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SEVERAL newspapers call attention to the danger that the excitement and hurry of war may be utilized by speculators to get vicious legislation through Congress, disguised under some form which will render it acceptable to people who have not time to study it thoroughly. One of the schemes which has the strongest money backing is that for the virtual repeal of the forest-reservation laws. As the inhabitants of the little mountain States at the head waters of our principal rivers have an influence in the Senate many times as great as those of the populous communities lower down the stream, it is not surprising that they have had, in that branch of Congress, an advantage which has once or twice nearly led to the sacrifice of enormous national interests for the benefit of a few great lumber speculators, mining prospectors, and sheep-herders, who utilize the natural desire of settlers to cut wood in the public forests without paying for it to put them in a position to ravage the forests in which the settlers themselves have really a greater interest than any one else. The Lower House, which represents the nation far more closely than the Senate, has hitherto prevented the success of the plots to appropriate the public forests; but the Senate has a way of overriding the popular will by attaching its obnoxious measures to bills of the most obvious necessity and utility, and refusing to allow the necessary and urgent legislation to be carried out except with the addition of its own scheme. At this moment, a Senate amendment, practically abolishing the forest reservations of the United States, has been attached, by vote of the Senate, to the Civil Sundries bill, and is awaiting action by the House. Under our rules, the Senate, if the House should reject the amendment, may refuse indefinitely to pass the bill without it, and delay all the other provisions of a bill of great importance until the House submits; and it is very desirable that those who wish to prevent the carrying-out of the plot should strengthen the hands of the Representatives who are trying to maintain the rights of the people, by public expression of their opinion.

SPANISH matters are so interesting just now that many people will be glad to read the article on "Barcelona" in the current issue of the *Monde Moderne*. Among the illustrations with which the article is furnished is one showing the house of Señor Guell, which is not only a striking object from its size and picturesque design, but is of interest as having been the work of an architect who, some years ago, was welcomed with much satisfaction into the ranks of the profession in the United States. His long and intelligent study of the methods of building which the Latin races have inherited from

the Romans, aided by a sympathetic tact which is by no means generally characteristic of foreign architects sojourning in America, have enabled Mr. Guastavino to exercise a decided and extremely beneficial, influence upon our architecture; and the next generation will certainly assign to him an important place among the leaders who are effecting, in this country, a memorable revolution in the art, of construction.

THE *Engineering News* has some very timely comments upon the practice of hollow-tile fireproofing work, as seen in too many buildings of the present day. As most architects know, the officials of the New York Department of Buildings are very conservative in their views, and prefer terra-cotta fireproofing to concrete construction, although the latter is not by any means excluded from the city. In the thirty-story building now in process of erection on Park Row for what is known as the Ivins Syndicate, the specifications called for the use of either hollow-tile flooring, or concrete construction, on the Roebbling system. The beams were spaced five feet from centres, so that either system could be used, but the architects preferred the concrete construction, partly because by its use a saving would be effected of twenty thousand dollars in the cost of the floors, and partly because it would be much lighter, weighing forty-five hundred tons less than the hollow tile, and saving so much weight on the columns and foundations. Three separate petitions were presented to the Board of Examiners, asking for the approval of the floors with the Roebbling filling, and all three were rejected, the Board refusing to give any reason for its action. At last, the owner procured a mandamus from the Courts, ordering the Superintendent of Buildings to decide whether the concrete floors might be used. In December last he, accordingly, gave his decision, approving the use of the Roebbling construction; but by that time about half the floors had been filled with hollow tile, the owners finding it better to incur the extra expense of using tile, rather than suspend their operations to wait for official action.

