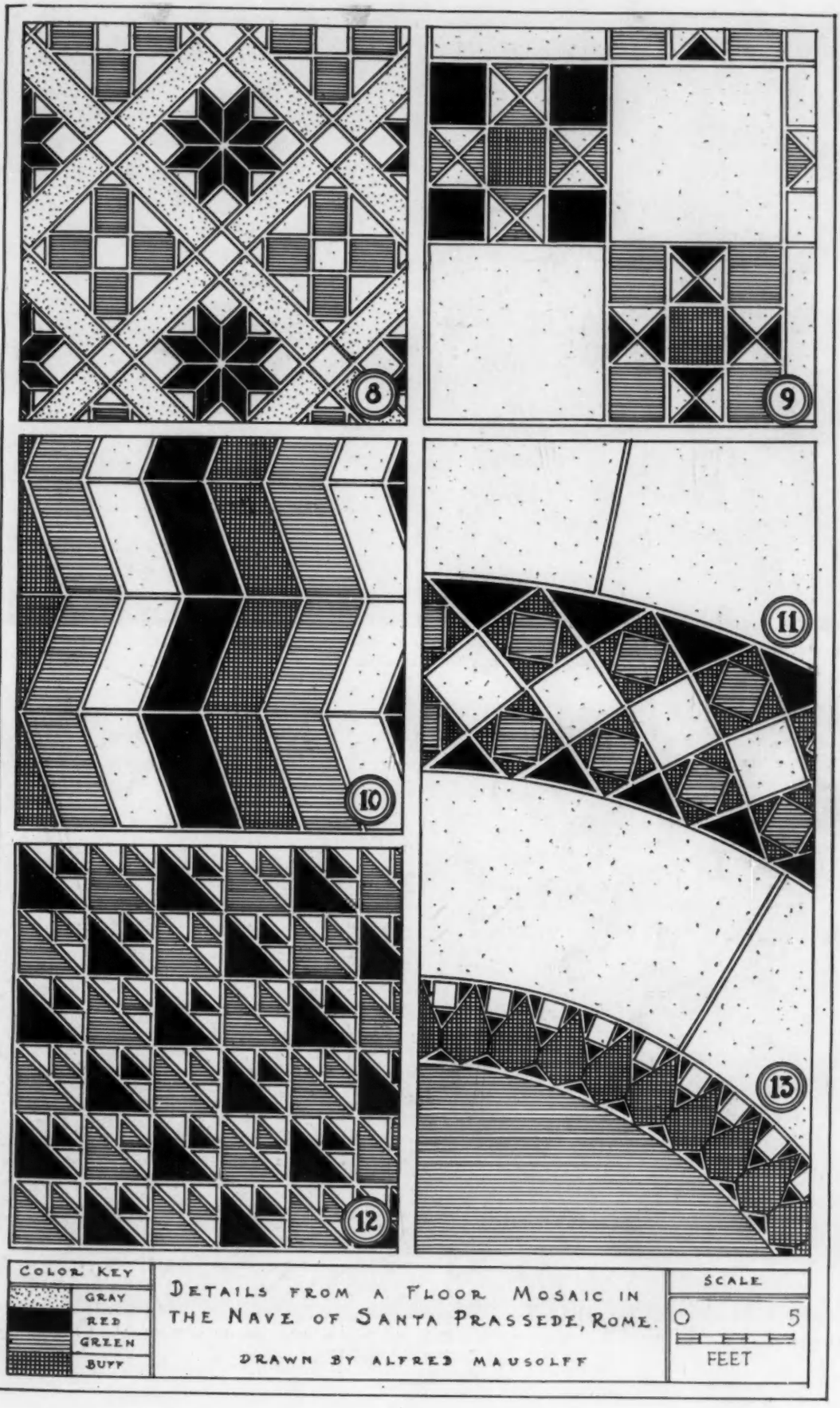
OF all types of mosaic flooring *opus Alexandrinum* must have been one of the most satisfying from the point of view of the mediæval architect who desired not merely to heighten the interest of an otherwise commonplace church pavement, but was bent upon emphasizing the principal axes of his plan and on leading the eye of the observer up to the center of interest and worship, the high altar. Examples of *opus Alexandrinum* floors are extremely common throughout Italy, where this art reached its zenith during the thirteenth century. Such Roman churches as San Lorenzo, Santa Maria Maggiore, Santa Maria in Trastevere, and San Marco are justly famed for their pavements. There are countless other smaller churches, however, which can boast of equally fine mosaic floors, but which are less frequently visited by the hurried traveler. Among these might well be reckoned Santa Prassede, on the Esquiline.

This church, the oldest part of which dates back as far as the ninth century, has naturally been subjected to frequent alterations and additions, many of them most deplorable; but one detail of its most recent restoration, undertaken by the Italian government during the World War, must certainly be pronounced a distinct success,—the repairing of its floor in *opus Alexandrinum*. It is a masterpiece, both from the point of view of general design and the color and patternwork in the mosaic fields. Even the illustration of the interior given here emphasizes the feeling of almost irresistible attraction of the eye to the high altar. Again and again one returns to this colorful floor with its prominent interlacing bands of light marble and its fields of red and green porphyry, which glow in soft, mellow contrast.

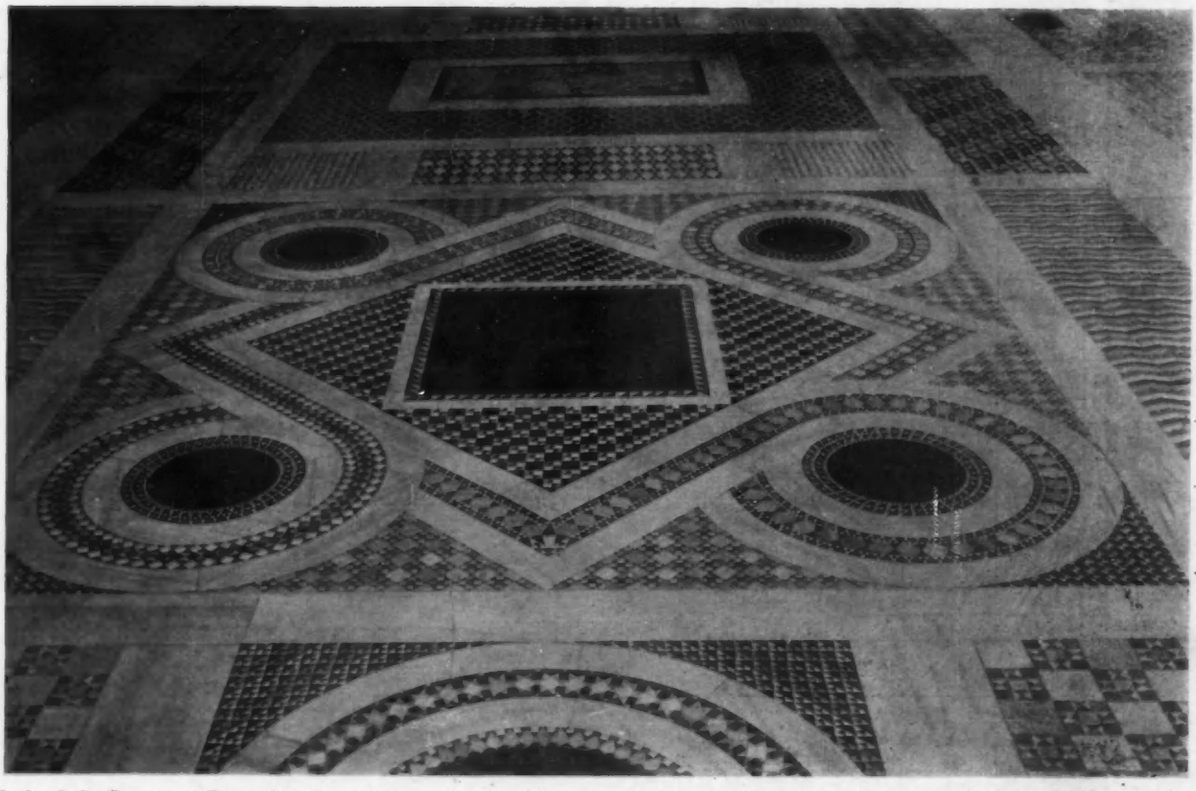
From these illustrations it will be evident that there is actually very little difference in the color values of the red and the green porphyry. They are interchangeable in their respective patterns and are relied upon to furnish the darker tones, while a light gray, a creamy white, and a buff orange produce the light areas and give the whole ensemble a pleasing sparkle. The individual *tesseræ* vary a great deal in size, some being as small as ½ inch, others as large as 4 inches or more in dimension, according to the design, but on the whole the scale of the units is very much finer than what we are accustomed to use today. It will also be noticed that there are slight variations and irregularities in the dimensions of similar units or the joints between them. The *tesseræ*, it would seem, were never intended to be laid with the machinelike accuracy which is the pride of the mechanic of this generation. The fact that each piece of marble had to be laboriously sawed by hand in itself prevented this to a large degree, and added not a little to the success of these floors which, for simplicity, dignity, and beauty have seldom, if ever, been surpassed.

The Colorful Floor of Santa Prassede

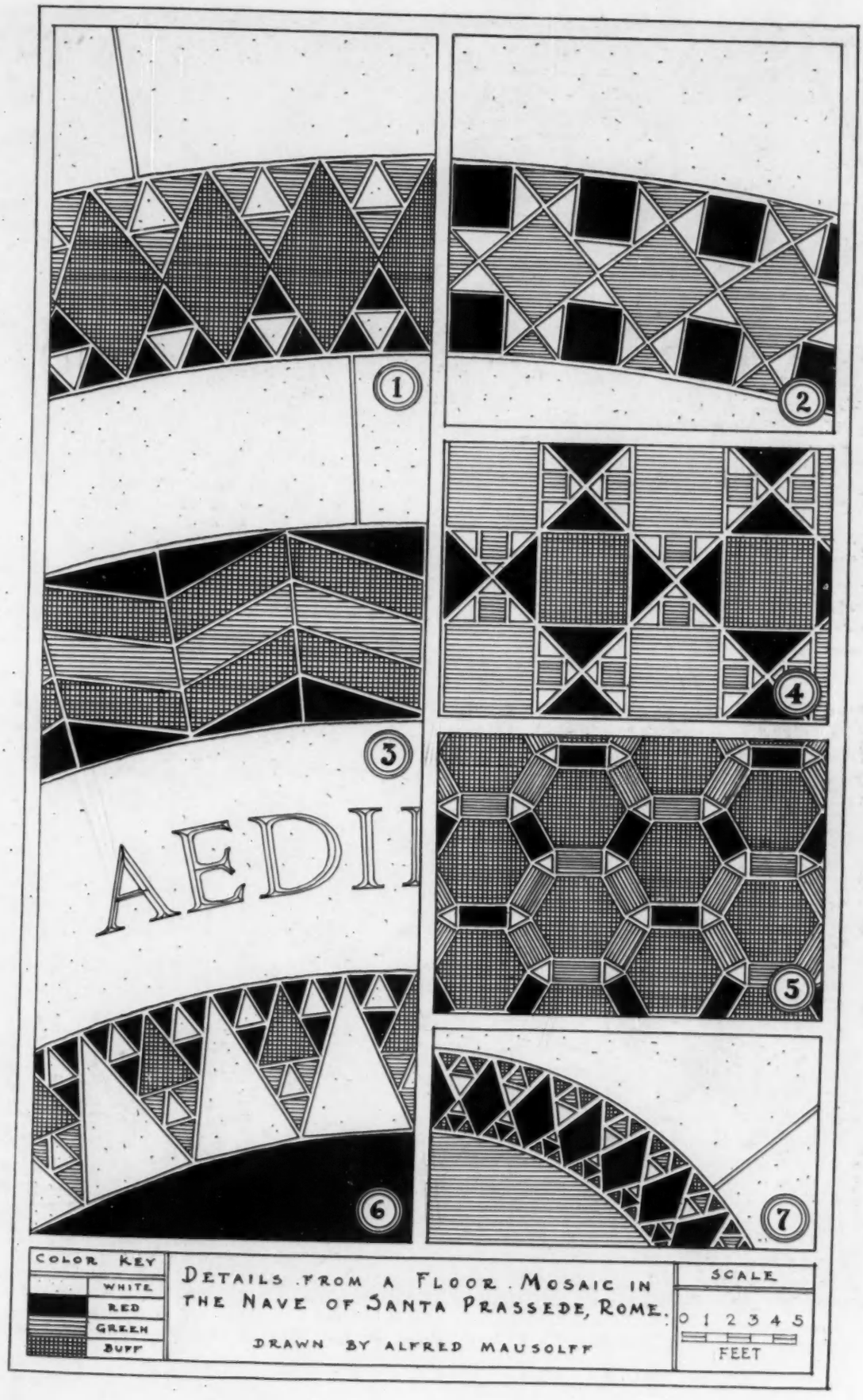

NOTE:
DESIGNS 8-13 OF THE DETAIL PLATES OCCUR IN THE FLOOR BEYOND THE PATTERN SEEN HERE, AND CAN BE FOUND IN THE PHOTOGRAPHIC REPRODUCTIONS.
GREEN MARBLE
GREEN M.
GR. M.
RED MARBLE
GREEN M.
GR. M.
1'-7½"
4'-4¼"
NUMBERS REFER TO THE PLATES OF DETAILS
PATTERN OF A FLOOR MOSAIC IN THE NAVE OF SANTA PRASSEDE, ROME
DRAWN BY ALFRED MAUSOLFF
SCALE
0 1 2 3
FEET


8
9
10
11
12
13
COLOR KEY
GRAY
RED
GREEN
BUFF
DETAILS FROM A FLOOR MOSAIC IN THE NAVE OF SANTA PRASSEDE, ROME.
DRAWN BY ALFRED MAUSOLFF
SCALE
0 5
FEET

The Circular Slabs of Marble Seen in the Center Designs Were Usually Sliced from Ancient Porphyry Columns, and Accordingly Vary Slightly in Diameter, Thus Requiring Borders of Various Widths



Much of the Beauty of These Old Floors Lies in the Fact That the Designs Are Executed in Polished and Colored Marble with Borders of Dull White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AEDI
COLOR KEY
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DETAILS FROM A FLOOR MOSAIC IN THE NAVE OF SANTA PRASSEDE, ROME.
DRAWN BY ALFRED MAUSOLFF
SCALE
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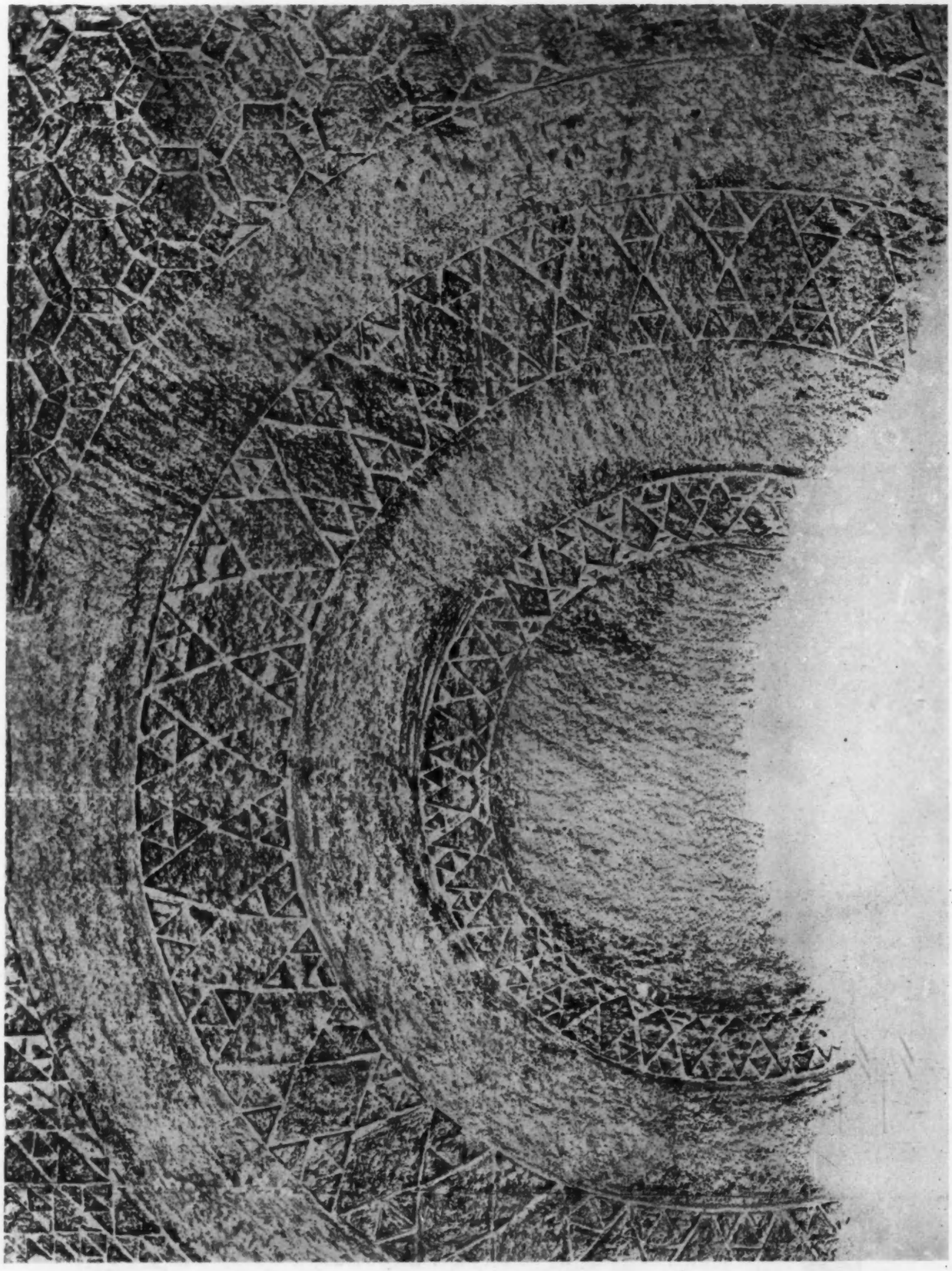


REDUCTION FROM AUTHOR'S FULL SIZE RUBBING OF PORTION OF SANTA PRASSEDE'S FLOOR

BUSINESS & FINANCE

C. Stanley Taylor, *Editor*

A Review of Building Activity During 1924

An analysis of a record year in the architectural and building fields. The sequel to this article, "A Forecast of Building Activity During 1925," will appear in the next issue.

WHEN the year 1923 drew to a close, and figures were available showing the total of contracts let for new buildings during that year, it seemed that the ultimate high total for any one year of building construction had been reached. At the same time, however, the tabulation of THE FORUM'S Annual Building Survey and Forecast for 1924 were completed, and the amazing figures of this forecast indicated that 1924 was to be not only another $5,000,000,000 year but would establish an even higher record than 1923. As we near the end of 1924 we find that THE FORUM'S forecast has been thoroughly justified, and that 1924 shows total new building construction of value approximately 10 per cent greater than in the record-breaking year of 1923.

This year of 1924 has been marked by no unusual disturbances in the building field and has, in fact, seen begun a desirable condition of stabilization in building material production, transportation, deliveries and in building costs. It has shown how flexible a great industry can be when it anticipates a great demand. The fact that 1924 has been a record-breaking year has been due not only to an unusual demand for new buildings, particularly in the speculative and investment fields, but also to the farsightedness of manufacturers who were prepared in stock and production capacity to meet the heavy demand which was to be placed on the building material market during the spring of 1924 and again in the reaction of buying in the fall of the year.

It is realized that although 1924 has been a year of unusual activity in the building field, such activity has been geographically centralized and not general throughout the country, although the fall season has shown a revival of activity everywhere. The great bulk of unprecedented building expenditure has been in the metropolitan area of New York, where each month has seen past records surpassed. The average total value of new building construction for the country with the New York area deducted has been only 2 or 3 per cent greater than in 1923, and in some districts even less.

