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PROFESSOR BONI, who has been called from Rome to advise in regard to the Venetian campanile, is endeavoring to find some drawings of the structure which may aid in its restoration. There are multitudes of photographs and engravings of the exterior available, but nothing like a geometrical section has been found, although the archives and libraries of Venice have been searched. Meanwhile, the most valuable portions of the building have been found nearly uninjured by their fall. The whole front cornice of the Sansovino Loggetta, with its bas-reliefs and columns, and three of the angels which surmounted it, have been recovered intact, and two of the bronze statues have been found, one with the head broken off, and the other with the hands slightly damaged. The bronze gates are also uninjured, so that the cost of restoring the most expensive portion of the structure will not be large. The investigation of the brick walls of the tower shows that, as might have been inferred from their collapse, they were badly built, in some cases being merely shells, filled in with rubbish. Among the ruins have been found large numbers of Roman bricks, stamped in such a way as to identify them as having been brought from Altinum, an ancient Roman city on the mainland, near Torcello. Altinum was deserted and in ruins long before the time of the prosperity of Venice, and it is probable that the remains served as a quarry for the Venetians at the time of the construction of the campanile.

PROFESSOR JOHN W. BURGESS, of the Law Department of Columbia University, has earned the gratitude of his fellow-citizens by establishing a summer class in sculpture in the town of Montpelier, Vermont, for the benefit of the carvers and stone-cutters in the neighboring granite-quarries. The class is under the care of Mr. Charles A. Lopez, of New York, who gives instruction from seven to ten every evening, and on Sunday afternoons, so that the men can attend without losing any of their working hours. The granite-cutters are said to take much interest in the undertaking, and to show already marked benefit from the instruction they receive. Hitherto, as the American stone-cutters have been, almost without exception, destitute even of the most rudimentary notion of artistic quality in their work, the French and Italians have practically monopolized the best-paid positions, and Professor Burgess has done a good deed, the influence of which may be incalculable, in setting the example of furnishing to our own citizens some of the advantages which every stone-cutter's apprentice in France or Italy enjoys.

THE newspapers announce that two distinguished artists, both natives of Pennsylvania, Mr. Edwin A. Abbey, the painter, and Mr. George G. Barnard, the sculptor, have been commissioned to execute the decorations of the new Penn-

sylvania State Capitol at Harrisburg. Four hundred and fifty thousand dollars have been appropriated, it is said, to pay them for their work. We are happy to congratulate, not only these eminent artists, but the people of Pennsylvania, on the prospect that so great a work may be carried out under such auspices. Architects, remembering the competition in which the profession was so grievously ill-treated, will probably wonder how a building, the total cost of which, as they were told, was absolutely limited by law to five hundred and fifty thousand dollars, should have developed so quickly into a structure which will, it is said, cost at least five millions, and is to be decorated on so lavish a scale; but this mystery, which is not without precedent in architectural history, need not prevent the new Capitol from becoming an ornament to the State and to the country.

MR. J. C. PUMPELLE, whose interest in public matters has before been shown, writes to the *New York Tribune*, urging that trades-unions should be required to be incorporated. As he well says, most of the troubles into which union men fall, and into which they bring other people, are due to the plotting or persuasion of irresponsible men, who cannot be brought to account for the ruin which they bring upon those who trust them. By incorporation, the members of the unions would gain much. While other people would be protected by the fact that the officers and property of the corporation could be held liable for corporate wrongdoing, the union members themselves would be protected in the same way against dishonesty of their own officials, and against the attacks of other unions, which now form a considerable part of the trials of workmen; and there is no question that with corporate responsibility would come a reasonableness and conservatism in the management of unions which they sorely need. In England, which has suffered greatly, and still suffers, from the tyrannical folly of unions, something has been done toward compelling them to assume the responsibilities of corporate existence, and there can be no doubt that this application of the good old rule, that where there is power there must be responsibility, would be as wholesome in connection with associations of workmen as it has proved to be elsewhere.

MR. PARKES, in his presidential address before the General Assembly of the British Iron Trade Association, made some interesting comments on the decline of the iron trade in England. While American competition is now little felt in Great Britain, the American mills being fully occupied in supplying the home demand, German iron is rapidly finding its way, not only into England, but, apparently, into markets hitherto supplied from English mills. Within two years, from 1899 to 1901, the exportation of English wrought-iron diminished about twenty-two per cent, while the exportation of cast-iron fell off, during 1901 alone, about six hundred thousand tons. At the same time, the importations of wrought-iron and steel, mostly from Germany, increased from six hundred and forty-five thousand tons, in 1899, to eight hundred and sixty-eight thousand in 1901, or nearly thirty-five per cent. It is probable that a good deal of this decline of British industry before German competition is due to the short-sighted tyranny of the labor unions, seconded by the extraordinary fatuity of that group of economists which professes to find in English trade conditions of the present day the solution of social problems; but the importance of the situation, as Mr. Parkes justly observes, lies not so much in the loss of British trade to the Germans as in the prospect of far more disastrous loss when American competition again begins to be felt in the English market. It is only a very few years since the annual production of American iron, much to the pride of American public men, reached that of Great Britain; it is now about two and one-half times that of Great Britain, and is rapidly increasing. For the present, the enormous domestic consumption absorbs the whole American production, but there are already signs that consumption in this country is beginning to fall off, and any serious decline in the domestic demand would throw upon the market a large surplus of iron, which must be sold somewhere, in order to keep up interest and dividend payments. The American iron-mills, enabled by the tariff to sell at an

enormous profit to their customers at home, and protected by combination from domestic competition, could well afford to dispose of their surplus iron in foreign markets at cost, or less, for the sake of keeping their men and machinery employed. This phenomenon has been already observed, before the flood of domestic orders absorbed all the iron that the American mills could make; and it is reasonable to suppose that it will recur, on a much larger scale, when the domestic consumption again falls below production. Meanwhile, the resources of the Americans for producing and transporting iron at the lowest cost have been improved, and their competition in foreign markets, when it is again felt, is likely to be more serious than ever.

LA CONSTRUCTION MODERNE publishes an interesting note on the manner in which the forfeiture clause in building-contracts is treated by the French courts. A correspondent writes that one of his clients contracted for the construction of a certain building, to be completed in four months, the builder agreeing, by the contract, to forfeit forty dollars a day for every day's delay beyond the date specified. The building was not completed until fourteen days after the stipulated time, and the owner claimed the full amount of the forfeiture. The contractor refused to admit the claim, partly on the ground that the penalty was excessive, and partly because, as he said, the clause providing a forfeiture for delay was invalid unless a corresponding clause provided a premium for completion of the work before the time agreed. It is curious to find that this latter superstition, which, we need not say, has no foundation whatever, prevails on the other side of the ocean, as well as on this. The architect, who seems to have been a sensible and clear-headed man, told the contractor that the clause, as it stood, was valid, and that he was legally bound to pay the stipulated penalty; but, for his own satisfaction, he referred the question to M. Ravon, the legal expert of *La Construction Moderne*.

M. RAVON, in reply, fully confirms the opinion of the architect. In this country, as our readers know, the courts uniformly hold that the owner, under such a contract, can recover from the contractor only compensation for the actual damage that he has suffered from the delay, no matter what the agreed forfeiture may be; but French jurisprudence takes a different view. The Paris Court of Cassation, in 1881, held that "When a penal clause has been formally stipulated in a contract for work to be executed, obliging the contractor to pay a determinate sum as damages for each day of delay after the stipulated time of completion, this clause must be maintained, as being the free expression of the will of the parties, reserving to the Court the right of determining the number of days of delay chargeable to the contractor"; and this decision has been followed ever since. In the present case, the contract stipulated that notice of the claim for delay should be given to the contractor by registered letter; and M. Ravon observes that unless notice was actually given in this way the penalty could not be enforced, for the reason that, in all such cases, all the conditions agreed upon must be strictly complied with.

AS we have already mentioned, the project for the construction of a new front for Milan Cathedral, which formed the subject of a great international competition some years ago, has been abandoned. The death, soon after the competition, of Signor Brentano, the distinguished young architect to whom the commission was awarded, caused a delay in carrying out the scheme, and, in the meantime, the conservative party among the citizens gained strength so rapidly as to prevent it from being taken up again, and the fund bequeathed by Signor Togni, in 1884, to be used in the rebuilding, has now, apparently with the consent of all parties, been devoted to charity, and the Renaissance front will be left undisturbed. As it happens, however, an earlier bequest provided funds for adorning the front with a pair of bronze doors. The sculptor to whom was awarded the commission for this work, Signor Pogliaghi, supposing that a Gothic front was to be built, under the Togni bequest, made a Gothic design of great merit; but the execution of the design was suspended during the discussion over the alterations. Now, although it has been decided to retain the Renaissance front of the Napoleonic era, the authorities see no reason for changing the style of the doors, and they are to be carried out as designed for the Gothic front in which it was supposed they would be set.

THE city of Paris has taken advantage of its present prosperity to devote immense sums of money to public works.

The underground railway, which is being rapidly extended, will cost nearly seventy million dollars before the lines already laid out are completed; more than ten millions will be immediately expended in street improvements; and it is said that, under the urgent advice of the medical officers of the city, nearly all the great hospitals will soon be rebuilt, at an estimated cost of about sixteen million dollars. The population of Paris is now twenty-eight hundred thousand, or nearly the same as that of Greater New York, and it is burdened with a large debt; so that the new undertakings indicate confidence in the future on the part of the Municipal Council, which, whatever its political eccentricities, has shown great prudence, as well as liberality, in its administration of the municipal finances.

IT is possible that the recent relaxation of the Parisian building-laws has done something to encourage the rapid development of the new style of French architecture, which forms, to the professional tourist, the most striking feature of recent Parisian construction. We have often illustrated the principal specimens of the new art, of which the Palace Hotel, in the Champs-Élysées, was one of the first, and is still the most conspicuous example. This has been followed by many other works, which, although, for the most part, less refined, and, therefore, less successful, agree in showing a determined revolt from the forms and fashions hitherto accepted which may contain the germs of a new and great art. We are very far from thinking that there is anything artistic in eccentricity; and the trouble that some of the "advanced" Parisian architects take to defy every kind of architectural tradition indicates a temperament unsuited to the highest artistic achievement; but the worst of the French eccentricity has nothing of the dull brutality which characterizes the works of the American or English contractor who has undertaken to "draw out" something "different" from the ordinary type, and the best, perhaps, contains the germ of a new artistic development. It must be confessed that the embryo appears, as yet, to be a very small one, but a man of genius, starting from the new principle of designing architectural forms purely as agreeable combinations of line and light and shade, without reference to precedent, may accomplish wonders.

A CURIOUS story comes from Egypt, to the effect that the Sphinx is "rapidly decaying," owing to the increased moisture of the Egyptian atmosphere consequent upon the more extended and regular irrigation of the country. It is well known that rain, which was formerly very rare in Egypt, now occurs quite frequently, and it seems not impossible that this may have had its effect upon the coarse red granite of which the Sphinx is made. Many years ago, two sculptured blocks of red granite from Egypt stood in a garden in Waltham, some ten miles from Boston. If these blocks are still there, it might be instructive to study the effect upon them of the New England climate. It is well known that the New York obelisk has suffered greatly from American rains and frosts, but it may be that the sulphurous vapors of a great coal-burning city have had their part in its disintegration, and the Waltham blocks, which have been in this country much longer than the Central Park obelisk, and have been exposed to a comparatively pure atmosphere, should afford valuable indications of the action of the weather on the material of which they are composed.

THE Germans have, with characteristic love of learning, improved their commanding mercantile position in Asia

Minor to undertake a considerable number of archaeological investigations, some of which have already been fruitful. One of the earliest of these explorations was devoted to the ruins of the great temple of Baalbek, which, after two years labor, have now been made intelligible, although another year will be required to complete the work upon them. Incidentally, some smaller ruins in the neighborhood have been studied, and, this summer, a preliminary survey has been made of the remains of Palmyra, Gerash and other cities east of the Jordan, with a view to their complete exploration later. Other parties have begun excavation at Miletus and at Babylon, as well as at a mound in Mesopotamia of which almost nothing is known. In Palestine, the English Palestine Exploration Fund has begun the investigation of what is supposed to have been the Biblical Gezer, and an Austrian and a German party are also at work in the neighborhood.

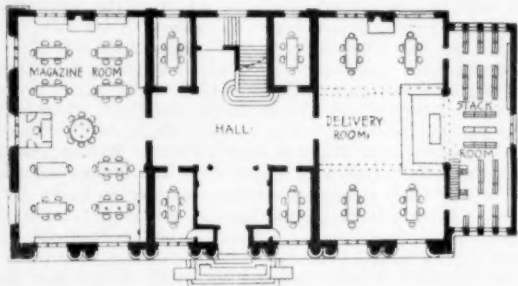
LIBRARIES IN THE UNITED STATES.¹—IV.

TOWN LIBRARIES. — DIVISION II.

At least two distinct types occur in the libraries selected to illustrate plans adopted in this class. The Atlanta and Davenport represent one and the Pawtucket the other. The latter has only a basement and first floor; the others have an additional floor. At Atlanta the plan is more compact, and, therefore, more easily worked as a library than the rather monumental plan at Pawtucket. The open-shelf rooms adjoining the stack-room and either side of the delivery-space are excellent features in the Atlanta Library. The Utica Library has not been erected yet. It seems to come midway between the above types. All the important rooms are placed on the first floor. Among the points worthy of note are the reference-spaces (10 feet wide) on each floor of the stack-room; the important position of the children's room, which balances the general reading-room; and the provision for special study-rooms. Libraries of this size—the cost ranging from £20,000 to £50,000—are becoming very numerous, and there is no doubt many new developments in their planning will be always taking place.

CARNEGIE LIBRARY, ATLANTA, GA.

The Carnegie Library, Atlanta, Ga., was completed and opened last year. It consists of three floors, and is built on an isolated site. The main-building has a frontage of 116 feet and a depth of 64 feet;



First Floor: Carnegie Library, Atlanta, Ga. Messrs. Ackerman & Ross, Architects.

projecting from the side to the right is the building for the book-stack, 18 feet wide and 56 feet deep, set back 5 feet from line of frontage.

The basement is reached either from a small back entrance or from the staircase leading from the main-entrance hall on the first floor. It is 10 feet 6 inches in height. The children's room extends across the whole of the west side. It is 33' 6" x 58', and well lighted on three sides. It is divided into two by a gangway 8 feet wide, leading to the attendant's desk; either side of the gangway are railings 2 feet 6 inches high, having gates in them next the attendant's desk, so each child entering or leaving is well under control. Each of these rooms has 6 tables, seating 4 readers each—tables vary in shape and height. The sizes of these tables are as follows: Tables 3 feet 6 inches diameter, 1 foot 10 inches high, chairs 1 foot 2 inches high. Tables 3' x 5', 2 feet 4 inches high, chairs 1 foot 4½ inches high. Tables 3 feet 6 inches in diameter, 2 feet 6 inches high, chairs 1 foot 5½ inches high.

Seats are fitted in each of the windows; they are 7 feet wide and 1 foot 4 inches high. The catalogue-files are placed either side of attendant's desk. Specimen-cases with glazed-doors, bulletin-boards with portfolios under, and shelving 8 inches deep are placed to a height of 6 feet 6 inches between the windows, as well as on the east wall. In a similar position on the east side is the work-room. It is 33' 6" x 58', lighted on two sides, north and south, and a central opening from it enters directly into the stack-room, the floor of which is up 6 steps. This latter room is 17' x 52'. The stacks are well arranged and lighted, and will take on each floor approximately 17,220 books. Two lifts with a table between, and a staircase adjoining to upper floors, are grouped together, and near at hand a toilet-room for staff is provided. There are altogether 4 floors of stacks, each 7 feet 6 inches in height. The upper floor is top-lighted, and is at present used as the cataloguers' room. The stacks themselves are especially well arranged, having ample space between for reaching the books. The two floors above are stacked in a similar manner.

On the first-floor plan the hall is placed right in the centre of the building, and is reached directly from the entrance-vestibule. It is 42' x 20'. The main staircase opens directly out of it on the north side. To the left is the magazine-room, and to the right the delivery-room. The 4 smaller rooms that open from the hall are placed either side of the staircase and vestibule; they average about 11' x 17' 6", and are used as special study-rooms and for the medical library. Each of these rooms is provided with a table 3' x 8' and 2 feet 6 inches high, and shelving to walls 6 feet 6 inches high. The medical-library shelving has glazed doors and a magazine-rack beneath the window. The delivery-space is 22' x 20' wide, the latter width being the length of delivery-counter to the public. It has in it the cases

for the card-catalogue and 2 tables 6' x 2' for its use. On each side of this delivery-space 2 rooms are set apart for open shelves. They are divided by railings 2 feet 6 inches high, fitted with gates, and are each 25' x 18' 6". Both have 2 tables, each 3' x 8', and 10 feet of the return of the delivery-counter on each side face towards these rooms. The counter is 3 feet wide, 2 feet 10 inches high, fitted towards attendant's desk with drawers, cupboards and shelves. There is a working-space of 12' x 18', with table for the attendant, and behind it is the opening to the stack-room, being the full length of the working-space. The stack-room is also approached from each of the open-shelf rooms; it is arranged practically as the floor below—2 lavatory-basins for public use take the place of the staff toilet.