AFTER the question had been thus settled, the *Engineering News* thought it worth while to examine the tile floors, as actually laid, and present a description of them, illustrated with photographic plates, to the consideration of its readers; and it gives, accordingly, views of a sort very familiar to architects who have had much to do with fireproof construction, showing the underside of portions of the tile flooring, with skew-backs broken; flange tiles with corners missing, exposing the metal of the beams; keys out of place; spaces filled with loose chips, and so on. It says, fairly enough, that these defects "are chargeable to the use of injured material, and to the manner of handling the material, rather than to the nature of the arch-material itself"; but it thinks, with reason, that the interests of the makers of the material, as well as those of the owners of buildings, and the public generally, require better workmanship in the use of it than is now common. Theoretically, the hollow-tile floor construction, as now used in this country, is nearly perfect; but, in practice, the ingenious precautions of the tile-manufacturers for protecting the metal, and securing the strength of the floor-arches, are almost nullified by the careless and ignorant way in which the material is used. Most of our professional readers can testify that the illustrations in the *Engineering News* show workmanship which is far from being exceptionally bad; in fact, we have seen much worse floors, which the persons most concerned did not appear to regard as objectionable, and have walked over tile-arches which shook so under our feet that, considering the consequences of their possible collapse, we considered it most judicious to use the upper flanges of the beams as a path for our subsequent peregrinations. It is easy to find an explanation for these discrepancies between the theory and the reality of hollow-tile construction. In the first place, the tiles seldom fit precisely the spacing of the beams, the latter being necessarily more or less irregular, and must be cut to get them in, and the cutting of a piece of terra-cotta of cellular construction can hardly be effected, particularly if the material is thoroughly burned, without breaking it into shapeless pieces. It is true that the "end-construction" arching now popular offers advantages in cutting, but, even with this, the difficulty is far from being eliminated. Again, where beams, as is often necessary,

consequence, smaller by considerable than it need have been, and many men of merit, judging from the published plans, have made the same kind of a gift to the Library as a man makes to a lottery when he buys a ticket. The amount of this gift is, to say the least, equal to the difference between what the competitor would have charged a client according to a proper schedule and what he would have received if he had won the prize. It was simple gambling on the part of the architects, judging from the current reports that a young man of small professional experience was one of the advisory committee, if not the most and only trusted "expert" engaged to pass on these plans, but we hope this is not a fact.

The Library Trustees got more work than they could afford to pay for adequately, and yet it was of no use whatever to them, compared with professional service of the best sort privately sought. This they could have obtained from a man or firm of acknowledged ability — who would have charged at Institute rates for preliminary sketches which they could have rejected at small loss, but would probably have accepted, and with the feeling that, practically and otherwise, the work was safe in such hands.

It is to the credit of the architects who got the work that they are said to have refused to enter the competition, and we are heartily glad that some architects have by staying out of the scramble been able to pick up the fragments thereof as a partial reward — for their forbearance.

Very truly yours, "VAIN REGRETS."

NOTES AND CLIPPINGS

THE PARIS SEWAGE FARM. — A recent issue of the *Revue Pratique des Travaux publics* gives some particulars of the large sewage-farm which has been laid out at Achères for purifying the Paris sewage before allowing it to pass into the Seine. The inhabitants of Paris number 2,500,000, and the total flow of sewage is stated to average 17,660,000 cubic feet per diem. This is collected in great intercepting sewers, which convey it by gravitation down to Clichy, where it is raised 118 feet by powerful pumps and distributed by gravitation through the farm. The pumping-engines at present installed are capable of indicating 1,200 horse-power in the aggregate, but future additions will raise this to 6,000. It is stated that experience shows that 1 acre of suitable soil can take 1,580 cubic feet of sewage daily, so that an area of about 11,120 acres would be needed to deal with the whole of the discharge of the Paris sewers. A very high degree of purification is reached, the effluent proving to contain fewer bacteria per cubic centimetre than most uncontaminated streams. The land also has been greatly increased in value, being now worth five times as much as it was before being made a receptacle for the sewage. As a natural consequence, neighboring land-owners, who originally had fiercely opposed the establishment of a sewage-farm in their midst, are now demanding to have the sewage supplied to their own properties. The farm at Achères is 2,471 acres in extent, and is under the control of M. Bona, a civil engineer, who in the main raises beet root, though this crop will admit of much less sewage being passed on to the land than certain others. The main conveying the sewage from the pumping-station is 43.2 inches in diameter, whilst a secondary system of pipes, ranging from 31 inches to 16 inches in diameter, serves as feeders to the irrigation trenches, into which the sewage passes through 11 1-2 inch valves. The ground is laid out and the irrigating trenches are so arranged that the only service needed in regulating the flow is the opening or closing of the regulating valves just mentioned. The crop which can stand the most sewage is grass, a meadow being, it is stated, uninjured by a flow of 2,430,000 cubic feet per acre per year; lucerne can take 1,790,000 cubic feet per annum; artichokes, 593,000 cubic feet per annum; flowers, parsley, sorrel, etc., 536,000 cubic feet, leeks, cabbages, and celery, 325,000 cubic feet per annum; whilst beet roots, carrots, and beans will take only 197,000, and potatoes, asparagus, and peas but 141,000 cubic feet per acre per year. — *Engineering*.