The trend of building costs has not shown any violent fluctuation during the past year. An examination of the chart on page 27 will show that the index of building costs rose gradually from January until April, undoubtedly increased by the de-

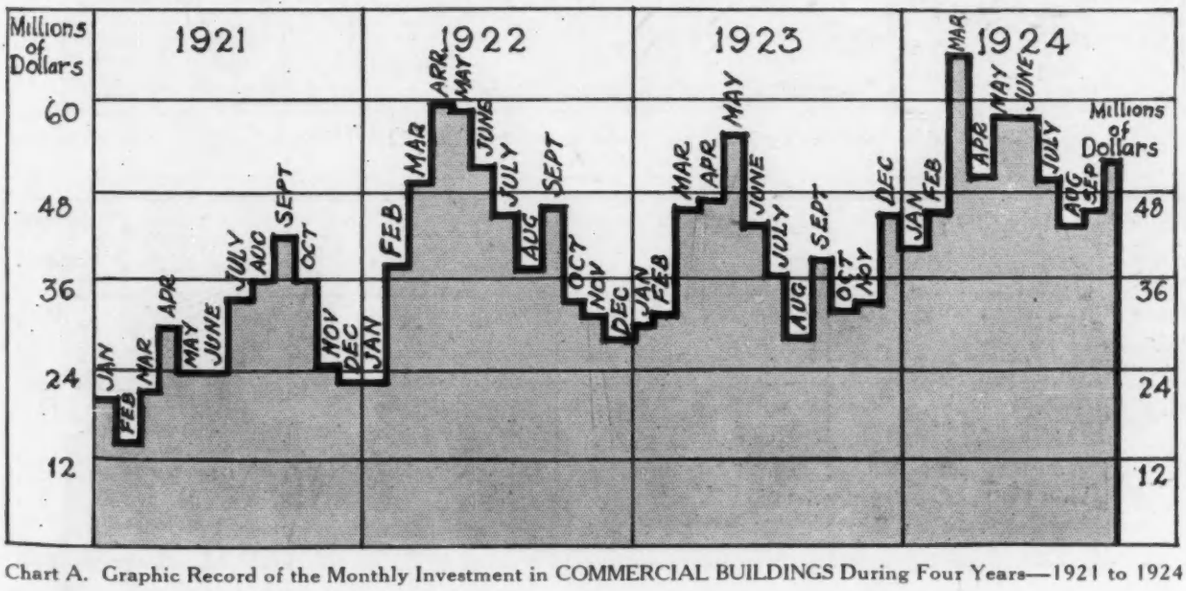


Chart A. Graphic Record of the Monthly Investment in COMMERCIAL BUILDINGS During Four Years—1921 to 1924

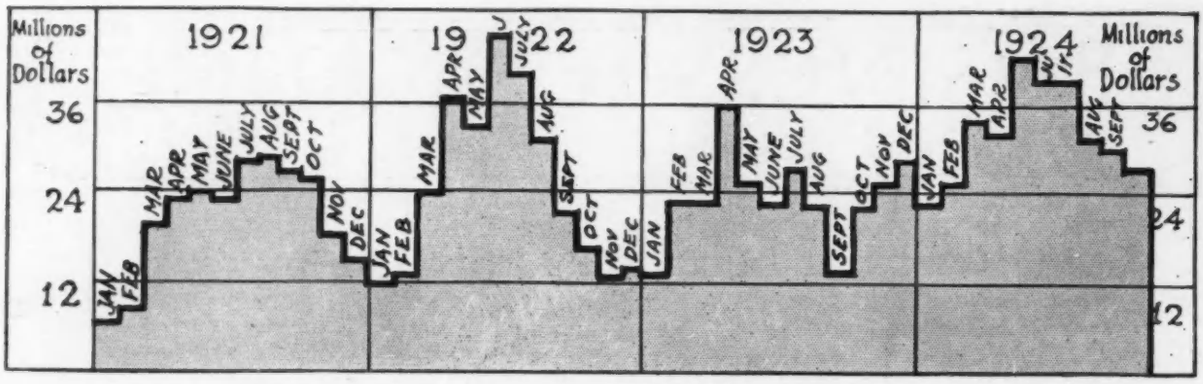


Chart B.—Graphic record of the monthly investment in SCHOOL and COLLEGE buildings during the four years 1921 to 1924

mand for labor and materials for the spring season; then it shows a slow decline through the summer months until in October, when the cost was approximately that indicated for December of 1923. This line has fairly paralleled that of general commodity costs shown in the same chart, and proves the fact that the building industry is a basic industry so interrelated with prosperity in other lines that building costs may be established as a fair index of the general business situation.

Accompanying this article will be found seven charts which have been developed graphically to show the amount of money invested every month for four years in seven important building types. Here will be found many interesting comparisons of activity in these several fields of building construction.

The residential field, including dwellings, apartment buildings and hotels, is analyzed on page 25 and indicates that the bulk of excess activity during 1924 was in this field. Nearly 40 per cent of the total value of new building construction during 1924 was residential in character. Examining the chart on page 25, it will be seen that every month during the year shows a considerable increase over the corresponding month of 1923. On this chart will be found also the relative curve of fluctuation in residential building costs, which indicates the variation during these four years. It will be noticed that in

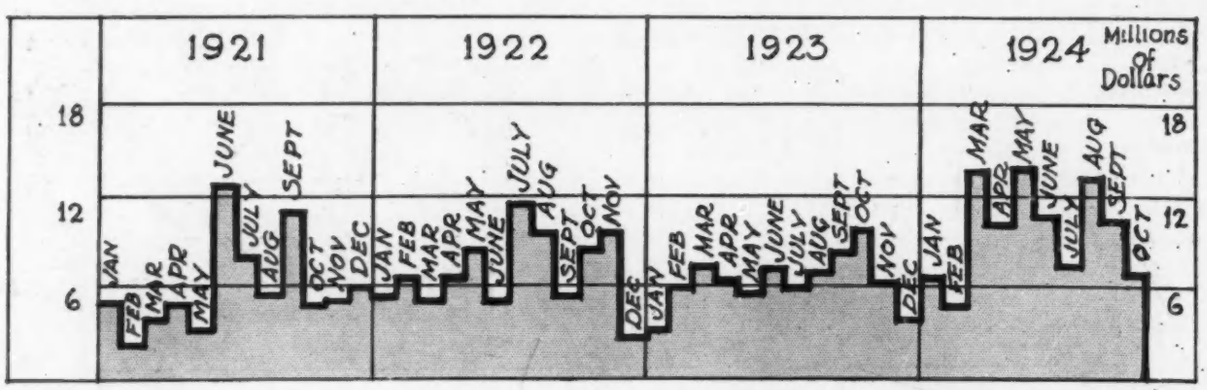


Chart C.—Graphic record of the monthly investment in HOSPITAL and INSTITUTIONAL buildings during the four years 1921 to 1924

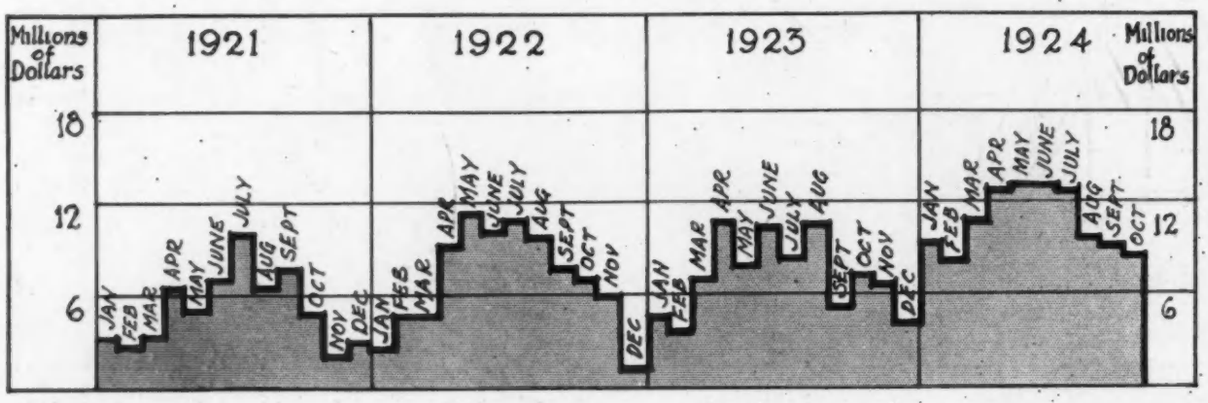
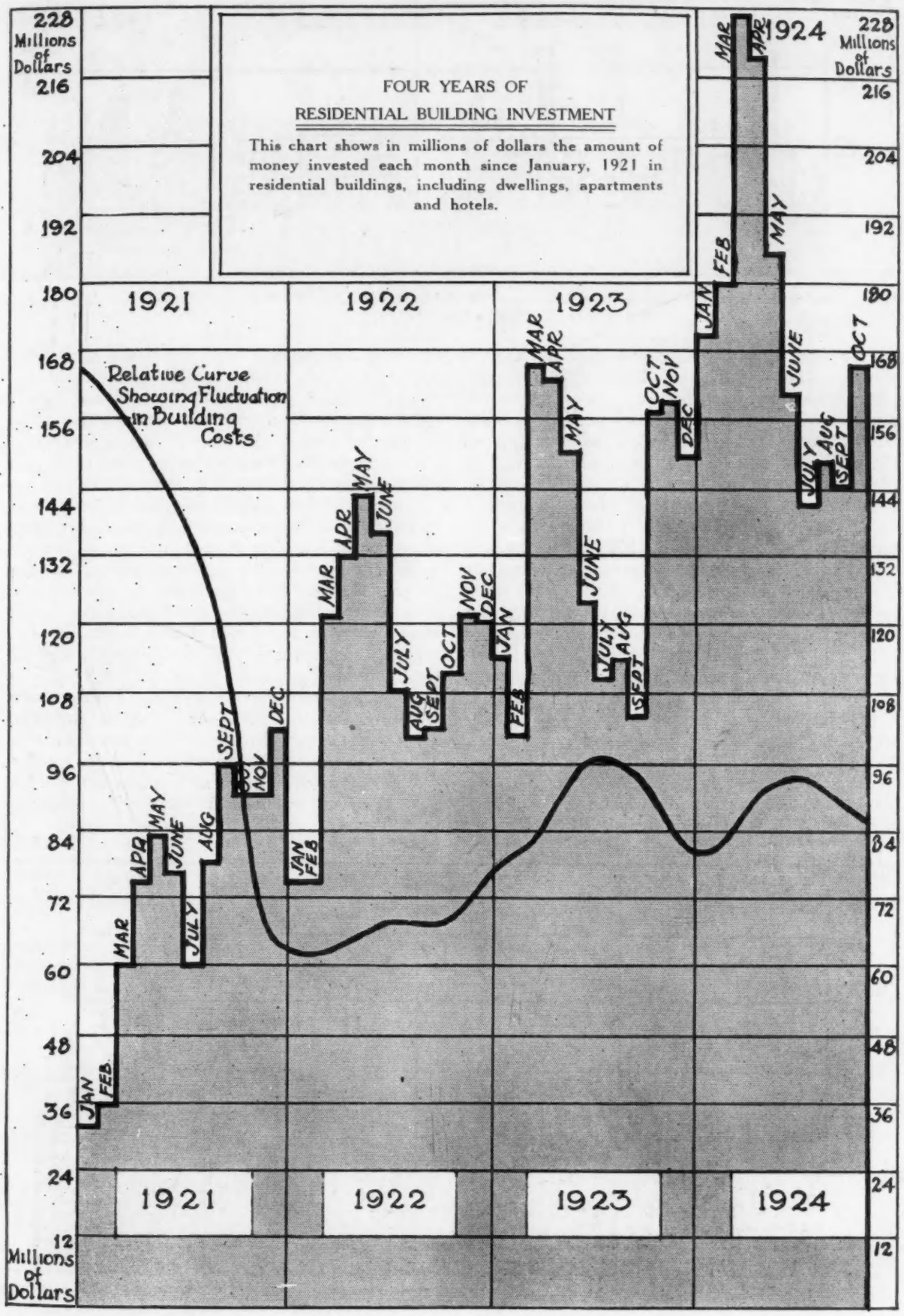


Chart D.—Graphic record of the monthly investment in new CHURCHES during the four years 1921 to 1924


FOUR YEARS OF
RESIDENTIAL BUILDING INVESTMENT
This chart shows in millions of dollars the amount of money invested each month since January, 1921 in residential buildings, including dwellings, apartments and hotels.
228 Millions of Dollars
216
204
192
180
168
156
144
132
120
108
96
84
72
60
48
36
24
12 Millions of Dollars
1921
1922
1923
1924
Relative Curve Showing Fluctuation in Building Costs
JAN FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV DEC
JAN FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV DEC
JAN FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV DEC
JAN FEB MAR APR MAY JUNE JULY AUG SEPT OCT

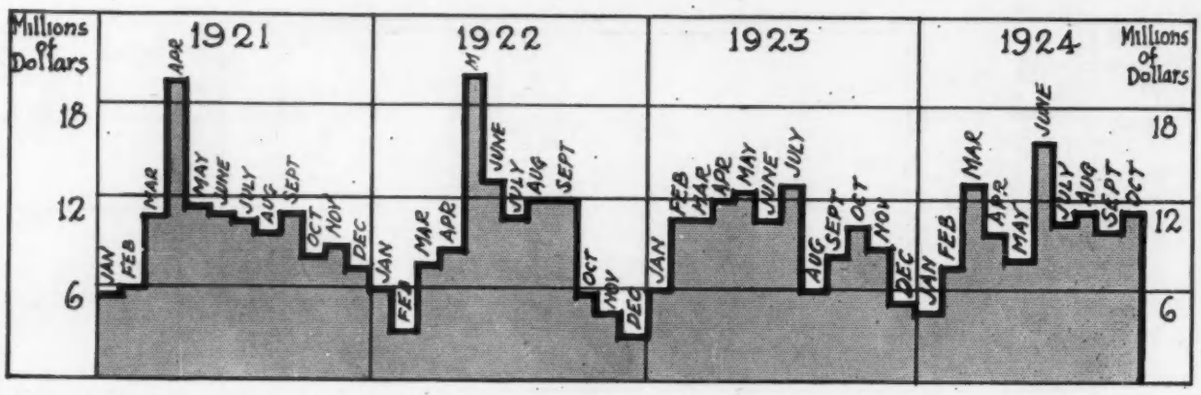


Chart F.—Graphic record of the monthly investment in CLUB and RECREATIONAL buildings during four years—1921 to 1924

1921 a great drop in the cost of building was recorded. This was the period of deflation for the building industry, when costs dropped from the unprecedented peak which followed wartime building activity, and it is plain that in 1921 as costs dropped the volume of new building increased steadily. So great was the momentum of falling costs and the impact of the "buyers' strike," which occurred in 1921, that the general cost of building fell to an artificially low level early in 1922 from which it recovered gradually as the volume of new building mounted. Eliminating its seasonal trend, this index line of building cost may almost be said to reflect the element of public confidence which has mounted steadily as building costs have stabilized and investment returns have proved certain and not subject to any further rapid deflation in the cost of building.

It is interesting to note in studying this building cost trend that each period of spring activity in 1922, 1923 and 1924 has been followed by a corresponding increase in the cost of building. This is a natural and healthy condition, which affects stabilization because it is at these periods that stocks are naturally low, building labor scarce and costs correspondingly high. These peaks of increased cost extend through the summer months, because the great volume of building construction is under way during that period, and only the seasonal effect of the winter months causes a slowing down of demand and consequently a drop in the cost trend line.

Comparisons of activity in other building types, as indicated in the accompanying charts, are interesting but do not show as great a difference in totals as those indicated in the residential field. The chart on page 23 records the activities of four years in the commercial building field, and shows that in 1924 there was more activity in this field than in other years, although that of 1922 closely approached this total. Evidently, under fairly normal conditions, the demand for commercial buildings in this country is steady, and does not show any great fluctuation from year to year except in relation to the totals of all building activity in different parts of the country.

It is surprising to note that in the school building field, as indicated in the chart on page 24, the activity

(Continued on page 27)

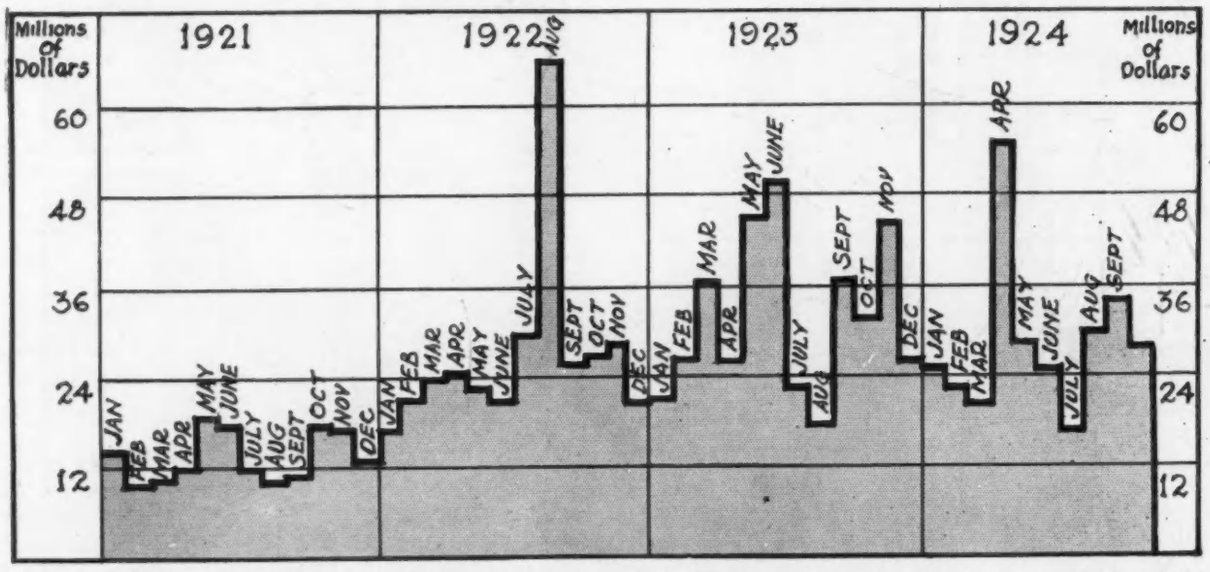
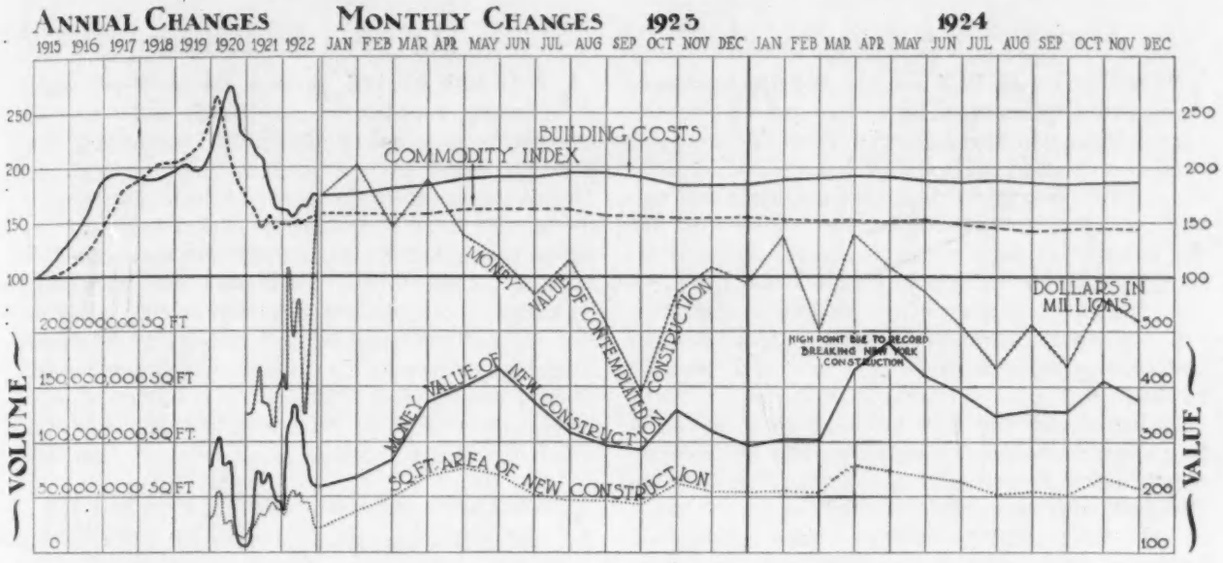


Chart G.—Graphic record of the monthly investment in new INDUSTRIAL buildings during four years—1921 to 1924

The Building Situation

A MONTHLY REVIEW OF COSTS AND CONDITIONS



THESE various important factors of change in the building situation are recorded in the chart given here: (1) *Building Costs.* This includes the cost of labor and materials; the index point is a composite of all available reports in basic materials and labor costs under national averages. (2) *Commodity Index.* Index figure determined by the United States Department of Labor. (3) *Money Value of Contemplated Construction.* Value of building for which plans have been filed based on reports of the United States Chamber of Commerce, F. W. Dodge Corp., and *Engineering News-Record.* (4) *Money Value of New Construction.* Total valuation of all contracts actually let. The dollar scale is at the right of the chart in millions. (5) *Square Foot Area of New Construction.* The measured volume of new buildings. The square foot measure is at the left of the chart. The variation of distances between the value and volume lines represents a square foot cost which is determined first, by the trend of building costs, and second, by the quality of construction.