The magazine-room is the same size, 33' 6" x 58', as the children's room below it, and the windows are placed on the three sides in a similar manner. The attendant's enclosure with desk is placed directly opposite the entrance. It is about 9' x 9', with a panelled railing 2 feet 6 inches high enclosing it, and having a gate opening into either side of the room. There are 8 tables, 3' x 8', 2 feet 6 inches high, each having 6 chairs, 1 foot 5½ inches high; and in the centre of the room, opposite the attendant's desk, is a circular table 6 feet in diameter seating 8 readers. Seats are provided in the window-openings, and along the front wall a standing newspaper-desk 25 feet long. Shelving 8 inches deep and roller-shelving 2 feet deep by 6 feet high occupy the remaining wall-spaces. Here will be kept the bound volumes of the magazines and the current files of all the weekly and monthly periodicals.

On the second floor the reference-room is placed over the open-shelf room and delivery-space. It is 33' 6" x 58', and has the attendant's desk exactly opposite the entrance, and opening out of what will be one day the top floor of the stack. The tables, etc., and the number of readers they accommodate, are as the magazine-room already described. The shelving is 10 inches deep instead of 8 inches, and there is a case 9 feet wide with 20-inch deep roller-shelving for atlases. It is 14 feet in height and is well top-lighted, in addition to the windows front and back. A temporary panelled partition 6 feet 6 inches high separates this room from the catalogue-room at the back of the attendant's desk.

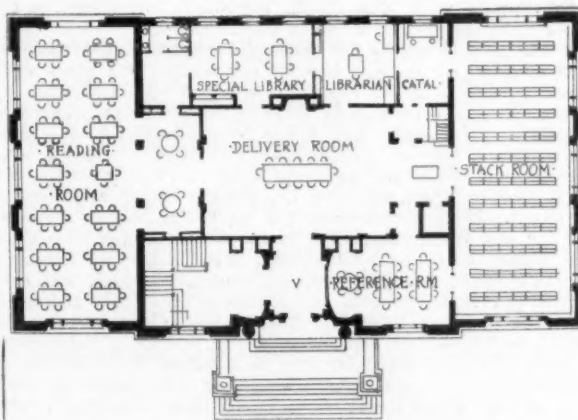
The rooms for the librarian are placed in the centre of the building, to the front a public office 21' x 18', and a private office 17' 6" x 10' 6". Opposite, on the other side of the upper hall, are placed the women's toilet and staff room. The latter is fitted with ten 14" x 16" x 6" lockers, with 6-inch drawers at bottom and shelf at top. There is also a sink and a marble-topped table adjoining, with small gas-stoves.

The large room in another wing over the magazine-room, and of the same size, is fitted as a lecture-hall. This room will, according to the librarian's report, "eventually become the main reading-room of the library, with shelving-capacity for 5,000 volumes, specially selected."

The compactness of the plan is very marked, and it is of its type an excellent example. The total cost was £25,000, and it was designed by Messrs. Ackerman & Ross, of New York.

CARNEGIE LIBRARY, DAVENPORT, IA.

In many ways the Carnegie Library at Davenport, Ia., is similar to the library at Atlanta. It covers, though, somewhat less area, the frontage of the building being 120 feet long, with a depth of 64 feet. The site is an isolated one. In the basement—approached from entrances at both sides and by a staircase from the main vestibule above, are the 2 children's rooms, the reading-room, 25' x 25' with 6 tables seating 6 each (36), and the children's study, of the same size and fitted in the same way. Other rooms are provided for the reports and historic records, work-room 16' x 18', boiler-room 16' x 26', large storage-room (under delivery-room), plenum (under



First Floor: Carnegie Library, Davenport, Iowa. Mr. Calvin Kiessling, Architect.

vestibule), with inlets under steps to entrance, janitor's room, disinfecting-room, and the men's lavatory. The children's lavatory is placed off the study-room. On the first floor the delivery-hall, 26' x 39', is right in the centre of the building, and is reached directly from the entrance vestibule. It is top-lighted and 42 feet in height. In

¹ A paper by Sidney K. Greenslade [A.], Pugin student, Grissell Medallist, Godwin Bursar, read before the Royal Institute of British Architects, Monday, March 17, 1902, and printed in the *Journal of the Society*. Continued from No. 1338, page 38.

the centre is placed a large table to seat 14 readers. To the left is the general reading-room, 25' x 60', with small alcove at entrance between it and the delivery-room, 12' x 30'. There are 16 tables, 13 seating 6 each and 3 seating 4 each. To the right is the delivery-counter (with work-space balancing the alcove on the other side of the hall), and the stack-room, 25' x 60'. The latter is arranged for 2 floors of stacks, the 12 rows being each 18 feet long and the total shelving capacity 60,000 volumes. Entrance to the stack-room is accessible to the public, but controlled by electric-button snap-catch gates each side of the delivery-counter, at the command of the attendant. The reference-room, 18' x 25', with alcoves, is well arranged, having its entrance from the delivery-hall well controlled from the delivery-desk, and it also opens directly into the stack-room. The cataloguer's room, 11' x 17', and librarian's room, 17' x 17', with lift to librarian's private room above and work-room below, balance on the other side of the delivery-desk, and to the left of the librarian's room is the special library, 14' x 24'. The ladies' cloak-room and toilet adjoin the general reading-room. On the second floor there are placed additional special library-rooms and private rooms for the literary circle, as well as an assembly-hall and exhibition-room. The architect is Mr. Calvin Kiessling, of Boston.

[To be continued.]

HEREFORD CATHEDRAL

IN 1877 there was a meeting of the Royal Archaeological Institute at Hereford, when the late Sir Gilbert Scott, R. A., read a paper on the history of the Cathedral and acted as cicerone. He spoke as follows:—

"In giving the history of a great building, it was sometimes the case that the difficulty arose from too great an abundance of information—an *embarras de richesse* of historical facts, and such he dared say was the case when that prince among those who undertook such tasks, Professor Willis, compiled his unrivalled architectural history of Canterbury Cathedral, for in that case the most important parts of its history were so fully and accurately chronicled that Professor Willis must have found difficulty in condensing the materials, rather than in searching them out. At Hereford the case was very different, for here they found almost a nullity of historical information in regard to the building, except what was indirect and uncertain. He had to search, therefore, in every conceivable direction for such mere 'waifs and strays' of history as might suggest guesses or theories, or furnish excuses for them, which it was impossible to prove or test. In writing on Hereford Cathedral, in 1841, Professor Willis said:—'It is much to be regretted that the period of no one part of this cathedral has been recorded with the exception of its front foundation.' How then could he (Sir Gilbert), who was no investigator of antiquarian documents, venture to give the history of a structure the builders of which, and those who were eye-witnesses of its erection, had neglected to record what they did and what they saw? But having accepted the task he begged their consideration of the difficulty he had met with, for the very paucity of information had increased the labor of seeking it, and poor as was the result, he should be ashamed to tell them the time and labor he had devoted to the task. Their sister society, the Archaeological Association, had been before them on this ground, and a paper had appeared in the journal of that Association, written by Mr. Gordon Hills, which appeared to have so nearly exhausted the documentary information within reach, that he should, with the writer's permission, make free use of it, adding such information as he might have picked out elsewhere. . . .

"The see which now took the name of Hereford dated from very early times, and it was likely enough that there was a church of some importance there so early as Offa, the great King of Mercia, who treacherously murdered his son-in-law—or intended son-in-law—Ethelbert, King of East Anglia, somewhere thereabouts, in the year 793, for the purpose of adding his kingdom to his own. Hereford was then known by the name of Fernleigh, and the body of King Ethelbert was brought there for reinterment by a pious noble named Brithfrid. About 830 the church was rebuilt in stone by Milfrid, the ruler of Mercia, in honor of the now sainted Ethelbert, and about two centuries later it was rebuilt by Bishop Athelstan, in the time of Edward the Confessor. Athelstan's cathedral was, however, but short-lived, as it was burnt in 1056 by Griffin, the Welsh king, or Bruce, who slew Leofgan, the Bishop, and many of his clergy. Leofgan was succeeded by two natives of Lorraine. The first was Walter, nominated by the Confessor, and the second was Robert, appointed by the Conqueror. Robert of Lorraine, commonly called Lozinga, a corruption of Lotharingus, was consecrated in 1079, and he held the see sixteen years. He undertook the reconstruction of the cathedral, which had lain waste since the invasion by King Griffin, and he was said by William of Malmesbury to have built it of a circular form in imitation of the basilica of Aix-la-Chapelle. Now, they knew something of the church he chose for his model. It was a round or polygonal plan, imitated, as it was said, from the church of San Vitale at Ravenna, which had about the year 550 been erected by Justinian possibly in imitation of the Temple of Minerva Medica at Rome, and, more probably still, of the church of the Holy Sepulchre at Jerusalem. All those imitations were, however, but rough ones, and consisted mainly in the adoption of a round or polygonal plan. Charlemagne's church at Aix-la-Chapelle probably still existed, and was in idea very similar to those built afterwards by the Templars in rough imitation of the church

of the Holy Sepulchre, which he probably had in his eye quite as much as that at Ravenna. But, however it was, the unfortunate fact remained that they had not in the Norman cathedral here at Hereford a trace or a suggestion of any of those buildings, and if Robert of Lorraine did really imitate Charles the Great's sepulchral basilica, his successors—and probably Bishop Reynelm—must have utterly obliterated his work.

"Reynelm held the see from 1107 to 1115. His reputed effigy bore what might be a model of a church, and his *obit* styled him as '*fundator Ecclesie Sancti Ethelberti*,' which was altered in a later hand, and he thought erroneously, to '*Hospice*.' Writers on the cathedral seemed disposed either to deprive him (Reynelm) of all claim as a builder of the cathedral, or to attribute to him the completion of the work begun by Lorraine. Neither of these suppositions seemed to him (Sir Gilbert) agreeable to common-sense. If Robert of Lorraine completed his design, or if Reynelm completed it, how was it that there was no vestige of anything agreeing with William of Malmesbury's description? Instead of that they had a church in a very straightforward Norman type—apsidal, it was true, but less pronouncedly so than usual, and bearing no resemblance whatever to that at Aix-la-Chapelle. Again, the architecture was not of the earlier Norman type, but that of a more advanced period. Nor did Reynelm complete the cathedral, for they found that this was not finished until 30 years after. He (Sir Gilbert) therefore inclined to the belief that Robert of Lorraine only began the church, and that, being a German, he was proud to do honor to the Imperial basilica of his fatherland; while Reynelm, who was probably a Norman, reverted to the manner of his own country. One could not but regret that Robert's church did not still exist, as it would have been quite unique among English cathedrals. Robert was a learned man in all the wisdom of his age. He was a poet, a mathematician, and learned in the stars and their influence on human affairs, and though intimate with Remigius, the builder of Lincoln Minster, with Walstan, who built that at Worcester, and probably with the builders of Gloucester, Tewkesbury, and other vast churches then rising, he perhaps scorned to follow in their wake, and gloried in imitating the basilica which overshadowed the great hero of his own race. Unhappily, what he had said was all they knew of the building of the Norman cathedral, excepting that it was not finished by Reynelm, but by his third successor, Robert Bethune or Betun, who held the see from 1131 to 1148, and who, having suffered, and his cathedral likewise, during the wars of King Stephen's days, lived to recover and repair the injuries incurred.

"The cathedral, then, throwing Lorraine out of the calculation, took forty years in building in its Norman form. The scheme of its design was that its nave had eight bays of not unusual Norman type, supported by massive round pillars to which double shafts were attached both to the north and south. The triforium was of moderate height and good design; the clerestory was somewhat lofty. The choir—or rather the precentory, for the choir proper was beneath the central tower—was of three bays, supported by piers, which were masses of wall rather than columns, and, judging from the great pilastering upon their inner faces, he agreed with Mr. Gordon Hills that it must have been vaulted, which was very unusual at that time in churches of so great a span. It terminated eastward in an apse, not formed, as was so frequent, by the swinging round of arcade, triforium, clerestory and aisles upon the altar as a centre, and uniting themselves together in semicircular continuity; but a separate and narrow structure, opening into the presbytery by an arch of moderate dimensions, over which the eastern wall returned in a square form. Each aisle also terminated in a smaller apse, and each of the three apses had its own separate roof. The transepts, of which one only remained, were of an ordinary type, without—at least, the remaining one was—the apsidal chapels, which are so usual. He had elsewhere shown that three not distant monastic churches of Gloucester, Tewkesbury and Pershore followed a scheme peculiar to themselves, and displayed great originality of invention. There was no trace of that scheme at Hereford. He was not sure, however, whether the nave here was not more beautiful than those of its more original neighbors. The less lofty columns, being surmounted by a well-proportioned triforium and lofty clerestory, formed a more elegant composition than the exaggerated lofty columns of Gloucester and Tewkesbury, which unduly stunted the upper stories of the nave, though it was possible that the two ranges of aisles in the choirs of those churches, running unbroken round the apse, and the continuous aisle, with its apsidal chapels, may have produced a more pleasing effect than the non-continuous arrangement at Hereford. It mattered little, however, which looked the best. They displayed two quite different systems, each being good and nobly carried out. They saw them now but in imagination, for all those churches had been so altered that the true effect was visible in none.

"He had said that the architecture of the cathedral was not early, but advanced, Norman. Its details in all the principal parts were decidedly rich in ornamental character, and very different from those of Remigius's work at Lincoln, at the consecration of which Lorraine would have been present had the stars been propitious; but no concurrence of stars could have rendered such details as those at Hereford possibly contemporaneous with those of the work of Remigius. He did not believe that a single stone of Robert of Lorraine's cathedral remained in its place. The great glory of the Norman cathedral at Hereford was its west front. It was probably the work of Robert de Bethune, and was consequently very late in

style. He mentioned that what little Norman vaulting remained was without diagonal ribs. Possibly Bethune's work was otherwise, as that feature had become frequent in his day. At some time during the Norman period the great timber hall of the Bishop's palace and the curious double chapel of St. Margaret were erected, and St. Catherine's, which adjoined. Bethune's successor was the famous Gilbert Foliot, but though he ruled fourteen years, nothing was heard of him respecting the cathedral.

"Sir Gilbert Scott then referred to the great transition in mediæval architecture during the time of the three successors of Bethune, and said that the next work done in the cathedral was the alteration of the east end by, probably, his fourth successor, William de Vere. De Vere reigned from 1186 to 1199, just the time of the two greatest Transitional works in the west of Britain, those of Glastonbury and St. David's, so that he was more likely to have been the promoter of the work referred to, as it displayed some marked resemblances to both the splendid structures just mentioned. The older abbey at Glastonbury had been burned in 1186, the very year of De Vere's accession at Hereford, and the next few years were devoted to the exquisite chapel of St. Mary, now known as that of St. Joseph of Arimathea, while the last decade of the twelfth century saw the rise of the unequalled abbey church itself. The chapel was more Romanesque in its character than the church, though both alike display a refinement of detail and workmanship, and an artistic sentiment which it was impossible to excel. They were the right glorious contemporaries of De Vere's work at Hereford. The work was a very fine Transitional character, with a large supply of that rich semi-Norman decoration which characterized the two great works alluded to; yet with other beauties derived from France, and with evidence, such as the great projection of the foliage of the capital, that it was not quite so early in its style. The great alteration Sir Gilbert Scott alluded to was the entire removal of the three apses and the substitution of an eastern aisle, supplying the deficiency in the first scheme of a continuous aisle or ambulatory round the apse, and the adding to that aisle eastward a range of chapels. The point most open to objection in De Vere's alterations was the blocking-up of the fine eastern arch of the presbytery, by which the interior was deprived of its culminating feature without the substitution of anything in its stead, and the beauty of the choir was most seriously damaged. The reopening of the arch was a work of our own age, and had done much to remedy the radical defect.

"They now arrived at the opening of the great thirteenth century, and here they had to start afresh with, if possible, still less direct information than they had hitherto found, though the church was rich in noble work of every part of the century, but every part was left to tell its own tale almost without even the suggestion of a date. He would pass over the mere guess that the first bishop in that century — Egidius de Bruce — built the central tower, the predecessor of that which now existed. It certainly was not the western tower, as some had supposed, for no such structure existed before the fourteenth century. First of all came the noble lady-chapel. This was wholly undated and unappropriated by any founder. He had come to the conclusion that the lady-chapel was somewhat early in its style, because the general details were not Transitional but developed Early English, and that a marked interval must have elapsed between the closing of De Vere's work and the beginning of the lady-chapel. It was true that at Lincoln and St. Albans they found developed Early English work at the very beginning of the thirteenth century, but where they had Transitional work of a very pronounced character up to the very end of the twelfth century they could hardly believe that the style at the same places suddenly changed without an interval. He would not, however, venture to assign it to any particular bishop. The bowing down of the vaulting upon the side-walls, which necessitated the arcading over the windows, had an Early appearance, but not so as to class it with Transitional work. He should call it a fine design of the earlier period of Early English, though the details of the crypt seemed too late even for that. The next work was the clerestory of the presbytery. It was a specimen of very advanced Early English. The windows had what Professor Willis termed 'plate tracery.' It was not improbable that the original clerestory and vaulting had become damaged by the unsettling and sinking of the tower, for he could hardly otherwise account for their having gone to the expense and inconvenience of reconstructing so important a part of the building. The style and details of the clerestory were particularly elegant.

