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## CONTENTS.

### SUMMARY:—

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| General SooySmith on the Life of Steel-framed Buildings.—<br>The late Boston Strike.—Owners of High Buildings pro-<br>tecting their Rights of Air and Light.—Retirement of Gen-<br>eral Loring, Director of the Boston Museum of Fine-Arts.<br>—The Applicability of Automatic Sprinklers to Hotels and<br>Houses.—The Horgan & Slattery Contracts. . . . .                                                                                                                                                                                                                               | 89 |
| DOMESTIC ARCHITECTURE IN ENGLAND DURING THE MIDDLE<br>AGES.—VI. . . . .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 91 |
| THE BOSTON STRIKE. . . . .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 94 |
| BOOKS AND PAPERS. . . . .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 94 |
| ILLUSTRATIONS:—<br>The United States Post-office, Creston, Ia.—Details of Portico<br>of the same Building.—Hatfield House, England.—The<br>Tower of London.<br>House in the Rue Octave Feuillet, Paris, France.<br>Additional: Smithell's old Hall and Chapel, Lancashire, Eng.<br>—House of Herr Glade, Wilmersdorf, near Berlin, Prussia.—<br>The City Museum, Altona, Prussia.—Central Pavilion of<br>the same Building.—House of Thomas Nelson Page, Esq.,<br>Washington, D. C.—House of Paul L. Ford, Esq., No. 37<br>East 77th St., New York, N. Y.—Entrance to same House. . . . . | 95 |
| NOTES AND CLIPPINGS. . . . .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 95 |

THE newspapers have commented very generally, although not, in some cases, very intelligently, on General Sooy-Smith's address, delivered a few days ago before the Chicago Real Estate Association, in which he warned his hearers that many of the great steel-framed buildings, for which Chicago has long been famous, had only a few years of existence before them. Architects generally have long known General Sooy-Smith's opinions in regard to steel-framed buildings, and accumulating experience has confirmed their correctness; but the warnings, given fifteen years ago, that an improperly constructed steel-frame building would not last more than twenty years, seem much more serious on repetition now, when, if they are well founded, many millions of dollars' worth of property, and, perhaps, many lives, hang by a thread, which may break at any moment, and is sure to break within a very few years. General Sooy-Smith drew, as he has always done, a sharp distinction between a steel-frame building properly constructed, in which every piece of metal in the main supports is thoroughly embedded in cement, in contact with it, and those in which the metal is surrounded with stone, or brickwork, built up against it, but in such a way as to leave crevices, through which air can circulate. Buildings of the first sort, he said, were good for two thousand years, while, in those of the other kind, unfortunately much more numerous, the metal corrodes with great rapidity under the influence of the moist air in the crevices, and corrosion of one-fifth the substance of the metal of a supporting member at any given point would, in general, cause its failure.

WE do not know what authority General Sooy-Smith finds for his opinion that iron, even thoroughly embedded in cement, will last for two thousand years in this climate; and, as we have often said, actual investigation on these points is urgently needed; but the fact that neglected iron, exposed to damp air, rusts very rapidly, is well known. In the case of iron bridges, and other structures, the metal of which is visible, and can be cleaned and repainted as soon as it shows signs of rust, engineers usually reckon on an average life of only forty years, yet the air around these is almost always dry, and it is only in clear nights, when the dew gathers on them, and during rains or fogs, that they rust; while the steelwork in a building is not only covered up, out of reach of the scraping and repainting on which the preservation of a railroad bridge depends, but it is sheltered from the drying influence of the wind, at the same time that the air around it is kept saturated with moisture by evaporation from the enclosing masonry, which is always damp, even the driest winds only removing superficially the water which all brick and stonework absorbs from rain. Moreover, in railway bridges, it is now usual to arrange the structure so as to avoid sudden collapse, by distributing strains, so that one or two overworked members may even given way, without involving the destruction of the whole, as in the recent case of the Brooklyn Bridge; but in buildings this is difficult, as the necessity for large windows in the lower stories makes it imperative to con-

centrate the supports there, and the failure of a single first-story column would generally involve the destruction of any of our large steel-frame buildings. Unfortunately, the first-story supports are more unfavorably placed, in regard to danger from corrosion, than any other part of the structure, for the water that is absorbed by the upper portion of the walls in storms slowly sinks by gravitation to the bottom, keeping the lower part damp, even when the upper part is dry. Some years ago, Mr. Post, we think, uncovered a wrought-iron first-story column, in making some alteration, and found it so corroded that he called the attention of other architects to it. The insurance companies also observed the circumstances, and, in consequence, as was reported, of their rather hasty deductions from them, first-story uprights, and even the wall columns of upper stories, were, for some time afterwards, very commonly made of cast-iron, on the ground that cast-iron verticals were less likely to suffer from corrosion. Architects, who often see cast-iron columns very badly corroded at the base from dampness, do not place much faith in the common superstition, and the difficulty, if not the danger, of connecting cast columns with the other members of a steel frame, led to the abandonment of this mixed construction, which is now rarely used. The question is now, therefore, practically reduced to that of the endurance of steel columns surrounded by masonry, not in the best manner, but in the manner commonly employed. Nothing can determine this question but actual investigation, and the sooner such an investigation is made the better. A twenty-story building which is likely, in the opinion of the best authorities, to fall at any moment will hardly be found a profitable investment, and the collapse of a single steel-framed office-building from corrosion would assuredly take many millions of dollars from the pockets of the owners of other buildings of the kind all over the country. In order to prevent the panic among the owners and tenants of such buildings which would certainly follow the failure of the first one, the only effectual resource is to make examinations at once, before the first failure occurs, beginning with the oldest buildings. It would be a comparatively easy matter to uncover, one at a time, the first-story columns of such a building, and replace them, if necessary, with others, better designed. This could be done, now, without exciting the apprehension of tenants, while a year or two hence it would be much more alarming, and, after one building had fallen, it would be the signal for the precipitate abandonment of every building in which it was attempted, however slight might be the real cause for uneasiness. So far as the profession is concerned, while it is the cheap structures, built on speculation, rather than those designed and supervised by architects, which have most to fear, even the latter wish to know, more definitely than is now possible, what are the conditions on which the durability of the modern mixed construction of iron and masonry depends, so that they can provide more intelligently for their future buildings, and, if necessary, direct precautionary operations in connection with existing ones. It is safe to say that no architect would willingly give up the advantages which the mixed construction offers, and it is very much for the interest of the community to use every possible means of learning how to make it secure and permanent.

THE great transportation strike in Boston came to a sudden and inglorious end, mainly through the intervention of one sensible man — Governor Crane. Instead of appealing to philanthropists or politicians, as much interested as themselves in posing before the public, the managers of the strike made the mistake of carrying their woes to a man who acts, instead of talking. When the various parties, after much newspaper interviewing and telegraphing to distinguished persons, had assembled before the Governor, the latter, instead of making an oration on the dignity of labor, and his anxiety to promote the interests of the workingmen, without neglecting those of capitalists, asked what the strike was about. This somewhat obvious question threw the strike managers into great perplexity. Nobody dared to say that it was an attempt to shut out from transportation goods not made by members of unions, or to drive out of business people who carried such goods. Fortunately, one of the champions of labor bethought himself of an old decision of the Massachusetts Supreme Court, which held that an employé of a railroad, who got on the wagon of

an express or transportation company, did so at his own risk; and, mentioning this decision, complained that one of the Massachusetts railway companies required its freight handlers to get on express wagons when necessary, to help the teamsters unload. The Governor listened patiently, and replied that if the unions would immediately declare the strike off, so that all the men could go back to work the next morning, he would see what he could do with the railroad company mentioned. The assemblage then retired, and the strike was forthwith called off, nearly all the men presenting themselves for employment the next morning. Meanwhile, the Governor, faithful to his promise, requested the New Haven Railroad officials to change their rule about obliging their men to get on wagons; and, although the request was declined, the main purpose, of puncturing a huge bubble of misunderstanding and pretence, and setting several thousand men at work again to support their families, at the same time that a small tangible grievance, affecting a few men, was discovered and put in the way of correction, was happily accomplished.

THE New York *Evening Post* mentions a case in which a four-story building on Broadway is being torn down, to be replaced by a two-story structure. The explanation of this is that on each side of the lot in question is a lofty office-building, with windows overlooking it. If the four-story structure should be replaced by one of twenty stories, a large number of windows in the adjoining offices would be blocked up, and the owners of the latter, in order to protect themselves, have been obliged to buy the estate; and, in order to obtain some income from it, without interfering with their own offices, have arranged for the new two-story building, which is already leased for forty years to a bank, which will occupy the whole of it. The owners of many of the New York "sky-scrapers" have been obliged, in the same way, to buy neighboring estates, often at very high prices, and will, undoubtedly, improve them in some similar fashion, so that, as the *Evening Post* says, the business part of New York bids fair to become a compound of very high buildings alternating with very low ones. In some ways, a two-story building is very attractive to a bank or trust company, and, in Boston, a firm of private bankers has already built such a structure for its own use; but the rent of a two-story building, on land costing from one to two hundred dollars per square foot, must either be large, or the owners must content themselves with a small income from their investment.

THE friends of the fine-arts in Boston will greatly regret the retirement of General Charles G. Loring from his post as Director of the Museum of Fine-Arts. Although not always under the same title, General Loring has been, practically, the chief administrative officer of the Museum of Fine-Arts since its organization, in 1870, and has seen the institution grow from a small affair to one of great importance, possessing, in certain departments, some of the finest collections in existence. In all its transactions, General Loring has been the judicious and discerning executive officer, and the favor with which the Museum is universally regarded is, no doubt, due, in great part, to his personal character. His health is, however, feeble, and a man of seventy-three, who has given thirty-two years of unwearied labor to the interests of such an institution deserves the rest which he asks for, and in which he may, it is to be hoped, continue for many years to enjoy the reward of his efforts in the knowledge of the benefits which they have conferred upon his fellow-citizens.

WE have received a letter from a correspondent in Philadelphia, warmly advocating the use of sprinklers in hotels, as a protection against fire, and mentioning that, according to the writer's information, only two architects in Philadelphia know what sprinklers are. We are quite sure that there must be some mistake about the latter point, for Philadelphia is a manufacturing city, and in all the other manufacturing towns that we know of, the architects are generally well informed in regard to the uses of automatic sprinklers, as well as in regard to the inconveniences which sometimes attend their installation. Among these, not the least is a tendency, with some sprinklers, to leak and drip, while, with others, a current of very innocent hot air, from a gas-burner or fireplace, has been known to melt the fusible alloy by which the valve is kept closed, and allow a deluge of water to escape; so that even such good things as sprinklers need to be used with discretion. Of course, there are several varieties of dry sprinklers, which, even if they open, do not scatter any water until a main valve

is turned; but architects are not kept so well informed by the manufacturers in regard to improvements of this sort as would be desirable, and they must be guided by the best knowledge that they possess in deciding whether to require them in their buildings, and how and where to install them.

IT is hardly necessary to say that a hotel proprietor, for example, would view with extreme disapprobation an installation of sprinklers over the costly furniture in his public rooms, and there are not many private houses, even, where a network of iron pipes, dotted with sprinkler-heads, would be tolerated under the drawing-room ceiling. At the same time, there are many places, both in hotels and private houses, where a few sprinklers would not be objectionable, and might be of great value; as, for instance, in the basement rooms, where most of the fires in such buildings originate, and, possibly, over elevator-shafts, although it is doubtful whether a shower of water would do much to check flames entering the shaft from below, and drawn up over the oily ropes. If we are not mistaken, insurance-companies make no allowance in premium rates for sprinklers unless the building is thoroughly equipped with them; so that owners of hotels and dwelling-houses do not have this inducement to use them; but the feeling of safety which they give is worth a good deal, both to proprietors of hotels and fathers of families, and, if suitable efforts were made by the manufacturers of them to bring them to the attention of architects and house-owners, it is quite probable that the use of such an efficient and inexpensive means of protection from fire might be greatly extended.

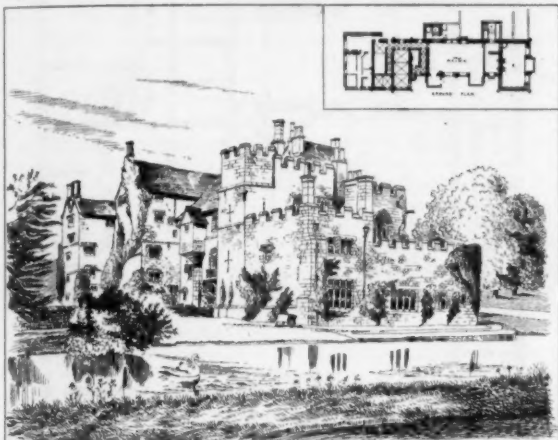
WE never like to see anybody persecuted, and it is, therefore, with a critical eye that we have followed the proceedings intended to remove Messrs. Horgan & Slattery from any portion of their employment as architects of municipal buildings in New York. Whether they are great artists or not has nothing to do with the question. If, such as they are, they were legally employed, by officials authorized to engage them, to do professional work for the city, we should not countenance any movement to take advantage of a change in the political control of the city to transfer their work to some one else, however superior the other person might be in artistic capacity. Of course, we are glad to see municipal work entrusted to the best artists that can be found, but the way to get municipal work done by great artists is to elect officials who will employ them, and not to do a wrong to innocent people who have been employed by the authorities duly chosen. It is fair to the profession in New York, and to the Corporation Counsel, Mr. Rives, to say that this has been the attitude of both, and that the newspaper clamor for the dismissal of Messrs. Horgan & Slattery has not been supported by any of the better class of architects.