(Continued from page 26)

of 1924 has been approximately equal and sometimes greater than for the unusual periods recorded in 1921 and 1922, which were supposed to represent the era of greatest activity ever to be known in the school building field. Here is reflected not only a definite effort to meet the shortage in school buildings which developed during and before the war period, but also a decided trend toward improvement and modernization in educational methods and consequently in the buildings which house such activities. School building is to remain active for some time to come, because there exist not only the problem of meeting the normal demand but also that of meeting a changing educational system and of replacing thousands of inadequate and obsolete schools.

1924 has been a great year in the hospital building field, as is shown on the accompanying chart. During the three years, 1921, 1922 and 1923, the building of new hospitals seemed to maintain an average pace and, strange to say, with very little seasonal fluctuation. 1924 has shown at least three record-breaking months in the hospital field, due to a tendency toward the construction of extremely large and expensive hospital units, and many more of these are to come in 1925, judging by preliminary reports and plans filed within the last two months.

The industrial building field during the last three years has shown a decided recovery from the slow period immediately following the war, and 1924 has contributed a quota equal to that of 1922 or 1923.

Church building has for the past three years gone on quietly but in large volume,—almost twice as great as normal. The year 1924 shows a greater volume of church building than any preceding year, and again there is reflected a drastic change in the planning of a basic building type, because churches today are for the most part built in larger units than in the past. Religion has been expanded to embrace many forms of community activity which in times past were not thought of as part of the service rendered by the church to its neighborhood. Consequently, the plan of church buildings has been developed to include educational and social facilities.

In the February issue of THE ARCHITECTURAL FORUM a detailed forecast of 1925 activity in the building field will be presented, as it has been presented successfully for the years 1922, 1923 and 1924. Here will be indicated types of buildings which may logically be expected to show a high degree of activity, and the reasons why the demand for such buildings will be met during 1925.

The Building Economics Digest

REFERENCE LIST OF BULLETINS, REPORTS AND OTHER PUBLICATIONS COVERING BUSINESS AND STRUCTURAL SUBJECTS OF INTEREST TO ARCHITECTS

WINTER CONSTRUCTION

IN the October 23, 1924 issue of *Engineering News-Record* appears the fourth and last of a series of articles on winter construction from the viewpoint of the contractor. These articles were written by C. S. Hill, Associate Editor, and contain much valuable information not only for the engineer but for the architect as well. The conclusion of the series thus sums up the main points established:

1. Winter conditions which affect the contractor are not climatic generalizations but local weather and frost phenomena, to be counteracted by specific methods.

2. Equipment and methods have been developed to a degree of efficiency which enables the contractor to solve the technical problems of winter construction with remarkable certainty.

3. Under present conditions of slack construction in winter, with labor and materials seeking a market, the contractor can obtain winter costs as low as or lower than the average costs of summer work. As all-the-year operations become general, the present wages and price curves will flatten out and the savings will be reduced.

4. Coördinate development of materials supply and delivery is essential as the volume of winter construction increases.

5. Full and considerate coöperation of the owner and engineer with the contractor in easing the exactions of winter work will increase the contractor's efficiency and reduce his costs.

6. Present conditions of seasonal construction are not primarily of the contractor's making. He is the servant of the owner and can act only when the owner calls for action. His efforts, individually and through organization, are being actively and successfully directed toward the elimination of seasonal construction.

BUILDING SHORTAGE

A NATION-WIDE survey, covering all cities having a population of 10,000 and over, has recently been completed by S. W. Straus & Company to determine the present building shortage. The report based on the results of this investigation shows that there is a shortage of building amounting to more than $4,000,000,000 in value. Of this amount $2,102,698,500 is needed for residential buildings; $1,130,851,500 for commercial buildings, and $870,270,000 for public buildings of all kinds. The survey covered 528 cities, of which number 148 showed no shortages. Several cities having a population under 10,000 were also studied, many of which revealed a shortage in all types of buildings.

BUILDING MANAGEMENT PROBLEMS

IN the November 24, 1924 issue of *Building and Building Management*, Chicago, there is an interesting article on "The Outline of Property Management" by Col. Gordon Strong, Past President of the National Association of Building Owners and Managers. This article was originally presented as a lecture before the Y. M. C. A. School of Commerce, and is of considerable interest to architects.

STANDARD CONCRETE SPECIFICATIONS

THE American Society for Testing Materials, 1315 Spruce Street, Philadelphia, has just issued a report on this subject, complete with 18 appendices, including 14 A. S. T. M. specifications and methods of testing that are a mandatory part of the general specifications. These specifications conclude the second (1924) report of the Joint Committee on Concrete and Reinforced Concrete. The book may be obtained at the list price of $1.50 per copy, or $1 to architects who are members of the A. S. T. M.

Building Labor Productivity and Costs

IN the November, 1924 issue of the *Monthly Labor Review* appeared an article by Ethelbert Stewart, United States Commissioner of Labor Statistics, describing in detail the findings of an extensive survey of building labor costs. This information will undoubtedly interest architects, as it has definite value in estimating and checking building costs.

Early in 1923 the United States Bureau of Labor Statistics began an investigation of labor productivity or efficiency in certain occupations in the building trades. Preparatory to this survey a conference of large building contractors and construction engineers from various cities of the United States was called. Elaborate questionnaires were devised as the result of the conference, covering a large number of specific occupations and types of work.

The field investigation was conducted principally by Special Agent Paul H. Moncure, of the United States Bureau of Labor Statistics, assisted occasionally by others of the bureau's staff.

The investigation was started in Atlanta, with the idea that it could be begun early in the year in a southern city. Atlanta was therefore the "try-out" city. This explains the large number of schedules from there as compared with other localities. The conference agreement was that not less than five schedules should be secured from each city on each of the sections of the study.

This being pioneer work, it was not expected that all the details called for by the conference questionnaire could be readily secured from every building contractor, but making all allowances for this, the try-out was discouraging. Only new work was considered. At the very outset carpentry work on frame buildings had to be abandoned, as there was no well defined unit of production.

As the investigation progressed from city to city it was found that in almost every line local styles and types of materials used made it necessary entirely to abandon certain points of inquiry. For instance, while bricklaying was covered in 15 cities, roofing was scheduled in only 10 localities, and painting in only four. Painting was abandoned because it became more and more difficult to follow up new work and because the various color schemes on the same house prevented the agents from getting adequate samples of straightaway work. Composition roofing was found to be much used in some cities and almost unknown in others, with the result that it was necessary to confine the study practically to bricklaying and pick up such other information from time to time and place to place as could be obtained.

Notwithstanding the persistence of articles and interviews in newspapers and trade journals about the relative inefficiency of labor as compared with former years, this bureau was unable to find a single building contractor, superintendent or foreman who had a record of work done per man-hour on the jobs in progress or upon any former job. It was necessary, therefore, for the agents of the bureau to locate building projects just begun or just about to be begun, and then to make arrangements with the responsible contractor to have the actual time of the men kept for the purposes of this report, and not only that but to follow up each job day by day to see that the record was being kept.

Whatever interest the subject may have for interviewing purposes, it must be admitted that the men coming in direct contact with building work have very little interest in the time cost by occupations or trades in the building industry. We are publishing the material collected by the bureau for what it is worth as representing the pioneer attempt to secure the actual facts through impartial sources.

Bricklaying

The instruction to the agents was to secure the bricklayer time and labor cost per 1,000 common bricks laid in a straightaway wall without openings. This would seem to be a simple matter, but it was found that brick houses, so common a generation ago, are very difficult to find. Structures of hollow tile, of cement and framework, and of steel are being faced with "face brick," but obviously these are so particularized in their plans, especially as to the brick finishing part, that this work cannot be considered as ordinary bricklaying; and solid brick walls are very difficult to locate. In other words, the bricklaying today is for the most part very different from that of 20 years ago or even 15 years ago. Methods of using brick have changed.

However, it was possible to find at least five new buildings in each city visited where common brick was being laid in straightaway walls of sufficient dimension to justify schedules being taken for them. The original questionnaire covered the question as to whether the bricklayer had to build his own scaffold, but as this was not found to be true in any case it has been eliminated from the tabulation. Another question referred to the placing of the brick and mortar for the bricklayer as, for instance, foot level, waist level, etc. As the bricklayer was required to pick up the brick from his own foot level in every case scheduled except two, this has also been eliminated.

The highest labor cost per 1,000 bricks in the wall ($14.47) was found in Indianapolis, where an average rate of $1.37 per hour resulted in a labor productivity of 95.7 bricks per man per hour. It should be understood that this money cost is for the bricklayer only. The costs of bricklaying vary greatly.

The lowest average cost per 1,000 bricks in the wall was found in Birmingham, where an average pay of $1.16 an hour resulted in a productivity of 241 bricks per man per hour.

LABOR PRODUCTIVITY AND COST IN BRICKLAYING, BY CITIES

City	Number of schedules	Average rate of pay per hour	Number of bricks laid: Per hour	Number of bricks laid: Per day of 8 hours	Cost of laying 1,000 bricks
Atlanta	23	$1.05	185.3	1,482.4	$6.30
Birmingham	8	1.16	241.0	1,928.0	4.82
Chattanooga	11	1.46	226.1	1,808.8	6.85
New Orleans	7	1.01	203.5	1,628.0	5.11
Norfolk	10	1.37 1/2	231.8	1,854.4	6.38
Boston	5	1.25	97.7	781.6	12.94
New York	12	1.76	157.6	1,260.8	11.69
Philadelphia	14	1.53	123.3	986.4	12.65
Chicago	24	1.57	156.8	1,254.4	10.60
Cincinnati	10	1.43	131.5	1,052.0	11.47
Cleveland	14	1.50	147.8	1,182.4	10.55
Denver	18	1.50	212.4	1,699.2	7.58
Detroit	15	1.54 1/2	154.0	1,232.0	10.44
Indianapolis	10	1.36 4/5	95.7	765.6	14.47
Minneapolis and St. Paul	21	1.21 1/10	193.2	1,545.6	6.84

The matter of trade union application of the workmen is shown, where such conditions were found, in the detailed table. Unionism appears to have had very little influence in a given trade in a given locality so far as bricklaying is concerned. For instance, eight of the establishments covered in Atlanta used union labor only. The average rate per hour was $1.20; the average productivity on these eight jobs was 243.9 bricks per hour, with a money cost of $5.50 per thousand bricks in the wall. There were nine non-union jobs, with an average of 97 cents an hour, a productivity of 142.9 bricks per hour per man, and a labor cost of $6.90 per thousand bricks in the wall. There were six mixed groups—that is to say, both union and non-union men on the same job—at an average hourly rate of $1.05 per man, a productivity of 169.4 bricks per man per hour, at labor cost of $6.44 per thousand.

In Chicago 10 union jobs were scheduled, paying an average of $1.56 per hour, with a productivity of an average of 161.9 bricks per man-hour and a labor cost of $10.28 per thousand bricks in the wall. Three strictly non-union plants were scheduled paying $1.52 per hour and having a productivity of 128.6 bricks per man-hour and a labor cost for bricklayers of $12.15 per thousand bricks in the wall. There were 11 jobs scheduled operating under the Landis award. The average pay was $1.60 per hour, the productivity was 159.7 brick per man-hour, and the labor cost was $10.48 per thousand bricks actually in place in the wall.

LABOR PRODUCTIVITY AND COST IN PAINTING, BY CITIES

City	Number of schedules	Number of coats	Rate of pay per hour	Number of squares painted: Per hour	Number of squares painted: Per day of 8 hours	Cost of painting per square
Atlanta	5	3	$0.68	0.34	2.72	$2.29
Birmingham	4	2	.63	.57	4.56	1.12
Chattanooga	3	2	.75	.48	3.84	1.57
New Orleans	4	3	.83	.25	2.00	3.84

Plastering

The schedule called for screeded and commercial plastering, two-coat work, the time to be shown on gross and net area. In the summary given here by cities the distinction between commercial and screeded work is not considered, as there is no uniform difference in the output per man per hour.

The net area per man-hour as between union and non-union plasterers did not vary greatly in the same locality. Twelve schedules taken from union firms in Atlanta give a net area output per man-hour of 5 square yards. Seven non-union jobs have an average of 5½ square yards. The non-union plasterer's cost per square yard was 19 cents and the union plasterer's cost 25 cents, but this difference is accounted for in the difference in the wages paid.

Painting

Painting is shown for only four cities. Five schedules on three-coat work were obtained in Atlanta, and four schedules on three-coat work were obtained in New Orleans. For the other two cities data are shown for two-coat work. In most cases the work was done by a so-called bucket painter, a man working for himself who may or may not employ assistants. The schedule called for straight-away work on new buildings. To obtain this information it was necessary for an agent to locate the jobs and watch them until first and second coats had been put on and had time to dry.

LABOR PRODUCTIVITY AND COST IN ROOFING, BY CITIES

City	Number of schedules	Rate of pay per hour	Number of squares covered: Per hour	Number of squares covered: Per day of 8 hours	Cost of covering per square
Atlanta	14	$0.90	0.78	6.24	$1.16
Birmingham	9	(1)	1.00	8.00	1.00
Chattanooga	10	.68	.31	2.48	2.21
New Orleans	22	.92	.62	4.96	1.49
Norfolk	12	.81	.40	3.20	2.04
Boston	5	1.10	.53	4.24	2.09
New York	10	1.15	.49	3.92	2.72
Philadelphia	7	.87	.66	5.28	1.38
Cincinnati	7	.89	.33	2.64	2.81
Indianapolis	7	.92	.77	6.16	1.23

[1] $1. per square.

The tabulation on productivity per man-hour in roofing is included and submitted only for what it is worth and with an idea that it may be helpful for comparative purposes should future investigations along these lines be made.

LABOR PRODUCTIVITY AND COST IN PLASTERING, BY CITIES

City	Number of schedules	Rate of pay per hour	Square yards plastered per hour: Gross area	Square yards plastered per hour: Net area	Square yards plastered per day of 8 hours: Gross area	Square yards plastered per day of 8 hours: Net area	Cost of plastering per square yard: Gross area	Cost of plastering per square yard: Net area
Atlanta	19	$1.040	5.7	5.2	45.8	41.4	$0.21	$0.23
Birmingham	7	.957	7.2	5.9	57.5	47.1	.14	.17
Chattanooga	10	1.134	7.4	6.4	59.0	51.4	.17	.19
New Orleans	8	1.000	5.5	4.6	44.0	36.4	.20	.24
Norfolk	7	1.283	7.1	6.0	57.1	47.8	.18	.22
Boston	6	1.438	5.1	4.5	40.8	36.3	.29	.33
New York	9	1.875	6.4	5.4	51.5	43.4	.34	.39
Philadelphia	7	1.643	9.0	7.8	72.1	62.4	.18	.21
Chicago	13	1.792	7.0	6.1	55.6	49.2	.27	.30
Cincinnati	8	1.578	8.6	7.2	68.8	57.5	.20	.23
Cleveland	10	1.500	6.8	6.1	54.6	49.0	.24	.27
Denver	11	1.500	7.5	6.6	59.6	52.9	.20	.23
Detroit	11	1.563	7.2	6.4	57.3	51.2	.23	.26
Indianapolis	7	1.322	6.9	6.0	55.0	47.7	.20	.23
Minneapolis	11	1.70	8.5	7.3	67.9	58.6	.15	.18

ENGINEERING DEPARTMENT

Economy in Concrete Forms

By E. F. ROCKWOOD, M. Am. Soc., C. E.

ALMOST the entire cost of a reinforced concrete structure can be apportioned between three main items,—the cost of the forms, the cost of the concrete, and the cost of the reinforcing steel, and of these three costs that which will vary most for a given building, and hence that which can best be reduced by intelligent design, is the cost of forms. The proper floor loads, the allowable stresses and the spacing of the columns are more or less fixed by considerations other than economy, and once these are determined, the type of design, whether flat slab, beam and girder, ribbed slab or terra cotta and concrete, is also pretty well determined, and this in turn determines largely the amount of concrete and steel, since while one designer may use thicker slabs or deeper beams than another, he will probably use less steel, and the total cost of the two designs will vary but little. On the other hand, without changing the amounts of steel and concrete, large variations can be made in the cost of forms.

The cost of forms may be divided thus:

1st. Cost of material.

2d. Cost of making.

3d. Cost of erecting, stripping and re-making.

Years ago floor forms were built in place, just as a frame house is built; i.e., posts were set up, on top of these girts and joists were laid and nailed, and then on these was nailed the decking. After a floor was formed, these were taken down in reverse order and the work done over again on each floor above. Today an experienced contractor makes his forms up in units which can be easily erected and stripped on each floor.

For example, let us take one bay of a multi-story building of beam and girder construction. The columns would be built by making each side a unit, and these four units might be assembled near their proper location or might be set up one at a time and assembled in place, according to the size of the column. Then the girders would be set in place. These would be made of units composed of the sides and bottoms, and probably would be assembled just below where they were going, and then be hoisted into place with their ends resting on the column forms. Jacks would then be put under them at proper intervals. Next would come the beams, which would be erected in a similar manner. Then the joists would be dropped into place and carried on the beam forms, and finally on these would be laid the floor forms in the shape of panels. To strip the forms, first the column forms would be removed, one side at a time. Then the joists would be knocked out. These in turn would release the panels and beam sides. The beam bottoms would probably be left until the next floor was formed, and then the jacks under them would be removed and the beam bottoms released. These operations would be repeated on each of the several floors above.

Let us consider now the effect of various changes on the floor above.

1st. *A Change in Story Height.* The column forms and the jacks would need to be changed in length. To avoid this expense the distance from the top of the finished floor to the under side of the floor above should be the same as in other stories. If a change is necessary, make the story heights less in the upper stories, as it is easier to shorten units than to lengthen them.

2d. *A Change in Column Size.* This would require changing the units composing the column, lengthening the units of the beams and girders framing into the column, and changing the floor panels around the column. While a change of this sort is necessary on almost all jobs, it should be minimized as much as possible. Particularly with wall columns, it should be considered whether the decreased thickness that could be gained in upper stories would be worth the increased cost of making the change. The writer does not believe that such a change is warranted unless it amounts to at least 4 inches. Interior columns take up more valuable space, and hence warrant changing more frequently. It might be well, however, to consider running them of constant size for two stories, and when they are changed, change them in one dimension only at a time.

3d. *A Change in Size of Beams.* A change in the depth of a beam can be made more easily than a change in width, as very often the bottom can be raised without disturbing the sides. Then all that needs to be changed is the framing at the column and possibly the length of the jacks. If, however, the width of the beam is changed, the beam bottom, the joists and the floor panels and the columns or girders into which the beam frames, will all need to be changed.

4th. *A Change in Slab Thickness.* This is the easiest change of all to make, since unless the distance from finished floor to underside of slab above is changed, none of the forms need be changed.

All of these suggestions can be thus summed up practically: Make the concrete sizes, in all stories, as much alike as possible, so that forms made for the lower stories can be used with as little change as possible in the upper stories.

Another important consideration is the use of sleeves, inserts, piping, etc., which will stick through the forms. These should be avoided whenever possible, as the forms are harder to strip and may be damaged so they will need to be made over before again being used. Whenever possible, sleeves and inserts which can stand on the forms, should be used.

