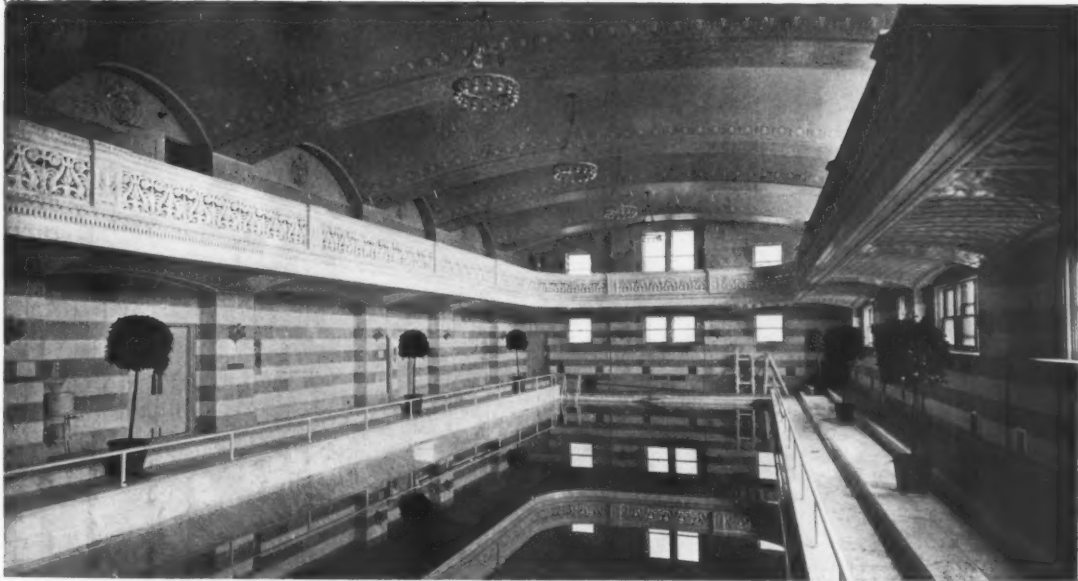


THE AMERICAN ARCHITECT

VOL. C.

WEDNESDAY, NOVEMBER 1, 1911

No. 1871



SWIMMING POOL, PITTSBURGH ATHLETIC ASSOCIATION, PITTSBURGH, PA.

(Colors are cream white and light green)

MESSRS. JANSSEN & ABBOTT, ARCHITECTS

TERRA COTTA AS A BUILDING MATERIAL*

By SAMUEL HOWE



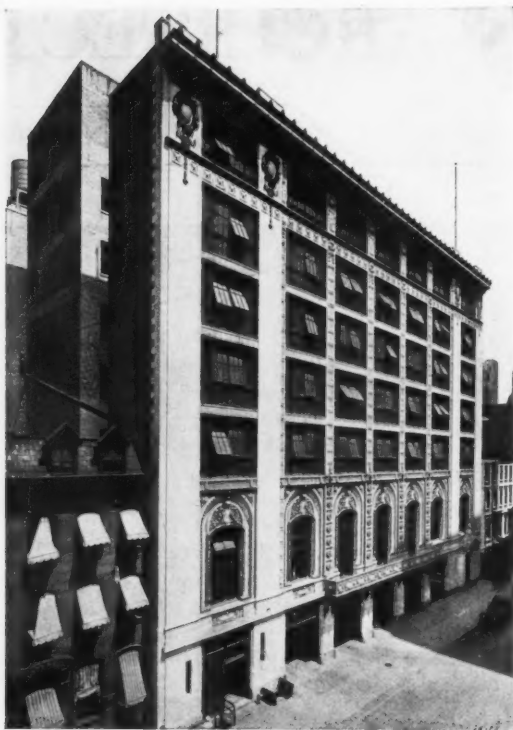
Of course every student of architecture knows in brief the history of terra cotta, that remarkable building material which unites with brick and wood in being the oldest as well as one of the most modern vehicles of human expression. Everyone interested in such matters recalls the discoveries in the Orient by the expeditions fitted out by the societies of France and England and America untiring in their research. Palaces and temples were disin-

tered, the walls, floors, vaulted chambers, some of the furniture—including cooking utensils—quaint figurines and even the royal records were found to be of clay, glazed and unglazed. Measured drawings, admirable charts and photographs of a high order crowd the museums of the largest cities here and in Europe, and the brief history of early times is now to be found in every library of importance. From which we learn that clay as a building material antedated stone and marble by many generations. This was perfectly natural because of the presence and applicability of clay and the frequent absence of stone. The dressing and coursing of stone followed the bonding of brick, slab and tile. Thus

*This is the first of a series of articles on Terra Cotta by Mr. Samuel Howe.

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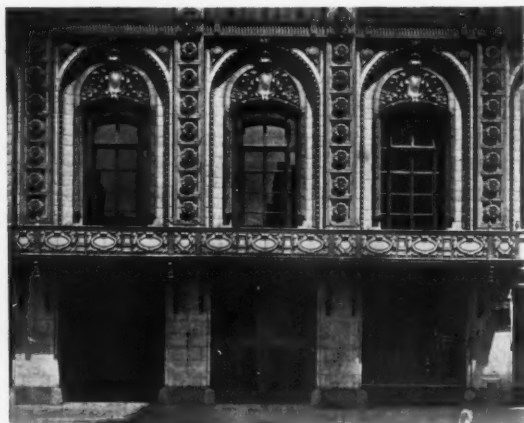


VIEW OF THE AUTOMOBILE CLUB OF AMERICA
Showing a free use of terra cotta and the skillful manner in which the iron work is covered with terra cotta slabs. Color is introduced in places.

MR. ERNEST FLAGG, ARCHITECT

were the masters of clay instructors of the workers of stone!

Their aptitude is shown in early sculpture of the Greeks—the marvelous workers



DETAIL, AUTOMOBILE CLUB OF AMERICA NEW YORK

MR. ERNEST FLAGG, ARCHITECT

—who soon, however, discarded that material for the crystal grained marbles of the small islands of the Ægean Sea, presenting the world with its finest bas-reliefs and temples.

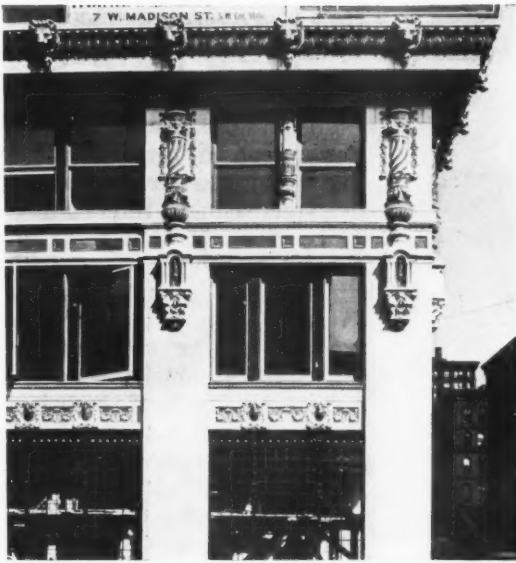
In Renaissance Rome brick and terra cotta were used by Bramante and by Michael Angelo. The plains of Lombardy are enlivened and humanized with buildings of importance, where terra cotta has been moulded into forms so exquisite as to lift the common clay into a material of value and of dignity charged with themes sacred or gay. The ancient churches of Pavia have delicate tracery of the Middle Ages. Milan exhibits arabesques and medallions