THE STATUES IN THE TOWER OF THE PHILADELPHIA PUBLIC BUILDINGS. — The bronze base-plate supporting the statue rests directly upon the cover-plate of the apex-cap; it is 9 feet in diameter and 6 3-8 inches high, cast in halves, and formed of radial and annular ribs, 1 inch thick, cast on the upper plate, which is 1 1-4 inches thick; the halves are bolted together through two ribs that form the joint, and the whole is bolted to the apex-cap by eight 1 1-2 inch square steel eye-bolts with 2 1-4 inch-diameter nuts; these eye-bolts are held by the steel pins in the brackets of the apex-cap and placed in a circle. Two of these bolts enter the feet of the statue. Besides the eye-bolts, each foot is bolted to the base-plate by four 2-inch-diameter bolts, two of steel and two of bronze. The tree-stump, forming a part of the statue, is bolted to the base-plate by thirty-six 1-inch-diameter bronze bolts, while the parts that form the figure are bolted together through flanges, as also to the stump, thus forming one united mass — the connection between stump and figure being at the left hand, skirt of coat, and thigh of body to the upper portion of the stump with bolts. The thickness of the metal of statue varies from 1-4 of an inch in upper parts to 3-4 of an inch at the ankles and 1 1-4 inches for the soles of the feet. The stump averages 3-8 of an inch in thickness, and all flanges for joining the parts were 5-8 of an inch thick and about 3 inches wide. The base-plate is provided with two manholes — one to the outside and the other to the interior of the stump. These are furnished with watertight man-hole covers. Another manhole is in the crown of Penn's hat, the cover-plate of which is glazed to light the interior of the figure. No internal braces were found necessary in any of the statues. The four groups of 24-feet-high statues at the base of the pyramid (a Swedish