THE Corporation Counsel has declared from the first that contracts legally entered into between Messrs. Horgan & Slattery and the municipal officials should be maintained. Two important ones have, however, been found plainly illegal and void. One of these, which provided for repairs on the County Court House, to the value of about two million dollars, and, in various ways, promised the architects a commission of about ten per cent on that amount, was found never to have been certified as the law requires, and, even without that, to have been plainly illegal, from the fact that no appropriation had been made for such repairs, a circumstance which, under the law, makes void any contracts entered into in connection with them. Another municipal commission has been taken away from the same architects on a different ground. They were formally instructed to prepare designs for a certain building, to cost not more than four hundred and fifty thousand dollars. The designs were made, and estimates invited, and the lowest bid was six hundred and sixty-six thousand dollars. This seemed to the Corporation Counsel sufficient reason for cancelling the commission, and there is no doubt that he was legally justified in doing so. It has been held that if the lowest bid received for a building is not more than ten per cent higher than the limit to which the architect was instructed to conform, the architect cannot be discharged for that reason, but must be allowed an opportunity to revise his plans and specifications, so as to bring the cost within the sum specified; but an excess of nearly fifty per cent would, undoubtedly, be regarded by any court as a failure, on the part of the architect, to comply with the terms of his engagement, so gross as to release the other party.

DOMESTIC ARCHITECTURE IN ENGLAND DURING THE MIDDLE AGES.<sup>1</sup>—VI.

## PERPENDICULAR PERIOD.

**T**HIS period of architecture, commonly called the "Third Pointed," or "Perpendicular," extended through the reigns of Henry V, Henry VI, Edward IV, Edward V and Richard III—from 1391 to 1485. This is sometimes bracketed with the Tudor period, but,



Broughton Castle, Oxfordshire.

as the latter is so well defined, and its salient features so very characteristic, it is proposed to treat it separately.

The early portion of this century was marked by constant warfare with the Welsh on the western borders, or with the Scotch on the north, with whom the disaffected barons sided more or less. There was also intermittent war with France,—sometimes truce, but never peace. It was during these wars that the ill-fated Joan of Arc formed one of the prominent features in the history of the times. During the latter portion of the period the civil "Wars of the Roses," between the houses of York and Lancaster, devastated the north of England.

Their effects on the architecture of the period were indirect, but are very apparent to the student. It was the way of the time that "to the victors belonged the spoils"; thus, a castle seized by the Royal forces from a baron aiding the King's enemies was forfeited and, by process of attainder, the owner was outlawed and all his property and estates were forfeited to the Crown. Success in war, therefore, placed great estates, money and titles at the disposal of the Crown, and these were distributed as rewards to the King's most efficient supporters. Thus, many of the castles of turbulent barons were dismantled and partially destroyed; many estates changed hands by gift or by sale, and the new proprietors rebuilt or enlarged them in the style of the period. This stimulated building and induced a certain emulation among the owners, thus incidentally advancing the progress of architecture.

The great Earl of Warwick, called the "King-maker" whose doings are so graphically chronicled by Bulwer Lytton in "*The Last of*



The Market-Cross, Malmesbury, Eng.

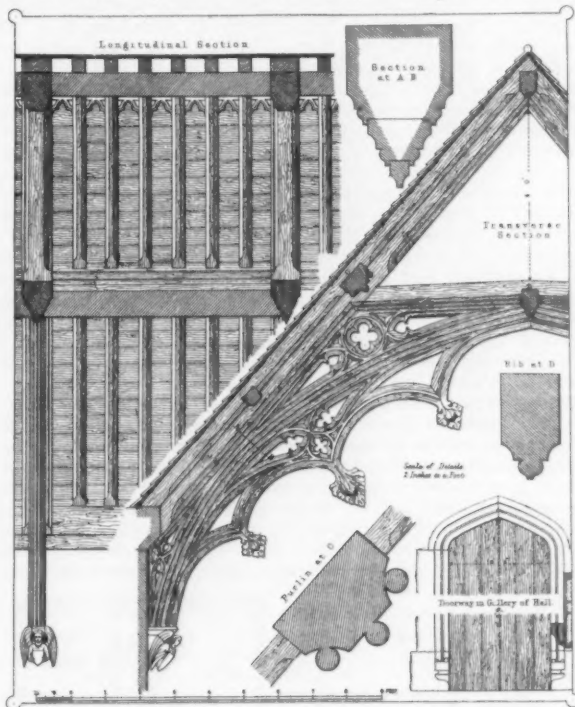
*the Barons*," was of this period. In his various mansions 30,000 people are said to have fared daily, giving some idea of the extent of the retinue of a great lord of the time, the amount of domestic accommodation he needed and his consequence in the State.

It was an age of sudden rebellious risings, sudden victories and defeats, followed by swift retribution, the attainder and beheading of the insurgent leaders, and of frequent retaliatory murders.

Troublous as was the fifteenth century, it was an age of increasing interest in literature and art. Princes and nobles began to take pride in the collection of books and in the encouragement of authors, transcribers and illuminators. Many of the missals, breviaries and books of these days remain as some of the choicest productions of any age, and may be seen in the British Museum and other libraries. But, as long as books could only be multiplied in manuscript, they were necessarily both scarce and costly. The monks were the first transcribers as well as authors, but, later, copying became an established vocation.

Paper at this time began to take the place of the parchment hitherto in use, and William Caxton, who had learned the art of printing from movable type in Belgium, came over and set up a printing-press in Westminster and commenced by cutting his own type in imitation of the writing of the period. The ballads of Chevy Chase and Robin Hood are of these times and are of great historic interest.

This century is also remarkable for the introduction of the mariner's compass, the discovery of India and America, and the great commercial expansion that followed. It was a time of transition in all the affairs of life and the habits and customs of the nation. Social conditions were steadily improving, and this was particularly noticeable in the dwellings of the more peaceful classes. The increase in wealth, due to commercial activity, led to a demand for greater comfort, greater accommodation, and improvement in the conveniences of living. The traders and artisans were rapidly becoming of greater usefulness to the community and of more consequence to the State. The serfs had become independent laborers, and the retainers, those that remained, discharged the domestic



The Roof: Canynge House, Bristol.

duties of the establishments. The men-at-arms that used to crowd the halls of the barons of earlier days became gradually scattered among the villages as "cottiers," peasantry and yeomen, or small traders and mechanics. These cottiers held half an acre of land or more, and paid rent in kind, the usage varying in different manors: the village carpenter repairing woodwork, the blacksmith repairing armor, etc.; others, less skilled, worked one day a week for their lord all the year round, nutting at one period, harvesting, gathering rushes, supplying fowls, eggs, honey, tending the hounds, etc., but paying no other rent. Others again, holding a small acreage of farm-land, ploughed for their lord one or more days in the week,—finding the oxen,—hauling fuel and the like. These cottiers enjoyed certain rights of common and forest and many of these obligations remain in modified form to the present day.

The lowland Scots were of essentially predatory habits, and were wont to go harrying over the moors of Westmoreland and Northumberland, and the Welsh were ever threatening the western borders of Cheshire. It was necessary, therefore, for the gentlemen of these parts to make their homesteads secure against a possible raid. If a slight eminence rose above the general level, or a favorable bend occurred in the adjacent river, these features decided the location of the proposed house. But when no such suitable position presented itself, the site was usually surrounded by a broad moat, a ditch or a "haw-haw," and admission by draw-bridge was the only means of access.

Stone, as a common building-material, was difficult to obtain in these western countries, and was generally confined in its use to the foundations, the superstructure being usually framed in heavy oak (which was abundant) and the spaces between the timbers filled-in

<sup>1</sup> Continued from No. 1364, page 53.

with wattle and clay, and covered flush with plaster. In Kent, brick is still frequently used for the same purpose. Leland describes Morley Hall as quadrangular in plan, standing upon a stone basement, which rose six feet above the level of the moat, "in the waters of which grew the 'acorus calamus,' a pleasantly scented reed, which was used to strew the floors of the chambers within." The plans of these houses were usually shaped like the letter E, and are very characteristic of the period.

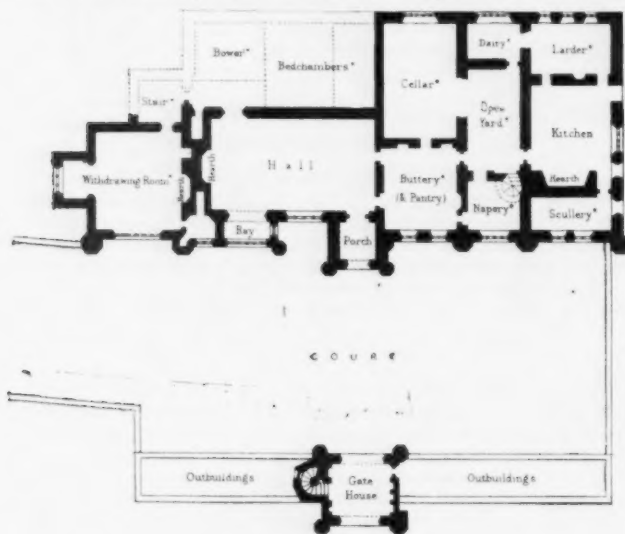
The lords of the manor frequently erected in the midst of the villages shelters called market-crosses, to which the farmer folk could bring their produce for sale or barter, the lord levying a small toll for the privilege. Leland, in his "Itinerary," says "these were made all of stone and curiously vaulted for poor market folk to stand dry when rayne cometh." Chichester, Malmesbury and Northampton are well-known examples, the precursors of the market-halls of the present day.

Although the castles of the Crown, like Windsor and the Tower of London, were fortified and maintained in condition adequate to withstand the artillery of the period, the same necessity as regards private dwellings had ceased to exist, and the defensive works of many of the nobles had been destroyed. The retainers were scattered, and attention was concentrated upon the personal convenience of the owner and his family as it was understood at the period.

The "house-place," as such, is no longer found; the "common hall" remains as a leading feature with its "minstrels' gallery," but the size in all new buildings is much curtailed and the raised dais of earlier times is usually omitted. A deeply recessed bay-window, at one side (at the dais end) became a very conspicuous feature, and fireplaces of great size, massive construction and ornate design began to appear. The hall was no longer used as a dormitory, as of old, where guests and retainers slept off the effects of their revels, but was reserved for banquets and other great festivals.

The walls of Westminster Hall are of earlier foundation than the roof, which, with the great windows, was reconstructed at this period. This hall is 290 feet long by 68 feet wide, and the tie-beam construction (which in many smaller cases had given way to the collar-beam and arch-ties, as shown in Canynge Hall) would have seriously marred its grandeur of appearance. The consideration of its great width and the importance of the case led up to a scientific readjustment of the timbers and the development of the "hammer-beam" construction, by which the weights and thrusts were counterpoised and the resultant load securely placed at points in the outer walls, well below the level of the wall-plates. As was their wont, they beautified their salient features of construction, throwing the full height of this masterpiece of carpentry open to view, forming a feature, not only new to the world, but of surpassing grandeur and of wonderful beauty in all its detail.

The roofs over Westminster Hall, Eltham Palace (now a barn), Hampton Court and Crosby Hall, all in the neighborhood of London, are among the noblest specimens of a type of work peculiar to England. In subsequent years this great Hall of Westminster was the scene of great historic events: the trials of Queen Anne Boleyn, Sir Thomas More, the Earl of Strafford, the Earl and Countess of Somerset, King Charles I and others, who were here condemned to death and later beheaded. Here, too, Cromwell was inaugurated as Lord Protector, and the coronation banquets were held under



GROUND FLOOR  
Wolterton Manor-house.

this great roof up to the time of George I in the early part of the eighteenth century.

Prior to the fifteenth century, flues for the conveyance of smoke from the open fires on the hearth consisted of huge canopies built of wicker plastered with clay and lime, the temporary nature of which accounts for their disappearance from the dwellings of earlier periods. In 1419, that is, during the early part of this period, we

find ordinances of the city of London providing that henceforward all new chimneys shall be built of stone or brick, "and not of wood, under pain of being pulled down."

During this period we find the family chambers were grouped by themselves at the dais end of the hall and, in like manner, that the



GROUND FLOOR  
Oxburgh Hall, Norfolk.

offices were grouped by themselves at the other end of the hall, approached from the passage formed by the screen. Wolterton House, from Professor Ker's "English Gentleman's House," clearly illustrates this point.