THE HEARST BUILDING, CHICAGO, ILL.

of the Cinque-cento period. The south of France has remarkable examples, particularly those at Toulouse. Along the banks of the Rhone cornices, balustrades and carved tiling are to be found. The northern portion of Germany and the provinces bordering upon the Baltic show that brick and richly ornamented terra cotta occupy the important places formerly assigned to stone. These illustrate the use of the material not alone for the exterior but also for the interior. The towers of the churches and the halls, the private houses, even the

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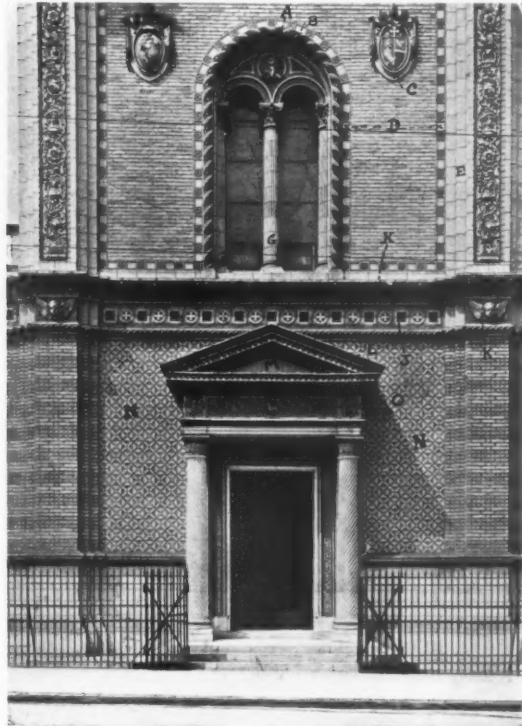
DETAIL OF HEARST BUILDING, CHICAGO, ILL.

lofty piers of cathedrals have their pinnacles and finials of terra cotta which varies in color and texture and is usually free from glaze. Yes! The fifteenth and sixteenth centuries of Italian work mark the flourishing period of this interesting art, from which it will be seen that terra cotta was accepted as a satisfactory material which, when backed by concrete, cement and brick,



DETAIL OF HEARST BUILDING, CHICAGO, ILL.

was quite able to support its own share of the burden of the building. To-day all the important cities of the world depend upon it for places of importance; for its strength to endure and withstand the sudden and severe changes of temperature; for its wondrous facility of delicate expression;



VIEW OF THE CHURCH OF ST. AMBROSE, BROOKLYN, N. Y.

Showing the diversified character of the terra cotta walling. Note the use of molded brick and of terra cotta tile, and the coloring of portions of the ornament. Interest in the diaper of the lower section will be doubtless still further stimulated by weather changes. It is beautiful today.

MR. GEO. H. STREETON, ARCHITECT

for its adaptability to intricate shapes and outlines entailed by complicated construction; and for its moderate cost.

The enthusiast of the Italian revival to whom this craft was due in the main, was Luca Della Robbia whose history is well known. He was the leader of the family or school known as The Robbia's sculptors, potters and workers in enamels and glazes. Desiring a material which should be subtle and stimulating, to which color could be applied in places, Luca centered his atten-



VIEW OF THE CHURCH OF ST. ANN, PROVIDENCE, R. I.

The body of the church is of red brick with buff bands at intervals. Color is freely introduced into the details of the entrance, the tower and the gable.

MESSRS. MURPHY, HINDLE & WRIGHT, ARCHITECTS

tion to facile and responsive clay, glazing it with a hard enamel—an opaque body which invited a picturesque and vivacious handling to which he added color to certain of the decorative adjuncts of his groups.

Truly the ceramic artists of Spain and Majorca—learning from the Arabs—had manufactured tiles for churches and glazed vessels years before, covering them with a colorless glaze; some important groups of sculpture had also been made long before the days of Luca, still he it was who gave life to the art, sweeping aside marble and bronze and placing his clay groups in places of principal importance. He it was who gave prominence to the clay, lifting it to its proper position once again, the position it held in the days of the early Orientals.

For years the engineering skill of Amer-

ica's progressive architect has been famous for his free use of materials adapted to a specific purpose. It is interesting to note how heartily he has welcomed terra cotta into his world and how large and ever-increasingly important a place does he assign to it. So much can be done with terra cotta; it can be made in almost any color and texture; it can be mottled into any tone reproducing the reds, yellows and buffs of the brick, the diversified surface of the granite, and upon its surface can be burnt glazes of any degree of density or transparency. These in turn can be dulled or made brilliant as lustre or the translucent glazes of majolica. Some portion of the buildings can receive a matt finish while other parts preserve a high glaze. The most fastidious taste can be gratified.

A conscientious examination of the buildings in this city shows how admirably the terra cotta preserves the weather markings and stainings, receiving a low-toned patina which is excellent. Indeed, there are few buildings of

stone that accept so rich a color by climatic changes. There is doubtless something within the clay that responds willingly to the vagaries of the elements. It is interesting to note the influence of the weather upon such buildings as St. Paul's Church on West End Avenue, the Presbyterian Church on Madison Square, the Automobile Club, the West Street Building, the Madison Square Garden and the New York Herald Building. They all tell the same story in their own manner. There is much diversity of treatment in style and in detail. In each can the terra cotta be seen associated and in contrast with costly marbles, cut stone and moulded brick and some have a suggestion of color in the form of a thin glaze.

An examination of the sky line of this

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city—the modern City of Great Towers, as it might very well be termed—is a tribute to terra cotta. Mr. Sidney Reeve describes the skyscraper “With every line cut short at the end of its money-making power; with its tawdry best face forward, with no sides at all and an unspeakable rear.”

This outrageous characterization referred doubtless to the older skyscrapers and can

for the contract of erection. He alleged that this had not been done. It was held that the owner was entitled to establish such a claim, if he could, by proof of what he insisted to be a general custom of the architects’ profession, known to the plaintiff when the contract was made.

Lowinson v. McKenna, 126 N. Y. Supp. 604. (J. S.)



MAIN LOGGIA CEILING PANEL IN STATE EDUCATIONAL BUILDING, ALBANY, N. Y.

Colors are white, cream and light blue

MESSRS. PALMER & HORNOSTEL, ARCHITECTS

bear no reference to the more recent buildings which so superbly mark the progress of the times, for were anyone asked to present to the world an acceptable testimony of the grip of the architect of to-day, and his skill in grasping large problems and solving them to the general satisfaction, the great towers which mark the confines of this city must surely satisfy the most exacting demands.

RECENT LEGAL DECISIONS

CUSTOM OF ARCHITECTS TO FURNISH COPIES OF PLANS AND SPECIFICATIONS

As a defense to an action for architects’ fees the owner claimed that a compliance with the contract to furnish plans and specifications for the erection of a building and to supervise the construction thereof, includes in fact the furnishing of eight written copies of such plans and specifications for use of the contractors desiring to bid

WHERE APPROPRIATION FOR PUBLIC BUILDING NECESSITY TO KEEP WITHIN ESTIMATED COST

Architects sued for their services in preparing plans and specifications for a municipal building under a contract which provided for the preparation of preliminary studies and specifications, together with an estimate of the cost of the building. The contract provided for revision in case the plans, etc., were not satisfactory to the commissioner of water supply, the estimated cost, including architect’s fees and the cost of surveys and inspection, to be within \$48,000, “the funds available for the said building.” The preliminary plans and drawings were for a building to cost within that sum, but these were not approved by the commissioner of water supply and he directed the architects to prepare further plans and specifications embracing new features, which necessarily increased the estimated cost beyond the stipulated sum. These plans were approved and bids solicited, but no contract was awarded and no building erected under the plans. It was held that the contract bound the architects to keep within the amount indicated in the contract as the available appropriation, not only in the preliminary plans and drawings, but also in the definite plans and specifications, notwithstanding any direction of the commissioner of water supply as to changes or additions to be made thereon. A clause in the contract also provided for a payment of one per cent. upon the completion of the preliminary drawings and specifications. It was held that the architects could not recover this sum.