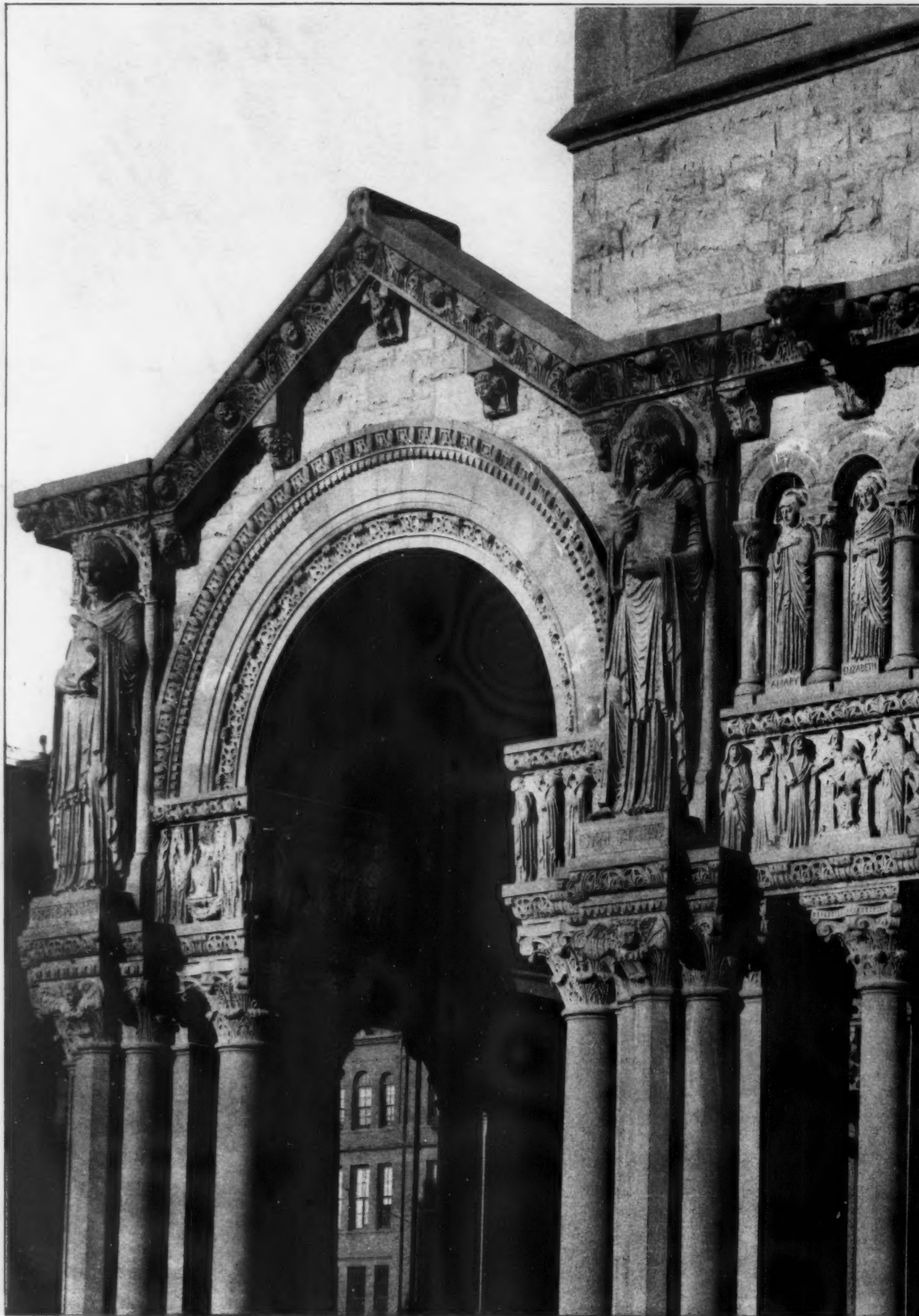
man and boy, a Swedish woman, girl and lamb, an Indian chief and dog, and an Indian woman and boy) are supported on cast-iron base-plates bolted to the upper members of the framework below. The plates are covered by 3-8-inch thick bronze plate, upon which the statues rest, being bolted to the cast iron base plate through the feet and other available members of the statues. The alloys composing the statues were: For William Penn and the Indian chief, 90 parts copper, 10 of tin. All other statues were 88 parts copper, 20 of tin, and 2 of zinc. — *Francis Schumann*.

CENTENARY OF THE METRIC SYSTEM. — The Brussels *Mouvement Géographique* has an article on the centenary of the invention of the metric system, which occurs next year on June 22d. The first twelve countries to adopt the system were France, Belgium, Holland, Greece, Sardinia, Chili, Spain, Italy, Switzerland, Denmark, Sweden, and Ecuador.