"They now arrived at a yet more marked era in the architecture of the cathedral. The pointed style made its *début* in the Transitional work of De Vere, and they came to the second transition — that from Early English to Decorative — or from first to middle pointed. The windows in the lady-chapel were strictly lancet-shaped. Those of the north transept, to which they now came, had bar tracery — that was to say, tracery pierced in all its little spandrels and corners so as not to look like a flat surface, but like the bending about of the mullions. This invention was the Magna Charta of Gothic architecture, setting it free from all the trammels of its earlier years. The history of the see about the period when this work was introduced was remarkable, and threw more perplexity than light upon the origin of the great work. It was held from 1240 to 1268 by Peter de Aquabianca, a turbulent foreigner, who came over in the train of William, half-brother to Henry III. Aquabianca was a favorite of the King's, but hated by the clergy, and he was absent from England from 1259 to 1268 in the Holy Land. In 1264

the King, passing through Hereford, found there neither Bishop nor clergy, and the church in a ruinous state. He was enraged and reprimanded the Bishop, and threatened that if he did not quickly return and mend his manners, he would take the temporalities into his own hands. Aquabianca returned, but only to be taken prisoner and robbed of his wealth by the insurgent barons. He was imprisoned at Ordelay, and he died in 1268. If Aquabianca built the beautiful transept it was difficult to imagine how he came to have the will or the time to do so. Yet that he had a hand in it was certain. His exquisite tomb, which they might be sure nobody would have erected but himself, bears so close a resemblance to the architecture which overshadowed it as to leave no doubt that they were by the same hand. Sir Gilbert then proceeded to point out that the tower was not all built at the same time. He concluded that the work of the lower part of the transept was carried out by the Dean and Chapter in Aquabianca's time, and that it was completed by the two succeeding episcopates, somewhere about 1288. The great faults of the design were the straight-sided form of the arches and the thinness of the details of the triforium, but with those exceptions it was an exquisite architectural design. Sir Gilbert next referred to the shrine of St. Thomas de Cantilupe, and its translation from the lady-chapel to the chapel of St. John the Baptist in the aisle of the new north transept, which was partly, he dared say, built by himself, but not until then completed, remarking that they might rest satisfied that it was the *bonâ fide* shrine of St. Thomas of Hereford.

"After service in the cathedral, Sir Gilbert Scott gave an historical and architectural description of the fabric. After pointing out the various parts and their features which he had referred to in his paper, which served as an illustration of his remarks, he passed on to other parts of interest in the Cathedral. He pointed out as leading from the north porch into the nave a doorway of remarkable design, especially as to the crossing of its arch. It contains all the foliage of the Early English period, and the crisp natural foliage of the Early Decorated, which with other matters he thought showed its age to be about the same as the shrine of Cantilupe. It would follow, therefore, that the porch and the whole north aisle of the nave were built by Bishop Swinfield about 1288. The south aisle, though less ornate, he pointed out to be of the same age or thereabouts, and that consequently Swinfield must have built both the aisles and the nave. He described the style of the nave aisles as 'Early Swinfield,' and that of the presbytery aisles and the north-east transept as 'Late Swinfield.' In the north-east transept is the monument which he thought Swinfield in his later days erected to himself. These series of recessed monuments and effigies by which so many of his predecessors were commemorated in the walls of the presbytery aisles was probably owing to him. His death took place in 1315, and the question arose whether he had a hand in the rebuilding of the central tower, which Professor Willis seemed to have thought. He pointed out that two years after the accession of Adam de Orleton, in the year 1319, a remarkable circumstance took place in the history of the Cathedral. The Dean and Chapter, supported by the Bishop of Salisbury, petitioned the Pope to sanction the appropriation by the Church of the tithes of the parishes of Shrinfield and Swallowfield, in Berkshire, on the ground that they, the Dean and Chapter, wishing in past times to restore the fabric of the church of Hereford upon an ancient foundation, which the architects and builders of the time thought firm and solid, but which architects and builders in the time of the petitioners deemed to be weak and unsafe. Consequently all the money they had expended on sumptuous work to the honor of the House of God, twenty thousand marks in all, had been to no purpose; for they were now threatened with ruin so severely that there was no remedy to be had, according to the architects and builders, unless the old fabric of the church were totally removed, and on account of that and the expense caused in connection with the canonization of Thomas de Cantilupe, they were oppressed with various burdens of debt. The Pope replied in the following year — 1320 — granting them their request, and accompanied it with an assurance of his special devotion to the 'blessed Thomas,' whose canonization he had so tardily granted thirty-eight years after his decease. This led him to ask what the buildings were that were constructed on the old foundations, and what on the new? He could only conceive that they were the tower and north transept; and the question suggested itself, what had they done with the money? Sir Gilbert then entered upon a series of speculations as to when and by whom the second tower was built, citing different theories. He said it was of singularly beautiful design throughout, and drew attention to the extremely light work in the upper part, which was necessitated by the great weight of the former tower sinking and crushing all the other work beneath it. Passing on to the more interesting parts of the cathedral, he remarked that the transformation of the south-eastern chapel into a transept was probably late in the fourteenth century, when the style had much deteriorated. Not long after the beautiful chapter-house and its vestibule were erected with a great revival of artistic taste. It was believed to be 1375. The series of monuments about that time was interesting as showing the gradual passing from the Decorated to the Perpendicular style. Towards 1474 Bishop Stanbury erected his beautiful chapel adjoining the north presbytery aisle. The monuments and effigies of the various bishops were examined, and the beautiful addition made by Bishop Booth, in 1520, to the north porch was pointed out. The futile attempts at remedying the central tower were also examined. Towards the close of the

last century the western tower showed such symptoms of impending failure that several architects were consulted and the worst advice accepted, and on Easter Monday, 1768, it fell. James Wyatt was called in, and to him they owe the present western façade, which Sir Gilbert Scott described as about the dullest piece of work in any cathedral. He also pointed out the latest repairs by Mr. Cottingham since 1840. All the present arrangements of the Cathedral which had been made by Sir Gilbert Scott to suit modern requirements were also pointed out by him, and in one or two instances he expressed a doubt whether he would have made such arrangements had he to do the work over again. The cloisters, which contain numerous Norman fragments of stonework, were next examined, and the company, which had by this time dwindled down to only a few in number, lastly descended the crypt, and on reascending separated." — *The Architect*.

THE FALL OF THE TOWER OF ST. MARK.

MILAN, July 14, 1902.



ITALY has fallen under the weight of an immense disaster, which for a long time will agitate public opinion and the world of arts. The celebrated Campanile of San Marco, at Venice, the grand and elegant tower which rose near the Golden Basilica, is ruined, and this time it is no mere question of a false alarm, as formerly in the case of the impending ruin of the Ducal Palace, but it is a real one, whose effects cannot be lessened by any prudence in official language.

For some little time back, people remarked to one another that the Campanile of San Marco did not seem to have that absolute stability which every structure, ancient or modern, ought to have, if it is to keep at arm's length a disaster as sensational and irremediable as that which the Campanile of San Marco has just offered us. But no one suspected that this jewel of the artistic crown of Venice was about to fall in ruins all in a moment just as has happened. It is not long ago that it was again perceived that the structure of the campanile was defective, and its state of equilibrium compromised, a fact which was brought to attention by numberless cracks. In particular, the piers of the "contrecanne" [sic] were damaged, one of them being so seriously impaired that it had to be strongly banded with iron. So, each year as it passed required new safeguarding aids, that the preservation of the campanile might be guaranteed and the public reassured.

Lately, a commission of civil engineers, in conjunction with the attachés of the Bureau for the Preservation of the Monuments of Venice, having remarked once more movements in the tower far from insignificant, had settled on a plan for urgent repairs which were about to be begun. The attention of engineers was always turned upon the campanile, and this morning, July 14th, Signor Rupolo, the architect of the Bureau of Monuments, the man who was entrusted with the delicate work of the restorations in the Ducal Palace, having remarked very alarming signs, arranged that the Piazza of St. Mark should be closed to business and the public, thus giving notice of the threatening fall of the campanile, a disaster which nothing could now prevent.

In fact, this morning, at ten o'clock, the campanile fell, with all the upper portion of the tower, upon the side of the Piazzetta, producing a terrible clamor and an immense sensation.

A feeling of desolation at once spread amongst the people of Venice, so solicitous about the artistic grandeur of their unique city. The people were unwilling to believe that the celebrated tower, so long cherished by it, had no longer an existence; but alas, the campanile had doubled up on itself, and had become a mere mass of stones, a complete ruin.

At the present moment of confusion and obsession, one cannot definitely fix the responsibility, if there be any, and the Government is going to name a commission for a rigorous inquest, whose findings are to-day uncertain, although it appears that grave responsibilities do not exist so far as the attachés of the Bureau for the Conservation of Monuments are concerned. However this may be, in the shadow of this huge disaster, concerning the details of which the press will soon be overflowing, we can only take consolation in the fact that no victim of the disaster has been discovered, and this is indeed miraculous. One has only to consider the habits of the Venetians and foreigners alike, who fill the Piazza of St. Mark and the numerous shops of the Procuratie vecchie e nuove, at all hours of the day, and this consideration taken in conjunction with the morning hour, about ten o'clock, is enough to fill us with horror at the thought of what might have happened, if, as has been said, Signor Rupolo had not foreseen the possible disaster.

The Municipal Government was hastily convened, and the Mayor, after having officially denounced the disaster which had just fallen upon Venice and Italy, proposed, amidst the most sincere and justifiable applause, that the Campanile of San Marco should be rebuilt. In this connection, the municipality, for the purpose of a competition for the reconstruction, placed at the disposal of the Governmental authorities, the sum of a half million of lire (\$1,000). A public subscription has been opened for the same purpose and it is certain that it will produce at the earliest moment a sum corresponding to the gravity of the disaster.

Aside from the ruin of the campanile we must, also, mourn the loss of the Loggia of San Marco, or the Loggetta of Sansovino, as it is commonly called, which was connected with the campanile on the face towards the Ducal Palace. Now it lies completely buried under

the ruins of the tower — an immense heap of brick and stones, and is likely to be found, when uncovered, in a desperate condition. There is, however, a general feeling that it will be found possible to rebuild it if the fragments are sorted out with proper care, and we will hope that this may actually be done. It would be extremely happy, too, if in rebuilding the campanile a good proportion of the old material should be used, for the mere rebuildings of ancient edifices with new materials are never worthy of praise; they are mere lies, and such would be the fact with the campanile if a mere copy in new materials should be erected.

Significant damage has also fallen upon Sansovino's library, the Library of San Marco, which, at the time of its original construction, suffered from an accident which ruined one of the vaults, and caused the imprisonment of the author, who obtained his liberty through the intercession of the highest influences in the Republic.

Fortunately, the Basilica of San Marco and the Ducal Palace suffered no injury; but if the campanile had fallen forward, since it is erected *vis-à-vis* to the Porta della Carta, between the Ducal Palace and the Golden Basilica, the consequences might have been graver yet; a fact which gives us, in the midst of the gloom which has fallen on us, a certain feeling of serenity, a serenity which, in the midst of evil, allows us to perceive that things might have been worse. In short, everybody, the Venetian municipality, the Italian Government, highly moved by the disaster which I hasten to recount to you, have to-day determined to reconstruct the characteristic tower, without which the celebrated Piazza of San Marco would be unrecognizable, and this fact is something. Moreover, Italy everywhere feels the high responsibility of being, *par excellence*, an artistic country, and means to watch jealously over the preservation of its artistic patrimony, which is really the artistic patrimony of the intelligent throughout the world.

The disaster of the Campanile of San Marco has caused to be written, and will cause to be written, a quantity of misinformation upon its history, so I will give a brief *résumé* of the facts, not gathering them from newspapers and guide-books, where the truth is often as wanting as good sense in the head of a madman: —

The campanile was fully isolated, only having connected with it upon one side, that which faced the Basilica of San Marco, the loggia of Sansovino. Built of brick and Istrian stone, it was conceived with simplicity, and its ensemble had a *cachet* that was very characteristic. It appeared to belong to the Renaissance, just as did Sansovino's loggia and library, but in reality its origin mounted far beyond the fifteenth and sixteenth centuries; but properly speaking, the origin of the tower is obscure and uncertain.

It was founded before 948; people do not know in just what year; the works were continued up to 985 according to certain chronicles, and according to others until 1068 or 1147, while some say 1310. At all events, in 1489, the campanile was badly damaged by a fire. Giorgio Spavento was interested in the restoration which was carried out; again, in 1511, an earthquake was still more disastrous for the tower than was the conflagration of 1489. This time, the tower received the belfry-story — perhaps designed by Bartolomeo Bon, of Bergamo — a story of exquisite sobriety, which constituted the more ornamental portion of the tower. It should be noted that the author of this belfry-story has not been clearly identified, and it is only by induction that the best-informed critics of the day venture to name Bartolomeo Bon, who may be confirmed as author, or denied, if ever any documents may be found to throw light on this obscure point in the history of our monument. It must be added that the conflagration of 1489 burned the summit of the tower, which was gilded, and also attacked the Church of the Frari.

It is also to be remarked that the common belief that the tower had foundations as deep as the tower was high, and that these foundations were star-shaped, and that they even passed under the Basilica, with a platform built of tree-trunks, arranged in pyramidal fashion, from the perimeter to centre, an opinion frequently reiterated, was done justice to by the studies carried out in 1886, which demonstrated that the foundations of the Campanile of San Marco were only 5 metres deep, a fact sufficiently interesting to know, considering that the campanile itself rose to the height of 98 metres.

ALFREDO MELANI.



[Contributors of drawings are requested to send also plans and a full and adequate description of the buildings, including a statement of cost.]

A COMPETITIVE DESIGN FOR THE BOSTON ATHENEUM, BOSTON, MASS. MESSRS. HERBERT D. HALE AND G. B. DE GERSDORFF, ASSOCIATED ARCHITECTS, BOSTON, MASS.

HOUSES ON THE BAY STATE ROAD, BOSTON, MASS. MESSRS. SHEPLEY, RUTAN & COOLIDGE, ARCHITECTS, BOSTON, MASS.

HEREFORD CATHEDRAL FROM THE SOUTHEAST.

THIS illustration is copied from the *Architect*. See article elsewhere in this issue.

UNITED STATES POST-OFFICE AND COURT-HOUSE, FERGUS FALLS, MINN. MR. JAMES KNOX TAYLOR, SUPERVISING ARCHITECT, WASHINGTON, D. C.

DOORWAY: HÔTEL DE VILLE, TOURS, FRANCE. M. LALOUX,
ARCHITECT;—ENTRANCE: CHAMBER OF COMMERCE, TOURS,
FRANCE.

[Additional illustrations in the International Edition.]

THE metalwork here shown was executed by Mr. John Williams, of New York.

PLANS, SECTION AND ELEVATION OF A COMPETITIVE DESIGN
FOR THE BOSTON ATHENÆUM, BOSTON, MASS. MESSRS. H. D.
HALE AND G. B. DE GERSDORFF, ASSOCIATED ARCHITECTS,
BOSTON, MASS.

COMMUNICATIONS

AN EYE-WITNESS ON THE FALL OF ST. MARK'S
TOWER.

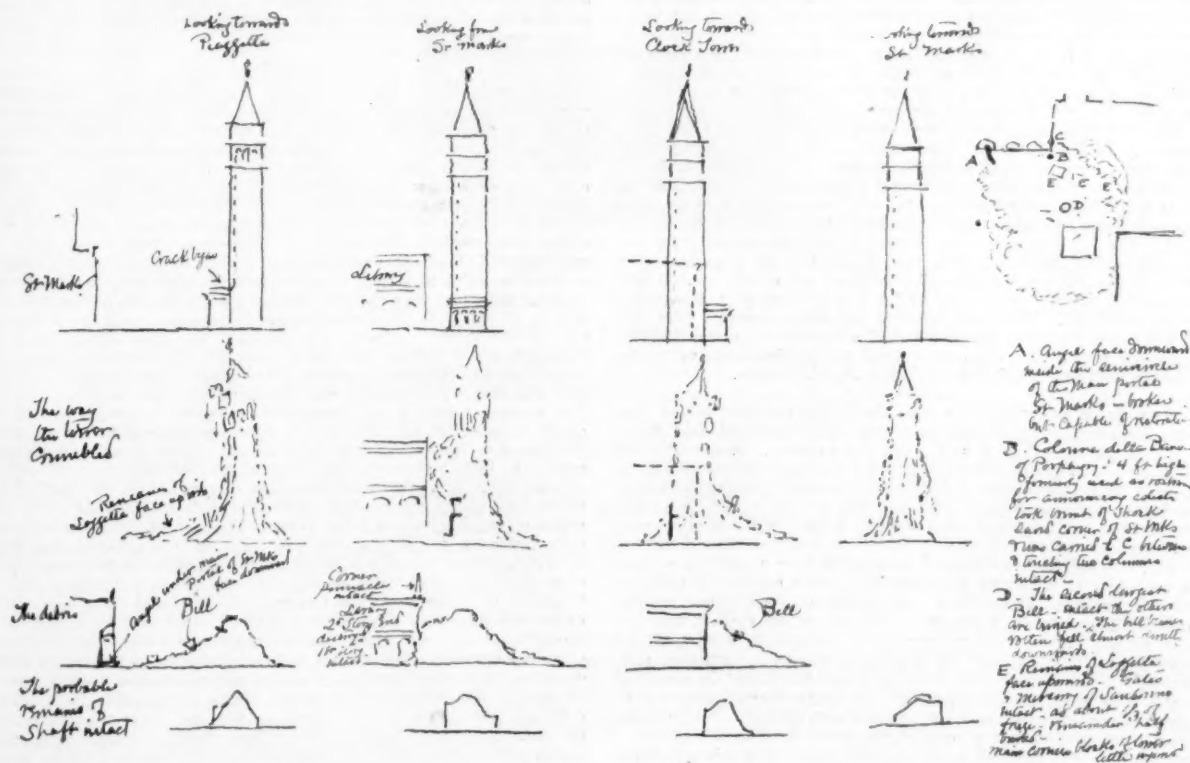
TO THE EDITORS OF THE AMERICAN ARCHITECT:—

amongst others some American architects, who have laid the fall of the tower to the settlement of the foundation. That shows absolute ignorance of the facts.