Bernstein v. City of New York, New York Appellate Division, 127 N. Y. Supp. 987. (J. S.)

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LEAD RAINWATER HEADS AT HADDON HALL

HADDON HALL is fortunate in possessing a remarkable series of lead rainwater heads and downpipes, two of which are here illustrated. They are of singular charm, dating from the early part of the seventeenth century, when the English crafts were in a state of flux. The older traditions were still vigorously alive in all thence concerned workmanship, while classical motives in decoration were beginning to find a footing. Plumbers had then, as they have to-day, a conservative reputation, and it is to this tendency we must attribute the long survival in leadwork of Gothic decoration. Stonework and woodwork much earlier succumbed to the spirit of the Renaissance, but in the examples here illustrated there is no sign of the new influence which was to change the face of English architecture.

The wheels of pierced sheet lead, like echoes of cathedral rose windows, are of a delightful delicacy. The other decorations are purely heraldic. The boar's head erased tells of the Vernons, and is reminiscent of that Dorothy Vernon whose romantic escapade has been such a blessing to equally romantic novelists; while the peacock displayed stands for the Manners family. It was Sir John who married the enterprising Dorothy in 1567. On the pipe socket of the larger head is the coat of arms of the

Montagu family, three lozenges in fesse. It was in 1628 that another Sir John Manners married Frances, daughter of Edward, Lord Montagu, so the head is dated fairly accurately by the heraldic tendencies of the plumber who made it. But for such



LEAD RAINWATER HEAD, HADDON HALL



LEAD RAINWATER HEAD, HADDON HALL

dating, one could hardly believe that the Gothic tradition would be so vigorous a century after Henry VIII. introduced Italian workmen into England.

The smaller head is a good example of the toy castle type that was so popular at the same period, and indeed up to about 1670.

Not the least attractive feature of these products of the plumber's art is the knowledge that it was in England that both pipes and heads of lead were invented, and that nowhere abroad was such rich work done at any date. Of the hundreds of fine English examples, few equal and none excel those at Haddon Hall, which is a home of all the building arts.

—*The Architects' and Builders' Journal*

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GRADUATE COLLEGE, PRINCETON UNIVERSITY
(Concluded)

FRONTISPIECE:-

AN ANTIQUE SCULPTURED TABLE

THE FIRE PREVENTION BUREAU IN NEW YORK.

THE Hoey Bill, which gives the Fire Commissioner of New York City summary powers to enforce the laws governing unsafe buildings, has been signed by Governor Dix. This creates what is practically a Bureau of Fire Prevention, although at present it exists only on paper and will not become an active working department until the Board of Estimate provides necessary funds for its organization and maintenance. Meanwhile, with the responsibility for the detection of existing infringements of the law not clearly located as between the Building Department and the Fire Department, there is still as great danger of damage to property and loss of life as existed before the present enact-

ment. It is to be hoped the matter will not be delayed until another disastrous conflagration spurs the authorities to action. This appears to be a case where official "red tape" might with good reason be cut and the usual deliberations be replaced by prompt organization of the Department of Fire Prevention.

OBSOLETE FORMS OF SPECIFICATION.

THE truth of the statement that "we are creatures of habit" finds at least partial exemplification in the apparent persistency with which architects follow a form of specification after it is once adopted, even though improvements in manufacture or changes in the manner of doing work would seem to render a modification desirable in the interests of good building. The practice, somewhat prevalent in the profession, of writing a specification for the average building by a process of interlining one that has done previous duty for a somewhat similar building accounts perhaps for the perpetuation of many features, both of construction and equipment, which would be greatly improved if they were made the subject of original thought stimulated by a thorough study of existing devices and conditions.

It is not difficult to find issued from prominent offices specifications included in which are paragraphs calling for work in accordance with what might be termed "obsolete practice." These have been copied from one specification to another through a series of years, while changes in the work and equipment for which they provide have been gradually taking place. As a result, we find push-buttons and other items of finishing hardware included in electrical specifications; marble work provided for in plumbing specifications; supports and anchors specified in conjunction with architectural terra cotta and many other items similarly included in work quite foreign to the items themselves.

Of course, the argument that responsibility should not be divided, that the terra cotta manufacturer should be held responsible for the safe anchoring of his material, the plumber and electrician for all work coming in connection with their trades, has always been advanced in defense of

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the "mixed trades specification," but it is difficult to see why that object is not as fully accomplished where a single contract is awarded for an entire operation. In such case the general contractor is not only responsible but is enabled to sublet the various portions directly to those who furnish the materials in accordance with usual practice. To have hardware included in electrical work, marble cutting and setting in the plumbing or iron anchors and supports in the terra cotta contract simply complicates the operation and presumably adds to its cost by reason of passing through

many hands. The contract must ultimately be divided in any event and the probability of unsatisfactory work and excessive cost is greater with a complicated specification not drawn in accordance with current practice and leaving to the judgment or discretion of the builder the adjustment and apportionment of the work among the various contractors and supply-men than if the matter is clearly and definitely set forth in the specification and each class of work and list of materials made complete within itself, but including no item belonging to a different trade.

THE LOST GOLD CROSS OF THE KREMLIN

WHAT is a Kremlin? It is simply a fortified enclosure or citadel; but, for people outside Russia, there is only one Kremlin—that at Moscow. It has a perimeter of nearly a mile and a half, and its brick walls are of formidable thickness and height. Inside there are many churches and chapels, including the Cathedral of the Annunciation, which dates from the fifteenth century, and a still earlier Cathedral of the Assumption; while an imperial palace, although it was rebuilt in 1840, retains intact some portions of a much earlier structure, and is remarkable also for its semi-Oriental decoration. Next year there are to be centenary celebrations in Moscow, and in collecting mementoes of the Napoleonic invasion, enquiries have been made regarding the fate of the great cross of Ivan Veliky, the church which dominates the Kremlin. This cross was pulled down at the command of Napoleon, who is said to have believed that, although it was sixteen feet high, it was made of solid gold, and by removing it he intended to punish the Russians for setting fire to the city, to add a glory to the dome of the Invalides, and perhaps to gratify in some measure

the superstition which formed no insignificant element of his complex mind, or perhaps to work upon the superstition of the Russians, who were understood to associate the cross with the fortunes of their country. The cross, however, had to be abandoned on the march to Smolensk, and was supposed to have been sunk in Lake Semlevo. The lake having been recently drained, careful search has been made in the hope of finding the cross, which, however, is now believed never to have left Moscow, but to have been buried under the wreckage in the Kremlin when its buildings were blown up by order of Napoleon. Moreover, it appears that Napoleon was mistaken as to the identity of the cross; the real gold cross remaining undetected on one of the churches which escaped destruction. That in Russian architectural decoration all that glitters is not gold may be inferred from the statement that much of the decorative "bronze" in the great cathedral of St. Isaac, in St. Petersburg, is really electrotype and the authority who makes this revelation adds, somewhat superfluously, that architects of other nations may profitably go to Russia to study, but not to copy.