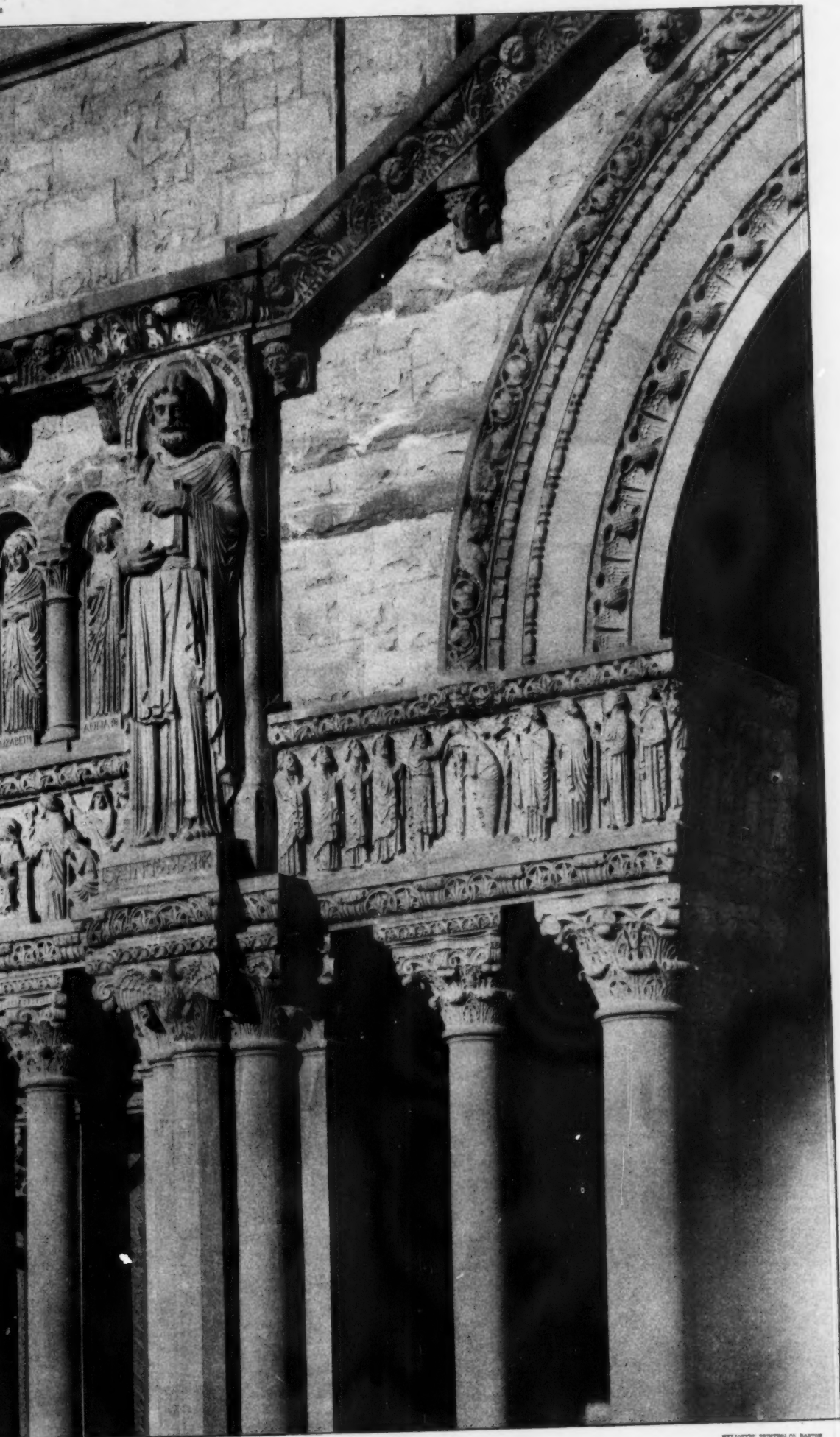
CHEAP STATUES FOR BEVERLEY MINSTER. — The Suffragan Bishop of Beverley writes an amusing letter in the *Times* recently, recounting the good feeling of the inhabitants of Beverley, Mass., in subscribing the price of two of the modern-mediaeval statues which are being affixed to Beverley Minster. The sum, it appears, for which two statues are produced is 35*l*. Whether vacant niches in a mediaeval building should be provided with modern statues is an open question; it depends to some extent on circumstances; but there can be no doubt that if it is done, the statues should be the work of the best sculptor's art of the day, only assimilated in line and general style into a certain harmony with the mediaeval architecture. But we should like to know what kind of statues are being put up on Beverley Minster at 35*l*. a pair. The price tells a tale. They must be executed and charged, we should imagine, as mason's work; or perhaps they are made by machinery. At all events, it is impossible that the hand of an artist can be in them — unless the artist is being drastically plundered. — *The Builder*.

THE ATMOSPHERE OF LONDON. — Only by degrees are the marvellous qualities of our London atmosphere becoming known. No city in the world can boast such a peculiar aerial composition as that which the inhabitants of the metropolis have served to them daily and nightly, without money and without price — for neither the Government, County Council, nor Vestries have yet attempted to tax the highly nutritive air which we breathe. Most people think that our atmosphere consists of practically nothing. Quite a mistake. It is both meat and drink. A paper contributed to the "Transactions" of the British Institute of Preventive Medicine states that even in a suburb the dust particles number 20,000 per cubic centimetre in the open air, and 44,000 in a quiet room; while in the city — *O fortunatos nimium!* — the totals per cubic centimetre were 500,000 when taken from a roof, 300,000 in a court, and about 400,000 in a room. In other words, the air of the square mile is 900 per cent thicker than in the suburbs, which is in accord with the general experience that fogs are both more dense and more frequent over the centre than in the outskirts. But what is especially interesting is to learn that although dust is the great carrier of micro-organisms, there is only one of these articles per 38,000,000 atoms of dust. Thus it is calculated a man could live in the metropolis for seventy years and only absorb 25,000,000 microbes into his system from the air, or about the same number as he drinks in half a pint of unboiled milk. Of course, there are other serious objections to dust; but it is something to know that there is only one microbe to many millions of notes. — *London Telegraph*.