I was here, much to my grief. From a distance I saw the angel slowly descend, swaying, but upright, and my daughter and her governess were on the Piazza not 200 feet away. They both say that spurts of lime-dust puffed from the tower about 20 feet up from the ground, and that then cracks appeared at the base in the curtain-walls between the buttresses, which opened upwards with great rapidity, and the base of the tower spread "like the roots of a tree." There was little or no shock. The angel descended in an upright position until the cloud of dust rose and covered it, and must have come down full 100 feet before toppling. When found it was directly under and within the main portal of St. Mark's.

The Italians say the tower "*se sedesse*"—*i. e.*, sat down upon itself. If there had been settlement it would have leaned. My own impression is this: The top of the tower has been continuously repaired with new material; the bottom less so. The Loggetta concealed the condition of the bottom wall behind it, and it was neglected. The series of windows just inside the corner in order to light the stairs was always a structural weakness in this type of tower. There has been work going on in flashing the roof of the Loggetta, which, while it seemed very slight and harmless under usual conditions, under these special conditions began to show great weakness at this point. This was acknowledged two months ago. The continuous repairs, etc., had produced in the brickwork, certainly of the outside walls, a state to which I can give no better definition than that it was a state of unstable equilibrium.

Energetic, organized action was imperative, and was not taken, from a lack of appreciation of the facts. I very much doubt if any action could have averted the disaster, after the crack, which started at the lowest window towards St. Mark's a week ago, had begun to snap from window to window, all the way up, because shoring-up would merely have transferred the weak point farther and farther up the shaft, and to the right and left on the outer wall. But the miraculous thing is that St. Mark's is absolutely untouched — not a piece of mosaic fallen. The Colonne della Banda and the corner columns of the foundation were insecure. Certainly there would have been damage to St. Mark's. The Library has at its end, in the second story, two columns with arches and entablature, torn out. The Gates of the Loggetta, the figure of Mercury, and two of the carved blocks with putte are practically uninjured. The rest are buried still. I sincerely hope that America will liberally contribute. There has been a good deal of talk in Paris that reconstruction of the old Campanile would not express the present advanced state of architecture, and some say that the Piazza is more harmonious without it. Fortunately, to my mind, no attention is being paid to these remarks. Venice has lost the foil, the contrast to the delicacy of its art. It was a noble foil, and dominated the long lines of the palaces, from



every approach. That the form of this vanished monument should be perpetuated is no mistaken conception. I have, on the other side of this sheet, rapidly sketched the past and present conditions.

Yours always, C. HOWARD WALKER.



ALCOHOL AS A MOTIVE POWER.—The present price of denatured alcohol in Germany is 15 marks per hectoliter, or about 13 1-2 cents per gallon. At this price it competes economically with steam and all other forms of motive-power energy in engines of less than 20 horsepower for threshing, pumping, and all other kinds of farmwork, so that a large percentage of the spirit produced in agricultural regions remote from coal-fields is consumed in the district where the raw material is grown.—*The Gas Engine.*

CURE FOR ELECTROLYSIS.—The *Electrical Review* speaks feelingly upon the question of electrolysis, declaring that the time is beginning to arrive when reckoning of a gigantic character is to be had between electric street-railway companies and those who employ buried piping system for various purposes. After treating of the general subject, and going over the methods used by both companies, and showing how the damage is done, the *Review* says that while the current which destroys the pipes may be diminished by increasing the ground-return to the power-houses to the limit of the corporation controlling the situation, it can never be reduced in that way to zero. The remedy, it is declared, is to break up the electric continuity of the piping-system by insulating-joints. A single insulating-joint would stop more current than many thousands of dollars' worth of copper laid in multiple with it, and 20 or 30 properly distributed insulating-joints would reduce the current in a pipe line more than an almost infinite amount of copper would do. This method of preventing electrolysis is well known, and its efficacy is undoubted, but the reason why it has not been adopted is the difficulty in reaching an amiable arrangement between the electric-companies and those maintaining water-pipes. Both sides agree that the insulating-joints should be put in, but each declares that the other should bear the expense. The damage to the pipes undoubtedly comes from the trolley-companies. The companies claim that after they have spent a reasonable amount of money to protect and reinforce their ground-returns, they cannot be legally asked to do more. As there is no legislation upon this subject it looks as if the pipe-line companies would be obliged to do the work, and the sooner they go about it the better for all concerned. At the same time it seems as if in equity the companies should come together, and agree upon some means of protecting the pipes. Certainly the gas-companies should do something to protect their pipes, which do much more damage when leaking than do the water-pipes.

AMERICAN STONE PRODUCTION.—The growing tendency to more permanent structures throughout the country is indicated in the compilation of "*Mineral Resources*" just issued by the Geological Survey, showing that the value of the entire production of stone in the United States in 1901 was \$60,982,000, a gain of \$12,295,405 over the value of the product of 1900. This great increase in value was shared by all kinds of stone. Limestone, including blast-furnace flux, showed the greatest increase, from \$20,354,019 in 1900 to \$26,406,897 in 1901, or 30 per cent. Granite showed the next greatest increase, from over \$12,000,000 in 1900 to over \$15,000,000 in 1901, or over 26 per cent. Sandstone increased from over \$7,000,000 in 1900 to not far from \$9,000,000 in 1901, about 24 per cent. Marble-production increased to \$4,935,699 in 1901, or 16 per cent, and slate-production increased to \$4,787,525 in 1901, about 13 per cent. In the order of production, Pennsylvania, producing every kind of stone, ranks first, with a total value of \$10,772,288; Vermont is second in rank, with a product valued at \$5,366,740; Ohio third, with a value of \$5,783,225; New York fourth, followed by Maine, Indiana, Massachusetts and Illinois in the order named, each producing over \$2,000,000 worth. The increase in building-stone produced is notable. In 1900 it was valued at \$10,672,598; in 1901, at \$15,112,600. Crushed stone for road-making and various other purposes increased in value from about \$6,500,000 in 1900 to \$8,500,000 in 1901. The value of the stone imported into this country for the fiscal year ended June 30, 1901, was \$1,276,602, as compared with \$1,028,550 for 1900, a considerable increase, of which marble and manufactured marble constituted by far the greatest part, amounting to about \$1,024,687. The total value of the stone exported from the United States in 1901 was only \$1,672,876, a decrease of about \$90,000, as compared with 1900. The chief export was roofing-slate, valued at \$650,543 in 1900 and at \$898,262 in 1901.—*N. Y. Tribune.*

DANGER FROM ELECTRIC-LIGHTS.—There is a common belief that electric incandescent-lights give out very little heat and that therefore fire-danger from them is practically non-existent. Hence it is that such lamps are frequently found disposed with much unconscious carelessness in the neighborhood of combustible materials, in shop-windows, for example, for decorative effect, and the wonder is that fire-losses from such use of the lamps are not more widespread. Many experiments have been made and recorded to show how real these lamp-fire risks are, and reference to some of them will bear repetition as possibly useful in emphasizing the need of greater caution in securing illuminating effects. In one case where a lighted lamp rested against a vertically-placed white pine-board, a spot about an inch in diameter and of a light-brown color appeared after about 4 hours. In the case of a similarly disposed strip of well seasoned varnished oak, the varnish became blistered in 3 minutes and blackened in about 15 minutes. The wood had the appearance of being charred at and near the point of contact with the lamp, but was not ignited. With a lamp encased in two thicknesses of muslin, the latter became scorched in 1 minute, in 3 minutes gave off smoke, and at the end of 6 minutes, when the muslin cover was removed from the lamp and fresh air reached its interior, it burst into flames. Where a lamp was laid on inflammable material, the effect seemed to be more rapid, due, probably, to the

pressure exerted by the weight of the lamp. A newspaper was in this way carbonized in 3 minutes and ignited in 45 minutes. The lamps used were of 16 candlepower. In the instance, cited recently, it was found that on immersing a 16-candle-power lamp in half a pint of water, the latter boiled within an hour. Again, with a lamp buried in cotton-wool, the wool soon began to scorch and ultimately burst into flames. A lamp in contact with celluloid fired in less than 5 minutes. All these trials indicate in a fairly conclusive way what may be expected under certain conditions from a popularly supposed absolutely safe form of light. Intimately associated with the electric incandescent-lamp is the flexible-cord connection, and in this we have a probably even more pronounced form of fire-risk. In two cases recorded some time ago short circuits developed in cords supporting lamps not turned on, and, while the current was almost instantly cut off by the blowing of fuses, the momentary arcs were sufficient to set fire to the cords, which were oily and dirty with lint, being in a cotton-mill. In both cases strands of the fine wire had probably broken and pushed their sharp ends through the insulation, causing the trouble, and both occurrences showed that however quickly current may be cut off by properly acting fuses, the heat of the arc produced is sufficient to make the cords burn.—*Cassier's Magazine.*

SMOKE-EXPLOSIONS IN BURNING BUILDINGS.—How smoke explodes in a burning building was recently shown the Fire Insurance Society of Philadelphia in its rooms in that city by Underwriters' Inspector William McDevitt. Mr. McDevitt set a two-story building, about 3 feet high, on a table. Then he partly filled it with smoke from pieces of burned wood. Thrusting in a gas-jet, a smart explosion followed, and a tongue of flame and smoke 10 feet long shot out of the windows. The inspector also endeavored to make, on a small scale, what firemen call a back-draught, which is really a downward explosion of smoke through elevator-shafts or stairways where there are iron window-shutters; but the roof of his little house was blown off, and the smoke went up instead of downwards. The inspector used only plain wood to produce the smoke for his explosions. Varnished or oiled wood, he said, would have been more effective, as producing more and thicker smoke. Before giving his practical illustrations of the explosive force of hot smoke, he briefly explained the causes of such explosions. In a fire (he said) free carbon rises and mixes with hydrogen; methyl-alcohol, creosote, and other gases are also present in smoke. These gases become heated to the point of ignition, and an explosion is the result. Of itself, smoke would explode at a temperature of from 600 to 800 degrees, but frequently the smoke is ignited by sparks or by coming into contact with a flame. "When the smoke becomes ignited," the lecturer went on, "the interior of the building is instantly converted into a mass of flame. The Hunt-Wilkinson fire strikingly exemplified that. When I first saw the fire great volumes of dense black smoke poured out of the windows. Suddenly there was an explosion, and the smoke was transformed into such a mass of flame as I never saw before." Very thick smoke, when ignited (the speaker said) becomes a pillar of flame, and rolls through a room with such a force as to shake the walls and make the windows rattle. If sprinkled with water, there would be no explosion. Where formerly firemen tried to keep smoke in, under the impression that it smothered the fire, they now immediately break in windows or skylights to let it out. Several ways of preventing such explosions were cited by Mr. McDevitt. In large stores (he said), if an air-shaft of sufficient size were in the centre, there would be no lateral spread of fire.—*Fire and Water.*

DA VINCI'S WORK AT THE SFORZA CASTLE, MILAN.—The Roman correspondent of the *London Morning Post* draws some interesting facts from a volume just published by Signor Luca Beltrami, the eminent Lombard architect, who has done such good work in the restoration of the Sforza Castle at Milan. This volume, entitled "*Leonardo e la Sala delle Asse*," contains an account of the discovery of the Leonardo decorations in the Sala delle Asse, one of the chief rooms in the apartment of Ludovico il Moro, in the Castle of Milan, and explains the method adopted in their restoration. Nearly eighteen years ago Signor Beltrami published a letter written by Gualtiero to Ludovico il Moro in 1498, in which there occurs the following passage: "On Monday the great room of the Asse—that is to say, of the tower—will be dismantled. Magister Leonardo promises to finish it for the end of September." There was nothing to show which room of the castle might be the Sala delle Asse, nor to identify it among the many rooms in the various towers of the castle. Nor could it be proved that the Magister Leonardo was Leonardo da Vinci and not another. For several years it was impossible to make investigations in the castle, because the hall which Luca Beltrami believed to be the hall of the Asse was used as an infirmary for the horses of an artillery regiment. In 1893, however, the hall was evacuated, and a German specialist who was visiting Milan at that time discovered on the vaulted roof of the hall which Signor Beltrami believed to be the Sala delle Asse traces of painting, and a large painted shield, bearing an inscription in gold letters in which mention was made of the alliance contracted in 1496 between Ludovico il Moro and the Emperor Maximilian against Charles VIII—two years earlier than the above-mentioned letter of Gualtiero to Ludovico. Closer examination revealed the general design of the decoration of the hall, the roof of which had been painted to resemble a bower with branches entwined round several shields bearing other inscriptions. The subject and the character of the design left no doubt as to the authorship of the work, which was clearly that of Leonardo. For some years, however, it was not possible to undertake a fitting restoration of the painting, but last year a public-spirited Milanese advocate, Signor Pietro Volpi, provided funds sufficient to enable a young painter of distinguished ability, Signor Ernesto Rusca, to undertake the difficult task. After carefully cleaning all the plaster and noting accurately every trace of Leonardo's composition it was possible to reconstruct and to restore the whole design.—*N. Y. Tribune.*

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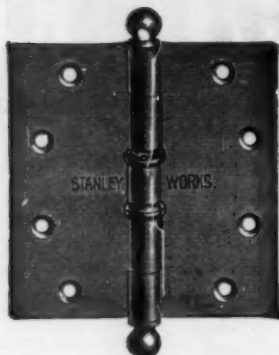
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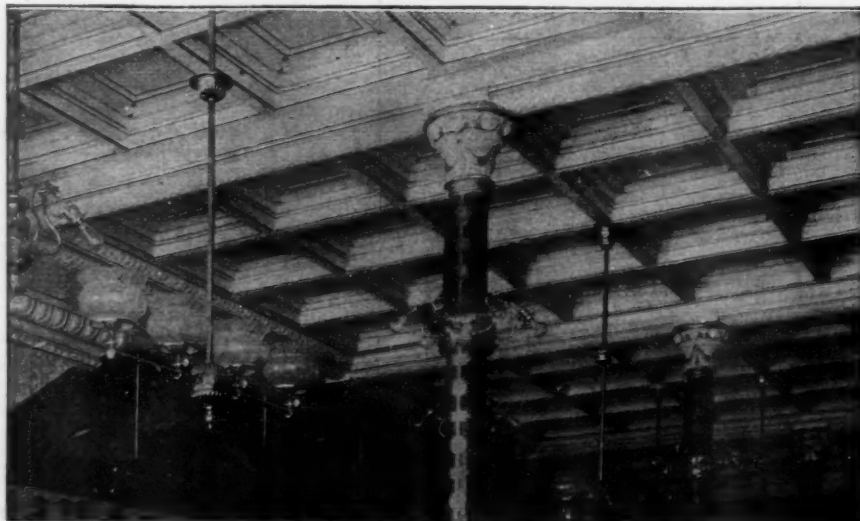
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Seventh-day Baptist Church, Newport, R. I.		" 1729
Christ Church, Alexandria, Va.		" 1767
Christ Church, Philadelphia, Pa.		" 1727
St. Paul's Chapel, New York, N. Y.		" 1764
Old South Church, Boston, Mass.		" 1729
First Church, Hingham, Mass.		" 1681
St. John's Chapel, New York, N. Y.		" 1803
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In addition to the subjects enumerated above there is a large quantity of measured and detailed drawings of Cornices, Ironwork, Gateposts, Windows, Interior Finish, Ceiling Decoration, Capitals, etc., together with elevational and sectional views of entire buildings.