—*The Architects' and Builders' Journal*



WEST END GREAT HALL

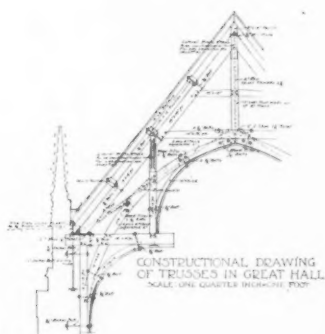
SECTION THROUGH KITCHEN AND SERVICE COURT
LOOKING NORTH



SECTION THROUGH KITCHEN LINE O-O

SECTION THROUGH KITCHEN COURT

SECTION ON LINE K-K



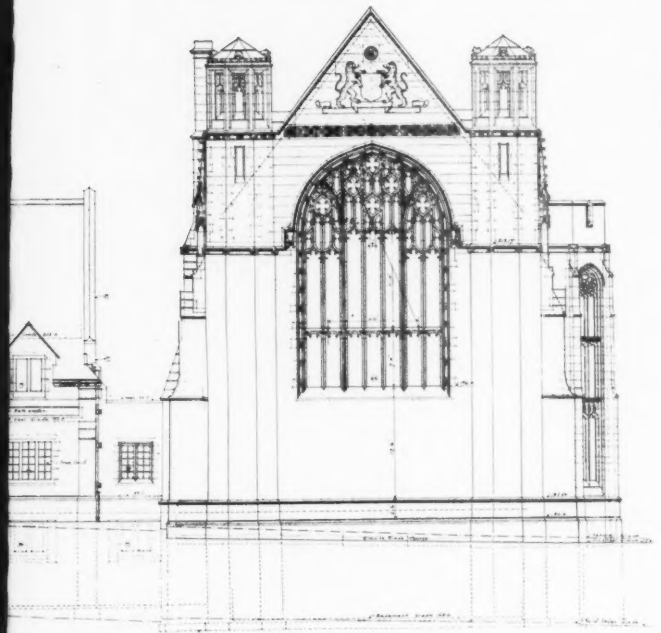
CONSTRUCTIONAL DRAWING
OF TRUSSES IN GREAT HALL
SCALE ONE QUARTER INCH TO FOOT



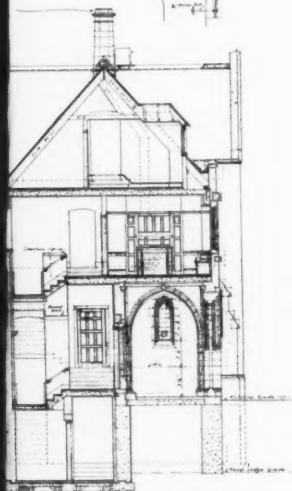
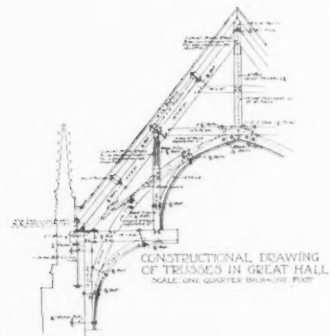
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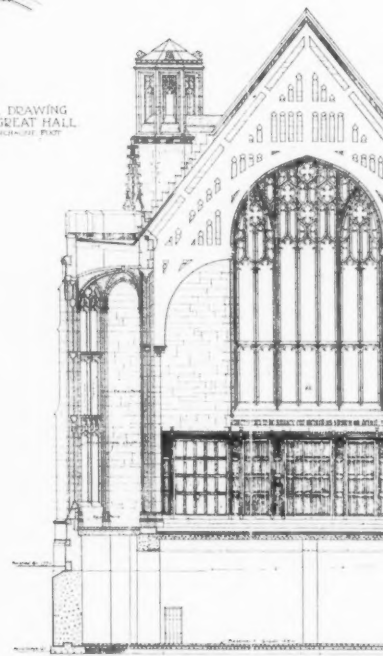
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WEST END GREAT HALL



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SECTION THROUGH GREAT HALL LOOKING

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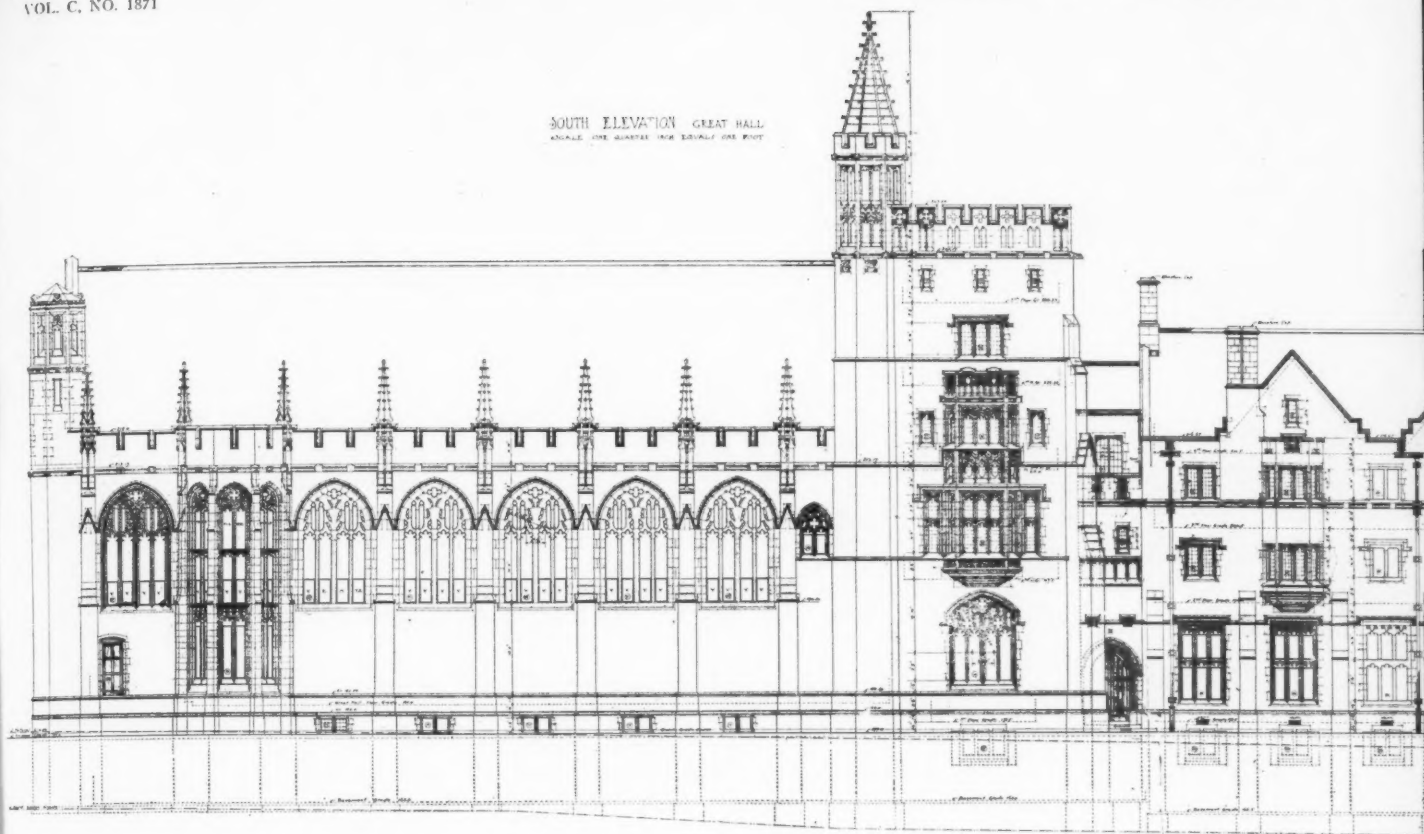
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UNIVERSITY, PRINCETON, N. J.
BOSTON AND NEW YORK