THE CATHEDRAL OF TOULOUSE. — This strange church consists of an early nave, to one angle of which was added in the fourteenth century an enormous choir with aisles and chapels overtopping by far the older church, and built evidently with the intention of some day adding a nave in place of that which still, fortunately, stands, not because the whole work is now harmonious, for it is very much the reverse, but because this old nave happens to be a work of extreme value and interest. It is a simple parallelogram, no less than 63 feet wide in the clear, and consists of three bays, each 45 feet from east to west. There is no evidence of the exact original extent eastward, but doubtless one or two bays were destroyed for the erection of the choir. This nave is said to have been built by Raimond VI while he was besieged by Simon de Montfort, in Toulouse, and with this date the character of the work fairly accords. The side walls are low and perfectly plain, and the enormous (and almost unequalled) span is covered with a simple quadripartite vault of brick. Here both the filling-in of the vaults, and the ribs which carry them, are all of brick, the ribs plain and square in section and the whole impressive rather for its extreme simplicity and fine scale than for aught else. Yet it would be wrong to deny the architect all credit for refinement, for at the west end there are some windows set within a bold arcading in the wall, and this arcading is carried on shafts whose capitals are carved so delicately and beautifully as to make a real sunshine in a shady place. The vault is very domical in its transverse section, and the several bays are divided by bold coupled shafts with sculptured capitals, which carry transverse arches (or ribs) no less than 3 feet 6 inches in width. Such a work as this is not only valuable to us as showing a very grand example of one of the broad unbroken naves so often seen in the southwest of France and in Spain, but still more as showing that it may be successfully executed in brick without any exaggerated — indeed almost without any — adornment, and yet with very grand effect. There is something so impressive in the vast dimensions of this nave that much elaborate ornament would be altogether out of place, and the refinement of the sculpture amply answers the purpose of showing that the artist had the power, where he had the will, of introducing delicate ornament with success. — *The Architect*.



DETAIL OF THE GALILEE PORCH: TRINITY CHURCH
SHEPLEY, RUTAN & COOLIDGE, ARCHITECTS



TRINITY CHURCH, BOSTON, MASS.
LIDGE, ARCHITECTS.