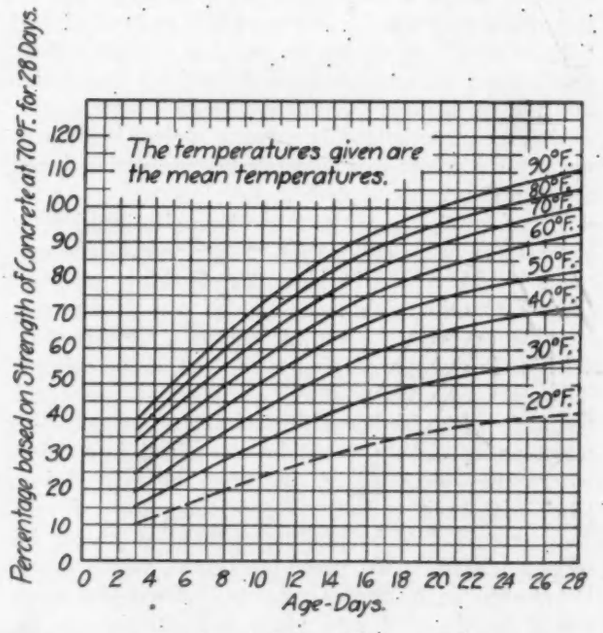
Round column forms are often used for interior columns, especially in flat slab construction. These are carried in stock by certain manufacturers, and it should be borne in mind that stock sizes cover even dimensions of shaft diameters only, and that the diameters of heads are 4′ 0″, 4′ 6″, 5′ 0″, 5′ 6″ and 6′ 0″. In these sizes, round columns are as cheap as square, but if odd sizes are required, the cost will probably be doubled.

In flat slab construction, the use of drop panels against the exterior columns should be avoided, as no reinforcement is saved, the amount of concrete and the form cost are increased, and nothing is added to the strength of the construction. Also, in this type of construction, spandrel beams should be inverted, thereby making it possible for the floor forms to run to the outside of the beams and serve as beam bottoms. Curtain walls, whether used as beams or not, should not be cast until the columns into which they frame have been stripped. If they are used as beams, hangers can be left projecting above the floor to anchor the slab, and a recess can be left in the column to take the end bearing.

But in addition to the economical design of a building from the standpoint of economy in form construction, the requirements as to how long the forms must be left in place will determine how many sets of forms will need to be made and hence greatly influence the cost. Columns and bearing walls can be and should be stripped as soon as they are able to support their own weight,—in summer weather, the morning after they are poured. This allows them to be rubbed and finished while the concrete is still green, and thus the work can be done economically. In flat slab construction, drop panels or plinths can be stripped practically at the same time and at the latest in one day more, as the span from the edge of the drop to the head of the column is very small. In beam and slab construction, beam sides could be stripped as soon as columns were it possible to do so, but as they support the slab forms, they cannot be stripped until the slab forms are stripped. As in this type of construction the slab carries only its own weight and receives no load from the floors above, it can be stripped very much more quickly than can a flat slab floor. In summer weather the writer has seen a conservative engineer and contractor allow a floor slab of 8′ span to be stripped in two days. At least half of the original supports under beams and girders should be left in place in summer weather for from a week to ten days. If they are then removed, reshores should be put in and left in place for three weeks.

In flat slab construction, the weight of the floors above is carried by each floor slab, hence flat slabs should not be stripped as quickly as plain slabs. If reshores are not used, a flat slab should not be stripped in summer until it is at least two weeks old. If reshores are used, it could be stripped in small sections and immediately reshored at the age of four days under the same weather conditions. The reshores should be left in place until the concrete is two weeks old. At other times of the year, both original supports and reshores must be left in place for a longer period of time, depending on the temperature to which the concrete is exposed. In other words, if the building is enclosed and artificial heat furnished, so that the concrete is maintained at summer temperature, the rules for stripping in summer weather can be followed; but if no attempt is made to protect and heat the concrete, rules adapted to such conditions must apply.

All of the foregoing may be condensed in this wise: Do not remove supports from beneath horizontal members until the concrete has attained sufficient strength to carry safely any load likely to be brought upon it. It is an easy matter to determine the load and the stresses likely to be brought upon the concrete. Due allowance, however, should be made for the reduced spans if some of the original supports are left in place or if reshores are used. The difficult thing is to determine the strength of the concrete, and for this purpose there is shown herewith a plot resulting from tests made at the University of Illinois, showing the effect of temperature on the increase in the strength of the concrete.



Percentages of Strength for Different Temperatures

The Forum Studies of European Precedents

Farm Buildings of Southern Europe

View Through Arch of Old Mill at Les Travers, Near Nice

LITTLE variation in character is found in the farm buildings of southern Europe, whether located in the Riviera of France, or on the sunny foothills of the Italian Alps. Low roofs, flat-sloped, on which are used red or yellow tile; walls of rough stone, sometimes covered with stucco; small windows, irregularly spaced, and low arches where larger openings are required, characterize these picturesque buildings. Usually not more than one or two stories in height, these farm groups are built without any definite plan, being added to from time to time as necessity requires. This haphazard grouping often produces unintentionally artistic results, further enhanced by such practical details as outside stairways, which give access to upper stories, without obstructing for farm purposes the rooms on the ground floor.

Writing about the farmhouses near the Riviera in The Forum last May, William D. Foster thus describes their construction: "While the hills around here are filled with stone, it doesn't seem to be a stone that is very good for quarrying, so that we find very little cut stone used in the buildings. The walls are generally laid up in a pretty rough fashion, with the rounded rocks set in the mortar and with pieces of old tiles and bricks filling in the spaces; a great deal of mortar is generally used, so that the result somewhat resembles a concrete mixture. These walls are then stuccoed or, as in some cases, left with only a little pointing up, so that the stones and bricks show in spots. In a few cases where the stone surfaces have been left uncovered, the stones seem to have been laid with greater care on the outside, but seldom has the stone been cut or trimmed. Practically always where a vault occurs or where an arch has been used, the form has been made with bricks instead of with stones."

OLD WINE MILL AT LES TRAVERS, NEAR NICE

The Forum Studies of European Precedents; Plate 18

FARMHOUSE AT LES TRAVERS, NEAR NICE

The Forum Studies of European Precedents; Plate 19

ANOTHER VIEW OF FARMHOUSE AT LES TRAVERS, NEAR NICE

The Forum Studies of European Precedents; Plate 20

FARMYARD NEAR BAHAS, FRANCE

The Forum Studies of European Precedents; Plate 21

ANOTHER VIEW OF FARMYARD, NEAR BAHAS, FRANCE

The Forum Studies of European Precedents; Plate 22

FARMHOUSE AT MOLINA DI QUOSA, NEAR LUCCA

The Forum Studies of European Precedents; Plate 23

FARMHOUSE AT MIGLIARINO

The Forum Studies of European Precedents; Plate 24

SMALL BUILDINGS

The English Cottage Type Dwelling

By LELAND HUBBELL LYON

Editor's Note — In this number of THE FORUM there begins the publication of an additional 24-page section which will be permanently devoted to the Architecture of Small Buildings. Here will be found, in text, plan and illustration, selected examples of recent work from all parts of the country, covering every type of small building from houses to hospitals; in fact the only limitations will be those exacted by good taste, logical plan, sound construction and moderate size. The treatment of this new section has been carefully planned to make it of the utmost practical value to the architect, by which standard it is to be judged. Comments suggesting improvements or changes in this new feature will be welcomed and given careful consideration by the Editor.

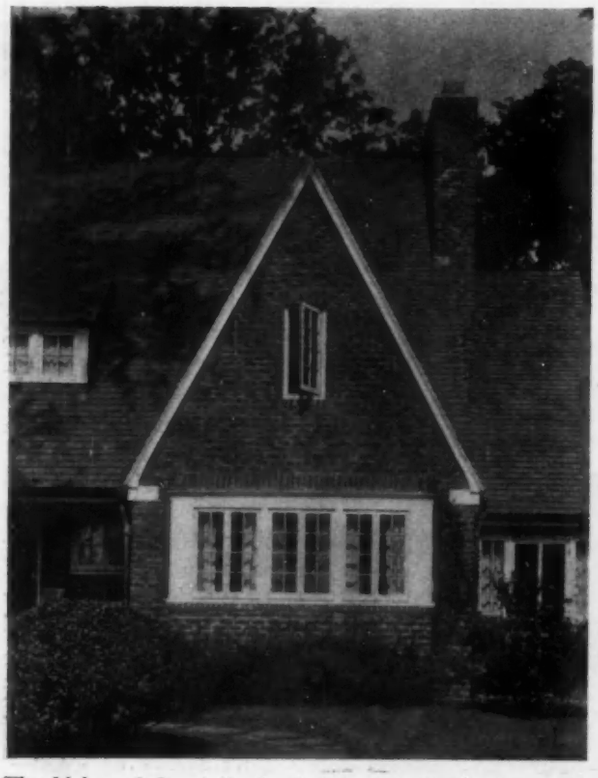
House at Riverdale, N. Y.
Julius Gregory, Architect
(See Page 43 for Plans)

THE cottages of England are of a development based on practicalities and not on affectation in any case, and have never through the ages needed ornamentation to make them interesting. Houses of the strictly Colonial type have been described as "rectangular boxes with various sloping covers," and they are nothing more or less. Their proportions were often most pleasing, but invariably derived through the use of quite definite rules. Their greatest charm was due partly to the accuracy of proportion, but mostly to the extremely interesting settings which now surround these old houses, the development of years.

The early English builders understood better than the builders of any other time the proper use of materials, and their construction was always sturdy and durable. Many of our English type cottages in this country fall down miserably as artistic successes because their designers have not taken the trouble to put themselves in tune with the spirit of the early English builders, and their work becomes exceedingly affected and stagey. Every detail of construction and every kind of material used in the English cottage had its reason, and therefore it is impossible to take any old plan whatsoever and, through the use of some sharp gables, slate roofs and endless variety of materials, roughly put together, make a proper English cottage.

The facades of these cottages are interesting mostly from the standpoint of composition. The gables were usually well proportioned, and their wall surfaces sometimes broken up by an extremely irregular but interesting fenestration.

Evidences of scholarship, learning and a knowledge of building and art in a sense understood by us today, are seldom found in the English cottage. The craftsman carried on from generation to generation the tradition of the locality in which he worked, and his gift to each building was his best of simple and direct workmanship, using the available materials as he knew how, and always inspired with ideas as natural as they were unconscious. The tremendous variety in the types of English cottages is due to the fact that England was divided into small counties and each county seemed to have its own traditions and of course its own local materials. In one county we find cottages of brick, in another of stone; even the bonding of the brick and the size and the color of the stones constantly vary. The surfaces of all materials used were expressive. Because of the fact that English cottages were built in such variations of materials, there is now a tendency to use our present imitations of these materials without regard to their propriety, with the result that our countryside is filled with dozens of crooked little houses with all sorts of queer tricks, and which are posed as English cottages. The range of materials presented for consideration when building a cottage of this type is endless. We have timber and plaster, timber and brick, entire walls of brick, walls of many kinds of stone laid in many different ways. Walls of



The Value of Carefully Studied Scale Is Well Illustrated by This Pleasing Gable
Detail from House by Leland Hubbell Lyon
(Shown on Page 41)

timber covered with hanging tile, sometimes timber walls covered with weather boarding. Roofs of slate, thatch and flat tile, sometimes of hand-rived shingles, floors of stone, waxed tiling, oak and slate.

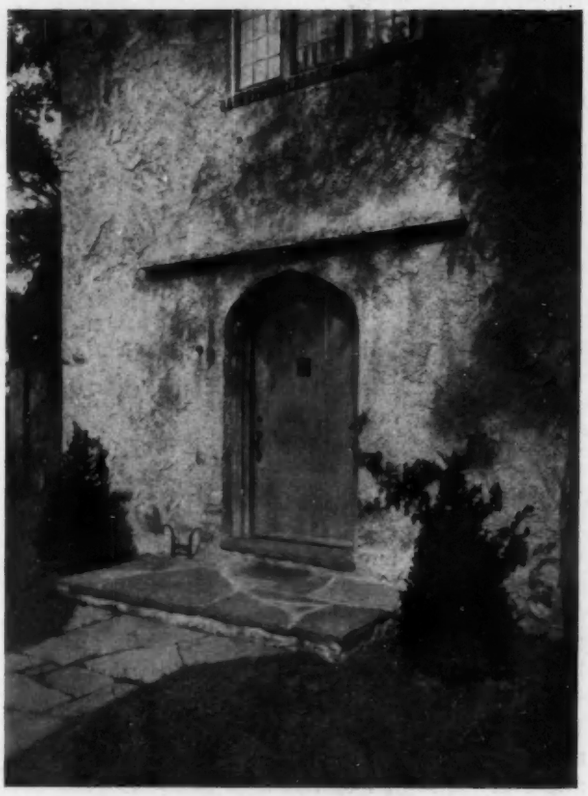
The English cottage possesses a vitality and freshness that make it extremely tempting, and the little buildings, no matter in what period they were constructed, are never harsh.

The American crib of the cottage of England is generally a miserable failure because of the fact that the cribber lost entirely the true plan, and after that failed to observe the many small refinements of workmanship. It would be far better if he would profit by studying the English plan and by applying these plan principles (mainly the principle of honesty and common sense) to his problem, and then let his facade develop from his plan. Let him use materials found in this country in their proper places, and not try to imitate beautiful old handmade materials by using improperly chosen manufactured products, and most deplorable of all, by perpetrating all sorts of ungainly and grotesque tricks with these materials.

The simple brick or stone cottage can be designed on English lines perhaps more easily than those of brick and timber or plaster and timber, because it is not necessary when using these materials to fake supposedly timber-framed walls. It seems almost criminal to plank ⅞-inch boards on a stucco wall and brand the result as an "English cottage." There was nothing in the construction of the prototypes of these cottages which was not necessary and which did not perform some function. Why tilt up the ridge of a roof at the gables and sandblast the corner braces ⅞ inch thick, and which, by the way, usually brace the wrong way, when English roofs were invariably built without ridge boards and were more likely after years to present to the eye a rather wavy line, slightly higher perhaps over truss points, but never but slightly tilted at the ridge ends, and when every timber in a building frame was put in to do work?

The cottages of the Cotswolds, which were generally of stone, present great possibilities, and can be and have been the inspiration for some splendid examples in this country. This type can be constructed without affectation. We have our fine limestones and seamed faced granites to choose from for the walls, and plenty of good slate for the roofs. The brick cottage is also a fairly safe type, and a very pleasing texture in the walls can be obtained by using common clinker brick, and even though the brick is only of veneer over a wood frame, it can be laid in a proper bond by breaking the bricks in the header courses in half. Roofs of pan tile, slate, or even of wood shingles are in good taste.

The brick and timber, or plaster and timber, types are extremely difficult to do. It is, of course, possible to construct actual oak frames with members mortised, tenoned and pinned together and then the various panels filled with brick or plaster, but this is hardly practical, for it brings up many structural and



Detail of Door and Stucco Finish of House at Riverdale, N. Y.
(See Pages 33 and 43)

weatherproofing problems which the writer has found through actual experience to be practically impossible of solution. The movement of the timbered frames is so great that it is next to impossible to maintain a tight joint between the brick or plaster panel and its enclosing frame. If the genuine timber construction is not used, there is left but the alternative of a fake frame, and why employ this and call the structure an English cottage, when it lacks absolutely the sincerity and honesty of the works of the old English builders? Why not leave off all unnecessary details? Let it be an English cottage because it is the result, first, of a plan developed as the English plans were, from the lay of the ground, the points of the compass and pleasing vistas; and then because its facades are projected from this logical plan, with openings located where light and air are desired, and, finally, practically roofed without forced gables, flat decks and so forth.

In the development of planning of an English type dwelling there are no standards except the proper provisions for giving sunlight and vistas. As an example, however, we can take a hypothetical building site which is a lot 80 by 130 feet, located in a wooded section of attractive, rolling country in a suburban district, and it is assumed that this lot is on the east side of a street which runs approximately north and south, and that in contour it slopes slightly. Two approaches are desired for the house, one a walk and one a driveway, the two fulfilling all possible requirements. The garage driveway is located on the north side because the service side of the house is naturally on the north side, which is cooler and provides better working conditions. This naturally leaves the southern side of the house with its eastern and western exposures as the best available part of the plan for the location of a sun-porch. It is also true that in this instance, a point which should be studied, this location is best from the viewpoint of prevailing breezes in summer, so that this can be a pleasant screened porch in summer and enclosed useful space in winter, because radiation will be extended to this room. It has been found that with properly constructed windows and wall radiators on two sides, this room is warm on the coldest day possible in any climate in this country. With such heating facilities and ample sunlight provided through proper orientation, it is found that plants grow luxuriantly during the winter months.

The north side of the house having been selected for the service side, the service entrance is naturally placed there, while the main entrance is on the west side facing the street to form a natural approach. It may be noted also that the long dimension of the house parallels the street, first, because a more impressive appearance is developed in this way, and, second, because this again takes advantage of light and air. The plan of such a house as is referred to is to be found on page 41 following. It will be noted there that the central portion of the plan is given over to an entrance hall and dining room.

The Central Roof Pitch Was Determined by Requirements of the Second Floor Plan as Described in This Article

Sunlight Governs the Location of Windows
Detail from House Shown on Page 43

One reason for this is that the dining room does not need a westerly exposure, so that this is a good opportunity for locating the hall on the west side and giving the dining room the desirable easterly exposure with sunlight in the morning. Also, the vista from the dining room is across an open space to a fine group of oaks, which in combination with sunlight and prevailing breezes from the southeast, provides ideal natural conditions for the dining room at the time when it is of most service.

The living room is naturally located on the side away from the service end and is arranged in plan to take advantage of all natural conditions—morning light, afternoon light, cross ventilation—and is contiguous to the sun-porch, and through the windows the best vistas are framed. A point which is worth noting is that the bay window shown on the front side of the living room was put into the plan primarily to establish a broader range of vision, which includes several vistas, including that of a small wooded lake which could not be seen from the living room except for this feature. This is the reason why the sun-porch was not extended to full depth of the house but was set back sufficiently to allow a window giving an attractive vista from the living room.

While those responsible for the planning of the original cottage type house of England were not technically trained to an understanding of orientation, they did have a full appreciation of the attractiveness of nature as a setting for a home, and if their plans may have at first seemed haphazard, it is always possible from the plan to trace the location of attractive vistas, to know the direction of prevailing winds, and to understand the English appreciation of sunlight in the house as well as in the garden.

The stair hall having direct access to the entrance hall located in the northeast corner of the house and the stairs turning up completely to one gable end, the natural lighting for the stairs is through narrow vertical casements through which the afternoon sun has access. The space under the stairs, which often is wasted, is used to care for a small entrance which might almost be called a carriage entrance, and a lavatory in conjunction with it makes this a particularly valuable feature when returning home from a dusty motor ride or when the children come home from school. The regular service entrance and kitchen facilities take up the remainder of the first floor plan and are designed from the viewpoint of utility, the principal factor in placing this section in the plan having been accomplished by putting the kitchen on the cool side of the house and back where its activities are screened from view.

It is interesting to note that the second floor was laid out before the elevation was finally developed, instead of following the usual course of letting the second floor plan be governed by the first floor layout and the demands of the elevation. There were practical reasons for this procedure. In the first place, it was desired to have all bedrooms on the east side of the house, which gives the morning sunlight and also is the warmer side in winter. The rooms were laid out and the long hall located on the west side, and only at that time were the height and pitch of the roofs on the westerly side of the house developed. With the westerly roof pitched to slope up sufficiently to give headroom in the long hall, air cushions and storage space were naturally provided on the west side of the house to act as insulation against the cold northwest wind. The result of careful planning here is that there is only one north bedroom window in the house, and only one-tenth of the whole bedroom exposure is on the north side. For obvious reasons the sleeping porch is located on the southeast corner, where it has the best light and the greatest possible ventilation and protection. It will be noted that the maximum protection against the winter was gained in planning the second floor without sacrificing cross-ventilation which is established at three points: through the hall window, the small central window and the bathroom window, all on the west side of the house.

These points established in the development of the specific planning of an English cottage type house are given because they have general application to any such plan and point by point may be made helpful in the particular design which the architect may be working on.

A great deal might be said about scale of the English cottage, and unless this element of the design is properly considered the entire charm of the old buildings will be lost. The ceilings must be low, as low as 7 feet, 5 inches to 7 feet, 10 inches—they were frequently lower in the cottages of the English countryside. Doors must not be more than 6 feet, 6 inches high. Window openings must be very small or may consist of a group of small window units arranged either horizontally or vertically. Gables and roof lines must be definite, and there should be no queer dormers or roof decks to spoil the sharpness of these lines.

Cottages of this type should nearly always be set very close to the ground, and the approach should cover a practically level grade, sloping just enough to carry off water. Great care must be taken in laying out the landscaping for these buildings, and a great deal can be done through the judicious use of wall vines and trimmed privet. Harsh evergreens should be used very sparingly, if at all, to be consistent. Much also may be done by means of garden design to give the proper surroundings to an English cottage. Of no country in the world is what may be called the "garden tradition" so strong and characteristic, and the English cottage garden, happily, may be carried out in complete accord with tradition at no great cost. But in the garden design, as with the design of the house proper, care should be taken that it be not strained or overdone. As has already been suggested, success with the cottage depends upon use of correct materials, and upon care combined with restraint in their use, and so too in the garden with its old fashioned shrubbery and motifs.