SOUTH ELEVATION GREAT HALL
SCALE ONE QUARTER INCH EQUALS ONE FOOT



SECTION ON LINE W-W

NORTH ELEVATION OF QUADRANGLE
SCALE ONE QUARTER INCH EQUALS ONE FOOT

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NORTH ELEVATION OF QUADRANGLE
SCALE: ONE QUADRANT (ONE SQUARE) ONE FOOT

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THE COLLEGE OF PRINCETON UNIVERSITY, PRINCETON, N. J.

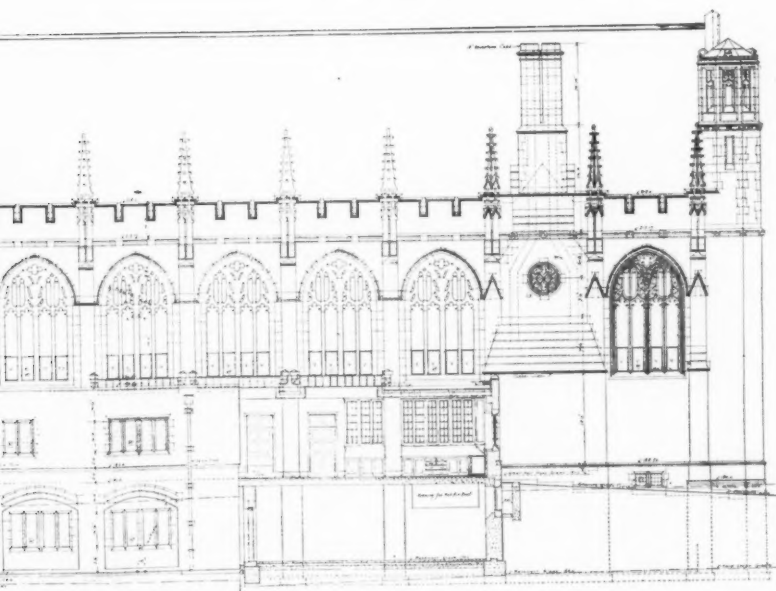
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NOVEMBER 1, 1911



SOUTH ELEVATION GREAT HALL

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SECTION ON LINE P-P

NORTH ELEVATION OF QUADRANGLE

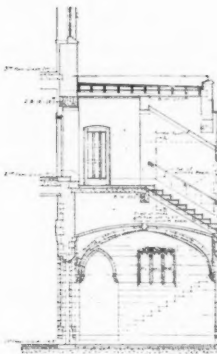
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SECTIONAL



LAST ELEVATION OF QUADRANGLE

SCALE ONE QUARTER INCH EQUALS ONE FOOT

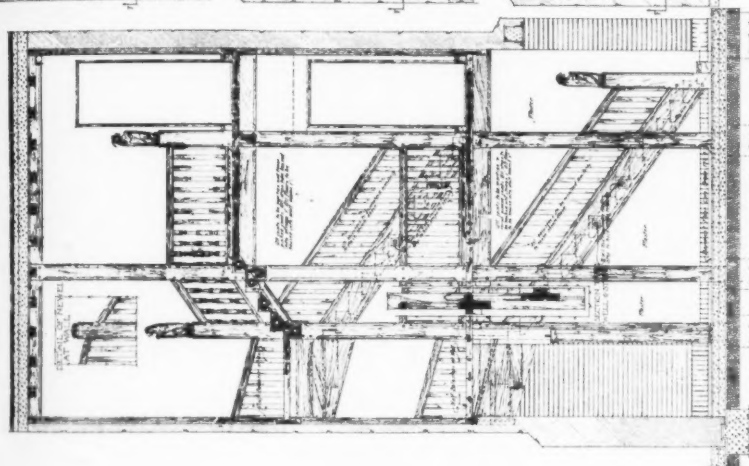
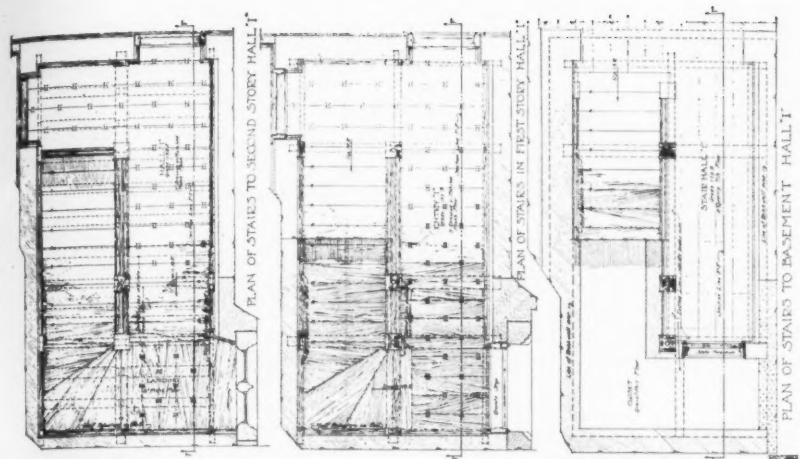
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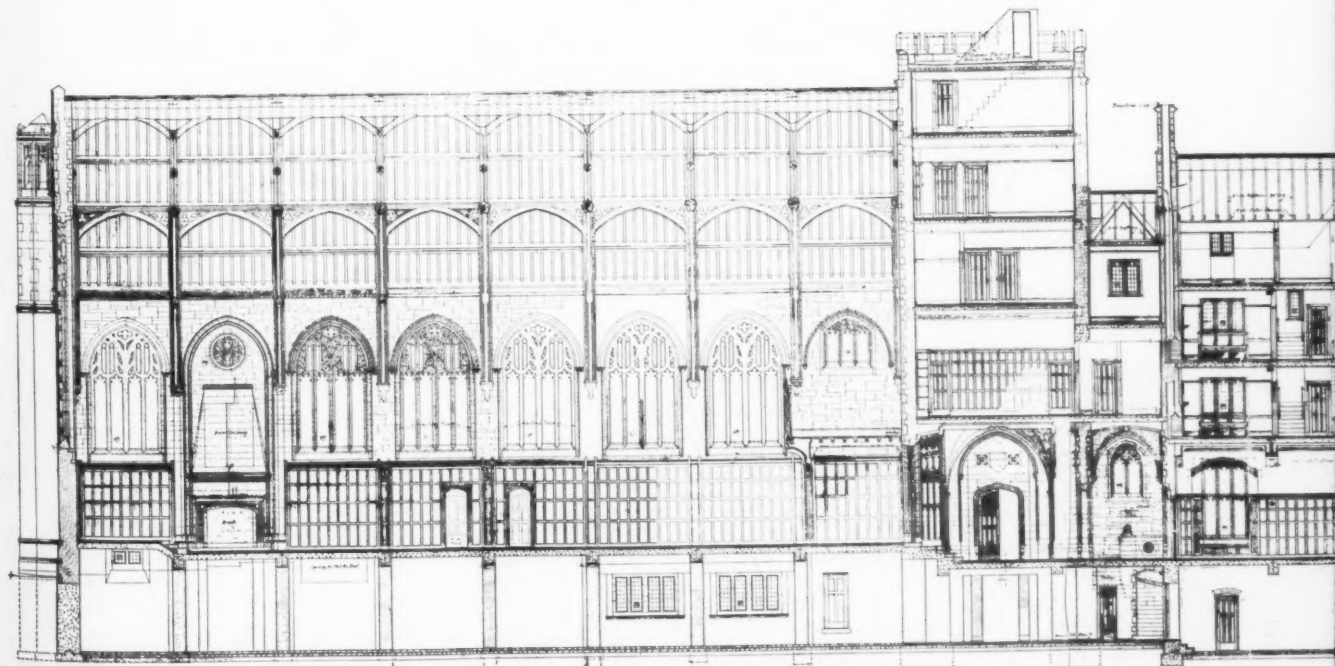
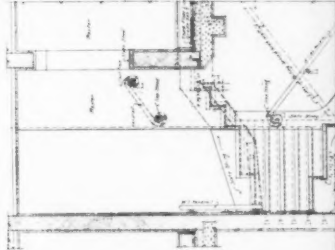
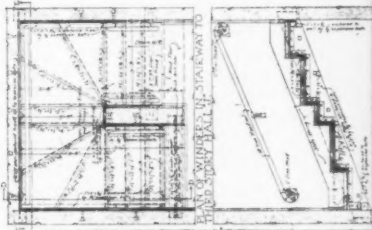
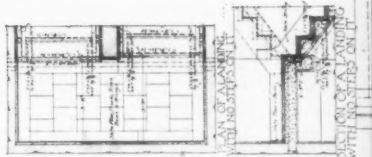
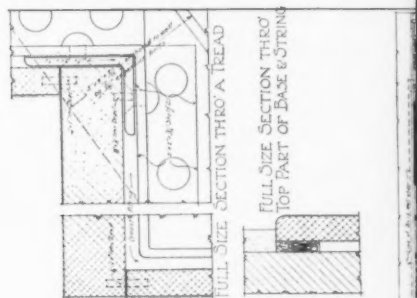
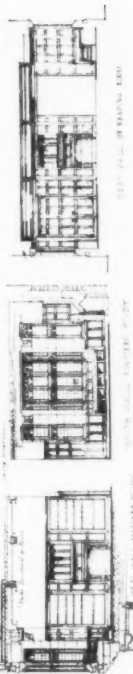