Sleeping accommodation and the privacy of the bedchamber became much improved at this time, and the multiplication of rooms in various forms went on. Among the better class of people it became the custom to retire to special private bedchambers, assume a night-dress and sleep between sheets on feather beds. In evidence of this advance in refinement we find in the Ewelwe inventory of 1466 references made to "the great bed-chamber," "my lady's closet," "the gentewomen's closet," the "lord's chamber," "my lord's outer closet," "washing-closet," "nursery," "wardrobe closets," etc. And we find in other records references to that cumbersome piece of furniture the four-post bed.

It is thus related that Richard III, when travelling, always took his bed with him, or had it sent on before him. In August, 1485 (as related by Hodgson), his servants had thus preceded him with the running-wardrobe and secured the best rooms at the "Blue Boar," at Market Bosworth, near Leicester, where his four-post bed was duly set up. It is described as being richly carved, gilded and decorated, and was constructed with a double bottom of boards. Richard slept here on the night previous to the Battle of Bosworth Field, whereat he was defeated and slain. This bed was subsequently stripped of its rich hangings, but the cumbersome bedstead, itself, remained at the "Blue Boar." In the reign of Queen Elizabeth, about one hundred years later, when the then hostess of the Inn was one day shaking the bed she observed a piece of gold fall on the floor; this led to further careful examination and revealed the double bottom, upon lifting a portion of which the interior was found to be filled with gold pieces of the reign of Richard III and earlier. This custom of hiding treasure in beds was common in mediæval times and this circumstance is a side-light upon the habits and customs of the period.

There was a tendency among men of leisure to study and to collect manuscripts, and in the houses belonging to this class we come upon the library as a distinctive feature, as at Oxburgh Hall (from Ker's "English Gentleman's House"), which is another good example of the houses of the period.

The staircase now becomes a marked feature; it is still enclosed between walls, and its windows are marked externally at varying levels. Secondary, or private, stairs are also found leading from special rooms or suites of rooms, to secluded gardens, forming valuable means of escape in troublous times.

Glass, in windows, became more commonly used during this period even in the lesser class of dwellings; but it was usually fixed in moveable frames or casements that were deemed the special property of the occupier and are thus referred to in inventories and were no part of the freehold. In previous times framed blinds of cloth or canvas, or linen dipped in oil, called fenestral, had been in use, though glass was common in the churches and monastic buildings and in the dwellings of the wealthier class.

Architecture. — The social progress is well evidenced in the plans and distribution of the dwellings of the period, but the salient features of the architecture of this fifteenth century are still more distinctive; they are as clearly defined as the Norman and the Early

English, and form the grand culmination of the style of architecture of the Middle Ages in England.

The First Pointed, or Early English, represents the birth or inception of Gothic architecture, and is incidental to the thirteenth century. The fourteenth is an epoch of steady growth, gradual improvement in science and art, with a geometric precision in its main decorative features, an amplification and enrichment of clearly-defined ideas. But the *Perpendicular* period of the fifteenth century, while proceeding still on the same lines in the march of progress, evolves out of the tendencies of the age a most striking line of departure. It is known as Perpendicular by common consent, but *Rectilinear* would be a more apt description, as horizontality is as strongly marked as verticality. The departure from flowing or curving geometric lines, and the substitution of strongly-defined rectangular lines, are the most salient features of this period.

Defensive architecture had, as a general rule, ceased to exist; that is to say, the necessity for towers, walled enclosures and fortified gateways had given way in the process of evolution. The intrinsic beauty of the old features was too great, too much interwoven with ancestral history and associations, to be disregarded or ruthlessly cast aside; it became, therefore, idealized. The *gate tower*, when used (and we find it in the baronial and college halls of the period), formed one of a series of apartments, flanked by turrets as of old, but now marked by wide hospitable doorways, broad mullioned windows and decorative parapets; the old portcullis is remembered only by sculptured reproductions in high-relief as one of the historic associations. The roof has become flat again, but not for defensive purposes; it is approached by the turret-stair, and gives an extensive view over peaceful hamlets, cultivated fields, green meadows—the pasturage of countless herds and flocks; of general smiling prosperity and peaceful security.

The *doorways* (not gateways) were often very much enriched, the deeply-moulded arch was decorated with conventional carving of roses, crowns, *fleurs-de-lis*, portcullises, grotesques, etc. The mouldings were smaller and less vigorous than in preceding periods: small shafts with moulded caps and stilted bases. The outer mouldings were run up square at the sides and over the top, enclosing spandrels in the angles, enriched with shields charged with coats-of-arms, etc. The arches generally were broader in proportion to their height, less acutely pointed, of shorter radius.

The *windows* are of very marked character during this period. In ecclesiastical buildings and in some of the more conspicuous halls, the great windows occupy the whole space between two buttresses, the whole end of a church, the full width of a bay. Not only is their width remarkable, but also their height. They are frequently divided by leading lines or mullions into two or three compartments, and further subdivided, by secondary mullions, into two or three lights

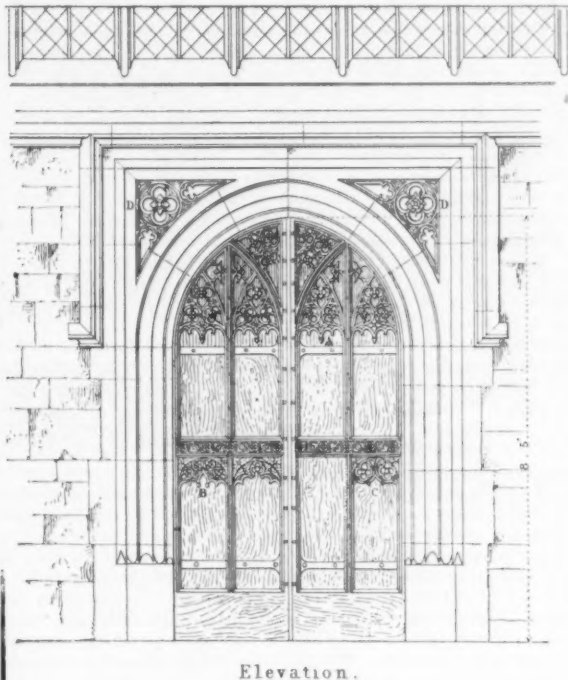


The Deanery, Exeter, Eng.

in each compartment. Not only are they divided up in their width, but in their great height by horizontal transoms, which is one of their special features. In their heads the geometric tracery of the past period is replaced by vertical mullions and horizontal transoms, richly cusped. The windows in the great churches and halls of England of this period are the grandest and most beautiful specimens of fenestration in the world, and are peculiar to England.

The halls, as at Hampton Court, extend through two stories, and the windows, filled with the richest stained-glass, extend the full height of the hall.

Both in the *stained-glass* and in the carving of the period we find a free use of heraldry. The use of coats-of-arms has already been referred to in treating of the twelfth century. These distinguishing badges, or crests, became the heraldic device and armorial bearings



Doorway: St. John's Hospital, Northampton.

of a family descending, with more or less quartering, through succeeding generations. During this period we find all these salient features of warlike days idealized and the necessities of the past periods became the decorative features of the fifteenth century.

The walls were built more scientifically and with less material than heretofore, the stone facings, inside and outside, being fairly dressed. The plinths were boldly moulded and often panelled, the parapets deeply moulded, the mouldings returned round the embrasures and the face panelled. In fact, superficial panelling, both inside and outside, was one of the distinguishing features of the period, to the extent, in many of the more ambitious buildings, of covering the whole surface of the walls, inside and outside, with more or less intricate panelling, producing a very ornate appearance, as seen in Henry VII's Chapel at Westminster, at Windsor and elsewhere. This same tendency to panelling applies to doors, screens, roofs and to joiner's work generally.

Buttresses became features of great constructional importance. As the walls were built more scientifically, of stone dressed all round, but of less thickness than heretofore, and as the windows were built of greater width, sometimes to the full extent of the space between the buttresses, the whole thrust and weight of the internal construction was concentrated at these points; they, therefore, became more massive and towering; huge counterforts, in fact. They were richly decorated with panelling, niches, canopies and sculpture, as emphasizing their constructional value and importance. The canopies and turrets were mostly octagonal in plan and finished with ogee-shaped domelets, crocketed up the external angles and on the apex, in character quite distinct from anything that had preceded them which had hitherto been finished with straight lines.

In the Midland Counties many charitable foundations were established and endowed as hospitals for the aged poor, as at Leicester, Coventry, Northampton, Bristol, etc. These were built of massive oak framing filled-in flush with wattle and plaster, and many of these earlier half-timbered buildings were of beautiful design and elaborate detail. They are fully illustrated in Dollman's "*Ancient Domestic Architecture*."

Supremely glorious are these fifteenth-century monuments, and this particular phase of the architecture of the Middle Ages is peculiar to England.

The rapidly increasing wealth of the times led to liberal patronage of the arts, and a certain emulation of display, to great building activity and to extravagance in ornamental detail. It was thus that the architecture in England during the Middle Ages, the mediæval times, rose, by adventitious circumstances, to its zenith, its greatest glory and development, and, for a century or more, it was high noon; but slowly and reluctantly, the sun of mediæval art began to decline. The days of true-art progress, the days of ever striving for fresh forms, more beautiful, more perfectly consistent than had hitherto been developed, gave place to days when the mechanical reproduction of established forms was often made grotesque by the on-grafting

of incongruous features copied from pre-medieval times, the cumulative result of which was that distinctive style of architecture known as Tudor.

THOMAS C. SORBY.

[To be continued.]

### THE BOSTON STRIKE.

"NOTHING could be more unreasonable than the demands of the workmen who have precipitated the great Boston strike. Only on the theory that a labor union's wishes take precedence to all law and that the whole country must, without interest or knowledge, instantly on the demand of a few labor leaders take up a controversy can such a proceeding as that taken in Boston be justified. No other body of men in civilized society presumes to hold up a whole nation for the settlement of petty grievances of a handful of persons. The disproportion of cause and effect is simply grotesque. The whole trouble arises out of an insignificant quarrel between organized labor and a local trucking company of Boston. What the merits of the question originally at issue were we do not attempt to determine. No matter how justly bitter the labor unions may have been against this concern, they were not in the least justified in venting their ill-will on the public at large, as they have done, causing suffering to thousands who never heard of the carting company and are perfectly helpless to influence the struggle.

"Having declared a boycott against the carting company, the strikers demanded that the railroads and steamship lines should refuse to handle any goods brought to them in this company's trucks. Such a demand, of course, could not be granted. The railroad and steamboat companies are common carriers. They are by law obliged to handle the freight that is brought to them. They may dislike the bringer and sympathize with the strikers against him; nevertheless, his right to the equal privileges of public transportation is absolute. It is a right which those who proclaim themselves the special friends of labor are always seeking to surround with additional safeguards. Transportation corporations, it is demanded, must make no discrimination between customers, they must charge the same rates to all, they must favor nobody, whatever his power or his relation to their business. But, if they must favor nobody, they must also punish nobody. If they can refuse to handle one man's goods because he is boycotted by a labor union, they can refuse to handle another's because he is competing with some friend of the railroad managers. If a railroad can do what the Boston strikers demand, a telegraph company can refuse to transmit the messages of any person on the request of his enemy who has influence with the telegraph directors. The next step is to establish the rule that the Post-office Department must close the mails to any person on petition of organized labor. Nor is it much of a step, either. Labor unions have gone much farther in other directions. They have long proclaimed the doctrine that a person under their ban was not entitled to the equal protection of the laws, and declared it outrageous that policemen or sheriffs or soldiers should guard him from violence or save his property from destruction.

"This is anarchy. The Boston strikers are acting just as much on anarchist principles as the men who throw bombs. They are demanding that persons against whom they have a grievance be outlawed and that others be freed from performing their legal obligations towards them. If common carriers may not transport a boycotted concern's goods, may the courts try their suits, may the street-cars take them as passengers, may the fire-department keep their houses from burning down, may the police protect them from assassination if a labor union sees fit to object? There is no middle ground. The lawful rights of every citizen must be respected, even if he is justly hated by organized labor, or else anarchy reigns, and when individual rights cease to be sacred it is always the poor man who suffers in the end. — N. Y. Tribune."

## BOOKS AND PAPERS.

EIGHT years ago an undergraduate in the civil-engineering course at Ann Arbor chose for the theme of his graduation thesis "Architectural Engineering," handling the subject so well that the attention of Wiley & Sons was called thereto, with the result that in 1895 the thesis, extended and elaborated, was published under the title of "Architectural Engineering." The first edition was noticed in these columns on November 16, 1895. The second edition of the work<sup>1</sup> is now before the public. In a way, it admirably illustrates the fact that the engineering demands upon the architect have vastly multiplied even in the six years since Mr. Freitag's first edition was published. Previous to 1894 Chicago stood first in the construction of high buildings, and the descriptions and examples cited in the first edition were mainly limited to Chicago practice. Indeed, it was customary at that time to speak of skeleton construction as the Chicago system, and the type was not looked upon with a great deal of favor by Eastern constructors, but business necessities have forced a consideration of the special problems involved in high buildings, and the East, particularly New York City, is at present far ahead of the West in the magnitude of its building operations, both up and down. That

is to say, the problems of foundations are to-day more complicated in New York than elsewhere and tall buildings have been carried to a greater height in that city than was ever known before. The last six years have also witnessed great changes and improvements in many details of construction, especially in terra-cotta and concrete floors and in all methods of fireproofing. It follows therefore that the work under present consideration is a second edition in hardly more than its title-page, for so much new and different matter had to be incorporated and considered that the practical rewriting of the book was inevitable. The number of pages has been increased from 239 to 407. The illustrations are drawn from all over the country rather than from Chicago, the New York methods receiving special attention. The greatest fault we would find with the work is that the original edition was not entirely discarded and the whole volume rewritten. It would have gained immensely in clearness and preciseness. The old material crops out conspicuously in places, and the illustrations are distributed in such manner as just not always to agree with the text. But this, after all, is not especially material. The real value of the work is beyond question and it easily leads in its class. We know of no one book which can be so thoroughly commended for both the beginner and the experienced practitioner.