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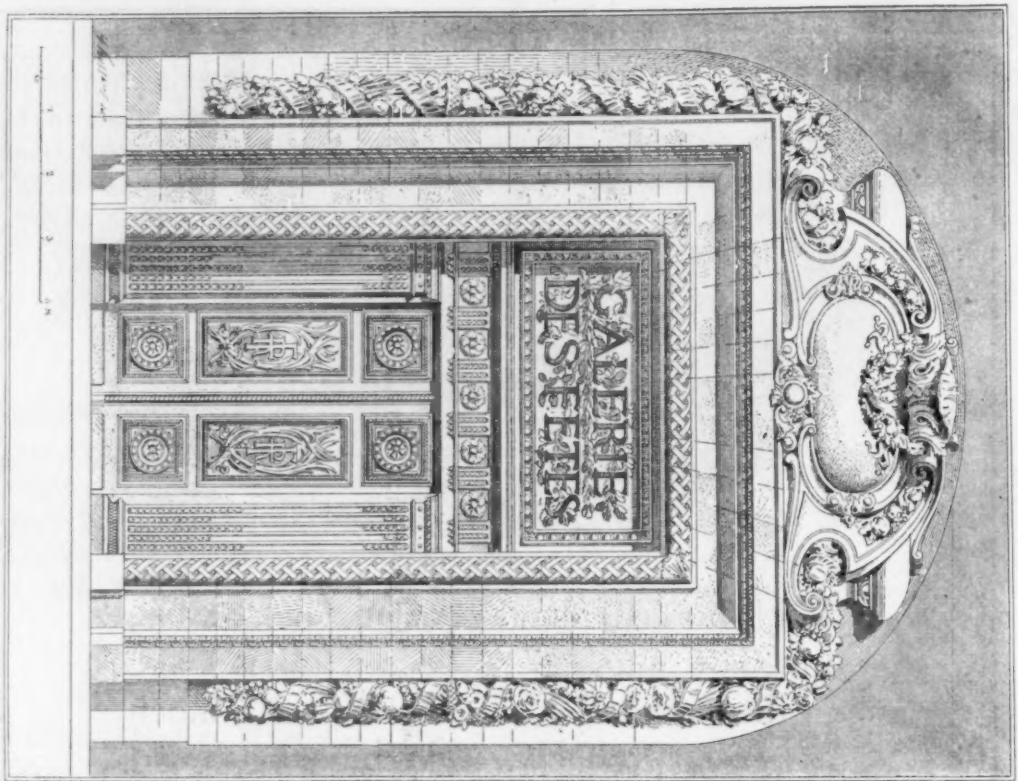
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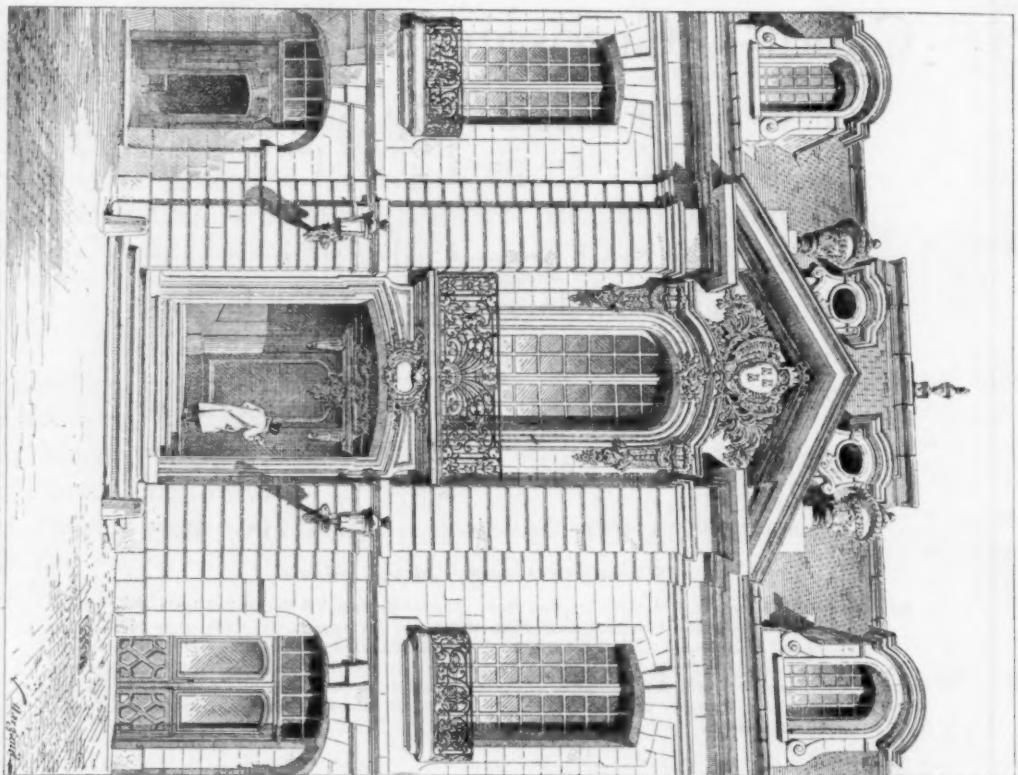
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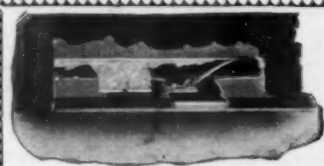
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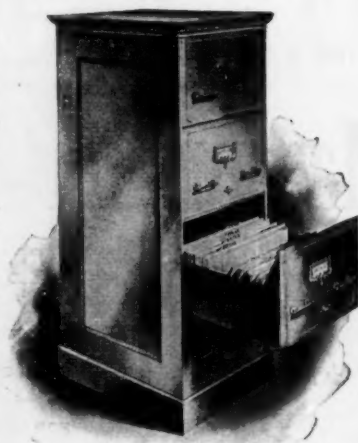
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Important Litigation Relating to Magnesia Covering Patents

THE KEASBEY & MATTISON CO., the owners of the patents for magnesia covering, have commenced a suit in the United States Circuit Court for the Southern District of New York against the Philip Carey Mfg. Co., George D. Crabbs, J. E. Breese, Schoellkopf, Hartford & Hanna Co., J. F. Schoellkopf, Jr., James Hartford, W. W. Hanna, C. P. Hugo Schoellkopf and Jesse W. Starr, to restrain the defendants from making and selling magnesia covering for boilers and steam pipes containing more than 50 per cent of magnesia, and especially coverings containing 85 per cent magnesia.

The Bill prays for a preliminary writ of injunction, to be continued during the pendency of the suit, and upon the final determination thereof to be made perpetual, and also demands an accounting and damages.

All persons are respectfully requested to refrain from purchasing covering infringing these patents, as such purchasing must of necessity lead to suit.

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ARCHITECTS' REMOVALS, Etc.

THE firm of Felt & Hein, architects, St. Joseph, Mo., have dissolved partnership and the business will be conducted in the future by Mr. J. H. Felt in the same offices, 51-53 Ballinger Building. 1391

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BUILDING INTELLIGENCE.

(Reported for the American Architect and Building News.)

[Although a large portion of the building intelligence is provided by their regular correspondents, the editors greatly desire to receive voluntary information, especially from the smaller and outlying towns.]

ADVANCE RUMORS.

Bedford, Ind.—The contract for constructing the new public library building has been awarded to Walner, Bailey & Koerner at \$20,433.

Boston, Mass.—The School-house Commission has awarded the contract for building a new primary school-house on Westville St., Dorchester, to the



The Improved Shingle Stain and Preservative. Imparts an artistic finish to shingles and prolongs their life by penetrating the pores of the wood and retarding decay.

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BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

Morrill & Whiton Construction Co., of that district, the contract price being \$122,178. This includes the erection and completion of building and the installation of plumbing, heating and electrical apparatus.

It is rumored that the Moses Kimball Estate contemplates building an eleven-story store and office structure on the site of the present Boston Museum when the leases expire next spring.

A ten-story brick and terra-cotta apartment-hotel, 80' x 80', is to be built at the corner of Bowdoin and Allston Sts., from plans by Benjamin Fox, 16 State St. To be of steel-frame construction.

Boulder, Col.—G. W. Roe, Pueblo, has prepared plans for a \$75,000 brick, stone and marble library building. Not let.

Bridgeport, Conn.—The New York, New Haven & Hartford Railroad Co. is drawing plans for a new railroad station in this city which will cost approximately \$175,000. The structure will be situated between Golden Hill and Gold Sts., and its dimensions will be about 120' x 180'. It will be built of brick and stone.

Burlington, N. J.—Jas. W. Lanning and John Barnhart, of Trenton, are stated to have the contract for the erection of an \$80,000 opera-house.

Camden, N. J.—Arnold H. Moses, architect, Philadelphia, Pa., is preparing the final plans for a new school-building to be built, and for which \$40,000 has been appropriated. It will be a three-story building, brick and stone, with slate roof. Address Chairman of Board of Education, Wm. D. Brown, City-hall.

Centralia, Kan.—Architect Stewart is said to have completed plans for a school, 80' x 120', and to cost \$33,000.

Chicago, Ill.—W. B. Mundle has completed plans for the William McKinley High School, to be erected in Adams St., between Hoyne and Seeley Aves., at a cost of \$300,000.

Cleveland, O.—J. Milton Dyer has been chosen as architect for the \$200,000 church to be erected by the First M. E. Society. Rev. Charles B. Mitchell, pastor.

Columbus, O.—Reports state that a fourteen-story steel frame brick and stone bank and office-building is contemplated by Nicholas Schlee, President of the First National Bank, and may be built at the corner of High and Lynn Sts., and cost about \$350,000.

Detroit, Mich.—Simon J. Murphy, 40 Moffat Building, will erect a fifteen-story brick, stone and steel office-building, 100' x 110', at a cost of \$500,000, after plans by Donaldson & Meier, 89 Moffat Building.

Duluth, Minn.—J. J. Wangenstein, architect, is preparing plans for a popular price theatre to be erected on W. Superior St., near 7th Ave.; cost, \$50,000. T. H. Reaney is interested.

Fort Wayne, Ind.—Architect J. M. E. Riedel has prepared plans for a \$25,000 asylum for feeble minded youths for the State of Indiana.

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BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

Golden, Col.—W. W. Atkinson, of Colorado Springs, has the contract to build the school for metallurgy at the School of Mines, for about \$35,000.

Grand Rapids, Mich.—Application has been made for a permit for the Herpolheimer Building to be erected at Monroe and Ottawa Sts.; the building will be six stories and the estimated cost is about \$100,000.

Great Barrington, Mass.—The Roman Catholic Church Society contemplates the erection of a church, or chapel. To be 68' x 137', with marble exterior and slate roof; \$40,000. James Murphy, Providence, R. I., architect, and Rev. Martin Murphy, pastor.

Hammond, Ind.—Architect J. T. Hutton is preparing plans for an opera-house for M. M. Lowie. It will be fireproof construction, brick, stone and steel, costing \$50,000.

Henderson, Ky.—Architect E. S. Tribble has prepared plans for a city-hall. Press brick, red sandstone and marble construction, costing \$17,000.

Indianapolis, Ind.—Herbert W. Folts, 49 Ingalls Block, has prepared plans for the three-story new building of the Central College of Physicians and Surgeons, to be erected on Senate Ave., between Ohio and New York Sts., at a cost of \$50,000.

Iowa City, Ia.—The Board of Regents of the State University of Iowa is stated to have awarded the contract for two College of Medicine buildings to Jas. Rowson & Son at \$84,630 for the laboratory and \$44,250 for the Anatomy Building.

Logansport, Ind.—Plans are to be submitted for the new Carnegie Library building, which will cost \$25,000. Q. A. Meyers, secretary library association.

ALTERATIONS AND ADDITIONS.

Springfield, Mass.—Bay St., two-sty' bk. addition to the Tapley School, 40' x 120'; \$40,000; o., City; a., E. C. & G. C. Gardner.

APARTMENT-HOUSES.

Cambridge, Mass.—Massachusetts Ave., cor. Lee St., Ward 5, seven-sty' st. & bk. apart. block; \$175,000; o., P. G. Rice & Co.; a., O. A. Heluck.

New York, N. Y.—One Hundred and Fortieth St., nr. Willis Ave., five-sty' & base. bk. & st. flats, 38' x 87' 8"; \$125,000; o., Gaines, Roberts Co., 117 E. 140th St.; a., Geo. F. Pelham, 603 Fifth Ave.

One Hundred and Thirtieth St., nr. 7th Ave., six-sty' bk. & st. flat, 50' x 87' 7"; \$75,000; o., Arthur B. Silverman, 400 Manhattan Ave.; a., G. F. Pelham, 503 Fifth Ave.

77 Tenth St., Nos. 135-137, six-sty' bk. flat, 44' x 82'; \$35,000; o., Friedman & Farber, 280 Broadway; a., Bernstein & Bernstein, 111 Broadway.

One Hundred and Seventeenth St., nr. 5th Ave., six-sty' bk. flat, 46' x 86'; \$65,000; o., L. Karp, 115 Hamilton Pl.; a., L. F. J. Welber, 103 E. 125th St.

South Boston, Mass.—E. Broadway, nr. F St., two-sty' fr. apart., 43' x 55', shingle roof, furnace; \$25,000; o., J. F. Fahey; a., T. E. Sheehan.

CHURCHES.

New York, N. Y.—One Hundred and Sixty-ninth St., nr. Franklin Ave., two-sty' bk. church, 54' x 103'; \$25,000; o., Second Church, Disciples of Christ, 1281 Union Ave.; a., W. C. Dickerson, 149th St. & 3d Ave.

CLUB-HOUSES.

Boston, Mass.—Boylston and Hereford Sts., three-sty' bk. & st. club-house, 102' x 183'; o., Represented by Quincy A. Shaw, Jr., 12 Ashburton Pl.; e., F. L. Whitcomb, 113 Broadway, Cambridge; a., Parker & Thomas.

Leverett St., Nos. 13-15, four-sty' bk. building for stores, lodge & club rooms; o., Alfred A. Patasniak; a., Wm. E. Clark, 15 Court Sq.

EDUCATIONAL.

New York, N. Y.—One Hundred and Seventy-seventh St., nr. Vase & Bryant Aves., four-sty' bk. school, 60' x 142'; \$120,000; o., City N. Y.; a., C. B. J. Snyder, Park Ave. & 59th St.

FACTORIES.

Brooklyn, N. Y.—Johnson Ave., nr. Leonard St., five-sty' bk. shop, 50' x 99'; \$20,000; o., F. Feldman, 114 Manhattan Ave.; a., F. Holmberg, 1183 Myrtle Ave.

Twenty-seventh St., nr. 3d Ave., 2 one-sty' bk. factories, 140' x 200' 4" & 40' x 200' 4", gravel roof, steam; \$24,000; o., Joshua Oldham & Sons, 26th & 27th Sts., nr. 3d Ave.; a., L. H. Voss, 65 De Kalb Ave.

Lowell, Mass.—Market St., four-sty' bk. rug mill, gravel roof; \$20,000; o., Bigelow Carpet Co.

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BUILDING INTELLIGENCE.

HOTELS.

Brooklyn, N. Y.—*Clin'on St.*, nr. Fulton St., twelve-sty' bk. apartment hotel, 65' x 70', steam; \$275,000; o., L. J. Horowitz, 186 Remsen St.; a., F. S. Lowe, 186 Remsen St.

New York, N. Y.—*Fifth Ave.*, cor. 60th St., fifteen-sty' & base, bk. & st. hotel, 50' x 200', slate & tile roof; \$1,500,000; o., Fifth Ave. Estates, 751 Fifth Ave.; a., H. J. Hardenbergh, 10 W. 23d St.

W. Forty-second St., Nos. 254-258, twelve-sty' bk. hotel, 66' 8" x 86' 3", tile roof; \$450,000; o., President Realty Co., 247 Broadway; a., Geo. Keister, 1133 Broadway.

Broadway, cor. 103d St., nine-sty' bk. & st. hotel, 100' 11" x 120'; \$750,000; o., J. A. Pinchbeck, 674 Columbus Ave.; a., H. A. Jacobs, 1133 Broadway.

W. Forty-ninth St., Nos. 104-106, nine-sty' bk. & st. hotel, 43' x 91' 5", tile roof; \$150,000; o., Geo. L. Felt, 246 W. 106th St.; a., Fred C. Browne, 143 W. 125th St.

HOUSES.

Boston, Mass.—*Commonwealth Ave.*, No. 611, three-sty' bk. dwell., 28' x 66', comp. roof, furnace; \$32,000; o., Stephen G. Allen, 27 State St.; a., Ernest Boyden; b., D. L. Rand, 166 Devonshire St.

Eiko St., nr. Cambridge St., Ward 25, two-sty' fr. dwell., 37' 10" x 46'; o., A. P. Skates; b., H. H. Hawkins.

E. Ninth St., nr. Dorchester St., Ward 15, three-sty' fr. dwell., 22' 6" x 45', flat roof; o. & b., Daly Bros.

E. Broadway, nr. P. St., Ward 14, 2½-sty' fr. dwell., 43' x 59'; o., J. F. Falvey; a., T. Edw. Sheehan.

Bradford Terrace, nr. South St., Ward 23, two-sty' fr. dwell., 25' 6" x 43'; o., Clifford Devens; a., J. G. Hatchinson.

Beech St., nr. Washington St., Ward 23, two-sty' fr. dwell., 36' x 37'; o., R. O. Nangle; b., Thomas Wills.

Greenwich St., cor. Clayton St., Ward 24, three-sty' fr. store & dwell., 35' x 51'; o., M. F. Flynn; b., Wm. G. Rodd.

Bay State Road, No. 79, five-sty' bk. dwell., 26' x 70'; o., Chas. W. Hubbard; b., G. H. Cutting & Co.

Sherborn St., No. 20, Ward 11, four-sty' bk. dwell., 29' 6" x 64' 6"; o., Albert Stone; b., Connery & Wentworth; a., Fehmer & Page.

Rutherford Ave., cor. Baldwin St., Ward 4, 3 three-sty' bk. dwells. with stores, 22' x 52', flat roofs; o., Geo. S. Hall estate; a., Chas. E. Park, 110 Tremont St.

St. Alphonsus St., opp. Calumet St., Ward 19, three-sty' fr. dwell., 26' x 50'; o., Dennis J. Kelly; b., John P. Curley.

Dorchester Ave., No. 1086, three-sty' fr. dwell., 28' x 28', comp. roof, furnace; \$6,500; o. & b., Boyd & Berry.

Roach St., nr. Dorchester Ave., three-sty' fr. dwell., 24' x 34', comp. roof, stoves; \$4,500; o. & b., W. T. Henderson, 53 Crescent Ave.

Mt. Hope St., nr. Hyde Park Ave., two-sty' fr. dwell., 24' x 35', pitch roof, furnace; \$3,500; o., Thomas J. Kelleher, Hyde Park Ave.; b., John E. Kelly.

Brighton, Mass.—*Brookdale Road*, nr. Parsons St., two-sty' fr. dwell., 37' x 39', shingle roof, furnace; \$6,000; o., Helen McDaniel; a., E. Parsons.

Brooklyn, N. Y.—*Fifty-eighth St.*, nr. 12th Ave., two-sty' & attic fr. dwell., 25' x 52', shingle roof; \$4,000; o., A. Mantell, 612 Atlantic Ave.; a., G. Hitehings, 41 Park Row, N. Y.

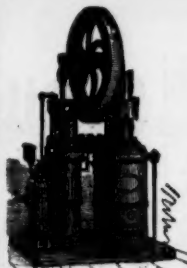
Marlborough Road, nr. Cortelyou Road, two-sty' & attic fr. dwell., 24' x 39', shingle roof; \$4,500; o., T. B. Ackerson Construction Co., E. 15th St., nr. Avenue B; a., B. Driesler, 13 Willoughby St.

Lenox Road, nr. Flatbush Ave., two-sty' & attic fr. dwell., 14' x 50', steam; \$1,800; o., Kate D. Spayd, 285 Clarkson St.; a., Barber & Klutz, Knoxville, Tenn.