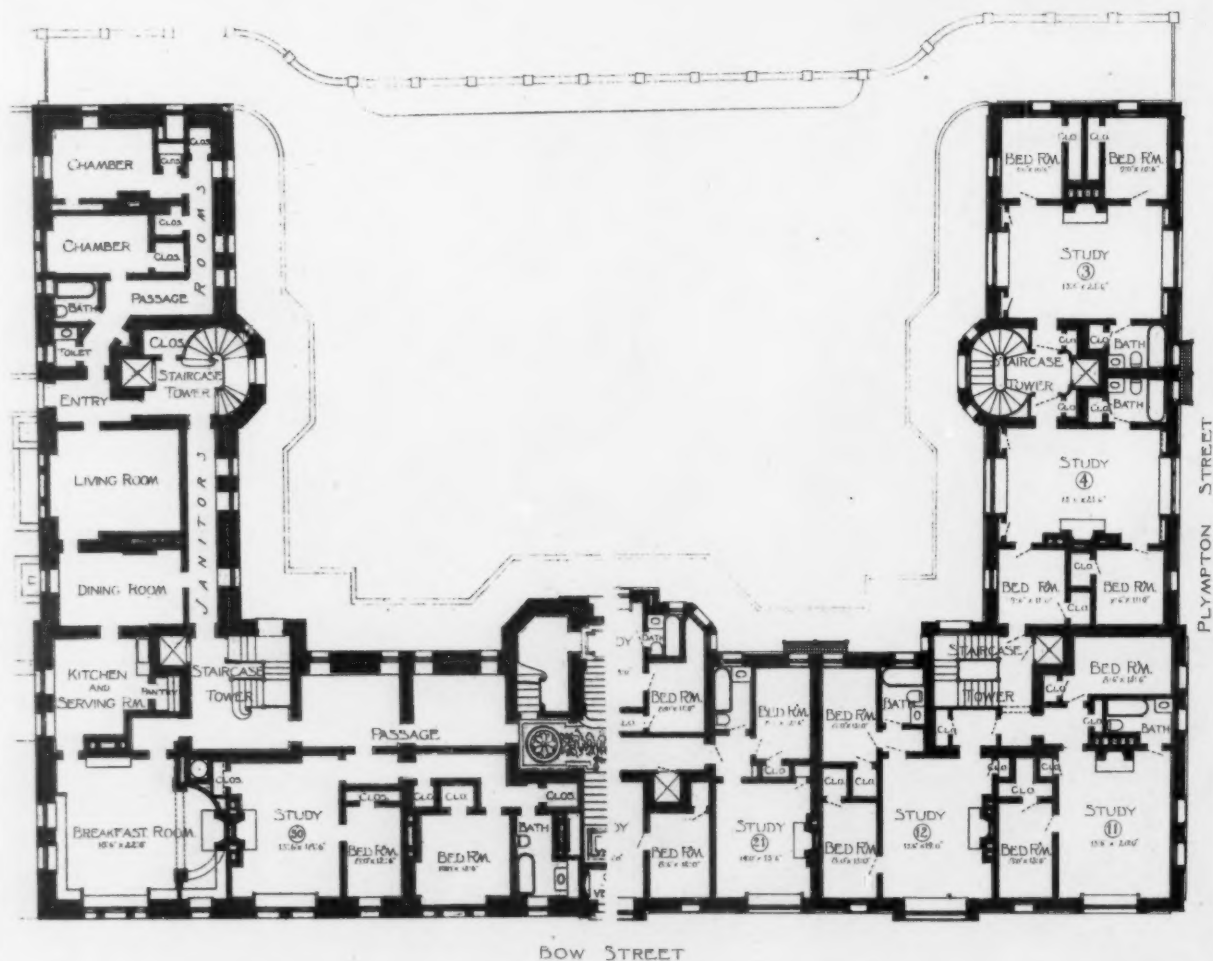
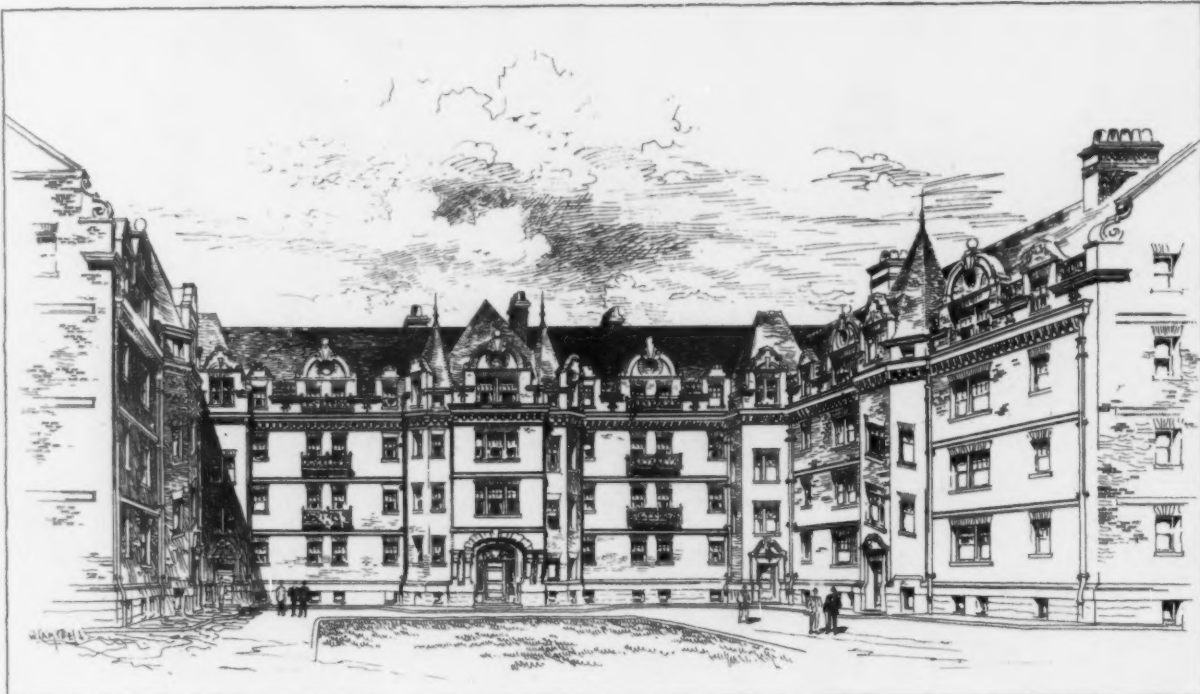
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GROUND FLOOR PLAN