While the title is comprehensive the real discussion is practically limited to the tall steel constructed office-buildings. The modern office-building presents almost, if not quite, all the problems involved in architectural-engineering. The arch has practically ceased to be a constructive member. It might almost be added that we have ceased to place any special reliance upon masonry as a supporting member, so that a modern building resolves itself practically into a foundation and a steel cage. Therefore the author is quite right in limiting his consideration to this type of building, and occupying the bulk of the volume with considerations of steelwork.

The chapter on columns is of especial interest. This is the one feature of building-construction about which we are to-day the least informed. We continue to use Gordon's formulas and the rules-of-thumb given in the Carnegie tables, and the fact that they answer most requirements is because they are really based upon the results of tests. But even in this respect our information is limited. There is an almost complete absence of definite data in regard to the ultimate strength of actual columns. Tests on short lengths of slight sections have an undoubted value, but they are not conclusive, and it is to be greatly regretted that it is not possible to institute a series of investigations which would give us data as conclusive in regard to columns as the investigations of men like Professor Lanza have been as to beams and girders. It is always a satisfaction to calculate a girder. One has a feeling of absolute confidence in the results which is quite lacking in the computation of a column. The radius of gyration is a convenient expression which covers a vast degree of ignorance, and until we can get down to a more basic scientific formula we have to be content with rules-of-thumb. Mr. Freitag's discussion of column-loading, to our mind, in a degree misses the actual mark. He cites one instance of eccentric loading in which the statement is made that a cast-iron pillar 10 inches in diameter and 11.9 feet long will break under a centre-load of 32,000 pounds per inch of metal area, while if the load is placed one inch to one side the unit resistance is reduced to 21,150 pounds, and a difference of only one-half an inch off the centre-of-gravity gives a reduction to 26,050 pounds. These are interesting figures, if true, but without questioning Mr. Freitag's good intent we frankly do not believe they would be substantiated by practice. In our own experience we have seen it proved repeatedly that a slight degree of eccentricity makes no appreciable difference in the strength of the column, and reasoning from practical considerations it would seem far wiser to systematize and balance our loads rather than to undertake the extremely uncertain problem of designing columns especially for eccentric loading.

The author takes up quite exhaustively a topic which we are always interested in seeing discussed and about which a great deal has been written of late years, but which is so intangible that it leaves possibilities for wide differences of opinion. We refer to the subject of wind-bracing in tall buildings. While we know that the wind does blow and blow hard, we have not, however, actual observations that will tell us to what extent a recorded wind-pressure at one point is exerted all over a side of a building, and therein lies the difficulty of rightly solving the problem. The admirable investigations made by Mr. Julius Baier on the St. Louis tornado and its effect on buildings constitute perhaps the most important addition to the literature upon the subject. All of this is carefully considered by Mr. Freitag, who very rightly, we believe, errs on the side of safety, and yet he places far more insistence upon a possible wind-strain than would seem in our judgment necessary. Applying the formula of the United States Weather Bureau,  $P = 0.004 V^2$ , to the extreme velocity recorded in the St. Louis tornado, gives a pressure of 60 pounds per foot. The maximum velocity ever recorded in New York lasted only two minutes and resulted in a pressure of only 22½ pounds per foot. And yet the engineers would tell us that we should assume not less than 30 pounds per foot, and should transmit every pound of this strain directly to the steel frame, disregarding the masonry walls, and that the resulting stresses on the structural members added to the stresses from the constructive and live loads should not be more than one-fourth of the ultimate resistance of the metal. Mr. Freitag assumes that the floor construction can be counted upon as sufficiently rigid to transmit the horizontal shears due to wind, and yet he is not willing that any reliance whatever should be placed upon the resisting factor of the masonry walls and partitions. And this notwithstanding his admission

<sup>1</sup> "Architectural Engineering." With Especial Reference to High Building Construction. By Joseph Kendall Freitag, B. S., C. E. Second Edition. New York: John Wiley & Sons. 1901. Price, \$3.50.

that most careful observations on the deflection of tall steel-skeleton-construction buildings in Chicago tend to show that any actual deflections in well designed and carefully constructed buildings, even under very heavy winds, are far less than any theoretical assumptions. No amount of argument except actual experiment will ever convince us that any plate-glass window of even moderate dimensions is capable of resisting a direct thrust all over its area of 30 pounds an inch, and though recorded velocities and even recorded pressures may give high readings at isolated points we have yet to see any facts which would show that such pressures or velocities are due to more than relatively fitful gusts which operate against only isolated portions of a building. The building-law of New York allows the working-stresses from wind-strains to be increased 50 per cent over what is permissible for other loadings. But where the metal, even under such conditions, is not loaded to anywhere near its elastic limit, we fail to appreciate any evidence that would make us hesitate to assume a wind-pressure in a tall building of not over 10 pounds a foot, and we doubt very much whether even that would actually exist. This is a subject which offers a fruitful field for discussion, while we have regarding it a dearth of real knowledge.

The chapter on spandrel sections is a very clear presentation of a feature of steel-construction which is often neglected. The facts are put in very usable form and the best practice is illustrated and explained. There is also an admirable discussion of the use of column sheets in making calculations, with a number of illustrations from typical buildings. The proper tabulation of computations, presenting the figures in such way that when the problem is an old one the process of calculation will not be forgotten, is a factor of considerable importance. We could wish that Mr. Freitag had seen fit to apply a similar process of formulation to beams and girders, which are not considered at all, though quite as important in their way as the column tabulations. In a work which covers so wide a field, however, it is natural that there should be some slips, as for instance when in the formula  $p = 17,100 - 57 \frac{l}{r}$  the value of  $l$  is said to be in feet, while  $r$

is in inches. Again, the writer makes the interesting statement that in Boston piles are used almost exclusively for foundations, which will be news to Boston architects. And on page 187 the statement is made that for openings in walls where beams or members are supported directly by the walls the load generally assumed to be carried in masonry of usual bond may be represented by a triangle whose base equals the clear span and whose height equals one-third of the span. A brick wall will, of course, bond itself over an opening, but it does not seem to us good engineering practice to depend upon such bonding, and it certainly is not so considered by many constructors. But these are, after all, minor defects of relatively slight importance and can easily be corrected in what we hope will be a subsequent edition. The work as it stands is so thorough and complete that it disarms criticism, and even taking into account the local character of the first edition, in its present form it is certainly standard.

A VERY excellent little book<sup>1</sup> is Mr. Leslie Waterhouse's "Story of Architecture," one of a series called the "Library of Useful Stories," perhaps rather unwisely.

"The waters of the Nile are the head-waters of architecture," says the author not inaptly; and from these head-waters spring all the great rivers and small rivulets and brooks of Greek, Roman, Medieval, Renaissance and modern architecture—if such a thing as architecture exists in the modern sky-scraper. Certainly, if architecture arose, as it seems to have done, in the earlier centuries from the religious faiths of nations, the hideousness of modern houses may be accounted for, as there is certainly no faith shown forth in them, religious or otherwise. "Nothing reveals the character of the nation so clearly as its religion; nothing has a more permeating influence upon its architecture." And thus the Egyptians, being not only a religious people, but having a vast number of deities, planned their temples upon the grandest scale. When one thinks of the Great Pyramid occupying 13 acres, or twice the extent of the foundations of St. Peter's at Rome, some idea may be formed of the stupendous character of Egyptian buildings. Its height is 481 feet, that is, 57 feet higher than the spire of Salisbury Cathedral; and it has been said that it would occupy the entire space of Lincoln's Inn Fields, London. Such vastness is lost in the desert; but could we erect a temporary pyramid in any of our great cities, we should then gain a fair idea of the stupendous grandeur of those early builders of 3700 B. C.

Mr. Waterhouse's summing-up of the French-Gothic churches (by the way, he insists upon the folly of the term Gothic, although we must bear it for want of a better, equally comprehensive, and compares Amiens with Salisbury, both being about the same date. The height of the nave of Amiens is almost double that of Salisbury, 140 feet and 84 feet, respectively; and the height of the *flèche* is nearly that of Salisbury spire (424 feet), hence, the meanness of the interior of the English church as compared with the French one. The richest feature of French cathedrals is the deep recessed porch, so superior to the English doorways. The earliest Pointed arches in England appeared at Malmesbury and Kirkstall Abbeys. The superb beauty of Canterbury and Westminster is due, probably, to a French architect.

The peculiar character of the English chapter-houses, the circular

or polygonal plan, with a central column from which ribbed groining springs was first adopted at Worcester, the earlier chapter-houses having been square or oblong, as at Bristol and Gloucester.

Mr. Waterhouse speaks of Köln as the "finest of all" Gothic churches, to which we may be allowed to demur. It is, no doubt, of French plan, but surely many of the cathedrals of France are far more impressive and beautiful. At page 164, the author cites Köln (Cologne he calls it) as the "largest of all Gothic cathedrals, with the single exception of Seville"; while at page 158 he gives Milan as "the largest of all mediæval churches, except Seville."

Considering that the little book contains but 207 pages, and gives the whole story of the growth of architectural plans, forms and details, it is not too much to say that very little, indeed nothing, of any importance to the young person or the full-grown amateur is omitted. It is just the sort of book one wants as a text-book for the young, and a concise and instructive handbook for others. There is not too much of a technical nature, but architectural terms are not omitted; and any one mastering its contents need not fear being superficial, even if he goes no farther; but the book would form an excellent foundation upon which to build a more elaborate knowledge of architecture culled from Fergusson, Parker, Statham and others. Of course, it is not intended for professional architects.



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

UNITED STATES POST-OFFICE, CRESTON, IA. MR. JAMES KNOX TAYLOR, SUPERVISING ARCHITECT, WASHINGTON, D. C.

DETAILS OF PORTICO OF THE SAME BUILDING.

HATFIELD HOUSE, ENGLAND.

THE TOWER OF LONDON.

[The following named illustration may be found by reference to our advertising pages.]

HOUSE IN THE RUE OCTAVE FEUILLET, PARIS, FRANCE. M. ARNAUD, ARCHITECT.

This plate is copied from *La Construction Moderne*.

[Additional illustrations in the International Edition.]

SMITHELL'S OLD HALL AND CHAPEL, LANCASHIRE, ENG.

THESE subjects are copied from *Building News* in illustration of the paper on "Domestic Architecture in England" elsewhere in this issue.

HOUSE OF HERR GLADE, WILMERSDORF, NEAR BERLIN, PRUSSIA. HERR ERICH PETERS, ARCHITECT.

THESE illustrations are copied from *Deutsche Bauzeitung*.

THE CITY MUSEUM, ALTONA, PRUSSIA. HERREN REINHARDT & SUESSENGUTH, ARCHITECTS.

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CENTRAL PAVILION OF THE SAME BUILDING.

HOUSE OF THOMAS NELSON PAGE, ESQ., WASHINGTON, D. C. MESSRS. MCKIM, MEAD & WHITE, ARCHITECTS, NEW YORK, N. Y.

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ENTRANCE TO THE SAME HOUSE.



THE DIMINUTION OF THE RED-CEDAR SUPPLY.—Reports from Puget Sound show that the supply of red cedar suitable for shingles is becoming smaller every year and that the manufacturers will soon have to go to Alaska for cedar logs. New appliances have so greatly increased the output of mills that last year 5,000,000,000 shingles were cut in Washington and Oregon. Good cedar logs command \$9 a thousand feet, and the supply is short at this price.—*N. Y. Evening Post*.

<sup>1</sup>"The Story of Architecture." By P. Leslie Waterhouse, M. A., A. R. I. B. A. With 59 illustrations. London: G. Newnes. 1s.