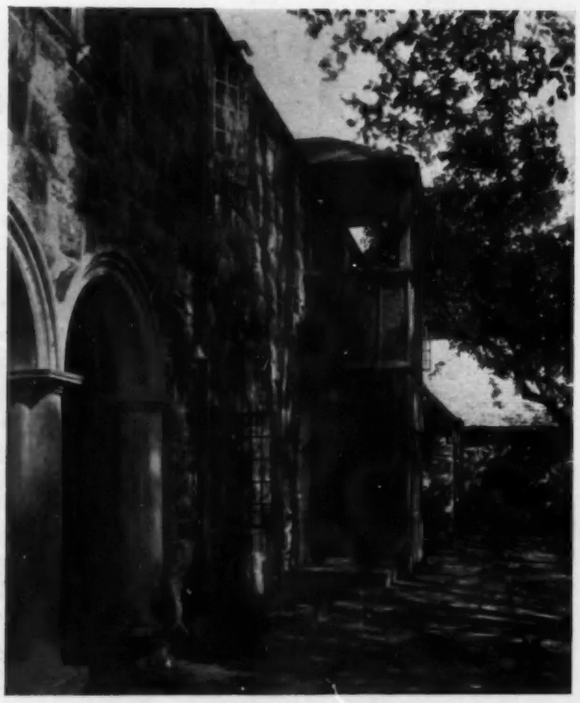
Casement Windows for the English Cottage

AN examination of the illustrations of buildings of the English cottage type in this issue of THE FORUM proves that architects fully appreciate the value of the casement window as an aid in developing the strong English feeling which distinguishes the type. It is fortunate indeed that it is thus possible to bestow character at precisely the spot where it is most needed. The windows of a house have been called its eyes, and just as the eyes of a human face give expression to the countenance, so the windows of a house determine its character and establish what might almost be called its personality. The exact degree of character which the use of casements gives cannot always be realized until one sees near together two houses almost alike, one of which has its windows arranged casement fashion, while the other has not.

That casements are historically correct for the English home in most stages of its development is of course evident, for in one form or another they were used in England from the beginning until the reign of William and Mary, when the so-called "guillotine" or double-hung window, imported from Holland, came into fashion, to be identified with buildings of that and the succeeding Georgian periods; and the casement agrees admirably with what is, perhaps rather loosely, known as the "modern English cottage" type, a form of architecture which is widely popular. There are several varieties of casements,—wood, hollow metal and steel,—all of which are in wide use.

The practical advantages to be obtained by use of the casement are obvious. It makes available for the admission of air the entire area of a window's opening, instead of merely as much of the area as can be opened by any conceivable arrangement of the sash of a double-hung window,—which never, by any feat of ingenuity, can be more than one-half. This is an advantage not always appreciated, except during the torrid days and nights of an American summer. Then again, since casements as a rule open out and not in, they can be securely fixed at any angle desired, and this is frequently helpful in deflecting into a room any air currents which may be stirring. But possibly the advantage which most frequently secures the use of casement windows is that such a window requires no weights to balance the sash, and it is therefore possible to closely group a number of windows, as is frequently done in English domestic architecture, separated only by slender mullions instead of by the spaces required for the cumbersome boxes necessary to accommodate one or perhaps more sets of weights and chains. Since weights or weight boxes are not used, construction is made simpler and less costly, and it will never be necessary to tear away the woodwork of

A Living Room of the English Type; Long and Low, with Casements and Paneled Walls

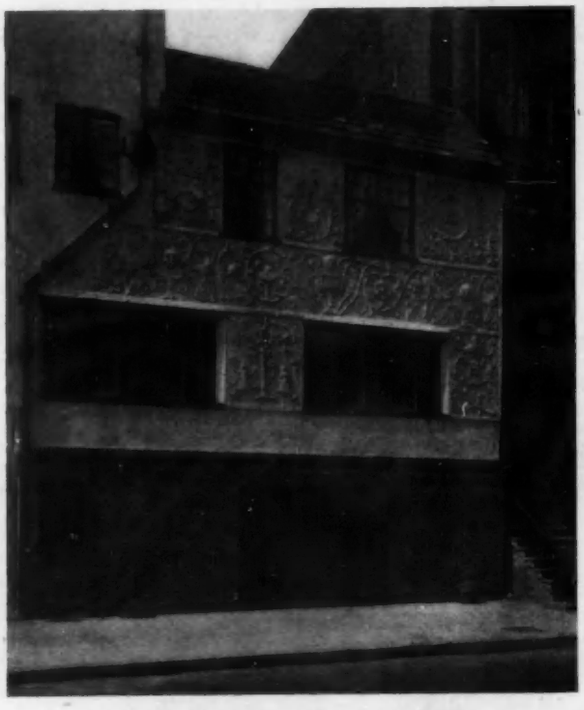


Casements in House of English Type
Alfred Hopkins, Architect

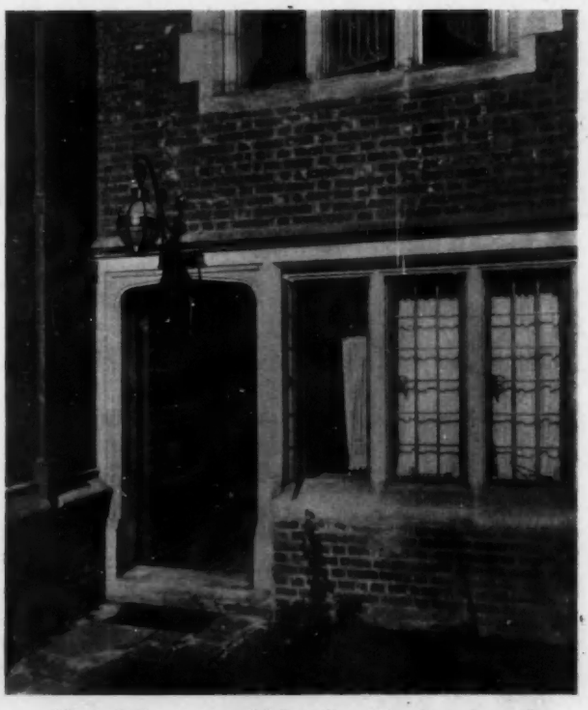
the window's architrave to repair the weights or to renew or disentangle their chains or cords.

The designer, when he is planning for the use of casement windows, might bear in mind the fact that they are in a sense a relic or a survival of the Gothic age and might well be treated accordingly. The chief point to be remembered is that where the walls of the building are of any thickness the casements should be set near the *outer* face or surface of the wall, which will of course leave the greater part of the wall's thickness as a reveal within. This works out to advantage in two ways, since with the casements placed near the wall's outer face there will be little to interfere with their being opened more widely than when set far back within thick walls, while inside the house the reveal (if it be deep enough) may be splayed on the top and the sides or even on all four sides, or else there may be used a sill of some appropriate material, all of which could hardly fail to give a heightened English character to the interior. Casements aid greatly in bestowing charm.

There are several objections which are sometimes urged against the use of casements, but it will be found that when such windows are properly made and correctly installed these objections break down. For example, it is sometimes thought that casements which open out are likely to be torn loose from their hinges by the force of the wind; but this is rarely possible when use is made—and it always should be made—of the devices made for holding a window fixed rigidly at the angle desired, which also act as braces to strengthen the casement. Housekeepers have sometimes objected to the use of casement windows on the ground that, particularly upon upper floors, it is difficult to wash their outside surfaces from within. But an examination of the illustrations of any house having its windows fitted with casements will show that such casements are rarely if ever wide enough to make impossible the passing of the arm around them to reach the outside. Many casements are, in fact, equipped with a skillfully



Ornamental Plaster and Leaded Casements



Use of Casements Makes Possible Opening of Entire Window

planned form of hinge which permits the casement to be turned literally "inside out"; in this way the inner surface of the window may first be washed, and the casement then be turned about so that the outside surface is presented for cleaning.

Another objection sometimes urged against use of casement windows is that they are not always weatherproof, and that during driving storms water has been known to be driven in. Of course when casements open in, which is sometimes the case, it is not always possible to make them proof against the weather, but where they open out—as they should and, in fact, almost always do—the construction of the casements renders them watertight. The only other objections which sometimes prevent the use of

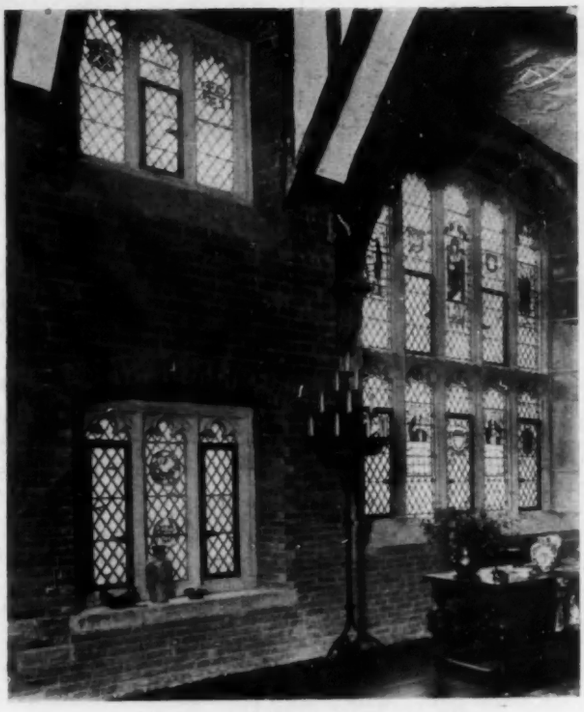
Simple Leaded Glass in Wood Casements
Thomas H. Ellett, Architect

casements are that they interfere with the use of wire screens and also with the use of window shades and draperies. These objections, however, are not well founded, since when casements open out they are manipulated in complete independence of the wire screens, the screens sometimes rolling up, in window shade fashion, sometimes hinged to open in. Window shades and draperies should never be attached to a swinging casement but to the inner surface of the architrave. Arranged in this way, window shades may be raised and lowered without reference to casements, and draperies may be hung without danger of being interfered with.

A word, in fact, might be said upon the use of draperies at windows fitted with casements, since, as has already been said, many mistakes have been made in draping them incorrectly, and as a result the casement has sometimes been thought to be

Casements Make Possible Close Grouping of Windows

awkward or impractical, whereas it is neither. As a general principle to follow, nothing should be attached to a casement itself, least of all when it swings out. Window shades, as already said, should be attached to the window's woodwork and placed *above* the opening; "sash" or "glass" curtains should be hung from slender rods or poles, which are likewise fixed to the jamb, and such curtains should



Casements Within Deep Reveals

come not to the floor but to the window sill. Heavier draperies should of course extend to the top of the window or group of windows and should fall to the floor, such curtains being hung upon a single pole across the entire window opening. Valances, either fitted to frames or merely hung, are useful where a window is unduly tall or where a number of openings are grouped, and whether valances are used or not the draperies should be so arranged that they may be drawn across the entire opening at night. The draperies, particularly when made with what are sometimes known as "French knots," are most successful when, even when they are drawn across the opening, they fall in folds sufficiently ample to avoid having a scant or meager appearance.

The use of casement windows has not always been fully understood by architects, and much less by the owners of houses in which such windows have been installed by architects; many a mistake has been made in their use, particularly when window shades on rollers have been attached to casements which open out, the awkwardness of which should have been self-evident. Familiarity with its use has now brought about the correct draping and decorative treatment of the casement window, and along with this better understanding there has naturally come wider use, which is an indication that there exists a keener appreciation of its advantages. Casements are rapidly growing in favor.

But the chief appeal of the casement in the eyes of architects is unquestionably upon the score of design. Since there is no necessity for installing weight boxes, the windows may be closely grouped, as already said, and design is likely to be improved by the substitution of narrow or slender mullions for the thick and heavy divisions which must otherwise be used. Another detail of interest in the design of the casement is in the variety of glass and the manner of its use which are possible when windows of this type are employed,—glass transparent or merely translucent, or combinations of either of these with fragments or panels of glass in color, leaded glass in diamonds, squares or other ingenious designs.

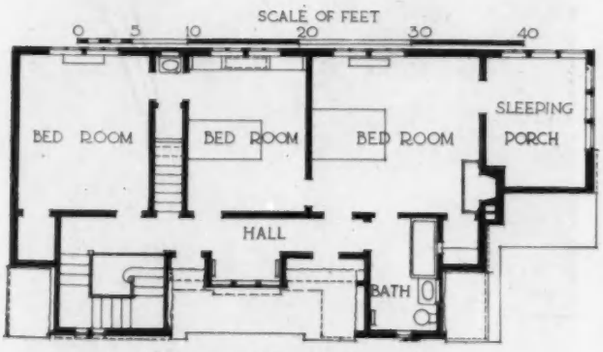
The interest which so often attaches to leaded glass in casement windows, while valued, is not always understood, but analysis will show that it is largely the result of variety of what might perhaps be called "texture." The small bits which make up a panel of leaded glass are held in position by narrow strips of lead, a metal so soft and pliable that it fails to hold the bits in strict alignment, and the varying approximations to perpendicularity produce the curiously irregular and uneven play of light and shadow that renders leaded windows so interesting.

Added interest is readily given to casement windows by the use of the hardware and metal fittings or accessories of various kinds which are now easily to be had. The genius of the English, which made the English cottage so notable an architectural achievement, was lavished upon no detail more than on its windows, and the fittings which they designed have been reproduced and so studied that new fitments have been made in the spirit of the old, so that it may be said that at no time during the long history of English domestic building has there been available so great a wealth of the details which add so much to the casement's attractiveness. Among such accessories are the stops, braces or stays which, as has already been explained, hold an open window rigidly in position, the simple locks, bolts or fasteners by which the windows are secured, and sometimes the tiny ventilators of lead, often in circular or "wheel" form, which are set in the leaded casements.

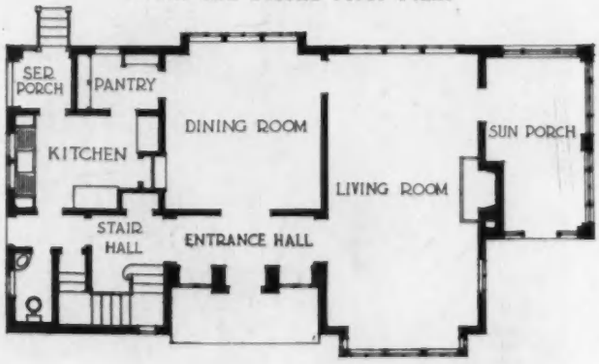
Architecture of the "Modern English" Type Makes Excellent Use of Casement Windows

Unlike buildings of certain other architectural types, the English cottage, if it is to be a success and not merely a caricature of what it might and should be, must be developed in the materials which were used in England during the period concerned, and these materials must be used in the way they were employed by the old English builders. When failure is the result of an effort to build upon the English cottage plan, analysis will generally prove that such failure is due to using materials which while appropriate for building in certain forms, are not suited to use in this particular architectural style, or else that while the correct materials have been used, they have not been employed in the ways which tradition and good taste demand. If this be true in general of a building of the English cottage type, how particularly it applies to a detail as vital as its windows!

EIGHT-ROOM ENGLISH COTTAGE TYPE DWELLING AT NEW ROCHELLE, N. Y.
LELAND HUBBELL LYON, ARCHITECT



First and Second Floor Plans



THE success of this excellent example of the use of the English style in a small country house is due largely to the carefully studied scale of the details and the informal balance of the elements of the design. The rectangular plan is broken by two projecting bays of equal size on one side. To these bays interest is added by the dissimilar arrangement of the windows, which by their character and shape indicate and express the interior plan. The high and sharply pitched roof permits adequate headroom for the rooms on the second floor, at the same time adding much to the picturesque quality of the design. Locating the main chimney at one end allows an unbroken ridgepole, which gives an always desirable horizontal emphasis and obviates loss of space unavoidable when chimneys are inside. Repeating the slope of the main roof in the low wing containing the sun and sleeping porches makes these features of the plan an integral part of the whole design, increasing also the apparent length of the house. The main roof on the front is carried down to the level of the first floor ceiling, which gives an effect of greater height to the roof and provides a covering for the shallow entrance porch.

(Outline Specifications, Details and Cost on Next Page)

FORUM SPECIFICATION AND DATA SHEET — 1

English Cottage Type Dwelling, New Rochelle, N. Y.; Leland Hubbell Lyon, Architect

OUTLINE SPECIFICATIONS

EXTERIOR:
Clinker brick veneer over wood frame.
Brick very rough;—color range, deep red to few spots of purple.
Copper gutters and leaders.
Trim—white pine.

ROOF:
Cedar shingles.

WINDOWS:
Wood casements

FLOORS:
First floor—oak, waxed.
Second floor—yellow pine, varnished.
Kitchen and bathroom—rubber tile.

HEATING:
Hot water boiler controlled by thermostat.
Enclosed radiators.
Service hot water heated by means of small coal heater.

(*Perspective and Plans on Preceding Page*)

PLUMBING:
All lavatories and toilets bracketed, leaving clear floor space underneath. Toilets with floor flush valves.
Electric vacuum cleaner in cellar, piped through house.
Gas range in kitchen.

INTERIOR MILL WORK:
White pine trim.
Birch doors, stair treads and handrail.

WALL FINISH:
Living and bedrooms—papered walls—calcimined ceilings.
Trim white enamel.
Bathroom walls tiled.
Kitchen walls enameled.

COST DATA

40,000 cu. ft. at 45c per cu. ft. $18,000

Not Including Garage

(*Costs Figured at Present Local Prices*)

A SIMPLE Colonial style has been used for the interior details on account of the owner's preference. All the woodwork is painted white, and old fashioned wallpapers have been used to decorate the walls. This use of Colonial detail is not inconsistent with the exterior of this English cottage, as all so-called Colonial work in this country was derived from English antecedents. The type of English architecture here used for the exterior design represents the traditional period between late Tudor and early Renaissance, and it has been developed in much the same materials which were used in England then.

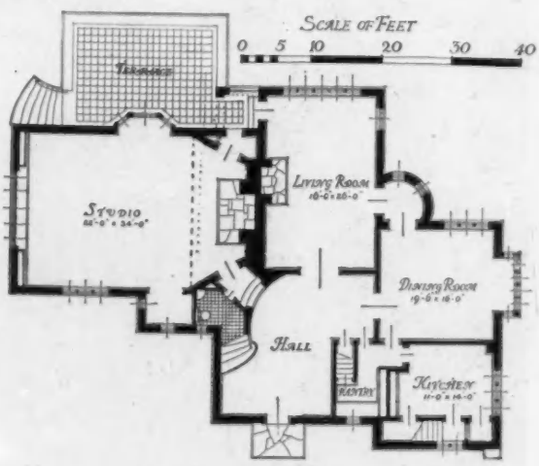
Stair Hall

Living Room

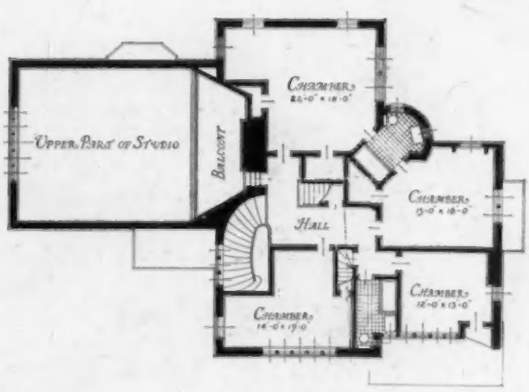
COTTAGE IN THE ENGLISH STYLE AT RIVERDALE, N. Y.
JULIUS GREGORY, ARCHITECT

STUCCO and rough stone are the materials used for the exterior of this picturesque house, much of the charm of which is derived from the successful and attractive way in which the design has been adapted to the steep slope of the hillside on which it is located. Brick window sills emphasize the window openings, which are fitted with leaded glass casements. The high gable at the front of the house breaks pleasantly the mass of sloping roofs on either side. The entrance door is an interesting study of English detail. In plan, again, the house is unusual. Three steps lead from the entrance hall into a large studio at the left. The living room, at the back, has a wonderful view over a valley from a long casement window on the west, near which is a door leading onto a raised terrace. The dining room is reached from the living room by means of a small entry in a tower-like bay. This tower is carried down to the basement level of the house, from which a doorway leads to the courtyard of the garage; the garage is under the living room.