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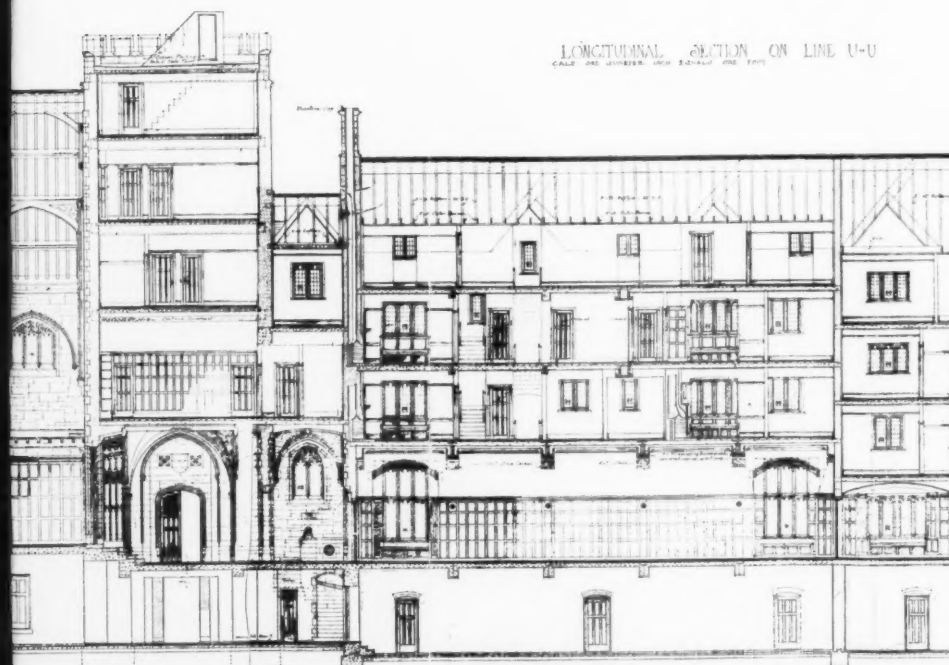
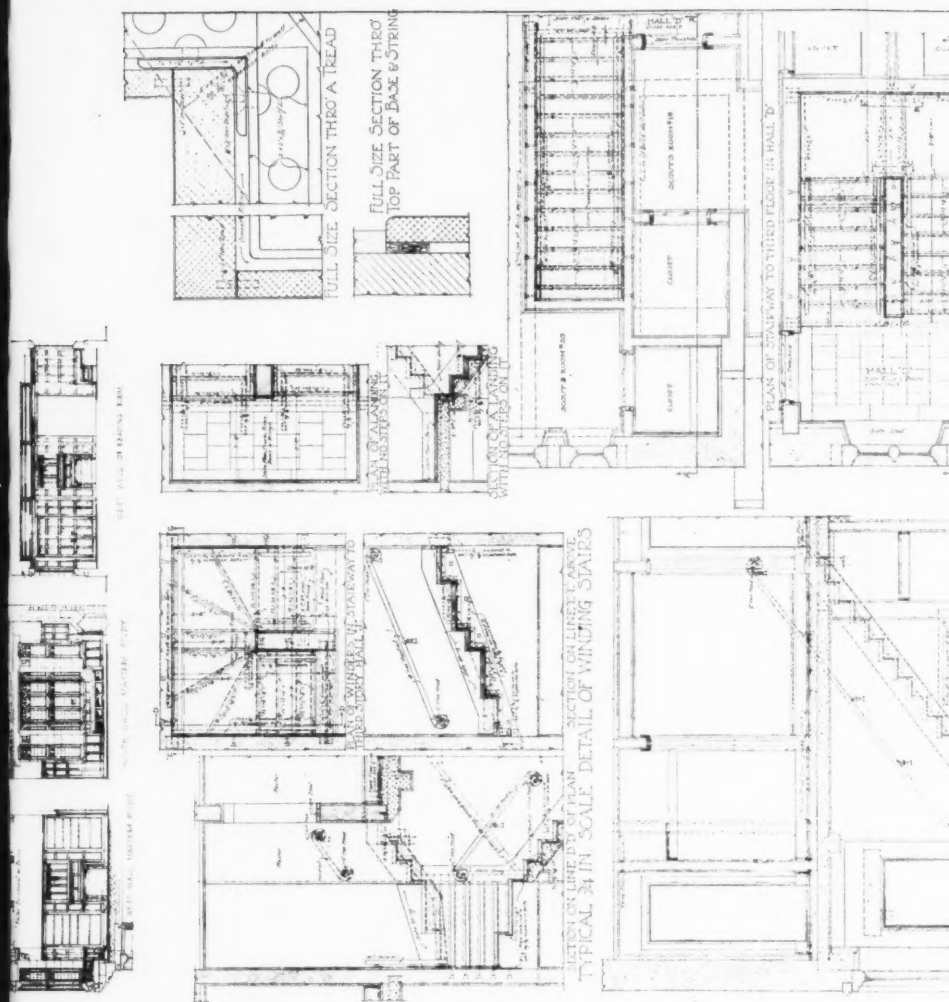