**ENGLISH BOROUGH OF BERMONDSEY LIGHTED BY GARBAGE.**—There was a large gathering at Bermondsey Town-hall, according to the *London Times*, when the borough opened the new electric-lighting and dust-destroyer works which have lately been brought to completion by the Bermondsey Borough Council. The new works are situated in Spa Road, at the rear of the Town-hall and public baths, and they occupy an area of about 1½ acres. The buildings consist of a destructor-house, an engine-room containing the generating plant, a pump and fan room, an accumulator-room and offices. The destructor-house is specially designed with the view of giving adequate ventilation. It consists of six cells, each having 26 square feet grate-area, and capable of destroying fifty tons of refuse in twenty-four hours. The refuse to be destroyed is brought in by the collecting-vans, conveyed along an inclined roadway to a tipping floor at the back of the destructors, and discharged into spacious bins placed over the tops of the cells, from which the latter are fed as required through rectangular shoots. After passing through the shoots the refuse is deposited on a hearth at the back of the furnace, and is there thoroughly dried before the actual burning takes place. By these means the refuse is rendered more combustible and the vapors which are given off become innocuous by being passed over the hottest part of the furnace. The gases from the cells pass out at the front and come into contact with the boiler-tubes, and are thus utilized for the purpose of raising steam. Each cell and boiler furnace is fitted with forced-draught apparatus. In deciding the system of distribution most applicable to Bermondsey, the engineers had under consideration the fact that the district is very concentrated and is filled with factories and workshops, and that the most favorable opportunity occurred for supplying electricity during the daytime for motive-power purposes. The alternate-current system was therefore not deemed so suitable as the continuous-current, which has been adopted. The plant at present installed in the generating-station consists of three multipolar generators. Two sets each have an output of 150 kilowatts at 480 to 520 volts, and the third set an output of 75 kilowatts at 480 to 520 volts. There are also installed in the station a balancer and a battery-charging motor booster. The battery, which consists of 280 cells, is capable of giving a discharge of 83 amperes at 510 volts for six hours, or on an emergency 300 amperes for one hour. The switchboard is an interesting construction, and is mounted in a wrought-iron frame. It consists of panels of polished black enamelled slate. The board has been designed to control three dynamos, six feeder-circuits, eight arc-circuits, the Town-hall, the depot and station lighting-and-power circuits, the storage-battery, the balancer, and the battery-charging motor booster. In the borough the three-wire system of mains has been adopted, and the feeder-mains are at present four in number. With regard to the public lighting, there are at present 71 standards erected, supporting ten-ampere double-carbon arc-lamps and incandescent-lamps. At twelve o'clock every night the arc-lamps are permanently turned out and the incandescent-lamps are lighted. The new stables, when completed, will afford accommodation for sixty horses. At present only fifty-four stalls are fitted up. The new depot also includes workshops, stores, offices and other buildings for municipal purposes. Mr. T. Cox, Chairman of the Electric-lighting Committee, who presided, stated that the charge for electric-lighting would be twelve cents for the first hour and six cents for each hour afterwards, based on the minimum-demand system. For motive-power purposes the charge would be five cents per unit. He remarked that the question of the disposal of the residuum from the destructor had occupied the attention of the Council, and an electrically driven hydraulic plant for the manufacture of flags from a portion of the clinker had been laid down. That machine would turn out flags at the rate of twenty-five per hour at a very low cost. The clinker was ground very fine, mixed with a due proportion of cement, thoroughly incorporated, and then subjected to a pressure of 1,000 pounds per square inch and afterward allowed to dry.

**A PACCA LAW SUGGESTED FOR FRANCE.**—The *Paris Chronique des Arts* protests against the sale of ancient French art-works to foreigners, and advocates the passing of a law similar to that now in force in Italy forbidding the export of any art-work exceeding \$1,000 in value and 100 years in age. It instances the sale recently of a rare specimen of old wrought-iron, a screen of eighteenth-century work that stood in the choir of the Trèves Cathedral, which came originally from the church at Clairvaux. The cathedral authorities, needing money for a new heating-apparatus, put it up at auction. The town, wishing to save it, carried the bidding to \$2,800, when a rich American, name not given, bid \$2,900 and got it. It is also said that many French châteaux and churches have been robbed of carved wood, stone and iron work by foreigners, and the *Chronique* foresees the day when America's superiority over the Old World in the possession of money will lead to wholesale despoliation, unless a stringent law is passed against such sales.

**WHAT IS A BLOCK?**—In the talk of New York the word seems most commonly to denote a distance—the stretch of one street lying between two intersecting streets, or, north and south, in the numbered streets, the twentieth of a mile. When the phrase has any other meaning, real-estate men, at all events, feel constrained to qualify it by the boundaries of the property. Here the distinction has slight importance, but in Chicago the precise meaning to be attached to the word has lately been the decisive factor in determining the efficacy of the local-option laws, which certain districts of that city enjoy. According to the law, a saloon or dram-shop may not be established in any block without the consent of the majority of the property-owners in that block. The liquor-dealers naturally chose to interpret the word as an expression of distance, and when they had obtained the consent of a majority of the property-owners on either side of that portion of the street between two intersecting streets on which they proposed to open up, they professed to have done all that the law required. The different municipal authorities, with the coöperation of sundry municipal associations, opposed this interpretation in the courts, setting up the con-

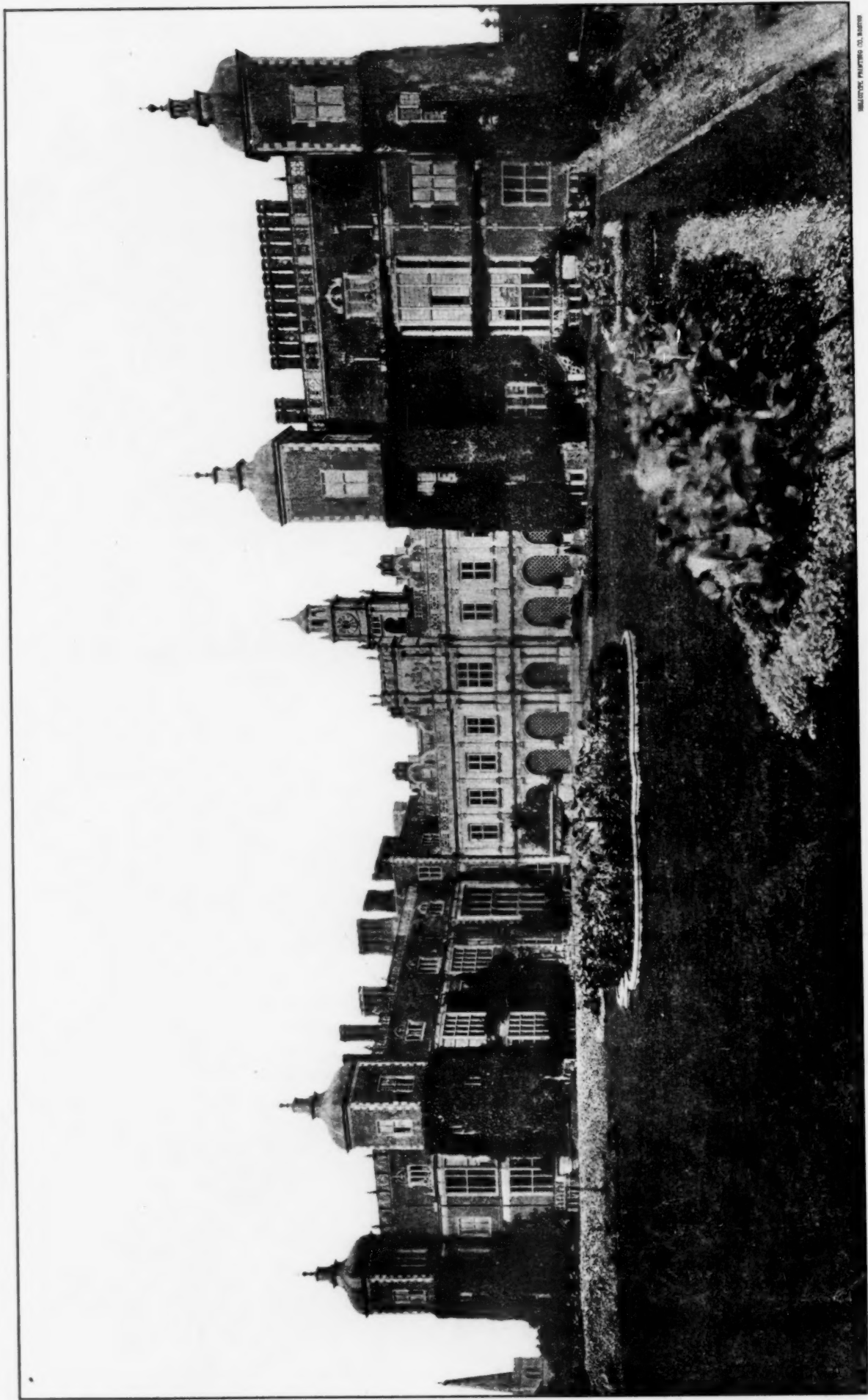
tention that a block was a tract of land bounded by four streets, and that in order to comply with the law, the liquor dealers would have to obtain the consent of a majority of property-owners upon each side of the streets which bounded the block. In the lower courts the saloon-keepers won, but, on appeal, the Supreme Court of the State of Illinois has lately decided that the contention of the city and of the protective associations is correct, adding that a dram-shop affects the value and character of all the property in the block in which it is situated, and that "to hold under the ordinance in question that the consent required was only from the property-owners on each side of the street in which the dram shop is kept, instead of each side of the streets surrounding the block, would manifestly lead to absurd results." Under the terms of this decision, a number of beer-gardens in the residence district will be obliged to close up, and as the ordinance was widely copied by smaller municipalities throughout the State, the final interpretation of the phrase is likely to have far-reaching results.—*N. Y. Evening Post*.

**A DRAUGHTSMAN'S RING.**—An Englishman has invented a writer's or artist's ring. The ring carries a small steel ball, so placed as to revolve freely in any direction. With the ring on one's little finger, so that the ball is at the point of contact with the paper, almost every bit of friction in the movement of the hand upon the writing or drawing material is removed.—*Exchange*.

**NICHES.**—The abundant use of statues by the Romans led to the adoption of the niche—a feature unknown in Greek architecture—as a convenient mode of inserting them within the surface of walls and thereby decorating them; at the same time space was gained in interiors where, if otherwise placed, they would have taken up room. Niches frequently occur in Roman temples and baths, and were occasionally decorated with a frontispiece of small columns, with their entablatures and pediments, but were generally left plain, and were for the most part semicircular in plan, in which case they usually terminated in an arch and semi-dome, after the manner of a tribune, or large recess, of which the niche was, in fact, a miniature copy. Niches, however, were very frequently rectangular in plan, and were also *crenæ*, or recesses, in which case the latter formed arches vaulted hemicylindrically.—*Stone Trades Journal*.

**SOME ECCENTRIC RAILWAYS.**—As the iron track is bound to force its way into most corners of the world, it is not surprising that some lines of railway exist which are striking evidence of a singularly bold conception carried out in the face of obstacles which seemed almost insurmountable. Sometimes the route of the future line lies across a desert; then the great law of the "compensation of nature" seems to make itself felt, for to balance the saving of time and money due to the fact that long tunnels will not have to be cut through hills or mountains the engineers are confronted by the total absence of three essential elements of construction, namely, wood, iron, and water, which have to be transported along the newly-laid line as it stretches its slow length across the desert. Russia's Trans-Caspian Railway, now known as the Central Asian Railway, was built under these conditions; thousands of logs of timber were needed, and the region traversed cannot boast of a single tree for more than 700 miles. This timber was required for building the long bridge, two miles in length, over the River Amu-Darya. This bridge was always the weak point in the highly important railway, and it has been replaced recently by a stone bridge. Between Merv and Charjui the line had to be carried over shifting sands 64 feet deep. When the work is being carried out in such regions the trains become a little town on wheels. They are composed of two-storied wagons, which contain sleeping accommodation, butchers' stalls, canteens, grocers' stores, and forges. As the Trans-Siberian Railway grew in length it was resolved by the authorities that the workmen should have their own "church car." A wagon was fitted up accordingly as a church, with a little peal of bells in the alcove above the entrance. The romance of mountain railways by no means ends with their construction, and travelling upon railways at a very high altitude is not a thing to be desired. The Peruvian line running from Callao to Oroya has a twofold claim to distinction; it is built at probably the greatest altitude of any existing railway, namely, 15,906 feet above sea-level, and it affords travellers certainly the most unpleasant "expérience de voyage" that can be imagined. As the result of travelling at such an altitude, the passengers begin by feeling great oppression, accompanied by pains in the head and limbs; these are quickly followed by bleeding from the nose and mouth, and then by momentary blindness. It is gratifying to know that there is a certain variety in the effects produced upon passengers at this point. Thus, while some persons are seized with giddiness, others entertain strange hallucinations, and others faint away; the last class become so weak that any undue exertion on their part often proves fatal. But this is not all that one has to undergo on the Callao and Oroya line. In due course the skin becomes irritable and sores break out, while the lips swell and then crack. On one of the Trans-Andes railways the passengers have to enter the train in a most peculiar and probably unique manner. The line referred to is that in the port of Mollendo, in Peru. The line starts from the quay-side, and the traveller can pass from the boat into the train. Unfortunately the boat cannot be brought completely alongside the quay. Disdaining the usual gangway, Peruvian ingenuity hit upon a very novel idea. Two large uprights, with a strong cross-bar, were erected on the quay, and from the cross-bar hangs an ordinary trapeze. The passenger wishing to land has to seize the bar of this trapeze; a few sailors surround him, and, when he gives the word, they unite in hurling him into space over the ship's side. One such "send-off" is quite enough, for with one swing the traveller comes to land in the outstretched arms of the railway porters. It is only right to add that both the sailors and the porters evince an amount of energy, delight, and dexterity quite equal to the nervousness of their victims.—*London Globe*.