(Outline Specifications, Details and Cost on Next Page)



First Floor Plan



Second Floor Plan

FORUM SPECIFICATION AND DATA SHEET — 2

Cottage in the English Style at Riverdale, N. Y.; Julius Gregory, Architect

OUTLINE SPECIFICATIONS

EXTERIOR:
Stucco on tile and stone; wood frame inside; stucco smooth, color deep buff, shading to straw.
Copper gutters and leaders.
Trim—oak.

ROOF:
Red cedar shingles, stained.

WINDOWS:
Metal casements, with leaded glass.

FLOORS:
First floor—tile and quartered oak.
Second floor—straight oak, stained, varnished and waxed.
Kitchen—rubber tile.
Bathrooms—encaustic tile.

HEATING:
Vacuum steam, controlled by thermostat.
Enclosed radiators on first floor.
Service hot water heated by means of small coal heater.

PLUMBING:
Brass pipes and copper boilers, used for hot water. Enameled iron fixtures throughout.

(Perspective and Plans on Preceding Page)

EQUIPMENT:
Pedestal lavatories in master bedrooms. Gas range in kitchen. Electric vacuum cleaner, operated by hand, connected with floor outlet in each room.

INTERIOR MILL WORK:
Straight oak trim throughout; doors, stair treads and handrail, oak.

WALL FINISH:
Rough, sand-finished plaster used in studio, living room, dining room, halls and all bedrooms.
Bathroom trim, white enamel and walls tiled, 4 feet, 6 inches; with smooth plaster above.
Kitchen walls, smooth-finished plaster and white enamel.

TREATMENT OF INTERIOR:
Quaint character of oak woodwork, stained dark, and tinted rough plaster walls give interesting English effect. Second floor joists and beams left exposed, and stained dark in living room and dining room.

COST DATA

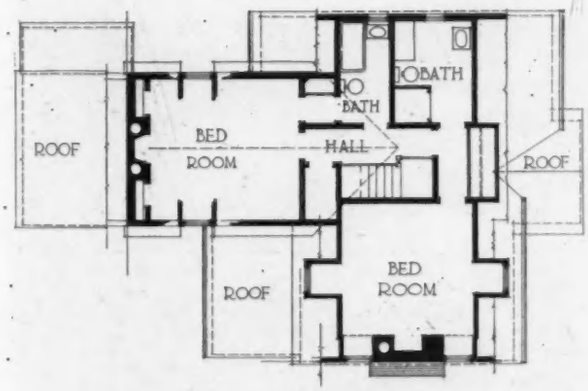
50,000 cu. ft. at approximately 50c per cu. ft. $25,000

(Costs Figured at Present Local Prices)

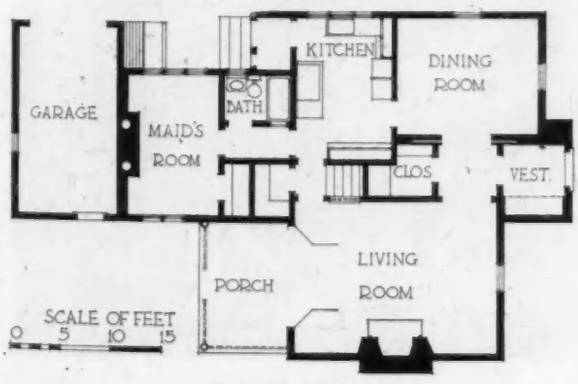
Detail of Studio

Detail of Dining Room

ENGLISH COTTAGE AT FITCHBURG, MASS.
PRENTICE SANGER, ARCHITECT



Second Floor Plan



First Floor Plan

ALTHOUGH wood is not commonly used for the exteriors of English cottages, there are many interesting and charming examples to be found in Kent, Sussex and Surrey, in which the exterior walls have been covered with wide siding in some cases, and shingles in others. The architect in this case has used wide and overlapping siding for the main walls of the house and matched siding for the walls of the little entrance porch. Although an inexpensive quality of slate was used for the roofs, the effect has unusual charm, due to the method of laying and the variety of colors secured. The slates, which vary in width, have been laid with unequal exposures and with care taken in the proper scattering of the colors, which range from dark gray to rusty brown and dull green. The three small dormer windows which break the roof slope add to rather than detract from the picturesque quality of this charming little house. The low eaves and steep pitch of the entrance porch make a delightful setting for the front door, on which quaint old strap hinges and a carved panel give unusual interest. The two plain chimneys have been carried up sufficiently high to give a definite vertical note to this otherwise horizontal design. Exterior chimneys frequently add much to the picturesqueness of a design, at the same time preventing the loss of floor space, unavoidable when chimneys are built inside exterior walls.

(Outline Specifications, Details and Cost on Next Page)

FORUM SPECIFICATION AND DATA SHEET — 3

English Cottage at Fitchburg, Mass.; Prentice Sanger, Architect

OUTLINE SPECIFICATIONS

EXTERIOR:
Redwood siding, painted white, over wood frame.
Field stone laid to smooth surface for chimneys and foundation.
Copper gutters and leaders.
Trim—oak, stained brown.

ROOF:
Slates, varying in widths, colors and exposures.

WINDOWS:
Metal casements with leaded glass.

FLOORS:
Yellow pine throughout, painted green and spattered with white.
Kitchen—linoleum.
Bathroom—tiled.

HEATING:
Hot water system; exposed radiators.
Service hot water from small coal heater.

PLUMBING:
Hot water pipes, brass; copper leaders.
Cold water pipes, galvanized iron.
Toilet fixtures, enameled iron.

(Perspective and Plans on Preceding Page)

EQUIPMENT:
Detached, hand-operated vacuum cleaner. Coal range in kitchen.
Lighting, electric.

INTERIOR MILL WORK:
White pine trim, painted.
White pine doors, painted.

WALL FINISH:
All walls throughout the house, gypsum wall board, painted. No plastering used anywhere.

TREATMENT OF INTERIOR:
Old-fashioned wood mantels with cement-covered brick facings, and special hardware copied from old examples add antique effect to the interior. The joints in the plaster board are covered with wood mouldings on both walls and ceiling, giving interesting paneled effect.

COST DATA

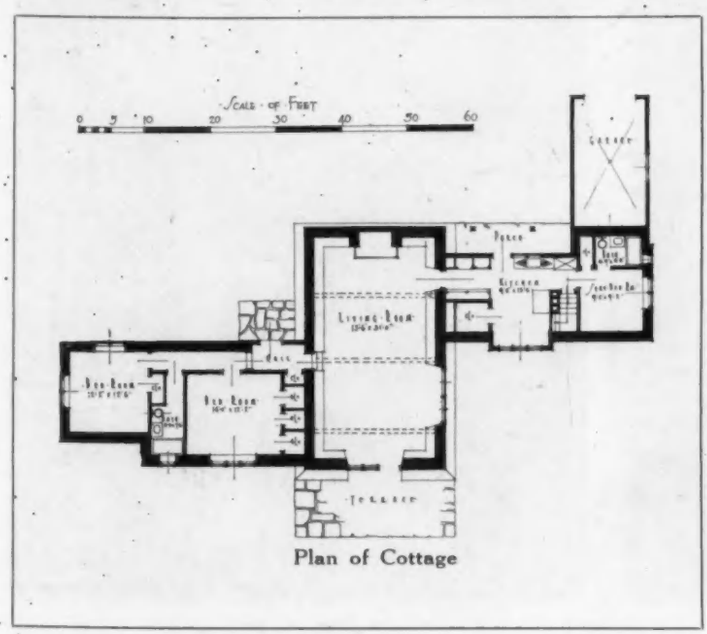
30,000 cu. ft. at approximately 56c per cu. ft. $16,800

(Costs Figured at Present Local Prices)

Entrance to Garage

The Main Doorway

STUDIO COTTAGE AT SOUTH NORWALK, CONN.
FRANK J. FORSTER, ARCHITECT



Plan of Cottage

LONG, low roof lines and rugged stone and cement walls characterize this picturesque cottage. Both in elevation and in plan the large living room or studio dominates and forms a strong central motif, to which the bedroom and service wings are subordinated. The interesting, rambling plan shows the two master bedrooms and a bath logically located at one side of the large living room, and the kitchen and servant's bedroom and bath on the opposite side. The floor levels of the house, as well as the grouping of the several parts of the plan, have been carefully adapted to the rocky hilltop on which the house is located. From every point of view this house is interesting and pleasing. The slopes of the shingled roofs, which have been carefully studied, are slightly curved outward as they approach the eaves.

(Outline Specifications, Details and Cost on Next Page)

FORUM SPECIFICATION AND DATA SHEET — 4

Studio Cottage at South Norwalk, Conn.; Frank J. Forster, Architect

OUTLINE SPECIFICATIONS

EXTERIOR:

Rough field stone, laid up in cement to a flat surface; joints varying in width and direction to suit stonework, giving the effect of stone laid up irregularly in concrete.

Walls of service porch, master's bedroom wing and garage wall, stone entirely covered with stucco.

Chimneys, stone with granite caps. Hand-hewn oak timbers, stained brown, used at main entrance and service entrance porch.

Copper gutters and leaders.

Trim—oak, stained brown.

ROOF:

Cedar shingles.

WINDOWS:

Wood casements.

FLOORS:

Quartered oak, stained brown, and waxed.

Kitchen and bathroom floors, rubber tile.

HEATING:

Hot water boiler. Free-standing radiators.

Service hot water heated by means of small coal heater.

(Perspective and Plans on Preceding Page)

PLUMBING:

All pipes and hot water boilers, galvanized iron.

Toilet fixtures, enameled iron.

EQUIPMENT:

Electric vacuum cleaner, attached and operated by hand.

Coal range in kitchen.

INTERIOR MILL WORK:

Quartered oak, stained brown, for all trim and doors.

WALL FINISH:

Two-coat carpet float, rough-finish plaster.

Bathroom floors and walls tiled; smooth plaster ceiling and walls above and tiled wainscot.

Kitchen walls, smooth plaster enameled.

TREATMENT OF INTERIOR:

The strong character of the outside treatment of this cottage has been successfully continued within. Dark stained chestnut and oak floors, massive stone chimney breast in the living room and rough plaster walls throughout, give the desired uniformity of exterior and interior treatment.

COST DATA

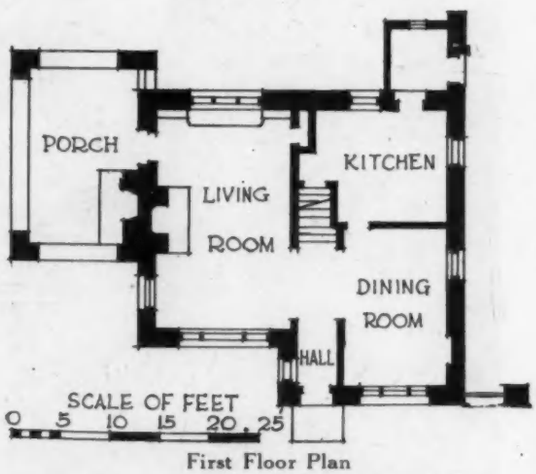
50,000 cu. ft. at approximately 45c per cu. ft. $22,500

(Costs Figured at Present Local Prices)

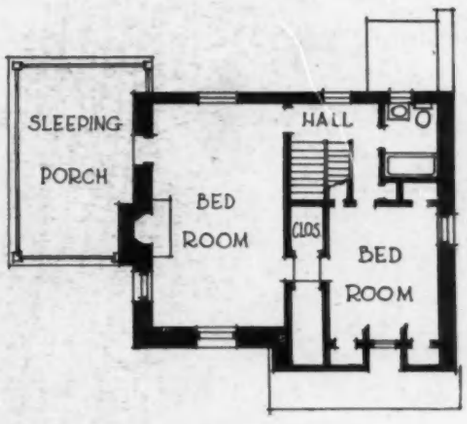
Detail of Studio Living Room

Detail of Kitchen Entrance

STONE COTTAGE IN THE ENGLISH STYLE AT RIVERDALE, N. Y.
JULIUS GREGORY, ARCHITECT



First Floor Plan



Second Floor Plan

(Outline Specifications, Details and Cost on Next Page)

FORUM SPECIFICATION AND DATA SHEET — 5

Stone Cottage in the English Style at Riverdale, N. Y.; Julius Gregory, Architect

OUTLINE SPECIFICATIONS

EXTERIOR:
Field stone, laid up to irregular surfaces; irregular jointing and brick window sills.
Gutters and leaders, galvanized iron, painted.
Stone chimneys with clay chimney pots.
Trim—front door, cypress stained; windows and garage doors, white wood painted.

ROOF:
Cedar shingles, stained.

WINDOWS:
Wood casements.

FLOORS:
Straight oak, stained and waxed.
Linoleum on kitchen and bathroom floors.

HEATING:
Steam, controlled by thermostat.
Concealed radiators below windows.
Hot water heated by gas stove.

(*Perspective and Plans on Preceding Page*)

PLUMBING:
Galvanized iron pipes and boiler; plumbing fixtures, enameled iron.

EQUIPMENT:
Electricity; gas range.

INTERIOR MILL WORK:
White wood enameled for trim, doors, etc.

WALL FINISH:
Textured plaster for all rooms except bathroom and kitchen, where three coats smooth-finished plaster, enameled white, were used.

TREATMENT OF INTERIOR:
The rugged character of the exterior of this house is pleasantly carried out in the interior in the rough-textured plaster of all the walls, and the field stone fireplace in the living room.

COST DATA

25,000 cu. ft. at approximately 55c per cu. ft. $13,750

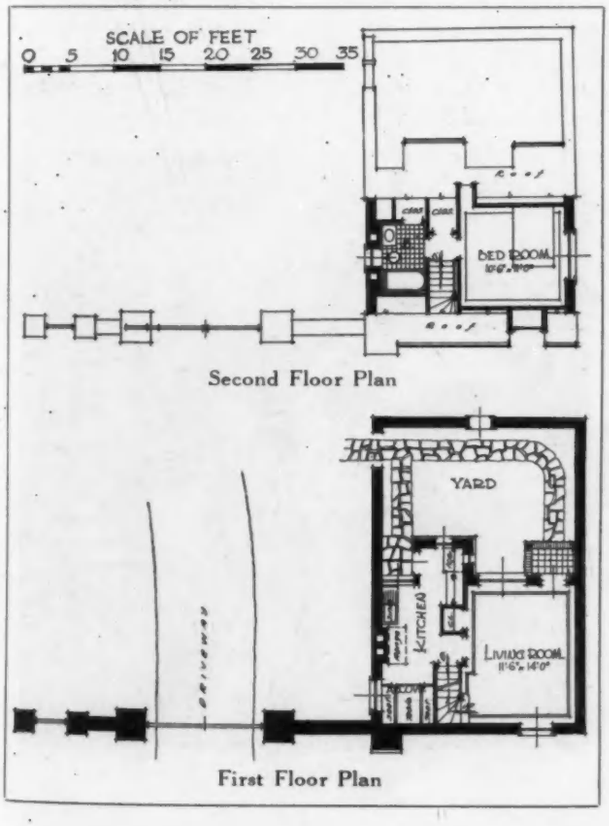
(*Costs Figured at Present Local Prices*)

ANOTHER variation of simple adaptation of the English style in small house architecture is found in a stone house at Riverdale, N. Y. This compact little building, which is practically square in plan, is given unusual interest and picturesqueness, not only by the rough stone of which it is built, but also by the manner in which the high, steep pitched roof is broken by large and small dormers. Carrying the roof down over the entrance door and the dining room makes a pleasant break in the front elevation. The treatment of the garage with a living porch above is successfully carried out by using the same rugged stone construction employed in the house, and by the happy manner in which this garage and porch are attached to the house itself. The house possesses character thoroughly English.

Detail of Entrance Porch

The Main Doorway

GATE LODGE AT CINCINNATI
R. C. HUNTER & BROTHER, ARCHITECTS



BUILT into the side of a hill, this little Brittany cottage possesses many features of interest to the architect of small houses. The long, gracefully curving roof lines, which at the rear are continued to form the top of a service yard wall, are especially appealing. The rough, random method in which the slates of various colors are laid gives texture and quality to the roof's surfaces, broken only by one small dormer on each slope. The massive, double brick chimney at one end of the roof not only gives a welcome note of color but forms a needed feature at this point of the design. Brick is again used in the arched opening in the service yard wall. The flues divide above the second floor, permitting the introduction of a small upper window in the gable end of the cottage. The treatment of the whitewashed stucco, on which small patterns are occasionally wrought, is quite unusual; it has a crackled effect suggestive of age. To make the cottage and entrance gates a complete and unified whole, the stonework of the gate posts is repeated at the outer corner of the cottage, and carried up to form the wall of the cottage at this end. As this little building was intended as a gate lodge only, the plan shows a simple arrangement of living room, kitchen and dining alcove on the first floor, and a bedroom, bath, and several closets placed on the second floor.

(Outline Specifications, Details and Cost on Next Page)

FORUM SPECIFICATION AND DATA SHEET — 6

Gate Lodge Near Cincinnati; R. C. Hunter & Brother, Architects

OUTLINE SPECIFICATIONS

EXTERIOR:
Stucco on double, reinforced concrete walls having interior air spaces.
Chimney, red clinker brick.
Copper gutters and leaders.

ROOF:
Heavy slate, laid random.

WINDOWS:
Metal casements.

FLOORS:
Oak, stained brown and waxed.

HEATING:
Steam, exposed radiators.
Water heated by small gas heater.

PLUMBING:
Brass pipes for hot water and copper boiler.
Fixtures, enameled iron.

EQUIPMENT:
Electricity and gas.

INTERIOR MILL WORK:
Chestnut, stained for trim and doors.

WALL FINISH:
Rough plaster throughout.

TREATMENT OF INTERIOR:
The few rooms of this small gate lodge are carried out in a manner thoroughly consistent with the quaint character of the exterior. Rough plaster walls and stained woodwork give a rugged effect, which is further emphasized by the heavy oak furniture in the English style.

COST DATA

20,000 cu. ft. at approximately 55c per cu. ft. $11,000

(Perspective and Plans on Preceding Page)

(Costs Figured at Present Local Prices)

THE plan of this building could easily be developed so as to include a larger living room and a dining room as well as the kitchen on the first floor, and two or three bedrooms on the second floor. The height of the roof and the proportions of the end elevations are such that this kitchen could be doubled in length and still keep its quality of charm and quaintness.

In character and finish the interiors of this cottage have been given the same careful study as the exterior. The walls are all finished in "antique" white plaster. The floors are made of wide chestnut boards. The trim and doors are also chestnut and, like the floors, are stained dark. The walls of the kitchen are painted white to correspond with the metal china closets and dressers. All of the interior hardware was specially made from old English models. In the basement of the building are located the steam heater, coal bin, etc.; it is reached by a short flight of stairs leading down from the kitchen, and under the stairs which run from the living room to the second floor. The house is small but complete.

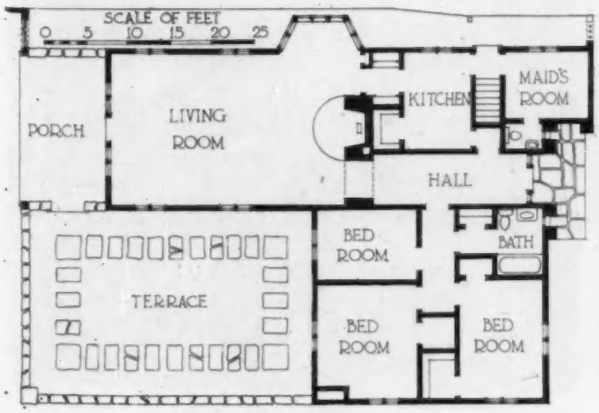
View of Lodge from Hill

Detail of Roof and Chimney

SMALL ENGLISH COTTAGE AT PELHAM, N. Y.
BLOODGOOD TUTTLE, ARCHITECT

IT is seldom that an architect is allowed to carry out a design as picturesque and true to type as this little English house at Pelham. The fact that there is no second floor permits the long, unbroken sweep of the roofs, which, although covered with shingles, are intended to resemble the thatched roofs of Stratfordshire: Hand-wrought beams, stained dark, are used to relieve the expanse of plain stucco at the main entrance and the service entrance. The L-shaped plan shows three master bedrooms and bath on one side of the entrance hall. The kitchen and maid's room and bath are located on the opposite side of the entrance hall, while the large living room is properly placed at the rear of the house, which gives it desirable privacy and seclusion as well.