E. Seventeenth St., nr. Avenue U, two-sty' fr. dwell., 25' 4" x 34'; \$4,500; o., A. E. Smith, 262 W. 22d St., N. Y.; a., A. M. Jenks, 42 S. 4th Ave., Mt. Vernon.

E. Seventeenth St., nr. Avenue V, two-sty' & attic fr. dwell., 25' 4" x 35', shingle roof; \$4,500; o., A. E. Smith, 262 W. 22d St., N. Y.; a., A. M. Jenks, 42 S. 4th Ave., Mt. Vernon.

Degraw St., cor. Albany Ave., three-sty' bk. stores & dwell., 20' x 59'; \$10,000; o., Herman Meyer, 40 Cumberland St.; a., H. Vollweiler, 483 Hart St.



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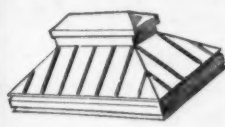
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BUILDING INTELLIGENCE.

(Houses Continued.)

Dorchester, Mass.—*Fuller St.*, nr. Dorchester Ave., two-sty' fr. dwell., 25' x 48', shingle roof, furnace; \$4,700; o., Wm. Smallman, 53 Crescent Ave.; b., Wm. T. Henderson, 53 Crescent Ave.

Roxton St., nr. Glenway St., two-sty' fr. dwell., 27' x 34', shingle roof, furnace; \$4,500; o. & b., J. Scott McLearn, Bowdoin Sq.

Wesley Ave., nr. Savin Hill Ave., two-sty' fr. dwell., 26' x 45', shingle roof, stoves; \$6,000; o. & b., Jos. Jenkins, 1504 Dorchester Ave.

Fairfax St., nr. Carruth St., two-sty' fr. dwell., 32' x 44', shingle roof, hot water; \$6,000; o., V. S. Rice, 30 Edson St.; b., W. M. Rice.

Hartford, Conn.—*Benton St.* & Wethersfield Ave., two-sty' fr. dwell., 30' x 50', hot air; \$6,000; o., Mrs. John M. Spear; b., DeForest Selley.

Huron, S. D.—*Two-sty' fr. dwell.*, 32' x 44', hot water; \$12,000; o., J. W. Campbell; a., F. B. & L. L. Long, Minneapolis, Minn.

Lexington, Mass.—*Arlington St.*, No. 17, 2½-sty' fr. dwell., 32' x 42', hot water; \$9,500; o., A. F. Granstein; a., Nathan Douglass.

Lowell, Mass.—*Gibson St.*, two-sty' fr. dwell., 34' x 49'; steam; \$5,300; o., W. H. Potter, 92 Middle St.; o., J. W. Bennett Co., 564 Middlesex St.

Minneapolis, Minn.—*N. Fremont Ave.*, No. 2638, two-sty' fr. dwell., 24' x 36'; \$4,000; o., Herman Hulsinga; b., V. U. Voorhees, Jr.

S. Humboldt Ave., No. 2108, two-sty' fr. dwell., 30' x 50', combination heat; \$6,000; o., H. C. Burleigh; b., T. P. Healy, 3115 Second Ave. S.

New York, N. Y.—*Franklin St.*, nr. Main St., City Island, two-sty' fr. dwell., 21' x 37'; \$4,000; o., Frank Horton, City Island; a., C. A. Milner, 124 E. 122d St.

E. Fifty-first St., No. 5, six-sty' bk. & st. dwell., 30' x 71' 9", gravel roof; \$60,000; o., Ellen S. Melcher, 30 W. 21st St.; a., Percy Griffin, 244 Fifth Ave.; b., Edward Corning, 11 John St.

E. Thirty-ninth St., No. 33, five-sty' bk. & st. dwell., 25' x 67' 11"; \$50,000; o., Walter Stabler, 674 Columbus Ave.; a., Chas. I. Berg, 571 Fifth Ave.

Rosindale, Mass.—*Bradford Terrace*, 2½-sty' fr. dwell.; \$5,000; a., Jas. Murray, 104 Poplar St.

South Boston, Mass.—*N. St.*, cor. 6th St., three-sty' fr. dwell., 23' x 59', comp. roof, stoves; \$4,000; o., S. W. Johnson, 594A Broadway.

West Roxbury, Mass.—*Mt. Vernon St.*, two-sty' fr. dwell., 33' x 39', shingle roof, furnace; \$4,500; o., Earl E. Davidson; a., H. Bailey Alden; b., Chas. Duran.

LIBRARIES.

Red Wing, Minn.—*One-sty' bk. & st. Carnegie library building*, 50' x 70', slate roof, steam; \$15,000; a., A. F. Gauger, St. Paul.

Shrewsbury, Mass.—*Two-sty' bk. library building*, limestone trimmings; \$25,000; o., Town; a., Barker & Nourse, Worcester; o., Seville & Wheeler, Worcester.

OFFICE-BUILDINGS.

Boston, Mass.—*Tremont St.*, Nos. 39-43, twelve-sty' bk., st. & steel store & office-building, 40' x 114', comp. roof, steam; \$350,000; o., Carney Estate; a., Hartwell, Richardson & Driver; b., G. A. Fuller Co., Brazer Building.

Congress St., Exchange Pl. and Hayes St., ten-sty' bk. office-building, 93' x 145', comp. roof, steam; \$800,000; o., Congress St. Associates; a., Andrews, Jacques & Rantoul.

STABLES.

Brooklyn, N. Y.—*Gwinnett St.*, nr. Lee Ave., one-sty' bk. stable, 25' x 40', gravel roof; \$1,500; o., Marie A. Harlman, 215 Penn St.; a., Th. Engelhardt, 905 Broadway.

Avenue J, nr. Ocean Ave., fr. stable, 48' x 80'; \$2,500; o., W. H. Debris, 997 Sterling Pl.; a., W. J. Dilthey, 1 Union Sq., N. Y.

BUILDING INTELLIGENCE.

(Stables Continued.)

Newton, Mass.—*Prospect St.*, Ward 3, two-sty' stable, 45' x 50', hot air; \$4,500; o., Samuel Ritchie; a., E. N. Boyden.

Hammond St., Ward 6, one-sty' stable, 30' x 50', hot water; \$5,000; o., Morris Gray; a., Chapman & Frazer, 8 Exchange Building, Boston.

New York, N. Y.—*Dyckman St.*, nr. Sherman Ave., two-sty' bk. stable, 50' x 134', felt & gravel roof; \$15,000; o., David Lee, 92 Riverside Drive; a., Jas. W. Cole, 403 W. 51st St.

TENEMENT-HOUSES.

Brooklyn, N. Y.—*Hamburg Ave.*, cor. Jefferson Ave., 4 three-sty' bk. stores & tenements, 25' x 48'; \$23,700; o., J. H. Heineman, 272 Cornelia St.; a., L. Berger & Co., 300 St. Nicholas Ave.

New York, N. Y.—*Perry St.*, cor. 4th St., 2 six-sty' bk. tenements & stores, 39' 2" x 35' x 92' 6" & 94' 7"; \$75,000; o., Goodman & Rothstein, 38 Broome St.; a., Bernstein & Bernstein, 111 Broadway.

One Hundred and Sixteenth St., nr. Lenox Ave., six-sty' bk. tenement, 50' x 87'; \$60,000; o., J. Shields, 53 W. 114th St.; a., Neville & Bagge, 217 W. 125th St.

WAREHOUSES.

Minneapolis, Minn.—*Fourth Ave. and Washington St.*, seven-sty' bk. warehouse, 60' x 162', gravel roof; \$65,000; o., Dean & Co.; a., Bertrand & Chamberlain, 517 First Ave. S.

MISCELLANEOUS.

Brooklyn, N. Y.—*Front St.*, nr. Jay St., four-sty' mill, etc., 40' x 153' 11", gravel roof, steam; \$70,000; o., National Lead Co., 100 William St., N. Y.; a., R. L. Daus, 130 Fulton St., N. Y.

East Cambridge, Mass.—*One-sty' bk. repair shop*, 340' long, steam; \$125,000; o., Boston & Maine R. R.; b., W. C. Edwards.

West Roxbury, Mass.—*Mt. Hope Cemetery*, 1½-sty' administration building, 43' x 66', slate roof, steam; \$25,000; o., City of Boston; a., Jas. Mulcahy, 66 State St.

PROPOSALS.

Treasury Department, Office of the Supervising Architect, Washington, D. C., August 6, 1902. Sealed proposals will be received at this office until 2 o'clock P. M. on the 18th day of September, 1902, and then opened, for the installation of a conduit and electric wiring system for the U. S. Post-office at Oakland, California, in accordance with the drawings and specification, copies of which may be obtained at this office or at the office of the Superintendent of Construction at Oakland, Cal., at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1391

HEADSTONES.

[At Boston, Mass.] Depot Quartermaster's Office, 170 Summer St., Boston, Mass. Sealed proposals, in triplicate, will be received here until 11 o'clock A. M. August 20, 1902, and then opened, for supplying 15,000 (subject to an increase or decrease of from 5 to 20 per cent) American white marble headstones or slabs: firms that may be unable to supply the entire 15,000 headstones may submit bids for such number as they can furnish, and all bidders should state the greatest number of weekly deliveries of headstones, complete, they can guarantee, and the earliest date after August 20, 1902, deliveries at such rate per week can begin. Information furnished on application. Envelopes containing proposals should be marked "Proposals for Headstones" and addressed to CAPT. A. M. PALMER, Depot Quartermaster. 1389

HEATING AND VENTILATING.

[At Boston, Mass.] The Trustees of the Boston City Hospital invite proposals for the heating and ventilating system for Pavilion III of Boston City Hospital, Albany St., Boston, Mass., and furnishing a bond in the sum of

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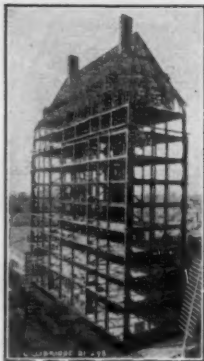
PROPOSALS.
ten thousand (10,000) dollars for faithfully doing the work. Only proposals obtained of James Mulcahy, architect, 66 State St., in said city, signed by the bidder, and left at the office of said Trustees, Harrison Ave., in said city, before twelve o'clock A. M. of August 14th, 1902, with a certified check for one thousand (1,000) dollars, payable to the City of Boston, and to be the property of the City if the bidder fails to carry out the proposal, will, at said hour and place, be publicly opened and read. The proposal should be enclosed in an envelope, sealed and endorsed, "Proposals for Heating for Pavilion III." A. SHUMAN, President of Trustees. 1389

SCHOOL. [At Jackson Centre, O.]
Bids will be received by the Board of Education until August 19 for furnishing material and erecting a school. F. E. POOL, clk. 1389

COURT-HOUSE. [At Kentland, Ind.]
Bids are wanted until September 2 for the construction of a \$50,000 brick and stone court-house. James F. Bruff, Kokoma, Ind., architect. 1390

Treasury Department, Office of the Supervising Architect, Washington, D. C., July 31, 1902. Sealed proposals will be received at this office until 2 o'clock P. M. on the 10th day of September, 1902, and then opened, for the construction, including plumbing, heating and ventilating apparatus, electric wiring and conduits of the U. S. Post-office at Anniston, Alabama, in accordance with drawings and specifications, copies of which may be had at this office or at the office of the Postmaster at Anniston, Alabama, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1390

Treasury Department, Office of the Supervising Architect, Washington, D. C., August 1st, 1902. Sealed proposals will be received at this office until 2 o'clock P. M. on the 22d day of August, 1902, and then opened,



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PROPOSALS.

for furnishing and installing new boiler plant for the U. S. Marine Hospital at Cleveland, Ohio, in accordance with drawings and specifications, copies of which will be furnished at the discretion of the Supervising Architect on application at this office or at the office of the Custodian at Cleveland, Ohio. JAMES KNOX TAYLOR, Supervising Architect. 1390

Treasury Department, Office of the Supervising Architect, Washington, D. C., August 2, 1902. Sealed proposals will be received at this office until 2 o'clock P. M. on the 15th day of September, 1902, and then opened for furnishing the steam-heating apparatus, complete in place, for the U. S. Post-office and Court-house at Abilene, Texas, in accordance with drawings and specification, copies of which may be had at this office or at the office of the Superintendent at Abilene, Texas, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1390

Treasury Department, Office of the Supervising Architect, Washington, D. C., August 2, 1902. Sealed proposals will be received at this office until 2 o'clock P. M. on the 16th day of September, 1902, and then opened, for furnishing the heating apparatus, complete in place, for the U. S. Post-office at Oakland, Cal., in accordance with the drawings and specification, copies of which may be had at this office or at the office of the Superintendent at Oakland, Cal., at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1390

Treasury Department, Office of the Supervising Architect, Washington, D. C., August 2, 1902. Sealed proposals will be received at this office until 2 o'clock P. M. on the 11th day of September, 1902, and then opened, for furnishing the heating apparatus, complete in place, for the U. S. Post-office at New Brunswick, N. J., in accordance with the drawings and specification, copies of which may be obtained at this office or at the office of the Superintendent of Construction at New Brunswick, N. J., at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1390

Treasury Department, Office of the Supervising Architect, Washington, D. C., August 2, 1902. Sealed proposals will be received at this office until 2 o'clock P. M. on the 11th day of September, 1902, and then opened, for furnishing the heating apparatus, complete in place, for the U. S. Post-office at New Brunswick, New Jersey, in accordance with the drawings and specification, copies of which may be had at this office or at the office of the Superintendent at New Brunswick, N. J., at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1390

Treasury Department, Office Supervising Architect,

PROPOSALS.

Washington, D. C., August 5, 1902. Sealed proposals will be received at this office until 2 o'clock P. M. on the 17th day of September, 1902, and then opened, for the installation of a conduit and wiring system for the U. S. Post-office and Court-house building at Abilene, Texas, in accordance with the drawings and specification, copies of which may be obtained at this office or at the office of the Superintendent of Construction at Abilene, Texas, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1390

STEEL WORK. [At Washington, D. C.]
Sealed proposals, endorsed "Proposals for Steel Work and Fireproofing," will be received at the Bureau of Yards and Docks, Navy Department, Washington, until 1 o'clock August 23, 1902, for furnishing the steel work and fireproofing for a storehouse building, navy yard, Washington, D. C. Estimated cost, \$24,400. Plans and specifications can be seen at the Bureau or will be furnished by the commandant of the navy yard named. MORDECAI T. ENDICOTT, chief of bureau. 1390

WATER-PIPE, ETC. [At Washington, D. C.]
Office of the Commissioners, D. C., Washington, D. C., July 30, 1902. Sealed proposals will be received at this office until twelve o'clock, noon, September 6, 1902, for furnishing thirty-inch, thirty-six-inch and forty-eight-inch cast-iron water-pipe and specials. HENRY B. F. MACFARLAND, JOHN BIDDLE, Commissioners, D. C. 1391

MESS-HALL AND KITCHEN, LAUNDRY, STOREHOUSE, ETC. [For the Mountain Branch, N. H. D. V. S.]
OFFICE OF THE NATIONAL HOME FOR DISABLED VOLUNTEER SOLDIERS,
Rooms 932-4 New York Life Building, 346 Broadway, New York City, August 1st, 1902.

Sealed proposals will be received at this office until 12 M. Tuesday, the 2d day of September, 1902, for furnishing materials, labor, etc., for the construction of mess-hall and kitchen, laundry, storehouse, hospital morgue, and for steam and electric lighting connections from the power-house to these buildings and others now under construction at the Mountain Branch of the National Home for D. V. S., near Johnson City, Tenn. Also for a complete system of water distribution and sewerage for this Branch Home. Plans and specifications can be seen at this office, at the office of the architect, J. H. Freedlander, 244 Fifth Ave., New York City, or at the office of the Superintendent of Construction, at the site of the work. Necessary information can also be obtained and blank

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PROPOSALS.

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Managers, N. H. D. V. S. 1389

ADDITION.

[At Columbus, O.]
Bids are wanted August 13 for erecting an addi-
tion to the Chemical Building of the Ohio State Uni-
versity. ALEXIS COPE, Sec'y Bd. of Trus. 1389

STOREHOUSE.

[At Fort Howard, Md.]
Bids are wanted August 18 for furnishing material
and constructing a brick quartermaster and sub-
sist.

PROPOSALS.

ence storehouse at Fort Howard. SAM'L V. HAM,
Capt. and Q. M. Baltimore. 1389

IRONWORK.

[At Wheeling, W. Va.]
Bids are wanted August 19 for furnishing iron-
work for lock gates for lock No. 6, Kanawha River.
CAPT. W. E. CRAIGHILL, Corps of Engrs., U. S. A. 1389

HIGH SCHOOL.

[At Charleston, W. Va.]
Local press reports state that bids for erecting a
high school have been rejected, the lowest received
being \$42,162, and that new plans will be procured
and bids again asked, the cost not to exceed the
appropriation, \$30,000. 1389

PROPOSALS.

SHOP.

[At Fort Slocum, N. Y.]
Bids are wanted August 15 for erecting a brick
shop at Fort Slocum. Address 1ST LIEUT. EDW. T.
DONNELLY, Artillery Corps, Q. M. 1389

LIBRARY.

[At New Brunswick, N. J.]
Bids are wanted August 18 for the erection of a
\$50,000 Carnegie Library. G. K. Parsell, of New
Brunswick, architect. 1389

ARMORY.