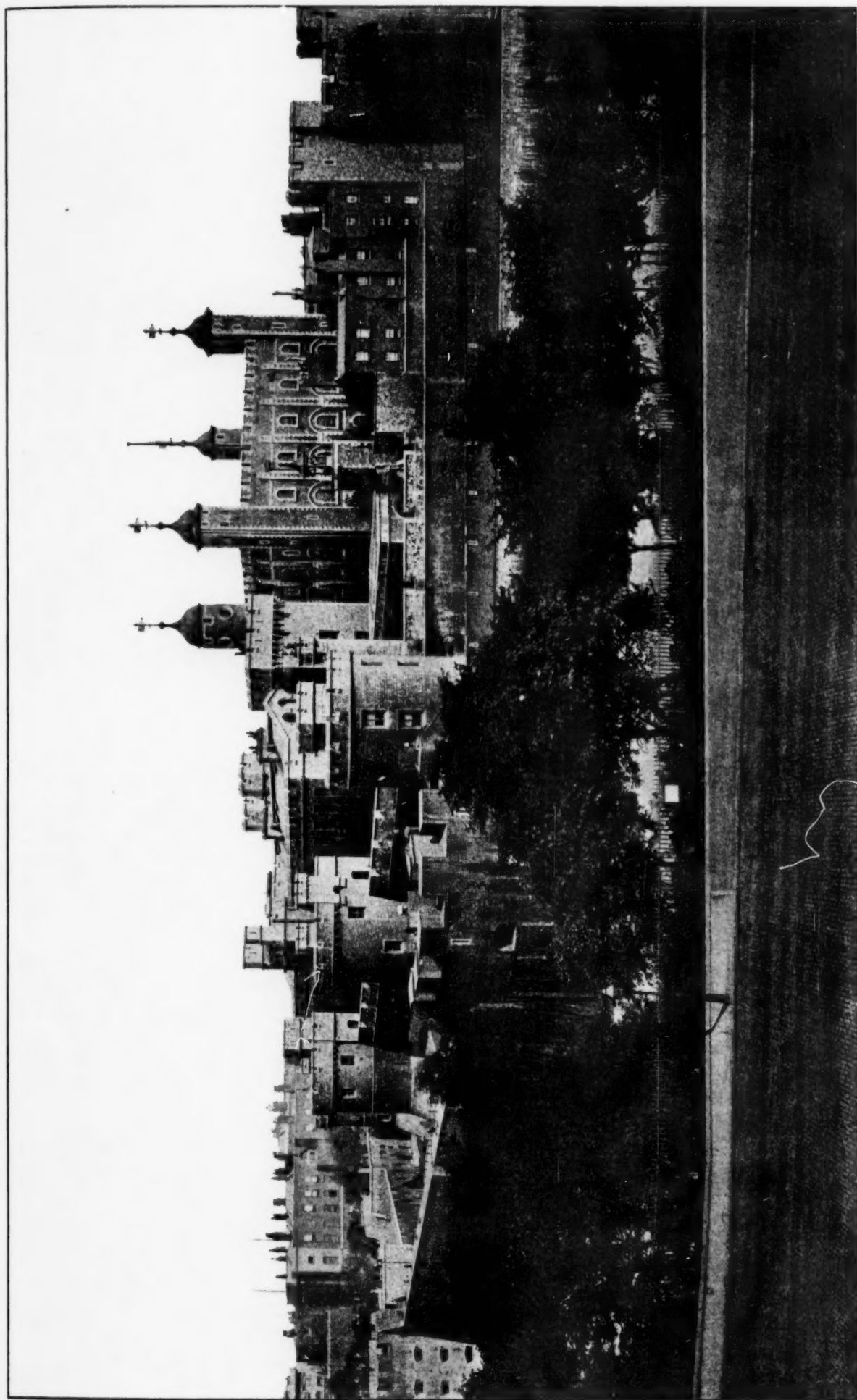
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*The American Architect*  
 March 22, 1902.

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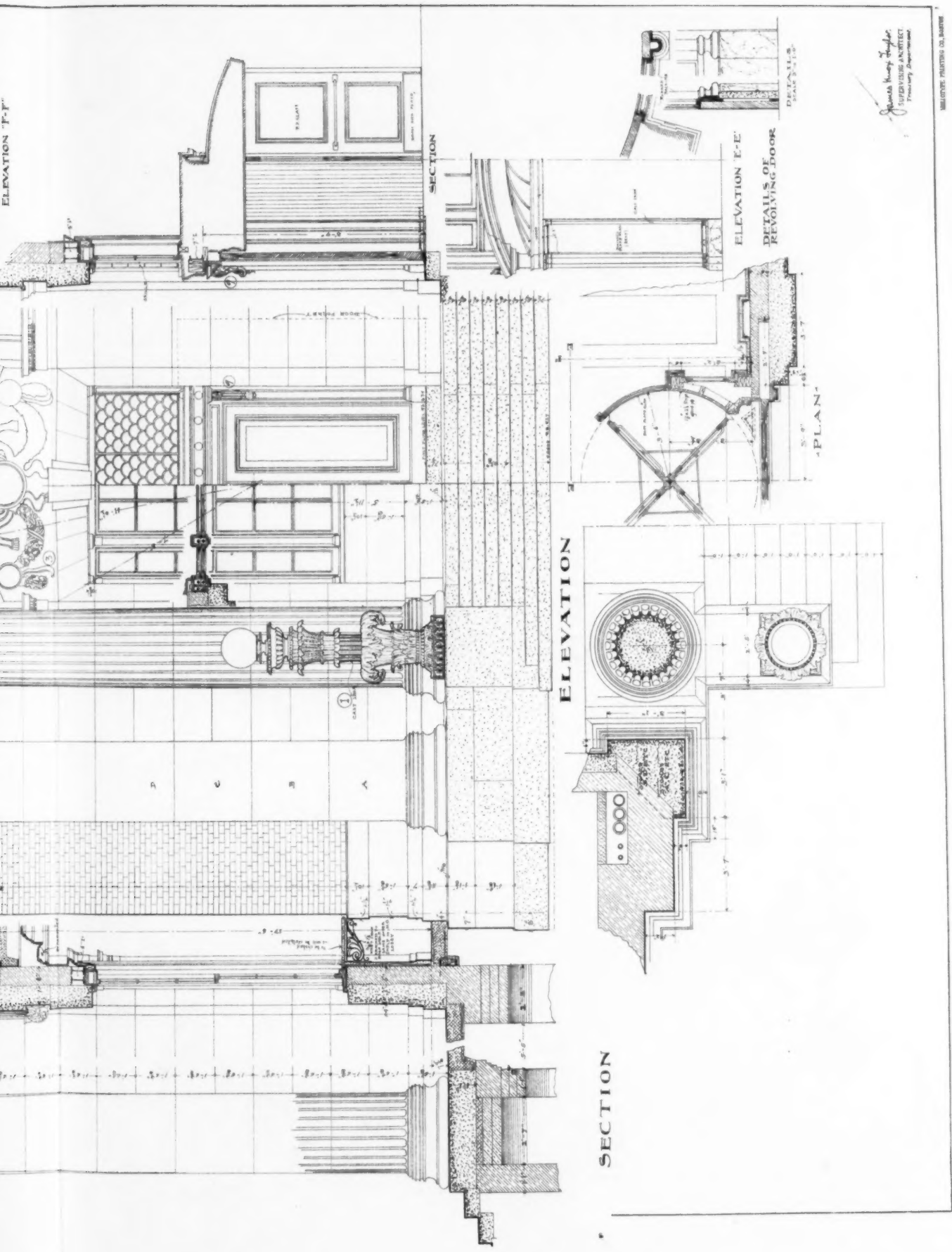
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| Pennsylvania Hospital, Philadelphia, Pa. | . . . . . | " 1755       |
| Carpenters' Hall, Philadelphia, Pa.      | . . . . . | " 1770       |
| Independence Hall, Philadelphia, Pa.     | . . . . . | " 1729       |
| Faneuil Hall, Boston, Mass.              | . . . . . | " 1741       |
| and others.                              |           |              |

## CHURCHES

|                                                 |           |           |
|-------------------------------------------------|-----------|-----------|
| King's Chapel, Boston, Mass.                    | . . . . . | Date 1749 |
| 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    |
| First Congregational Church, Canandaigua, N. Y. | . . . . . | " 1812    |
| St. Peter's P. E. Church, Philadelphia, Pa.     | . . . . . | " 1758    |
| Gloria Dei Church, Philadelphia, Pa.            | . . . . . | " 1700    |
| and others.                                     |           |           |

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|                                      |           |           |
|--------------------------------------|-----------|-----------|
| Fairbanks House, Dedham, Mass.       | . . . . . | Date 1636 |
| Royall Mansion, Dedham, Mass.        | . . . . . | " 1737    |
| Philipse Manor House, Yonkers, N. Y. | . . . . . | " 1745    |
| Tudor Place, Georgetown, D. C.       | . . . . . | " 179-    |
| Mappa House, Trenton, N. Y.          | . . . . . | " 1809    |
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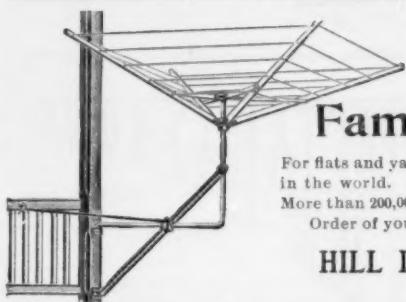
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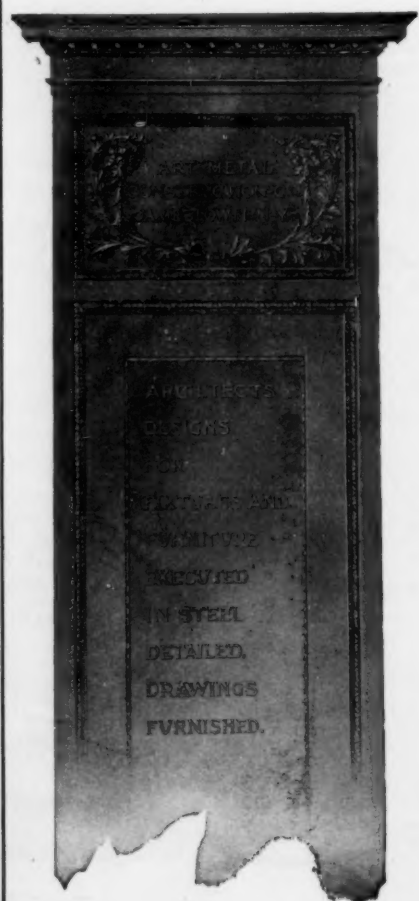
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## Important Litigation Relating to Magnesia Covering Patents

**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. ☞

Beware of Fraudulent so-called "Magnesia" Coverings as well as those infringing on patents.

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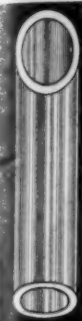
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## BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

**Des Moines, Ia.**—The W. R. Parsons & Son Co. have plans for a granite and marble mausoleum to be erected in Woodland Cemetery for Mrs. R. P. Watts, of Clarkson; cost, \$6,000. The date for letting contracts is not set.

A bill is before the legislature to appropriate \$250,000 for the completion and decorating of the State capitol building.

**Detroit, Mich.**—Simon J. Murphy will build a six-story power building on Congress St. West, near Griswold St.

The Y. M. C. A. have adopted the designs of Donaldson & Meier for their new building to be erected on Washington Ave. and Clifford St.

The club women have adopted the plans of Mason & Kahn for their new building to be erected at the corner of Withersell and Columbia Sts.

John Whittaker will build a six-family apartment-building on Trumbull Ave. after designs by Malcomson & Higginbotham; cost, \$25,000.

John H. Holmes will build a four-story brick store, office and bachelor's apartment building at the northwest corner of John R. St. and Miami Ave. after designs by F. Carl Pollmad; cost, \$25,000.

A. W. Chittenden is preparing plans for a fine residence which Frederick Stearns will build on Parker Ave.

N. Wardrop is preparing plans for the conversion of the dwelling 56 Winder St. into a flat of four compartments for J. W. Gray.

**Dexter, Me.**—A new Catholic church is to be erected here during the coming summer. The Advent Society is also soliciting funds for the erection of a new church.

**Duluth, Minn.**—A resolution will be offered to the County Board to issue \$300,000 bonds for the erection of a court-house.

Chester A. Congdon is figuring on the erection of a modern residence at 15th Ave. East and 1st St., to be of Indiana stone; cost, \$75,000.

**East Boston, Mass.**—The Unitarian Society will erect a brick and frame edifice on Marian St., after plans by Walter Atherton, 15 Exchange St.

**East Milton, Mass.**—A. A. Brackett, 64 South St., Boston, has begun the erection of a residence on Belcher Circle to cost about \$5,000, and work will shortly be started on two more houses at the same location to cost \$6,000 each. They will be finished in cypress and oak, and will have open fireplaces, hot-water heat and leaded glass. No sub-contracts have yet been placed.