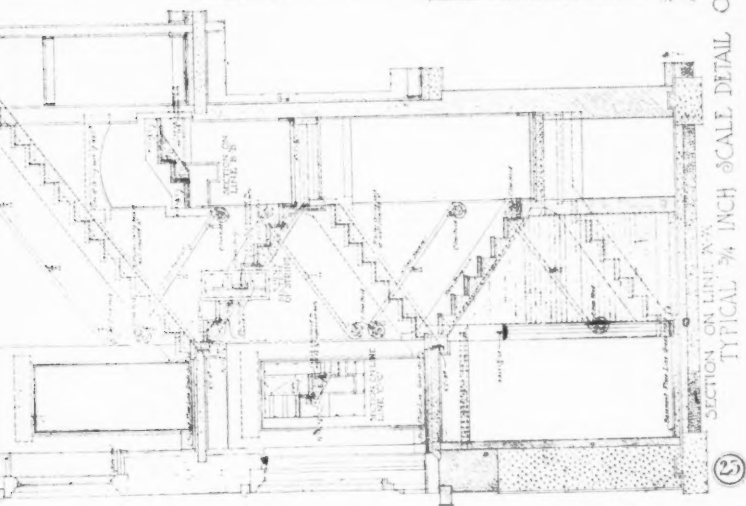
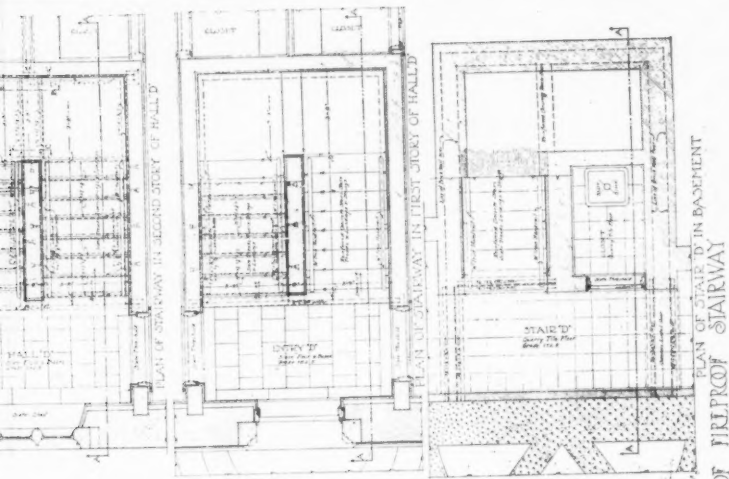
SECTION ON LINE T-T
TYPICAL 3/4 INCH SCALE DETAIL OF WOOD STAIRWAYS