[At Buffalo, N. Y.]
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structural metal work, carpenter work, sheet metal
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PROPOSALS.

system in connection with the erection of an armory for the 65th Regiment, N. G. N. Y., Buffalo, N. Y., will be received until August 12 at the headquarters of the national guard, room 161, 280 Broadway, New York City. JAMES MCLEER, brigadier general commanding, *et al.*, armory commissioners. 1389

Treasury Department, Office of the Supervising Architect, Washington, D. C., July 25, 1902. Sealed proposals will be received at this office until 2 o'clock P. M. on the 25th day of August, 1902, and then opened, for the construction (including heating apparatus, electric wiring and conduits) of an extension of the U. S. Post-office and Custom-house at Frenchman's Bay (Ellsworth), Maine, in accordance with drawings and specification, copies of which may be had at this office, or the office of the Custodian, Ellsworth, Maine, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1389

Treasury Department, Office of the Supervising Architect, Washington, D. C., July 26, 1902. Sealed proposals will be received at this office until 2 o'clock P. M. on the 4th day of September, 1902, and then opened, for the construction (except heating apparatus, electric wiring and conduits), of the U. S. Post-

PROPOSALS.

office at Lockport, New York, in accordance with the drawings and specification, copies of which may be had at this office or the office of the Postmaster at Lockport, New York, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1389

Treasury Department, Office of the Supervising Architect, Washington, D. C., July 29, 1902. Sealed proposals will be received at this office until 2 o'clock P. M. on the 28th day of August, 1902, and then opened, for safety vaults and work incidental thereto, in the Bureau of Engraving and Printing, U. S. Treasury Department, Washington, D. C., in accordance with drawings and specifications, copies of which may be had on application to this office, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1389

SEWERAGE CONSTRUCTION.

[At New Britain, Conn.]
Sealed proposals will be received until August 18, 1902, for the construction of Section 1 of the New Britain proposed disposal system, and includes building 31 filter beds complete, requiring the removal or handling of approximately 130,000 cubic yards of materials, the laying of about 7 miles of underdrain

PROPOSALS.

one mile of 24" main trunk feed sewer, 95 cubic yards of Rubble mason work, 2 screen chambers complete, 1 mile of effluent ditches, 1,000 cubic yards of screened gravel for driveways, 4,500 square yards of turfing, 19 manholes, together with many other parts and details as set forth in the specifications for this work. The above will be let in one contract. The City has bought or will furnish the materials entering into the construction of the work as set forth in the specifications. Plans, specifications and blank form of proposals may be obtained at the office of William H. Cadwell, engineer, 213 Main St., New Britain, Conn., after July 25, 1902. Address communications to W. H. CADWELL, 213 Main St., New Britain, Conn. 1389

BUILDING.