**Elizabeth, N. J.**—The Union County Board of Freeholders has decided to build a temporary court-house, at a cost of \$30,000. The County Clerk's, Sheriff's and Surrogate's offices will be in it until the new county building is finished. This latter will cost more than \$250,000. When the county building is finished the temporary court-house will be converted into a prison for women.

**Etherville, Ia.**—The B., C. R. & N. will erect a new depot and office-building, shops, etc., here, to cost \$90,000.

**Evanston, Ill.**—Henry J. Schlacks, 1503 Schiller Building, Chicago, has drawn plans for an academy for the Sisters of the Visitation, at Leon St. and Ridge Ave. It will cost \$30,000.

**Fairfield, Conn.**—A two-story brick library, 30' x 65', will be erected at a cost of \$20,000, from plans in preparation by T. C. Beardsley, Jr., Savings Bank Building, Bridgeport.

**Fall River, Mass.**—A corporation will soon be formed with a capital of \$500,000, to be known as the Davis Mills, for the manufacture of fine cotton goods. Plans by William T. Henry will soon be ready for a three-story granite building, 127' x 350', to be erected at the corner of Warren and Quequechan Sts., and work will be started as soon as the weather will permit.

A four-story brick block, 45' x 96', will be erected at a cost of \$35,000 on Hartwell St., from private plans. Will contain stores on street floor with storage room above. L. G. Destremps, architect, N. Main St.

A stone mill will be erected at Flint Village for the Davis Mill Co., cotton mfrs., from plans furnished by Wm. T. Henry, engineer, Borden Block. Ready for figuring about April 1.

**Float Island, Can.**—Contracts have been awarded for the erection of a large summer school here in the St. Lawrence River. The school will be conducted in connection with Trinity School, New York, of which Rev. Dr. Uimann is principal. The plans call for three buildings and work to begin at the opening of navigation. They are to be ready by June 25. The contract calls for the duplicating of the buildings next fall to provide for 300 pupils; estimated cost, \$20,000.

**Fond du Lac, Wis.**—The School Board recommends the erection of an 8-room building in the 5th Ward and a 4-room addition to the Jefferson School at a total cost of \$30,000.

**Frankfort, Ind.**—The C. M. Horton Co., South Bend, has been incorporated with a capital of \$200,000. A new plant, including a 70' x 200' building, engine, forge and foundry rooms and office-building will be erected at this place.

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## BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

**Ft. Smith, Ark.**—The Christian Church is about to build a \$80,000 stone edifice. Rev. E. T. Edmonds, pastor.

**Grand Forks, N. D.**—The plans of Warren H. Milner, 938 Stock Exchange, Chicago, Ill., have been accepted for the \$20,000 Carnegie Library. The Senate has passed a bill for a public building for this place.

The Y. M. C. A. has completed plans for the erection of a building to cost \$15,000 to \$20,000.

**Greenwich, Conn.**—R. M. Bruce has had plans drawn by Architect F. G. C. Smith for the proposed new isolated hospital he is to build and to present to the town. The plans provide for 4 brick buildings, each to be 40' x 50' and to contain 2 wards, baths, etc.

Plans have been completed by F. G. C. Smith for a brick stable, 41' x 63', to be erected for F. L. Froment. Will cost \$6,000. Contracts not let.

**Groton, Mass.**—A brick gymnasium will be erected here for the Groton Episcopal School, from plans furnished by Peabody & Stearns, architects, 53 State St., Boston. H. W. Whiting, supt. at school, has charge.

**Hammond, Ind.**—Plans have been drawn by J. M. E. Riedel, of Ft. Wayne, for a brick church to cost \$20,000. Address Rev. W. H. T. Dan, 119 Clinton St.

**Harrisburg, Pa.**—Alex. F. Smith, of Reading, has completed plans for a three-story depot, 103' x 152', to be erected on Market St. by the Philadelphia & Reading Ry.

**Hartford, Conn.**—Andrews, Jacques & Rantoul, 1 Somerset St., Boston, Mass., have completed plans for a three-story brick club-house to be erected on Prospect St. by the Hartford Club.

**Heppner, Ore.**—The plans of Edgar M. Lazarus, of Portland, have been accepted for a \$25,000 court-house for Morrow County.

**Holyoke, Mass.**—A one, two and three-story stone chapel, parish house and rectory combined will be erected for St. Paul's Episcopal Society at cost of \$80,000 from plans by W. T. Townner, 157 Summer St., Boston. Architect has entire charge.

**Kankakee, Ill.**—A \$30,000 high school will be erected here this year.

**Keene, N. H.**—Report states that a three-story brick addition, 40' x 60', will be erected at a cost of \$12,000 to present Elliott Hospital from plans by Robt A. Foster, architect. Will be occupied as nurses' quarters and contain 30 chambers, library, reception and office rooms.

**Knoxville, Tenn.**—The Knoxville Cotton Mills Co. has decided on extensive improvements to its plant. Said improvements will at first take the form of an additional two-story building, 80' x 100', by the side of present building.

**Kokomo, Ind.**—Andrew Carnegie has offered this city \$25,000 for a public library.

**Los Angeles, Cal.**—L. B. Valk, 325 Stimson Block, has drawn plans for a brick and cement church, 60' x 125', to be erected on Hill and 2d Sts. for the Central Presbyterian congregation.

**Lowell, Mass.**—The Mohair Plush Co. is preparing for the erection of a five-story brick mill on the property now occupied by the Middlesex Coal Co. The work will be started at once. Plans by Charles G. Hedrick.

**Lynn, Mass.**—A site has been purchased and funds are now being raised for the new synagogue for the Abbat Shalom Society.

**Manchester, N. H.**—A three-story brick and stone parochial school, 61' x 100', will be erected at a cost of \$25,000 at corner of Beach and Spruce Sts., from plans by Wm. M. Butterfield. Rev. Father J. A. Chevalier, 383 Beach St., represents owner.

**Mason City, Ia.**—C. D. Wilson contemplates erecting an opera-house to cost \$40,000.

**Meridian, Miss.**—St. Paul's Episcopal Church, of this city, will erect a \$25,000 church building in the near future.

**Milford, Neb.**—An appropriation will be asked of the legislature of \$75,000 for a new soldiers' home here, and repairs at the home at Grand Island.

**Milton, Mass.**—At a recent town meeting \$50,000 was appropriated for the erection of a new library building.

**Milton, Vt.**—Col. E. W. Jewett, Fred Howes, and others, of Burlington, have purchased property here and are preparing for the erection of a club-house this summer.

**Milwaukee, Wis.**—The N. A. Christensen Engineering Co. has plans for a five-story steel frame factory and machine shop to cost \$150,000. Uehling & Linde, architects.

Plans have been prepared for extensive alterations to the Alhambra theatre including an extension of the stage and additional seats; cost, \$20,000.

**Mount Pocono, Pa.**—Builders J. E. & A. L. Pennoek, Philadelphia, have received plans from Architect Walter Smedley for a handsome summer hotel to be built here. It will be a four-story stone and frame structure, and will be one of the finest hostleries in this part of the country.

**Newark, N. J.**—It is stated that the American Insurance Co. will erect an office-building on Park Pl., Pine and N. Canal Sts., at a cost of \$250,000.

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## BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

**New Bedford, Mass.**—The Wamsutta Mills are contemplating a new weave shed of brick, two stories, to cost \$100,000. No plans have been made as yet.

R. M. Van Buskirk, manager of the New Bedford Real Estate Association, has purchased Buttonwood Park and is making plans for the erection of an amusement building and dance hall.

**Newburyport, Mass.**—A new club-house will be built on the Parker River bank. The promoters are Josiah Hale, ex-Mayor E. P. Dodge and A. N. Currier.

**New Haven, Conn.**—A great hotel is to be erected at the southwest corner of Chapel and College Sts., opposite the Yale campus and the New Haven House by New York and Providence, R. I., capitalists, aided by New Haven subscriptions. The whole enterprise involves an investment of several millions of dollars. Plans for the hotel have been drawn and call for a structure of twelve stories filling the whole corner, and containing between 300 and 400 rooms.

**New London, Conn.**—A brick school-house, 73' x 140', containing 15 rooms, will be erected at corner Hampstead and Freeman Sts., from plans furnished by Donnelly & Hazeltine, Garfield Building; cost, \$45,000.

**Newport, R. I.**—It is stated that more extensive improvements are to be made to Mrs. Astor's villa "Beechwood" on Bellevue Ave. and the cliffs, than was at first proposed. The place is to be generally renovated and an addition built to the ball-room at a cost of \$75,000.

A two and one-half story stone and wood residence, 60' x 75', including practical remodeling of present house on Narragansett Ave., will be made from plans by John R. Pope, 1135 Broadway, New York, for Mrs. Robert Garrett, of Baltimore; cost, about \$50,000. Plans ready for figuring on or about March 31.

**New York, N. Y.**—Plans have been filed for a four-story brick and stone school to be erected on Madison Ave. and 130th St. for the R. C. Church of All Saints; cost, \$100,000. Plans by Wm. W. Penwick, 39 W. 27th St.

**Norfolk, Va.**—It is reported that the Atlantic Hotel, which was recently destroyed by fire, will be rebuilt by C. H. Randolph. The new building will be twelve stories high, 202' x 250', and fireproof.

**Norristown, Pa.**—The congregation of the Second Baptist Church has adopted plans for a \$125,000 addition to its edifice.

**Northampton, Mass.**—Representative Gillett has placed a bill before the House, urging an appropriation of \$75,000 for a new post-office building here.

**North Bosawen, N. H.**—The plans of M. F. Oliver, of Concord, have been accepted for a \$30,000 building to be erected at the County Farm. Steel cells in the jail addition will be put in at a cost of \$5,000.

**North Easton, Mass.**—The J. C. Walsh Co. has been awarded the contract for the new church of the Immaculate Conception. The new church, the plans for which were drawn by Murphy & Hindie, of Providence, is to be 71' x 133', and will have a seating capacity of about 700. It is to be late Norman Gothic in design, similar to the new chapel at the West Point Military Academy, and will be built of native seam-faced rock, quarried on the parish property, with Long Meadow brownstone trimmings. The roof will be of the open truss order, and the interior finishings will be of hardwood stained.

## BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

**Norwalk, Conn.**—A one-story brick and wood public library building will be erected here at a cost of \$20,000 as a gift of Andrew Carnegie. Plans by W. & G. Audsley, 11 Broadway, New York City.

**Norwich, N. Y.**—It is reported that the citizens have voted to appropriate \$30,000 for a fire house.

**Norwood, Mass.**—This town is contemplating the erection of a large brick grammar school to cost \$75,000. The appropriation has not yet been made, but will be, in all probability, at the next meeting of town officers. Plans have not yet been drawn.

**Oakland, Cal.**—The Odd Fellows Association is considering the erection of a \$75,000 building.

**Oshkosh, Wis.**—R. H. Cole will establish a cereal mill at a cost of \$100,000.

**Paterson, N. J.**—Geo. B. Post, 33 E. 17th St., New York City, has drawn plans for a \$350,000 building to be erected by the Paterson National Bank and the Paterson Safe Deposit & Trust Co.

**Philadelphia, Pa.**—Press reports state that contracts will soon be let by the Dept. of Charities and Correction for erecting 8 pavilions for consumptives on the grounds of the Philadelphia Hospital. They will be 32' x 42', and will rest on concrete and brick foundations, and will be constructed of steel and glass. An appropriation of \$80,000 is available for the work.

Herman Voigt will build a three-story brick stable, 21' x 49', at the corner of Delaware Ave. and Callowhill St., for Swift & Son; cost, \$6,000.

**Pittsburgh, Pa.**—Plans have been prepared by Mueller & East for a \$50,000 brick and stone residence to be built for Chas. A. Hook at Ellsworth Ave. and Anderson St.

**Portland, Me.**—It is said that a brick and stone amphitheatre will be erected at a cost of \$35,000 in addition to present plant of Maine General Hospital, from plans furnished by John Calvin Stephens, Oxford Building. Will be occupied as an operating room and contain all modern fittings and appliances.

A five-story brick business block will be erected on Pearl St. for Messrs. Wm. G. Davis and Hon. J. P. Baxter of this city, from plans by F. H. and E. F. Fassett, 3 Exchange St. Building will contain offices and salesrooms on street floor with storage facilities above; cost, \$80,000.

The city has voted \$100,000 for proposed new almshouse including site.

**Providence, R. I.**—Plans have been drawn for the erection of a two-story brick bottling factory, 50' x 100', for the Consolidated Mineral Water Co.; cost, \$25,000.

**Racine, Wis.**—A Danish-American College, it is said, is to be erected here to cost about \$50,000. Rev. J. N. Jersild, of Neenah, and Rev. Charles H. Jensen, of this place, are reported interested.

**Rosindale, Mass.**—The foundations are in for a large business block to be erected on Poplar St. for W. S. Macomber, dry goods merchant.

**Rutland, Vt.**—The Rutland Railroad Co. is to erect a depot here to cost \$150,000, and railroad shops to cost \$250,000. Page & Germain have the contract for the temporary station to be erected.