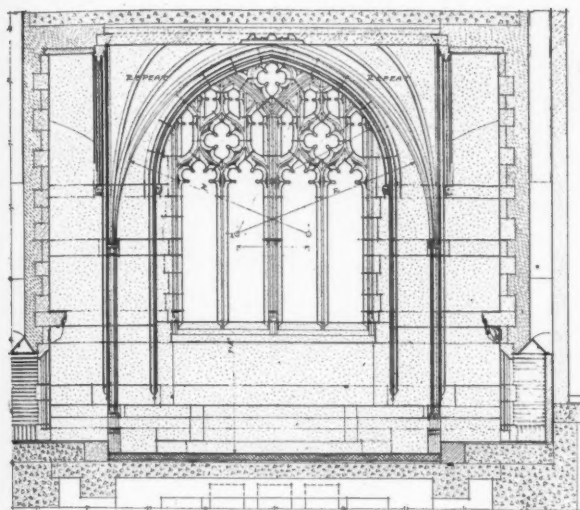


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MESSRS. CRAM, GOODHUE & FERGUSON, ARCHITECTS, P



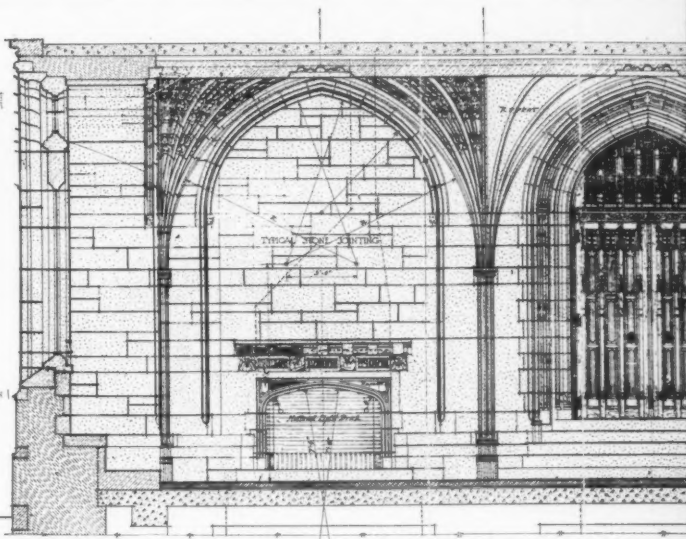




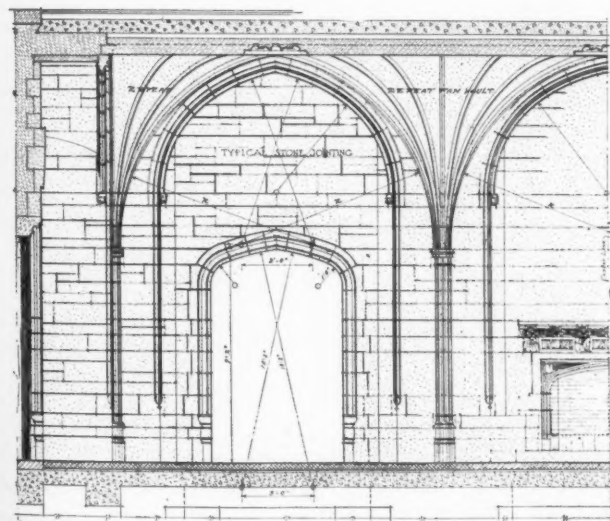
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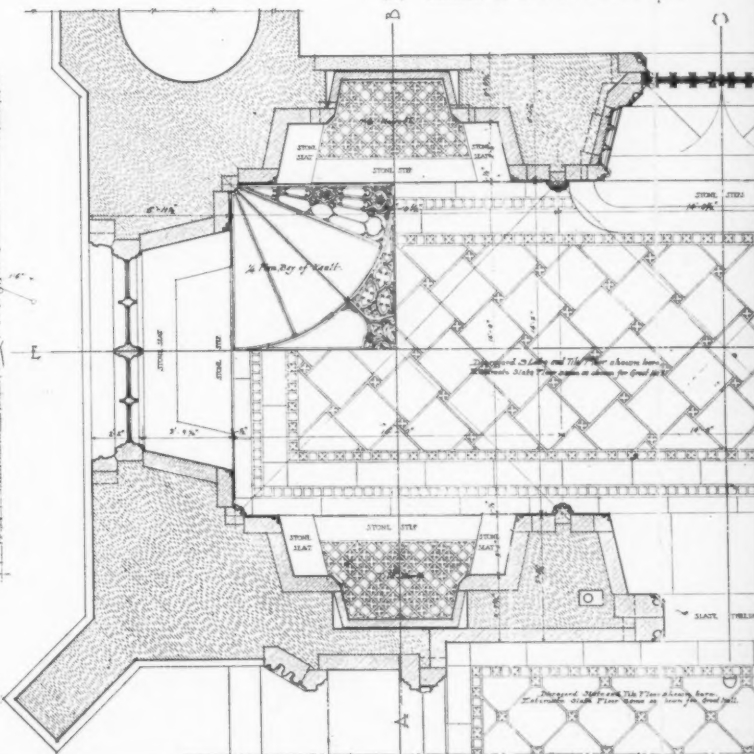
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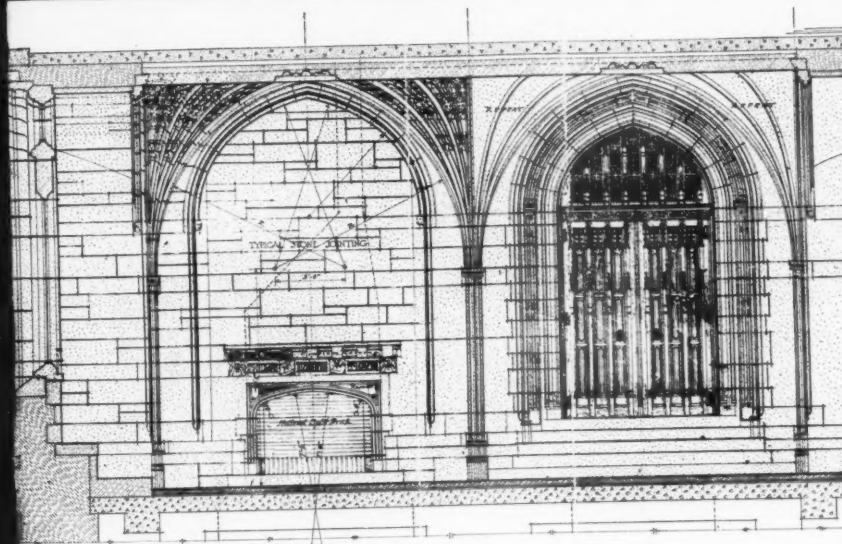


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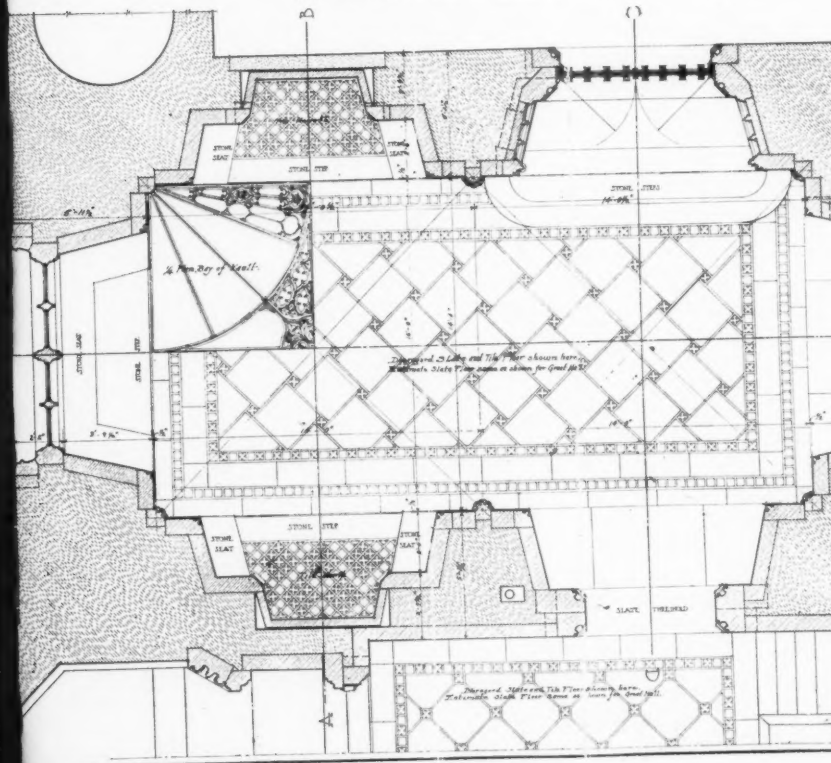


SECTION ON LINE L-F LOOKING EAST

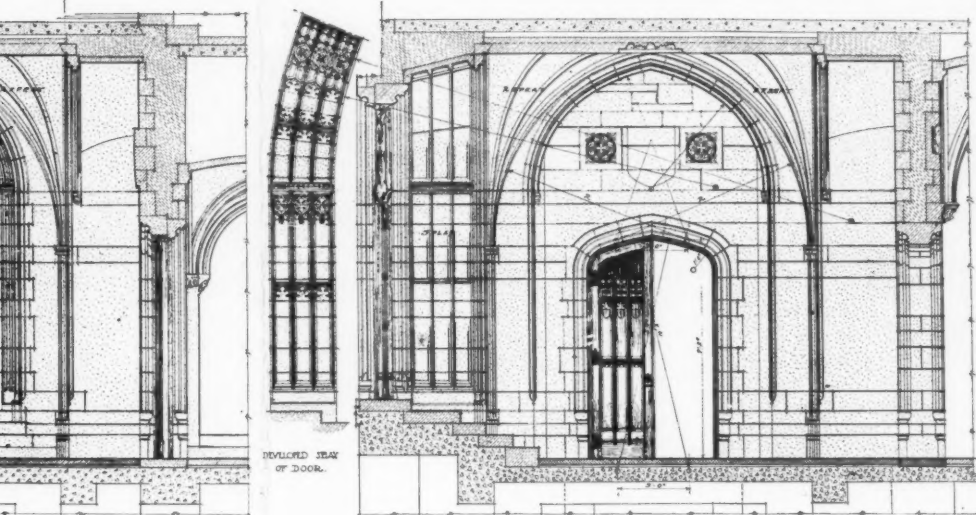




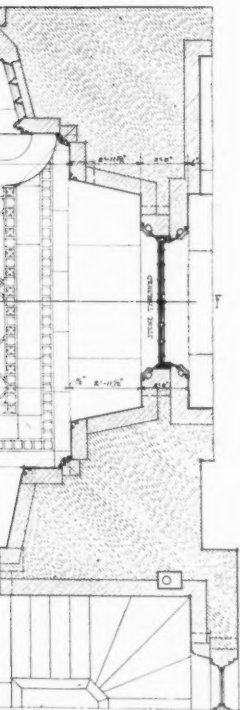
SECTION ON LINE EF LOOKING WEST



NOVEMBER 1, 1911



SECTION ON LINE C-D



THE GRADUATE COLLEGE OF PRINCETON
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MESSRS. CRAM, GOODHUE & FERGUSON, ARCHITECTS, BOSTON AND NEW YORK

ONE HALF INCH SCALE DETAIL VESTIBULE NO. 1

THE AMERICAN ARCHITECT



MONUMENT TO GUISEPPE GARIBALDI IN ROME, ITALY

E. GALLORI, SCULPTOR