(Outline Specifications, Details and Cost on Next Page)



Floor Plan

Detail of Service Entrance

FORUM SPECIFICATION AND DATA SHEET — 7

Small English Cottage at Pelham, N. Y.; Bloodgood Tuttle, Architect

OUTLINE SPECIFICATIONS

EXTERIOR:
Hard timber and stucco on hollow tile.
Hand-hewn oak used for timberwork at front entrance and on side porch.
Copper gutters and leaders.

ROOF:
Cedar shingles, stained and laid to imitate thatch.

WINDOWS:
Metal casements with leaded glass.

FLOORS:
Straight and quartered oak.

HEATING:
Hot water system; exposed radiators.
Service hot water heated by means of small coal heater.

PLUMBING:
Brass pipes for hot water and copper boiler.
Fixtures, enameled iron.

(*Perspective and Plans on Preceding Page*)

EQUIPMENT:
Electric lighting.
Coal range in kitchen.

INTERIOR MILL WORK:
Oak in living room, stained brown; elsewhere, white wood with enamel.

WALL FINISH:
Bathroom floors and walls tiled.
Rough plaster in living room and three-coat smooth plaster in bedrooms, bathroom and kitchen.
Wallpaper on bedroom walls; enamel on bathroom and kitchen walls.

TREATMENT OF INTERIOR:
The entrance hall and general living room have rough-textured plaster walls, with oak trim stained brown.
The living room is open to the ridgepole, showing oak rafters, with plaster between.

COST DATA

30,000 cu. ft. at approximately 50c per cu. ft. $15,000

(*Costs Figured at Present Local Prices*)

THE spacious effect of the living room is obtained by the height of the room, procured by leaving the ceiling open up to the roof's rafters and ridgepole. A deep bay window, adjacent to the passageway leading to the kitchen, makes an ideal dining alcove. The house throughout possesses character.

Dining Bay Off Living Room

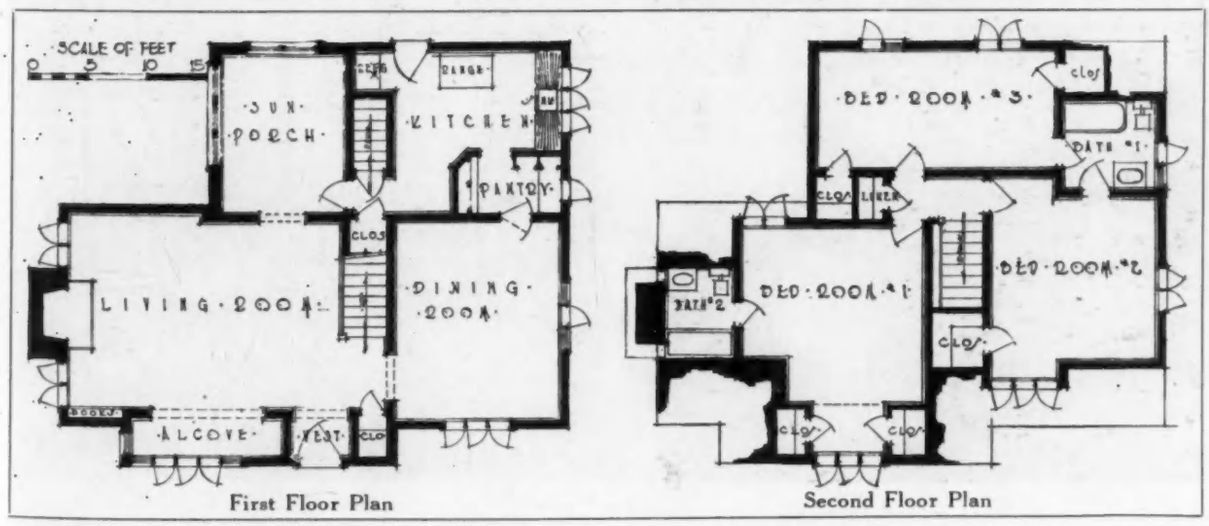
General View of Living Room

STUCCO COTTAGE AT BRONXVILLE, N. Y.
LEWIS BOWMAN, ARCHITECT

IN Bronxville there has been recently completed a stucco-covered house, small in size and simple in design, but possessing a degree of individuality seldom found in the cottage type. This is an excellent example of what good taste and artistic imagination can do to give charm and character to a small house. A large brick chimney dominates the gable at one end, while a garage is inconspicuously but conveniently located in the basement at the other end of the house, which is accessible by means of a sloping drive and enclosed service yard. The stonework of the foundation and entrance porch is carefully laid and interesting in character, adding much to the charm of the design. Concrete foundations are uninteresting in texture and character for any house, and particularly so for stucco houses where the walls seem to continue into the ground without any interrupting foundation. Whenever possible, concrete foundations should be avoided when stucco is used for the exterior walls.

The plan shows a pleasant living room with alcove and built-in bookcase. The second floor plan shows three bedrooms and two baths. In spite of the roof slopes, all of the bedrooms have sufficient vertical wall space for the proper location of the furniture.

(Outline Specifications, Details and Cost on Next Page)



First Floor Plan

Second Floor Plan

FORUM SPECIFICATION AND DATA SHEET — 8

Stucco Cottage at Bronxville, N. Y.; Lewis C. Bowman, Architect

OUTLINE SPECIFICATIONS

EXTERIOR:
Stucco on patented lathing board over building paper and sheeting on wood frame.
Copper gutters and leaders.

ROOF:
Cedar shingles.

WINDOWS:
Leaded casements.

FLOORS:
White quartered oak boards in living room, elsewhere, straight oak, stained and waxed.

HEATING:
Hot water boiler, controlled by thermostat.
Enclosed radiators on first floor; elsewhere, exposed.
Service hot water heated by small coal heater.

PLUMBING:
Brass pipes for hot water and copper boiler.
Fixtures, enameled iron.

(*Perspective and Plans on Preceding Page*)

EQUIPMENT:
Electric lighting.
Gas range in kitchen.

INTERIOR MILL WORK:
Oak used for trim, doors stained brown, downstairs.
White pine, painted, used for trim and doors upstairs.

WALL FINISH:
Rough plaster downstairs.
Three-coat, smooth plaster upstairs.
Bathroom walls tiled, kitchen walls painted.

TREATMENT OF INTERIOR:
The simple English character of the exterior of this house is effectively repeated inside. The oak floor and joists of the second floor are left exposed, with rough plaster between. The stained oak flooring and trim on the first floor further carry out the English treatment.

COST DATA

25,000 cu. ft. at approximately 45c per cu. ft. $11,250

(*Costs Figured at Present Local Prices*)

Living Room

INTERIOR ARCHITECTURE

Details of Small Louis XVI Salon, Compiegne

Drawn by C. HAMILTON PRESTON

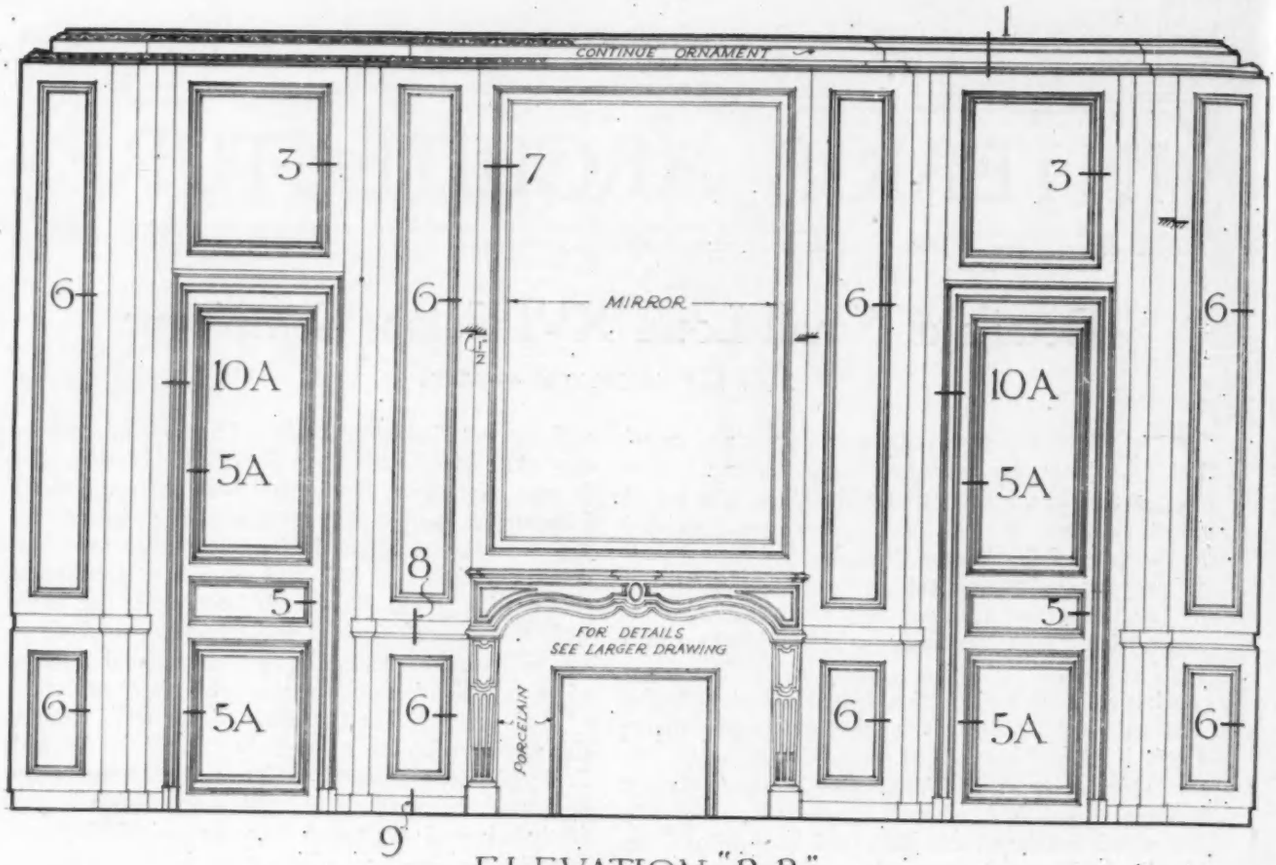
COMPIEGNE was always a favorite place of sojourn for the monarchs of France. Situated in a fertile valley with rolling hills round about, a superb forest close at hand which existed in the time of the Roman Invasion and was always famous for its hunting, this spot through its natural beauty held ever a fascination for the successive kings, vieing with Versailles and Fontainebleau as a royal residence.

Charles V erected there a feudal manor; Charles VII enlarged it; Francis I spent much time there; Louis XIII and Louis XIV favored it greatly. But our chief interest in Compiegne begins with the reign of Louis XV, when that monarch, so greatly enamored was he of the place and its environs, determined to erect there a palace which should be a fitting rival to the other royal residences. Gabriel, he who had created the two masterpieces in the Place de la Concorde and wrought so well at Versailles, was commissioned to do the work. The result was the present monumental and dignified palace.

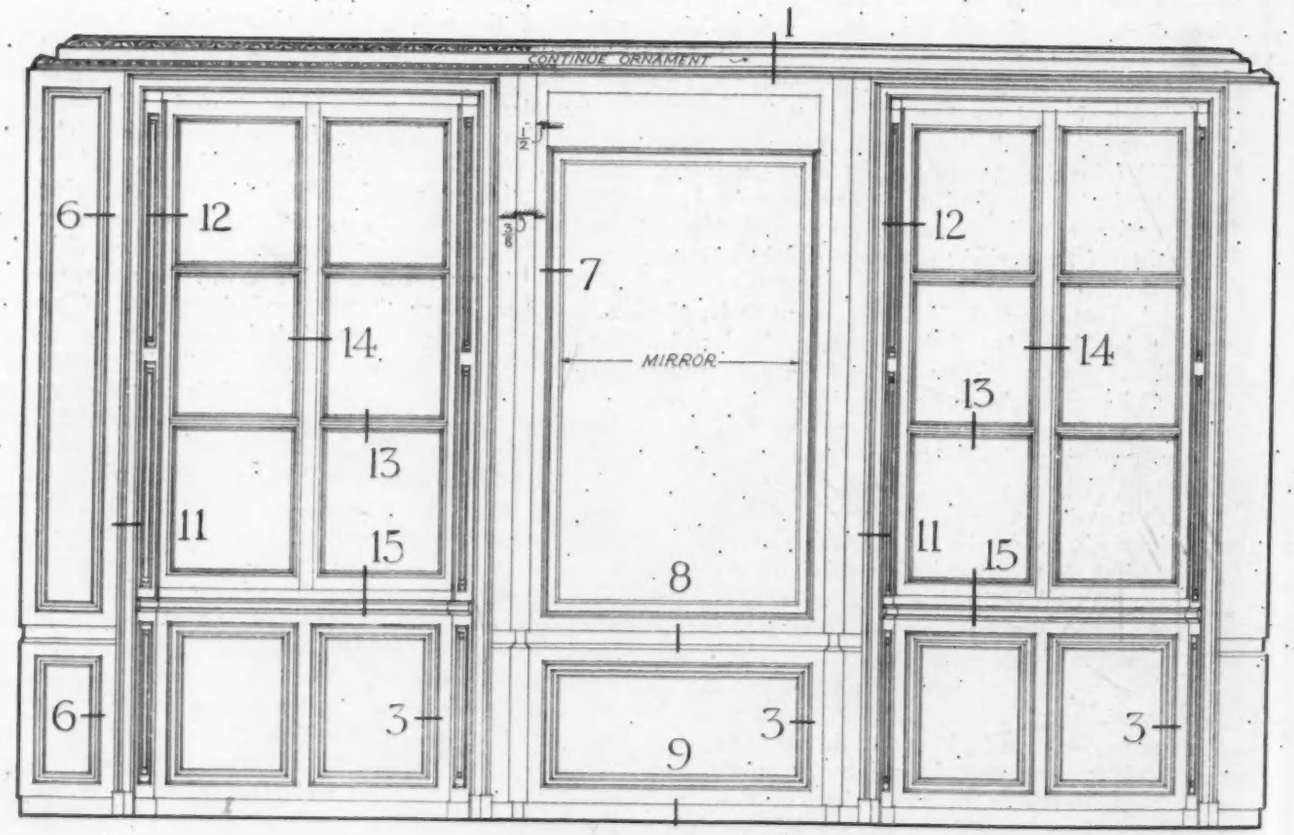
Little remains of the Louis XV interiors. Elaborate remodeling of interiors took place under Louis XVI for the apartments of Marie Antoinette. Napoleon in his time had an exceeding enthusiasm for Compiegne, and summoned the best architects and artists of the period to further modify and embellish the interiors of the palace, among them Percier and Fontaine and Girodet. Fortunately, the exterior has been but little changed. Under the Second Empire Compiegne received the same royal favor and became the favorite residence. It however escaped in great part the ravages of this thoroughly inartistic regime. During the late war Compiegne suffered not a little. In 1918 the palace was badly damaged by a bomb, which fell on the garden side, destroying a portion of the wall and some of the interiors. It was twice occupied by the Germans. In 1919, while the French officers were occupying the palace after the Armistice, fire broke out on December 19, destroying the Salon du Conseil and part of the room which is the subject of this sketch.

The mantelpiece is late Louis XV, of that period when all people were beginning to tire of flowing old lines, and the movement for a return to pure classicism was beginning to assert itself. Easy and graceful in its curves, it is yet simple and almost severe. The marble is dark gray with rose colored mottlings and veinings. All the mouldings in this room are strong and vigorous, in fact almost heavy and yet not forced in scale. The two mirrors on opposite sides, with their beautiful, simple gold frames, give great dignity and breadth to the room. The cornice is splendidly proportioned and decorated with varied and simple leaf motifs which are characteristic of the period, and seemingly peculiar to this portion of the Palace of Compiegne; flat in relief, rather deeply incised, and yet strong and vigorous and totally lacking in that sentimental fineness of parts which became so tiresome in later ornament of that period. The thickness of the walls enabled the architect by use of slightly splayed jambs with finely paneled shutters to give great beauty to the design of the windows. In plan the design is perfectly balanced; the two deeply recessed windows are opposite the fireplace, which is set in a deep alcove, with splayed sides which measure 45°. On each side of this alcove, doorways of equal size lead into other rooms of the palace. The alcove itself does not extend to the corners of this side of the room, but is set in, an equal distance on either side, permitting rectangular corners and narrow paneled wall spaces before the splayed walls of the alcove begin. The cornice, which is detailed with great delicacy and refinement, follows all of the angles of the interesting plan of this room. The vertical wall panels on either side of the fireplace and over the mirror are equal in width to the wall panels which occupy the rectangular corners before the start of the alcove. This perfect example of balanced design can best be appreciated by careful study of elevation "B B" on page 58. The stile above the lower panels in all the doors lines with the lower member of the wainscot cap, thus giving an uninterrupted horizontal line around all four walls, broken only by the recessed windows and the projecting mantelpiece. The mirror over the fireplace is balanced by another, slightly narrower in width, between the two windows on the opposite wall. Why this mirror is not carried up to line with the top stile of the wall panels is not obvious, unless this variation was due to the fact that the two mirrors were made of equal height, although the mantelpiece necessitated a higher level for one mirror. It is conceivable that through some error on the part of the builders these mirrors were ordered of equal height, and were installed as delivered, rather than to undergo the delay of ordering a new mirror for the wall panel between the windows. This seems to be a plausible explanation.

The woodwork of this room is painted a cool gray.