**Rye, N. Y.**—The citizens have voted to erect a \$70,000 school.

**Salem, Mass.**—\$175,000 will be expended on the proposed improvements and additions to the Salem Hospital. Hon. R. S. Rantoul is chairman of trustees of the hospital fund.

**San Francisco, Cal.**—The heirs of the late Senator James Fair will soon erect a fine hotel on Nob Hill. It will front on Mason St. and extend to California St. from Sacramento St. The style will be Italian Renaissance; the material either white terra-cotta or bright stone, and the cost about \$2,000,000. Although the building will be only five stories high, its elevated site commands a view of the entire city and harbor and the cities across the bay.

**Sault Ste. Marie, Mich.**—V. E. Metzger will erect a two-story and basement brick block, 50' x 150', from plans by J. C. Teague, architect; cost, \$25,000.

**Seattle, Wash.**—The site for the Carnegie Public Library has been selected by the City Council. It is a block, 240' x 250', bounded by 4th and 5th Aves., Madison and Spring Sts.; cost of site, \$100,000.

**Selma, Ala.**—President and General Manager C. A. Wickersham of the Atlanta & West Point and the Western Railroad of Alabama has announced the letting of the contract for a \$40,000 passenger station at this place. It will be used jointly by the foregoing roads and the Louisville & Nashville. The building will be constructed of brick and stone with fine mosaic work on the interior, and will be one of the handsomest in the State.

**Sharon, Pa.**—Owsley & Boucherle, Wicks Bank Building, Youngstown, O., have drawn plans for a three or five-story brick depot for the Youngstown & Sharon St. Ry. Co., to be erected on W. State and N. Main Sts.

## PROPOSALS.

## NOTICE TO CONTRACTORS.

## COURT-HOUSE.

(At Greensburg, Pa.)

Sealed proposals will be received at the office of the County Controller, of Westmoreland County, Greensburg, Pa., until 12 M., April 17th, 1902, for the erection and completion of the superstructure of the new court-house for Westmoreland County, at Greensburg, Pa., in accordance with the drawings and specifications prepared by William Kauffman, architect, Lewis Building, Pittsburgh, Pa. Bids will be received for structure to be of stone, or granite casing. Plans and specifications can now be seen at the office of the commissioners, Greensburg, Pa. All proposals must be accompanied by a certified check equal to ten (10) per cent of the amount of bid. The Board of Commissioners reserve the right to reject any or all proposals. All proposals must be securely sealed with wax, and the name or initials of the bidders stamped thereon. JOHN H. BROWN, controller. 1369

## PAVING AND CURBING.

(At Mankato, Minn.)

The Board of Public Works of the City of Mankato, Minn., will receive bids on the 2d day of April,

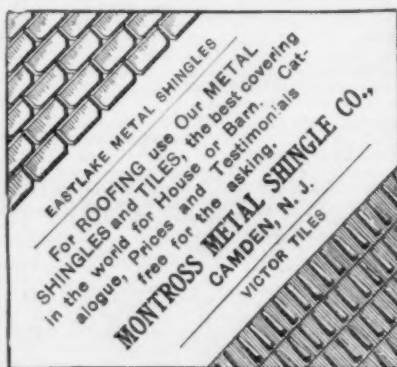


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## PROPOSALS.

1902, for furnishing all material and constructing approximately 10,730 lineal feet of cement curb and gutter, and 25,275 square yards of asphalt pavement and 1,900 lineal feet of stone curb and gutter to be reset, in said city, according to plans and specifications on file in the office of the City Recorder of said City. 1369

## BUILDING.

(At Warren, O.)

The Masonic Temple Company will receive sealed bids until April 1 for erecting a two-story brick and stone building, 80' x 110', to cost about \$30,000. It is to have steam heat and is to be lighted by gas and electricity. W. A. SPILL, secretary. 1369

## COUNTY HOME.

(At Vinton, Ia.)

Sealed bids will be received by the Board of Supervisors of Benton County, Ia., for the erection of a county home building, according to plans and specifications hereinafter referred to, up to the 11th day of April, 1902. Separate bids will be received for the heating, lighting, plumbing and sanitary work in said building. Plans may be seen at the office of Murphy & Ralston, architects, Waterloo, Ia., and at the County Auditor's office, at the court-house in Vinton, Ia., on and after the 10th day of March, 1902. J. P. COBURN, Chairman Board of Supervisors. Attest: W. O. BRAND, County Auditor. 1370

## COURT-HOUSE.

(At Alexandria, La.)

Bids will be received by the Police Jury until April 7 for erecting a court-house, to cost about \$75,000, according to plans prepared by J. Riley Gordon, of Dallas, Tex. 1370

## HOSPITAL.

(At Morris Indian School, Minn.)

Department of the Interior, Office of Indian Affairs, Washington, D. C. Sealed proposals addressed to

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## PROPOSALS.

the Commissioner of Indian Affairs, Washington, D. C., will be received at the Indian office until April 8, 1902, for furnishing necessary materials and labor required to construct and complete a brick hospital, with plumbing and electric light, at the Morris Indian School, Minn., in strict accordance with plans, specifications and instructions to bidders. For further information apply to John B. Brown, superintendent, Indian School, Morris, Minn. W. A. JONES, commissioner. 1370

Treasury Department, Office of the Supervising Architect, Washington, D. C., March 17, 1902. Sealed proposals will be received at this office until 2 o'clock P. M., on the 23d day of April, 1902, and then opened, for the construction, including heating apparatus, electric wiring, conduit and freight lift of the extension to the U. S. Custom-house and Post-office at Newark, N. J., in accordance with the drawings and specification, copies of which may be had at this office or the office of the Custodian at Newark, N. J., at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1370

Treasury Department, Office of the Supervising Architect, Washington, D. C., March 15, 1902. Sealed proposals will be received at this office until 2 o'clock P. M. on the 5th day of May, 1902, and then opened, for the construction (except heating apparatus, electric wiring and conduits) of the U. S. Court-house and Post-office at Salt Lake City, Utah, in accordance with drawings and specifications, copies of which may be had at this office or the office of the Postmaster at Salt Lake City, Utah, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1370

## CHURCH.

(At Fernando, Minn.)

The undersigned hereby gives notice that sealed proposals for the erection of St. Matthew's Evangelical Lutheran congregation at Fernando, Minn., including all labor and material, will be received by

["A Hit, a Palpable Hit!"]—HAMLET.

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### PROPOSALS.

building committee until the 12th day of April, 1902. All bids must be in strict accordance with the plans and specifications, prepared by Charles E. Webster, of Winthrop, Minn., which may be seen at the office of the Improvement Bulletin, Minneapolis, and on application at the office of Charles E. Webster and Henry Proehl, Fernando, Minn. (Signed) HENRY PROEHL, F. W. ROSE, FRED. F. FENSKE.

1371

### NOTICE TO CONTRACTORS.

STATE CAPITOL BUILDING. [At St. Paul, Minn.] Sealed proposals in duplicate will be received at the office of the Board of State Capitol Commissioners, No. 512 Endicott Bldg., St. Paul, Minn., until Tuesday, May 6th, 1902, at 12 o'clock noon, for all labor and material required for the plastering, the ornamental iron; also until Tuesday, June 3d, 1902, at 12 o'clock noon, for the woodwork, the painting and glazing; also until Tuesday July 1st, 1902, at 12 o'clock noon, for the hardware; also until Tuesday, October 7th, 1902, at 12 o'clock noon, for the interior stone and marble work. (Proposals for each class of work separately.) For the new State Capitol Building at St. Paul, in accordance with the drawings and specifications, which may be seen at the office of the Board and at the architect's

### PROPOSALS.

offices on and after Monday, March 17th, 1902. Copies of said drawings and specifications may be obtained from Cass Gilbert, architect, No. 524 Endicott Building, St. Paul, Minn., or Room 704 Constable Building, 111 Fifth Ave., New York City, upon payment of the cost of such reproductions, and a deposit of \$100, such deposit to be returned to the bidder upon return of the drawings and specifications. Certified checks must accompany bids, as follows: on plastering, \$1,500; on ornamental iron, \$1,500; on woodwork, \$1,000; on painting and glazing, \$1,000; on hardware, \$500; on interior stone and marble work, \$2,500; payable to the order of said Board, as a guarantee of good faith. The right is reserved to reject any and all bids and to waive any defect or informality in any bid, if it is deemed in the interest of the State to do so. Proposals received after the time stated will be returned to the bidders. Proposals must be made in duplicate and on printed forms, which will be furnished by the Board, and must be enclosed in envelopes, sealed and marked "Proposals for (name class of work bid upon) the new Minnesota State Capitol at St. Paul," and addressed to the Board of State Capitol Commissioners. For the Board of State Capitol Commissioners. CHANNING SEABURY, Vice-president. St. Paul, Minn., March 15th, 1902.

1372

### REMODELLING HALL.

[At Baltimore, Md.] Bids are wanted March 30 for remodelling Friend-

### PROPOSALS.

ship Hall, 125 E. Montgomery St. Address, EDW. E. MITCHELL, Pres. Bd., 1226 S. Charles St. 1369

COURT-HOUSE AND JAIL. [At Shelburne, N. S.] Bids are wanted April 2 for erecting a court-house and jail. GEO. A. COX, Chmn. Const. Com. 1369

BUSINESS BLOCK. [At Dawson, Minn.] Sealed proposals will be received until March 29th, by Mr. H. H. Onstad, of Dawson, Minn., for the erection of a brick business block at Dawson. Plans and specifications may be seen at the store of H. H. Onstad, Dawson, Minn., or at the office of the Improvement Bulletin, Minneapolis. H. H. ONSTAD. 1369

AGRICULTURAL BUILDING. [At Durham, N. H.] Bids are now being taken and no date set for closing on proposed three-story brick and stone agricultural building, 59' x 110', with ell, to be erected at a cost of \$30,000 at Durham, N. H., from plans furnished by J. E. Randlett, of 72 North St., Concord, N. H. Architect has charge. 1369

SCHOOL. [At Pocahontas, Ia.] The Independent School District of Pocahontas, Ia.,

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## PROPOSALS.

will receive bids until **March 31, 1902**, for the erection of an eight-room brick school-house. Plans and specifications may be seen at secretary's office in Pocahontas, Ia., or at office of Jas. S. Cox, architect, Estherville, Ia., after March 15. A. L. SCHULTZ, secretary, Pocahontas, Ia. 1369

## BARRACK BUILDINGS AND POWER-HOUSE.

[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, March 12th, 1902.

Sealed proposals will be received at this office until 12 M. Wednesday, the 16th day of April, 1902, for furnishing materials, labor, etc., for the construction of barrack buildings and power-house at the Mountain Branch of the National Home for D. V. S., near Johnson City, Tenn. Plans and specifications can be seen, necessary information obtained, and blank forms for proposals procured on application to this office or to the architect, J. H. Freedlander, 244 Fifth Ave., New York City, or at the office of the Superintendent of Construction near the site of the work. The Home reserves the right to reject any or all bids and to waive defects. MOSES HARRIS

## PROPOSALS.

General Treasurer, N. H. D. V. S. Approved: M. T. McMAHON, President Board of Managers, N. H. D. V. S. 1372

Treasury Department, Office of the Supervising Architect, Washington, D. C., March 10, 1902. Sealed proposals will be received at this office until 2 o'clock P. M. on the 15th day of April, 1902, and then opened, for furnishing the low pressure, steam heating apparatus, etc., complete in place for the U. S. Post-office at Hot Springs, Arkansas, in accordance with the drawings and specification, copies of which may be had at this office or at the office of the Superintendent at Hot Springs, Arkansas, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1369

## DORMITORY AND WATER AND SEWER SYSTEMS.

[At Crow Agency, Mont.]  
Department of the Interior, Office of Indian Affairs, Washington, D. C. Sealed proposals addressed to the commissioner of Indian Affairs, Washington, D. C., will be received at this office until March 31, 1902, for furnishing and delivering the necessary materials and labor required in the construction and completion of a brick or stone dormitory, and water and sewer systems at Pryor Creek, Crow Agency,

## PROPOSALS.

Mont., in strict accordance with plans and specifications, and instructions to bidders. For additional information apply to this office, or to J. E. Edwards, U. S. Indian agent, Crow Agency, Mont. W. A. JONES, commissioner. 1369

## CEMENT AND STONE.

[At Ft. Wadsworth, N. Y., and Ft. Hancock, N. J.]  
U. S. Engineer Office, Army Building, New York, N. Y. Sealed proposals for furnishing and delivering cement and broken stone at Ft. Wadsworth, N. Y., and Ft. Hancock, N. J., will be received here until March 31, 1902. Information on application. W. L. MARSHALL, major, engineers. 1369

Treasury Department, Office of the Supervising Architect, Washington, D. C., March 10, 1902. Sealed proposals will be received at this office until 2 o'clock P. M. on the 12th day of April, 1902, and then opened for furnishing the heating apparatus complete in place for the U. S. Post-office building at Oskaloosa, Iowa, in accordance with the drawings and specification, copies of which may be had at this office or at the office of the Superintendent at Oskaloosa, Iowa, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1369