SECOND FLOOR PLAN

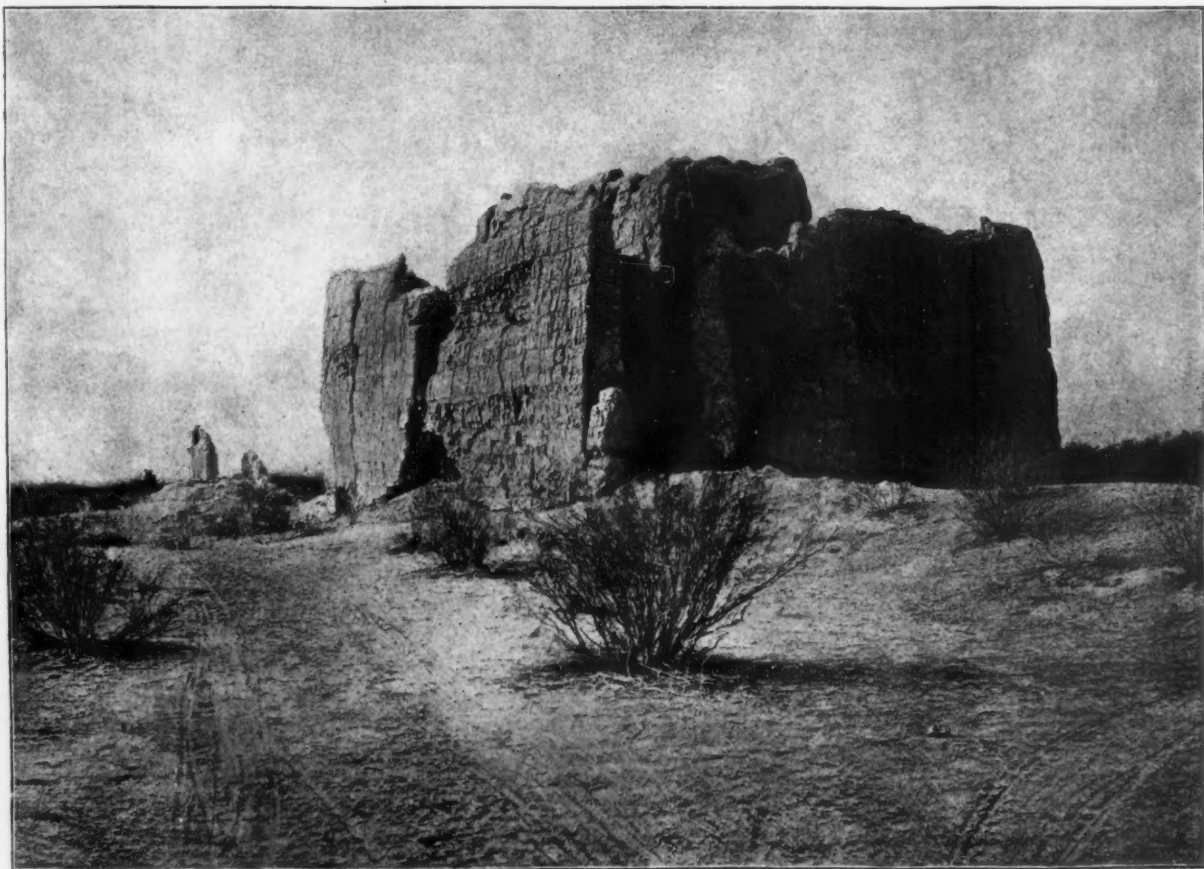
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VIEW FROM THE SOUTHEAST BEFORE THE COMPLETION OF THE WORK



GENERAL VIEW OF CASA GRANDE RUIN