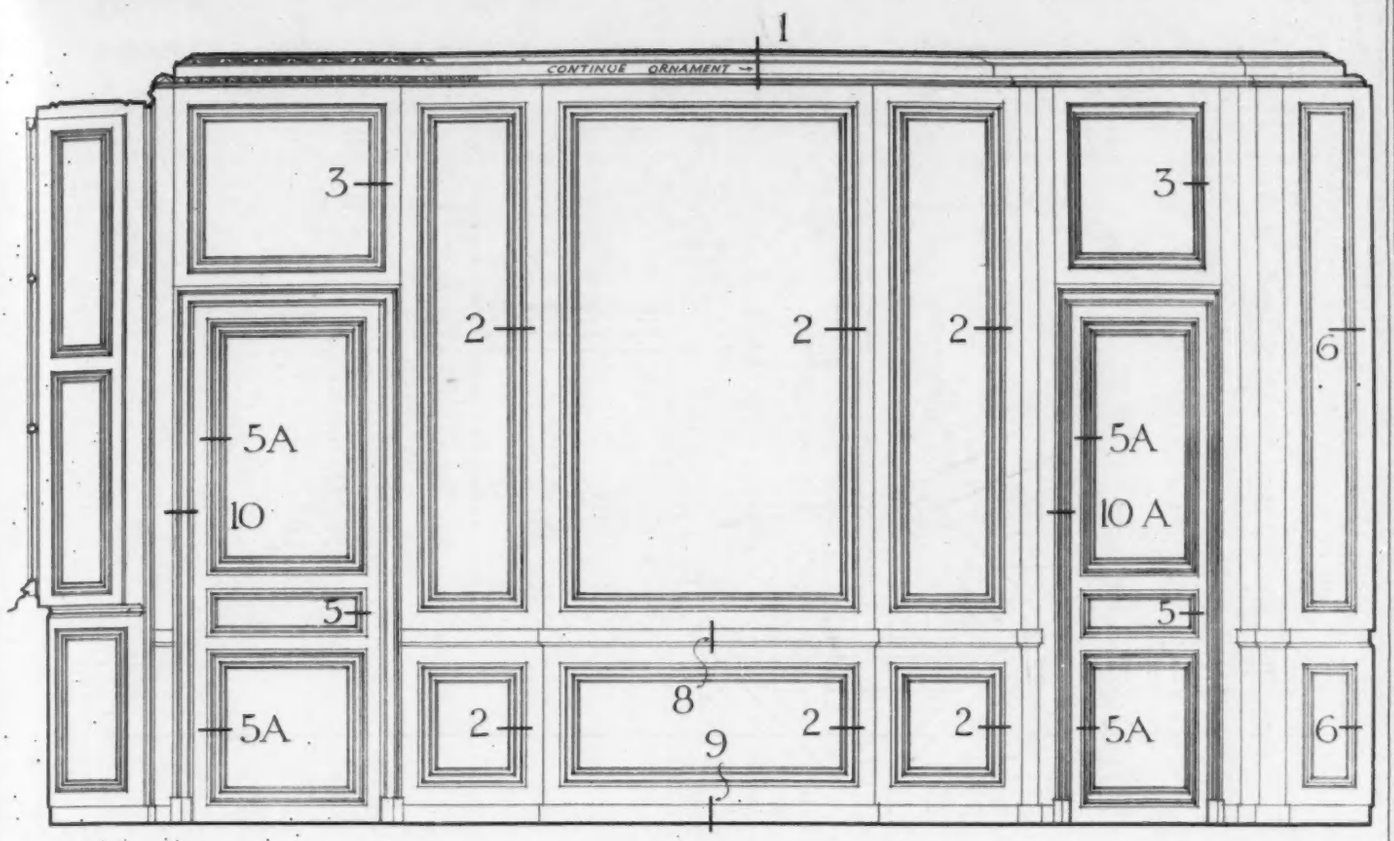
ELEVATION "B B"



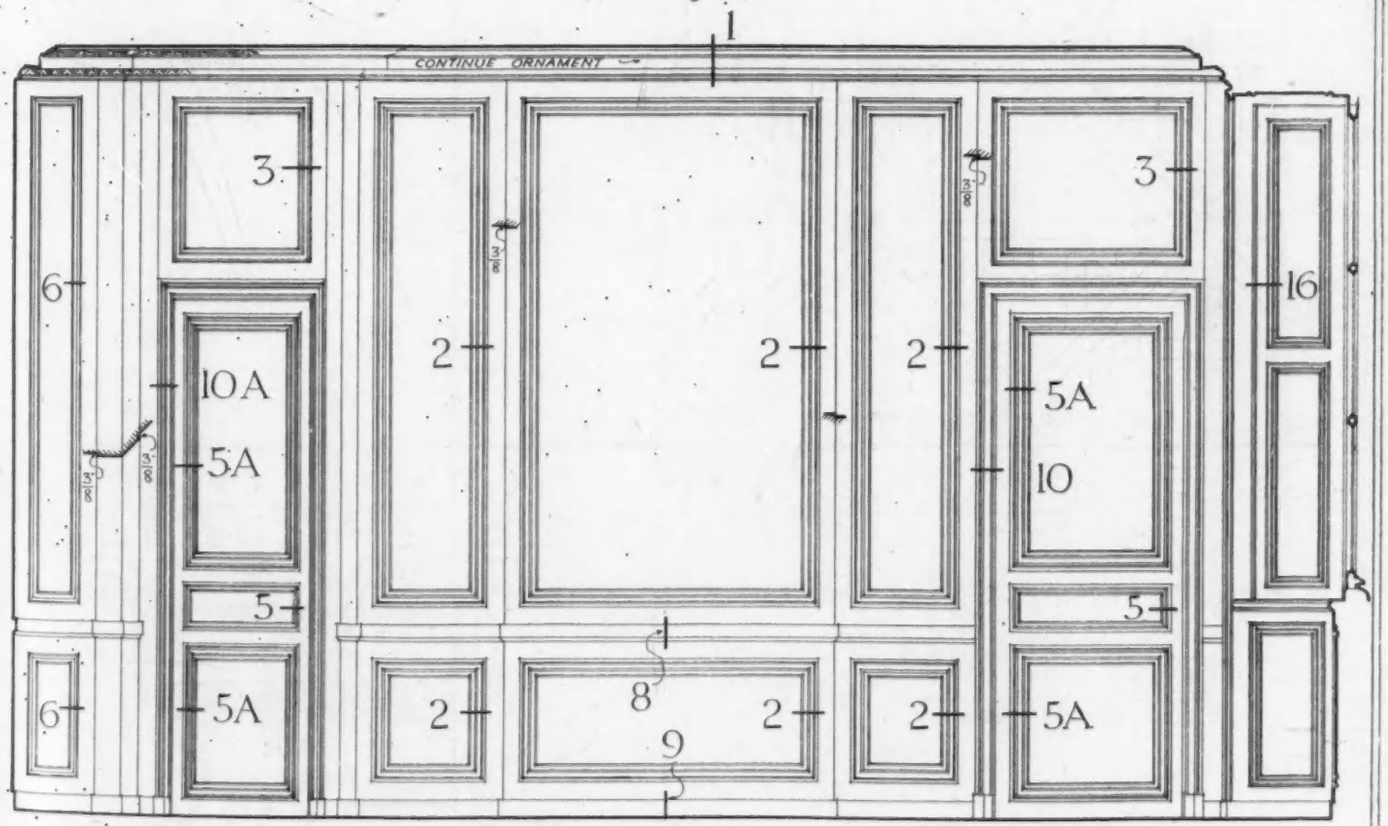
ELEVATION "A A"

PETIT SALON

CHATEAU DE COMPIEGNE

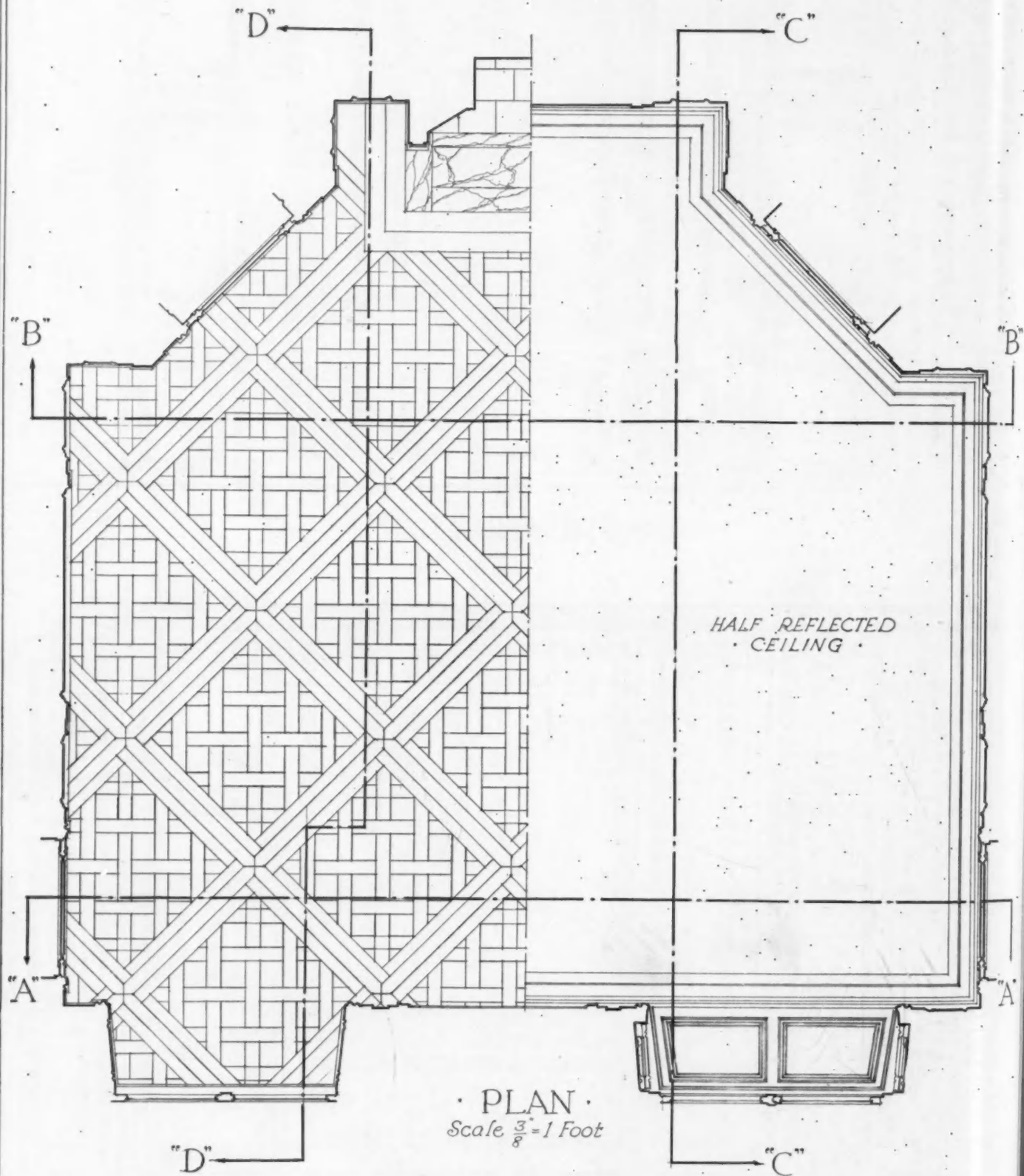


ELEVATION "D D"
Scale $\frac{3}{8}$" - 1 Ft



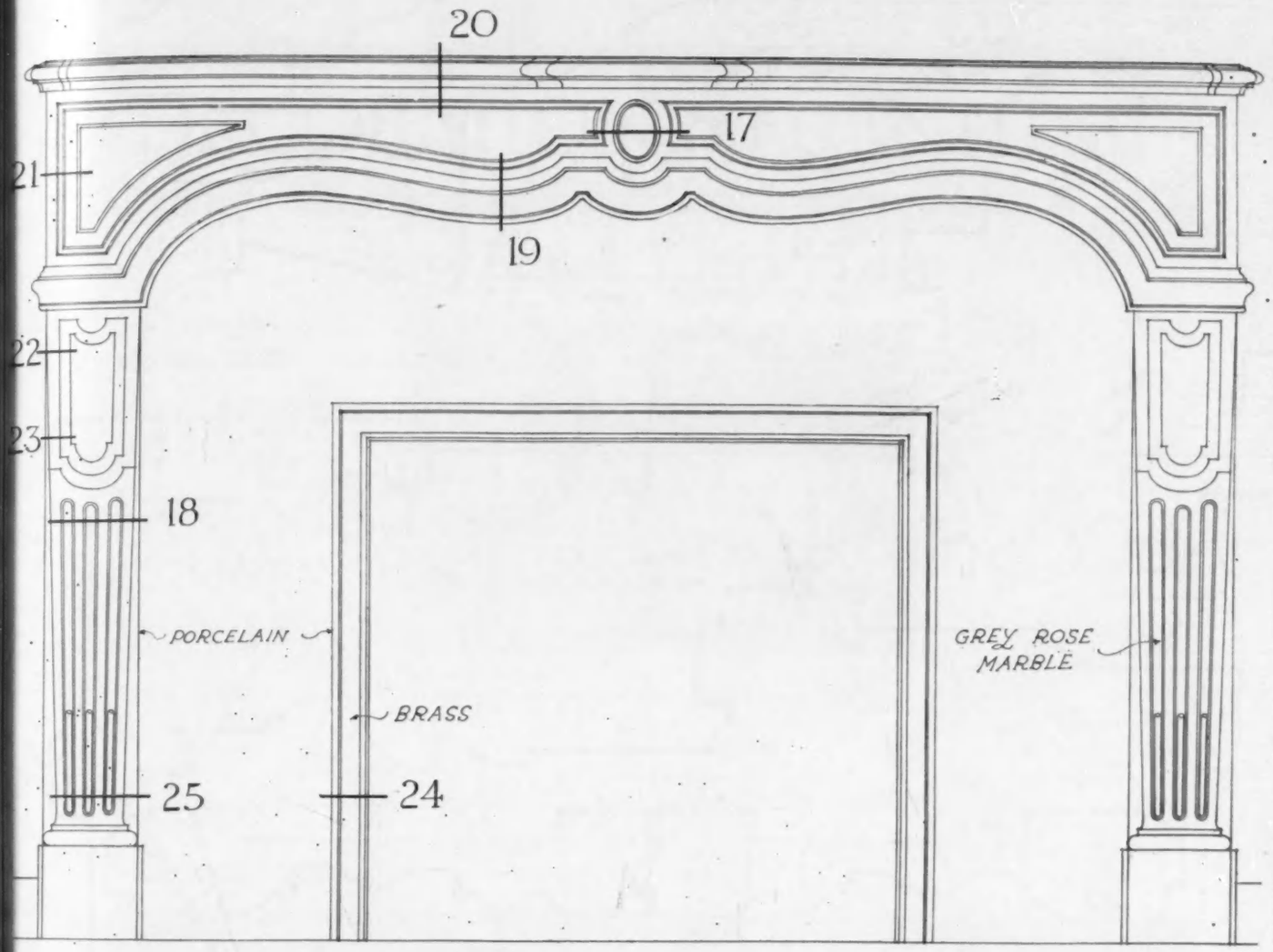
ELEVATION "C C"

PETIT SALON
CHATEAU DE COMPIEGNE

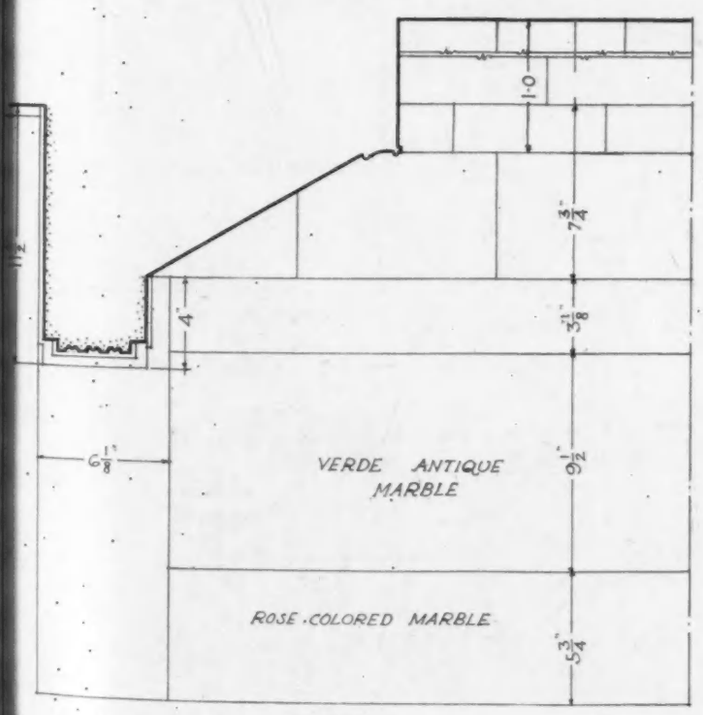


PLAN
Scale $\frac{3}{8}$" = 1 Foot

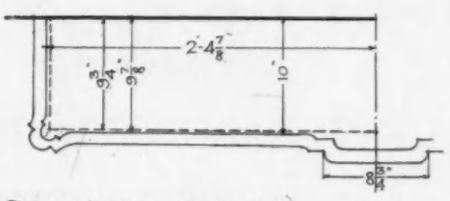
PETIT SALON
CHATEAU DE COMPIEGNE



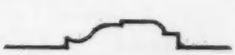
ELEVATION OF MANTEL
Scale $1\frac{1}{2}$" = 1 Foot



PLAN
Scale $1\frac{1}{2}$" = 1 Foot

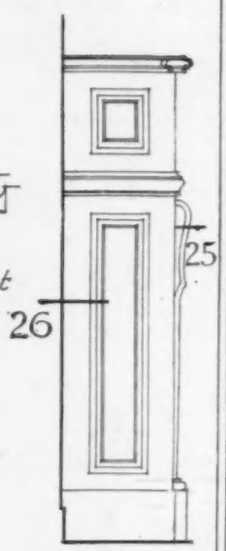


PLAN OF SHELF Scale $\frac{3}{4}$" = 1 Foot



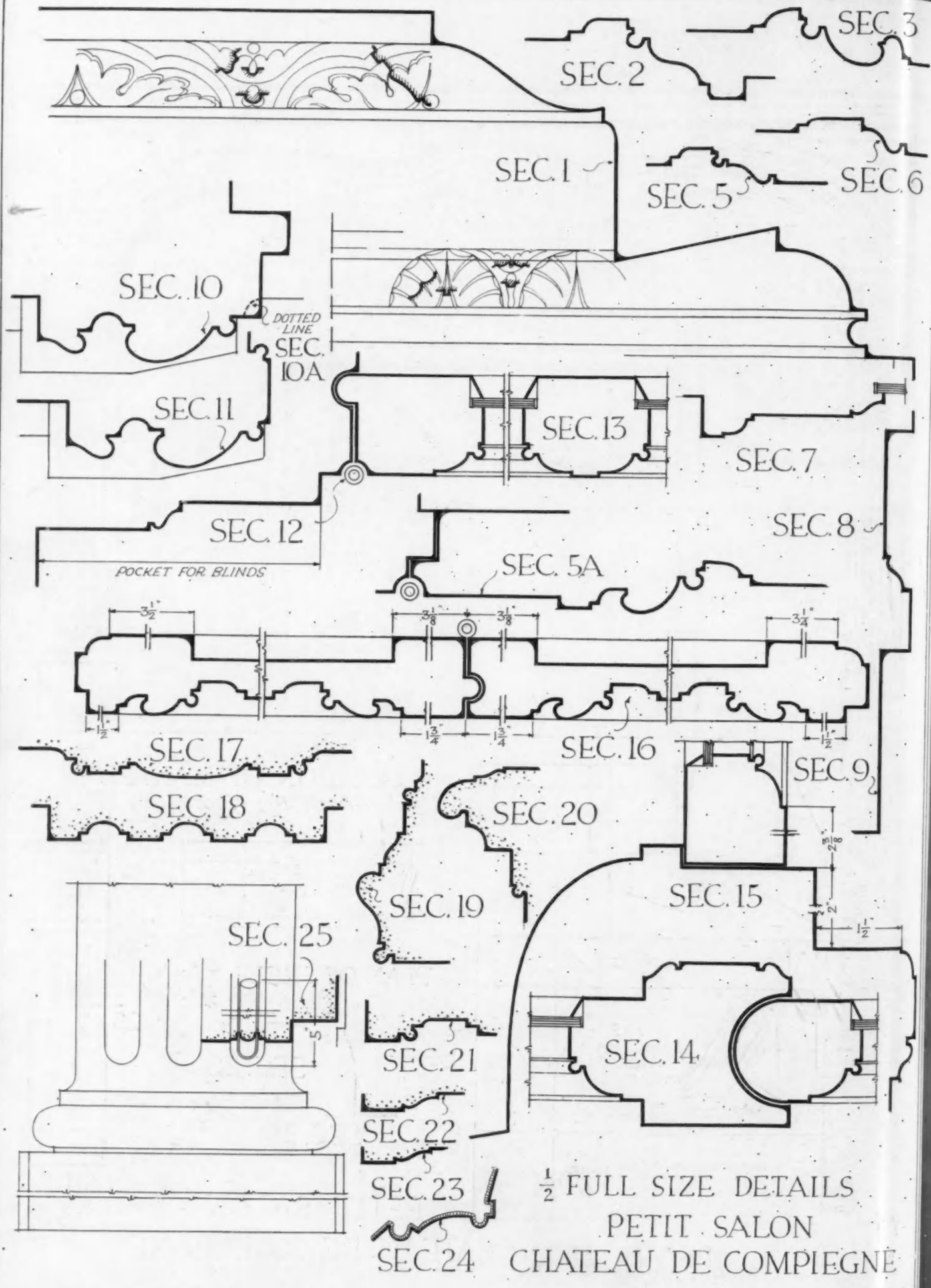
SEC. 26

SEC. 25



SIDE ELEVATION
Scale $\frac{3}{4}$" = 1 Ft

PETIT SALON
CHATEAU DE COMPIEGNE



½ FULL SIZE DETAILS
PETIT SALON
CHATEAU DE COMPIEGNE

DECORATION & FURNITURE

Some English Types of Tables

STUDENTS of furniture find that with the development of the chair and the table there may be studied the history and the growth of furniture making in the different countries of Europe. In one sense, in fact, the study might be said to be of but one piece of furniture. A chair is but one of the developments of the bench, and for centuries benches and tables were practically alike excepting for the difference in size, a table being practically a bench, generally made to cover a greater area and always made of greater height to render its use convenient for its purpose.

Courtesy "Belmaison"

Reproduction in Oak of English Gateleg Table

In no country of Europe has there ever been designed or made furniture more in accord with its architectural setting than that developed in England. Then too, there has been no period in England (if we except that time during which Vanbrugh, Chambers and certain others were filling their vast palaces with furniture copied from that used in France) when there has been a clearly defined line drawn between furniture used in the cottage, farmhouse or manor house, and that used in the homes of the great. The forms were much the same in both.

Much is being said and written just now about "refectory tables," the term being so loosely used that it is made to apply to a great variety of types. Strictly speaking, a refectory table is of the kind

Courtesy Kensington Mfg. Co.

A Fine Reproduction in Oak of an Old English "Draw" Banquet Table