[At Philadelphia, Pa.]
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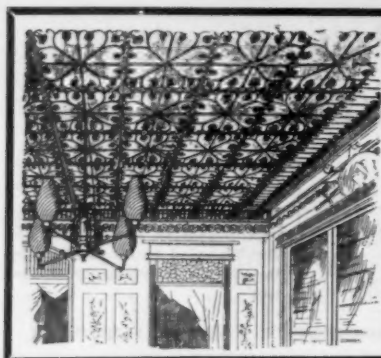
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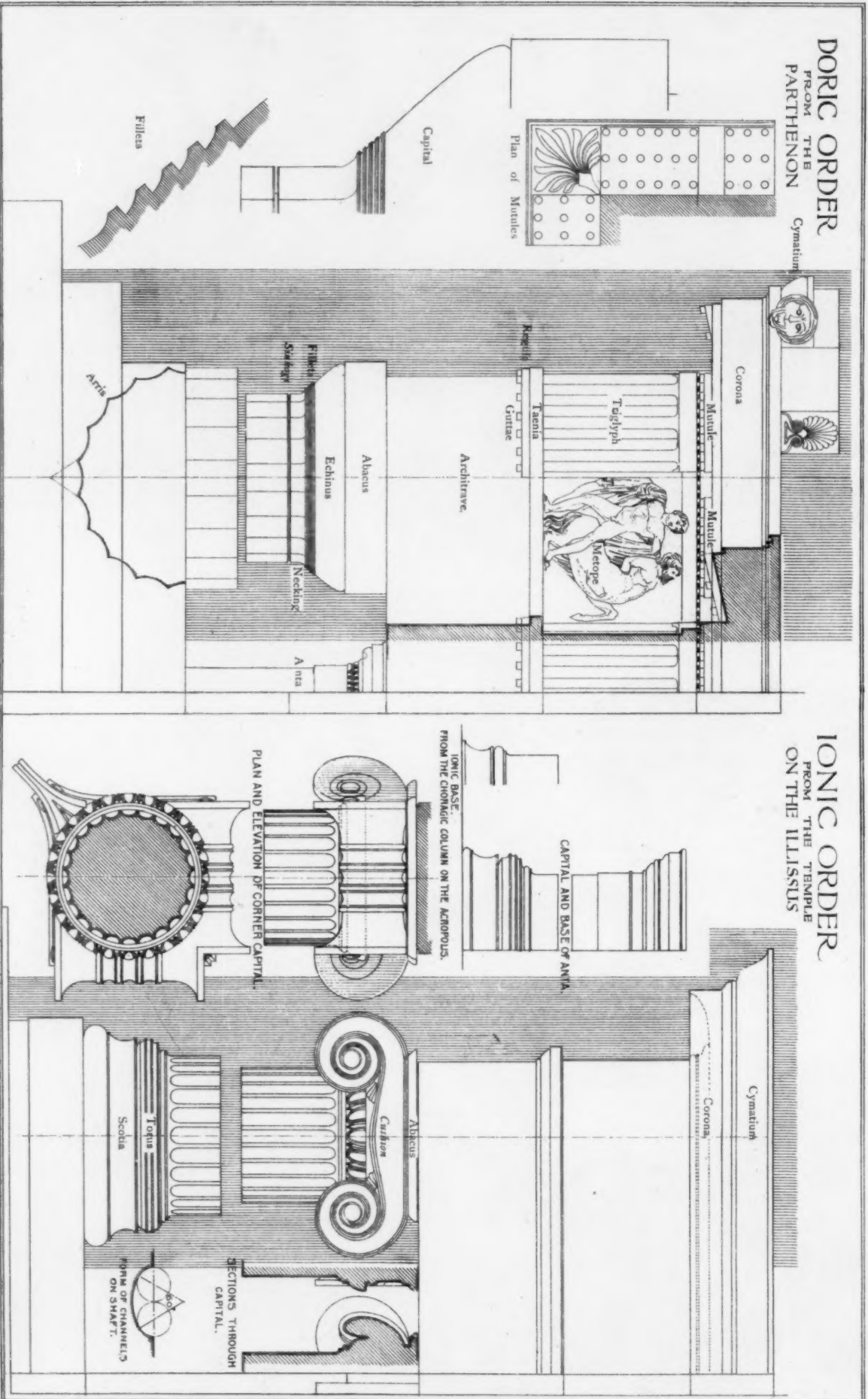
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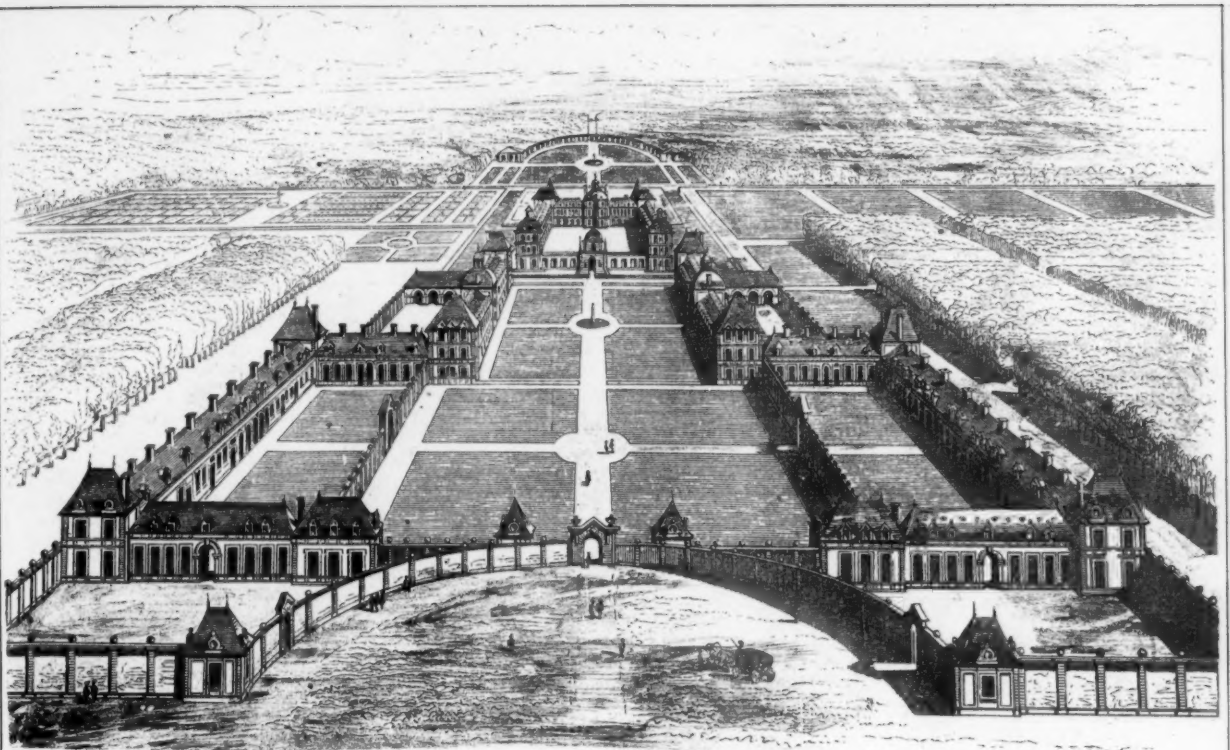
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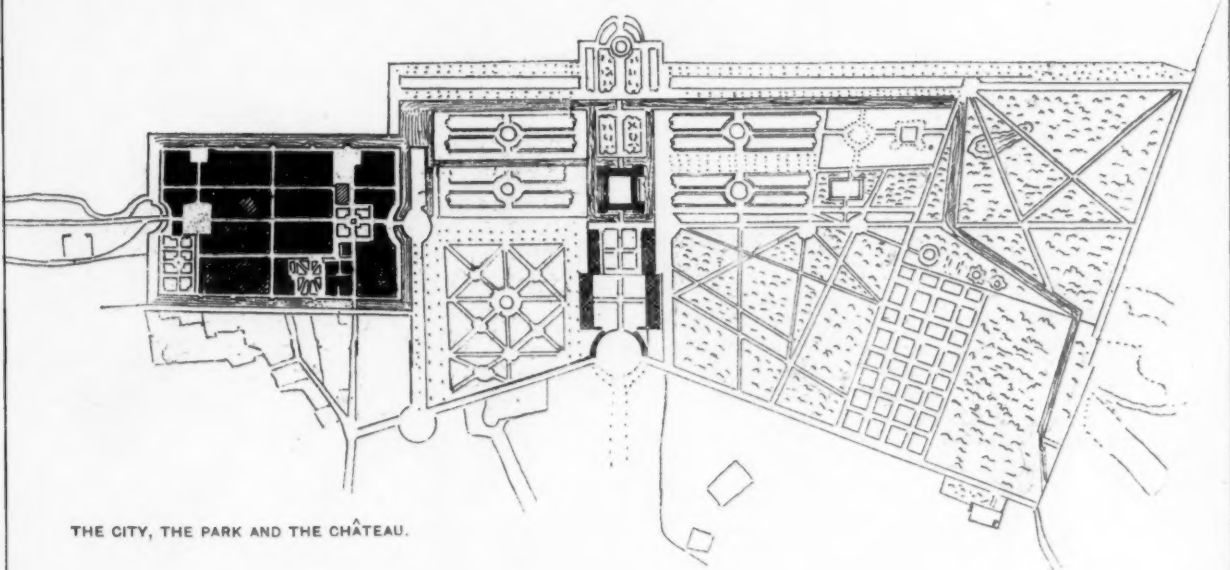
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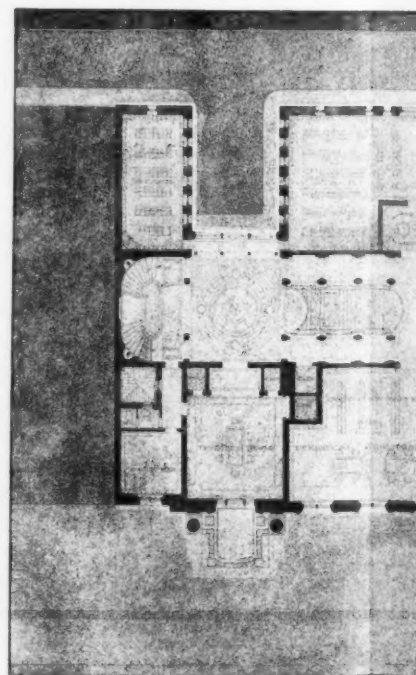
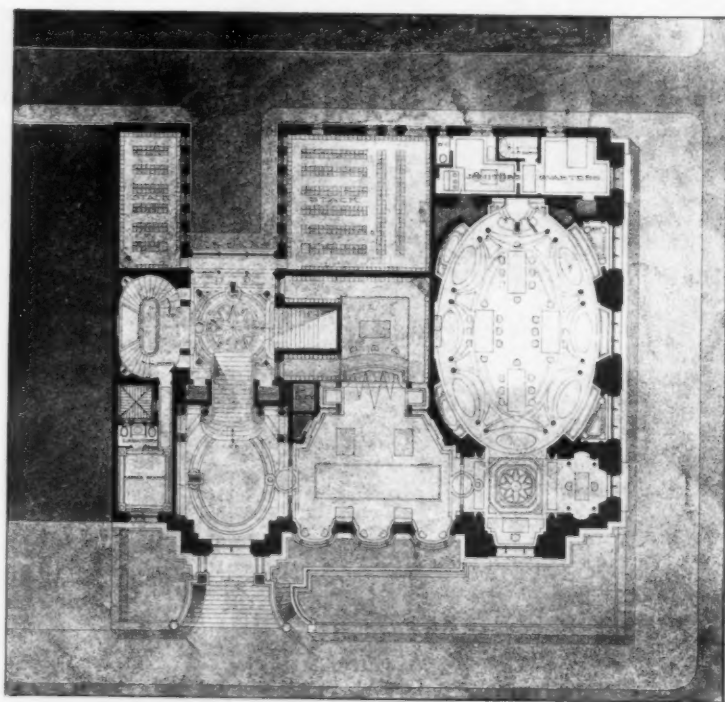
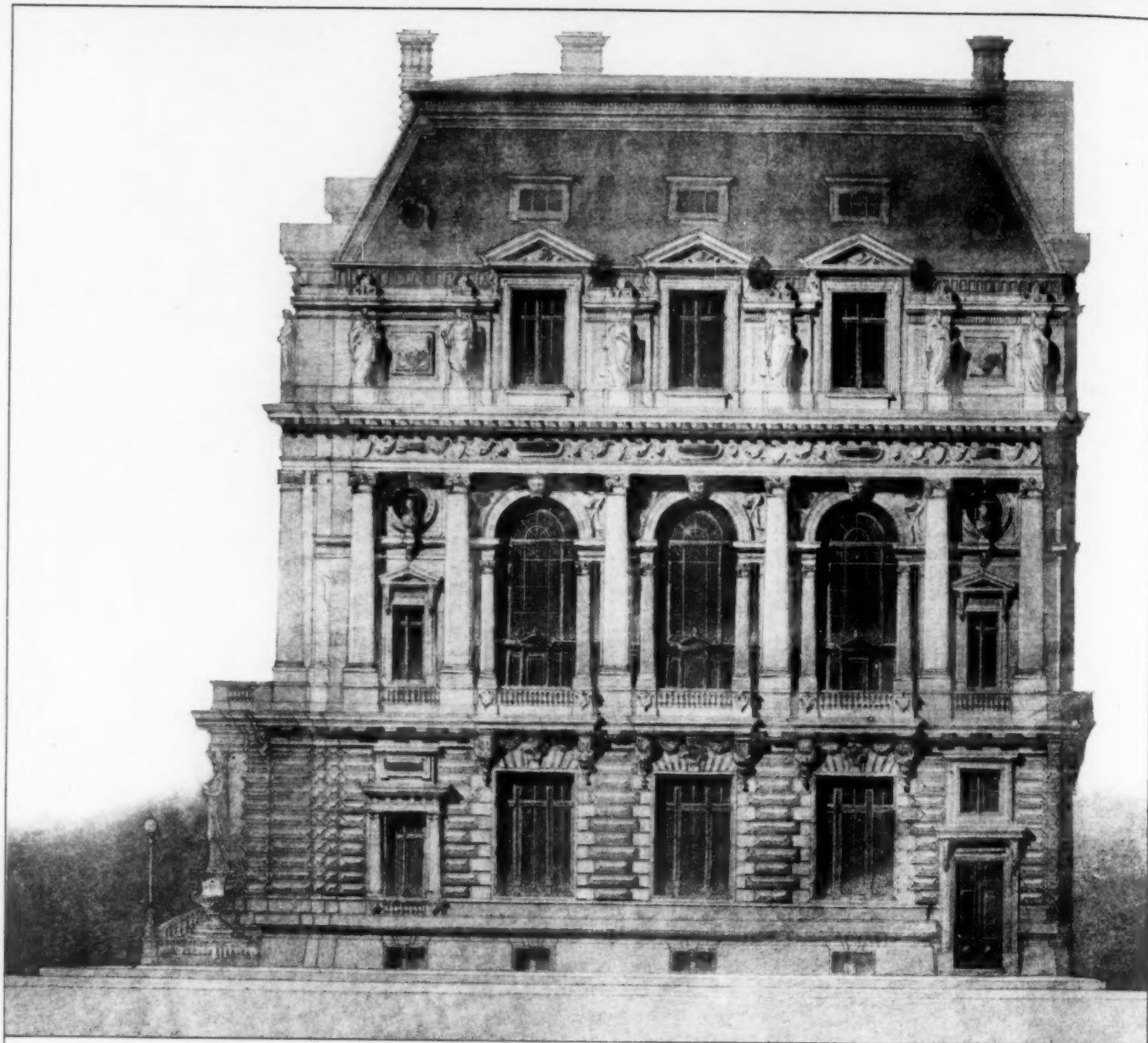
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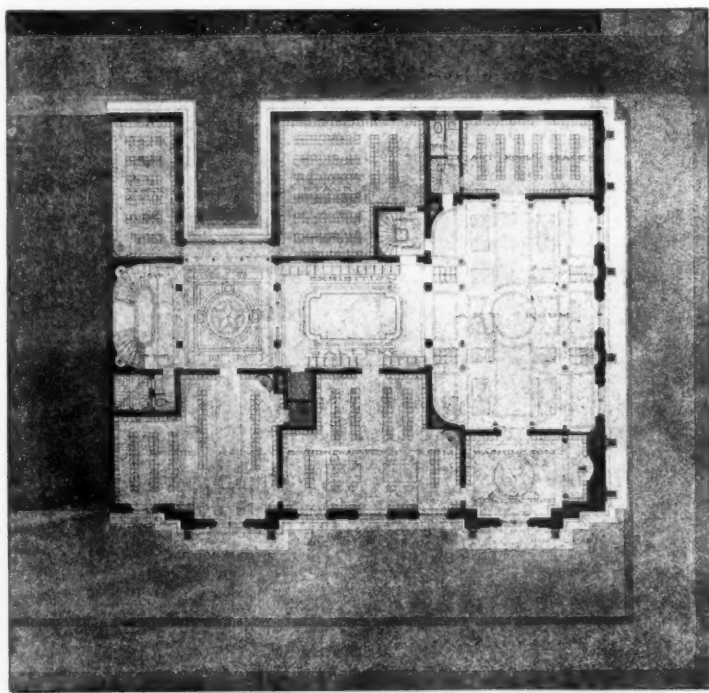
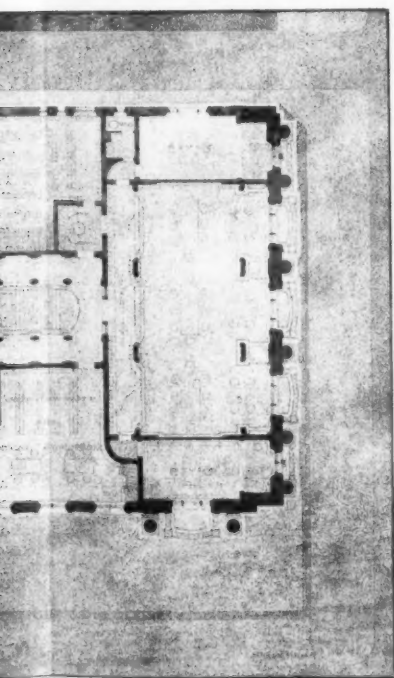
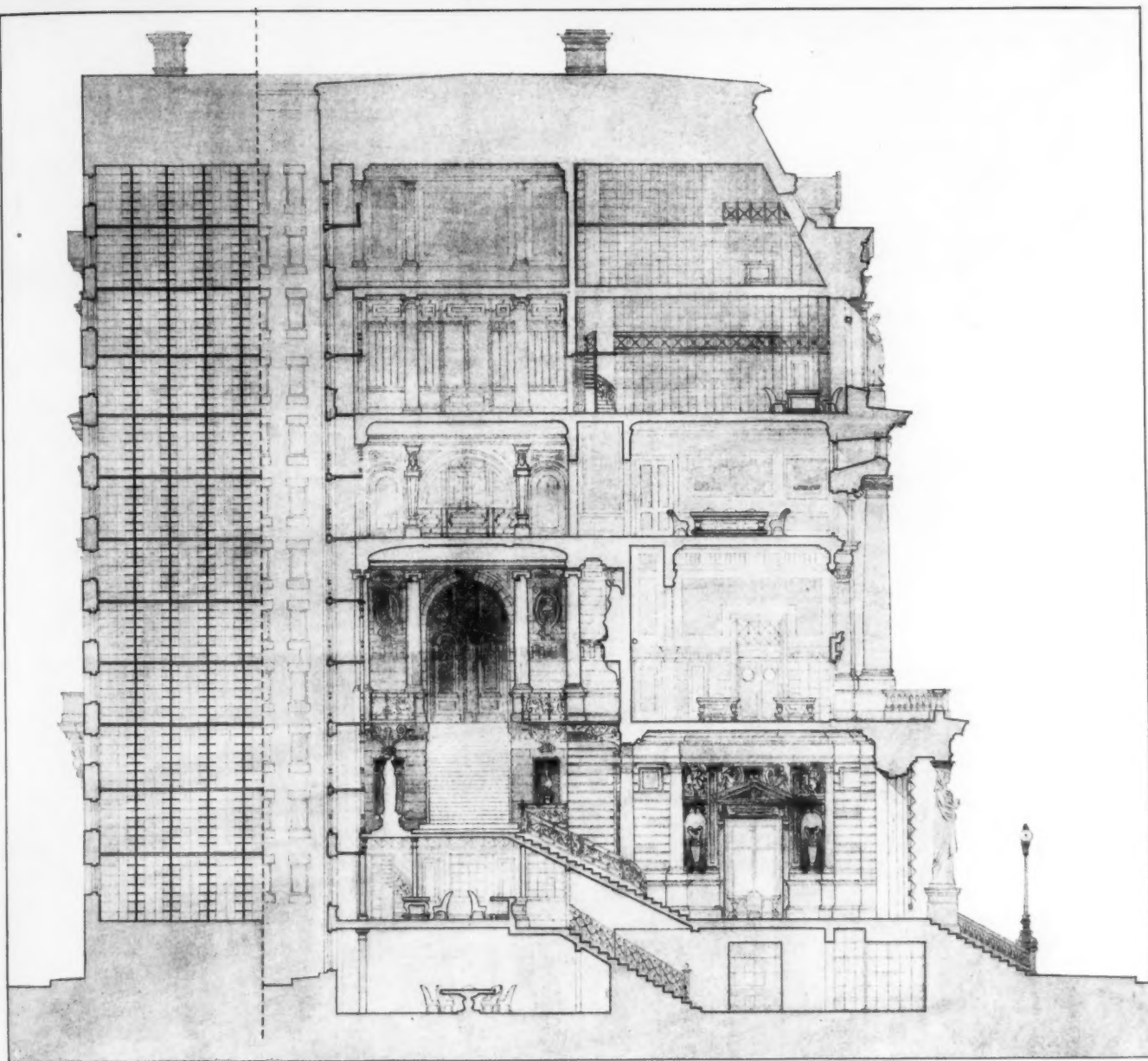
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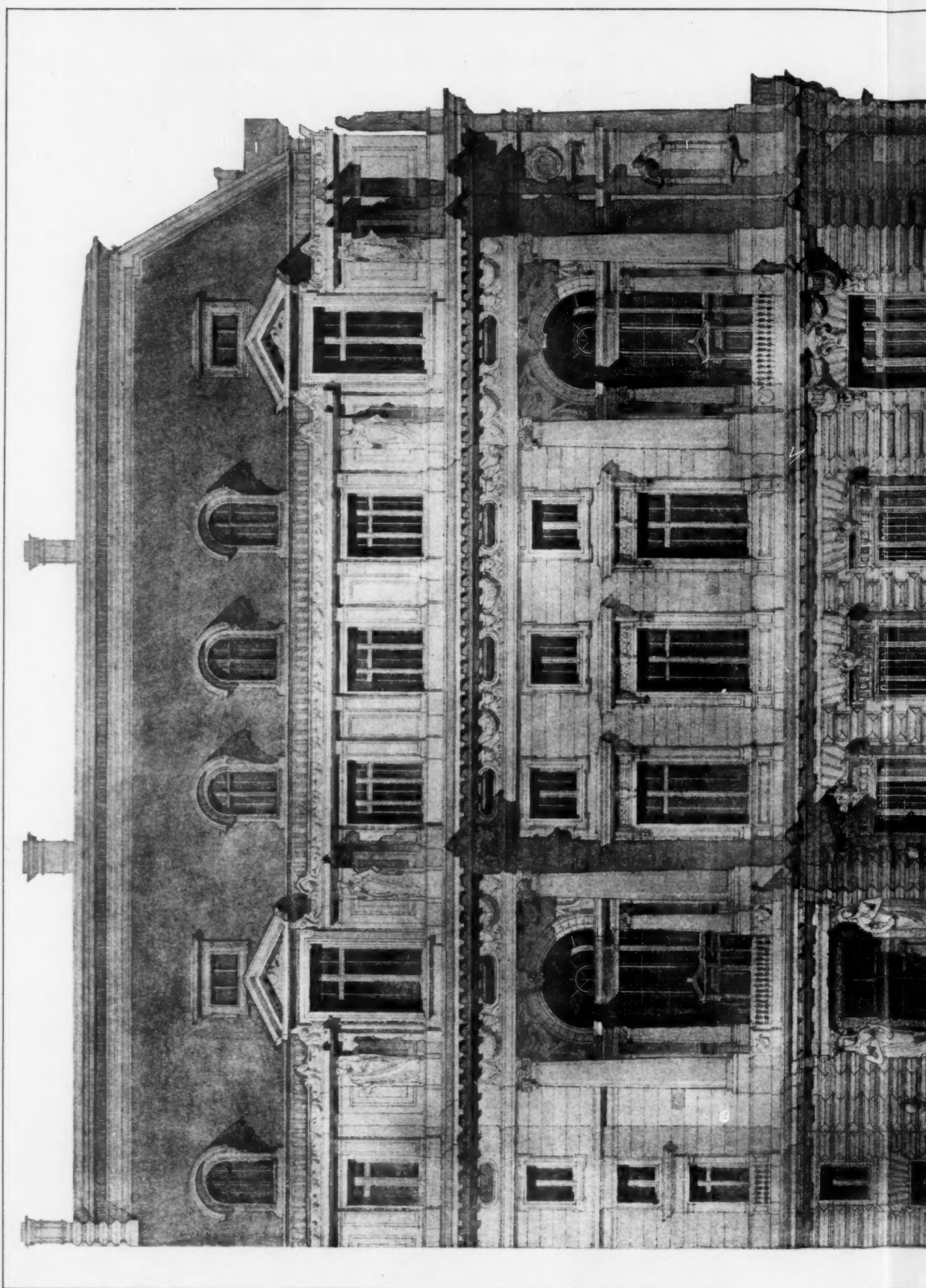
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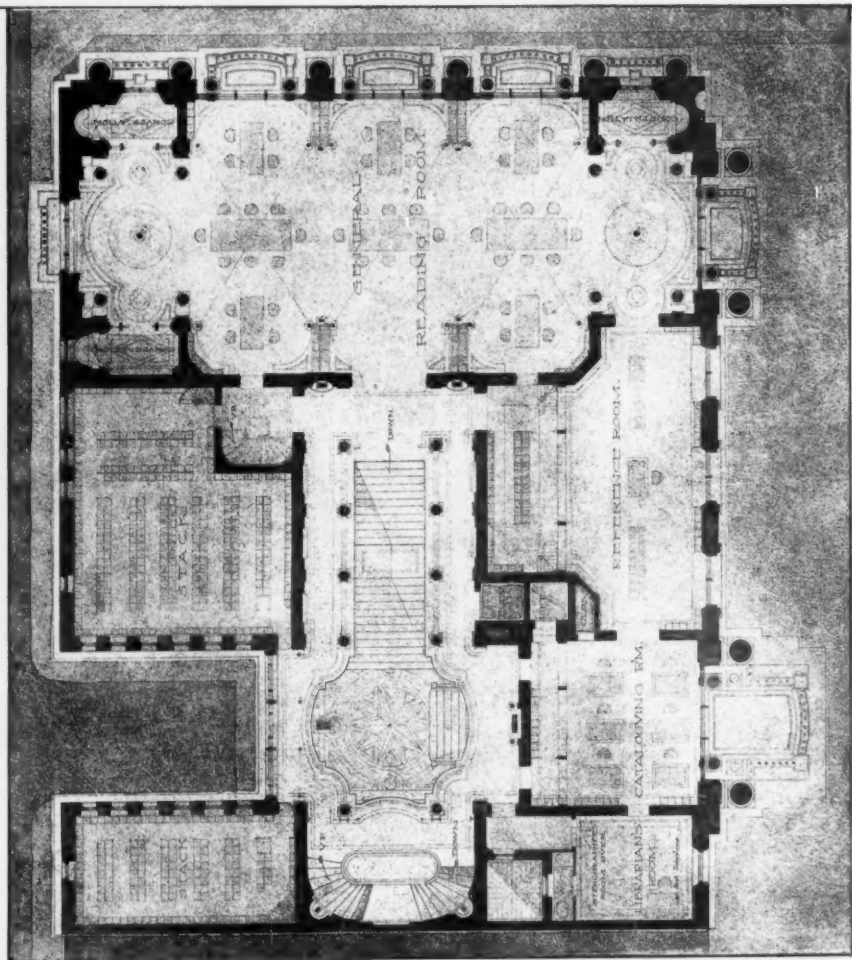
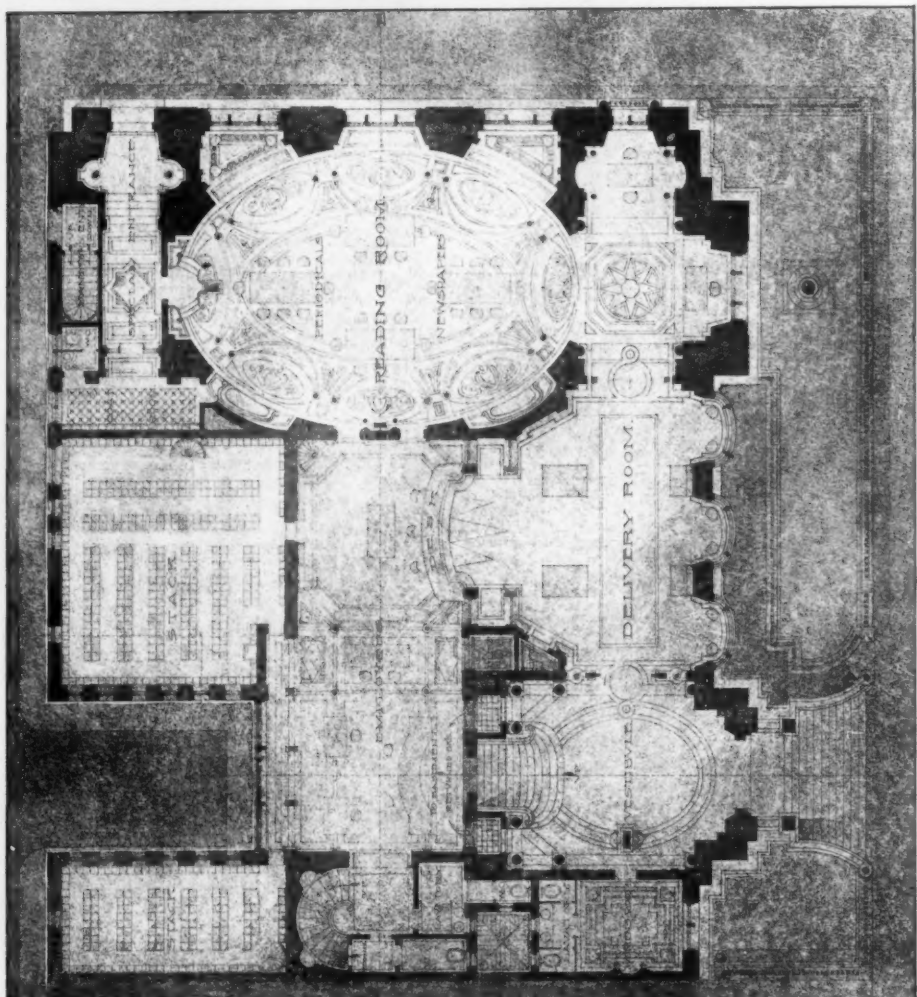
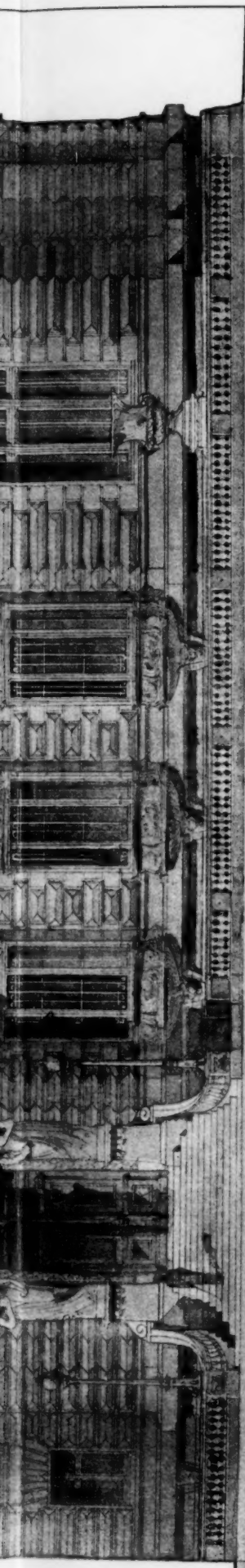


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