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A CURIOUS case is now before the New York Supreme Court. Under a recent agreement between the Mason Builders' Association, of New York City, and the journeymen masons, both parties bound themselves not to do, or attempt to do, any work on any building against which a mechanics' lien had been recorded. As nearly all mechanics' liens are for debts which the owner of the building does not owe, this agreement was practically a compact among robbers to support each other in robbery. The first sufferer from it seems to have been the Central Realty Company, which, being offered the alternative of paying a claim which it had reason to resist, or seeing work upon its building indefinitely suspended, decided to test the legality of the agreement, and sued for an injunction to prevent both parties to it from carrying it into effect.

WE need not say that the whole building world is interested in the success of the Central Realty Company's contention. The whole system of mechanics' lien laws is founded in injustice, and these laws have probably more effect than all other causes put together in discouraging building enterprises, pauperizing workingmen, and encouraging and supporting swindling contractors. Why mechanics, whose income is, on an average, larger than that of any other people in the community with equal education and capital, should be allowed by law, if they do not get their pay from the person whom they have chosen to trust, to help themselves to what they want out of the pocket of some one who owes them nothing, and who never asked them to work for him, while lawyers, doctors, ministers, clerks, bookkeepers, farmers and business men of all kinds, except those engaged in furnishing building materials, are obliged to inquire into the honesty of those with whom they deal, under penalty of loss if their confidence is misplaced, is one of the questions which will most perplex the sociologists of the future. Meanwhile, the effect of the lien laws is that any sharper, with or without enough capital or credit to pay for a suit of clothes, can set up as a builder, bid against honest and experienced men, take from them, by bidding less than the value of the work, contracts which rightfully belong to them, and proceed to engage men and purchase materials, without being expected to furnish any evidence of honesty or solvency. The men whom he employs do not even inquire into these points, knowing that the lien laws enable them to make good any deficiencies in their pay out of the pockets of innocent parties; and, in many States, those who furnish building materials have the same privilege. The cheerful swindler goes on with the work, draws regularly his payments under the contract, puts the money in a safe place, and, when he has got all he can, assigns, "for the benefit of creditors," while the sub-contractors and journeymen, who are often in the secret, lay their hands upon the unfortunate owner, who is compelled by law to pay over again for what he has already paid for under the contract. Notwithstanding the ostensible rigor of the statutes, liens for fraudulent claims are often recorded with the genuine ones, on the supposition that the owner will not detect their fraudulent character, or will pay them to avoid the expense and annoyance of a lawsuit; and the New York agreement, by stopping work on a building so long as any lien stands on the record against it, simply enables any person whatever, with fifty cents and an easy conscience, to record any sort of a trumped-up claim, and suspend operations on whatever buildings he chooses to attack, until he is bought off.

A NEW chapter in the Parks case in New York has opened, through the confession of one Farley, a fellow-delegate with Parks, and sharer in his guilt, although not in his profits. In the trial of the case in which Parks was found guilty, for extorting the sum of two hundred dollars from Josephus Plenty, the horticultural builder, Farley and Parks both swore positively that neither of them were at the place where the money was alleged to have been paid, at the time specified in the other evidence. The jury did not believe either of them, and found Parks guilty, while Farley was indicted for perjury, and held for trial. Parks was soon released, pending an appeal to a higher court, and displayed himself in public with more arrogance than ever, while the miserable Farley lay in prison, neglected and forgotten by those whom he had served. Possibly the dog-like fidelity of Farley might have supported even this test, had it not been for the sufferings of his poor wife, who was left to starve by those who had profited by her husband's crime. This was too much, even for his patience, and he finally signified to the District Attorney his willingness to make confession. His confession will not save him from punishment for perjury, and not much of it has been made public, but it is known that one of the items of his story is that he and Parks went to Mr. W. E. D. Stokes, the owner of the enormous Ansonia apartment-house, where there had been a succession of strikes, and demanded fifty thousand dollars, as the price of cessation of the strikes. According to him, Mr. Stokes offered them a check for this sum, which they refused, and he finally paid them the whole amount in cash. This is only one of the performances through which the New York contractors are said to have been compelled to pay, during the last year, two million dollars in blackmail to persons of this class.

MR. JOHN SEELY WARD, JR., a member of the Board of Managers of the New York Association for Improving the Condition of the Poor, has been spending the summer usefully in studying the French sanatoria for tuberculous children, at Berck-sur-Mer, Hendaye, Ormesson and Villiers-sur-Marne. We may remark that these establishments are quite familiar to American architects who interest themselves in hospital and sanatorium work, but architects have not the public ear as an official has, and Mr. Ward's enthusiasm for what he found there is likely to be productive of immense benefit to the rich and generous, but busy and ignorant, community of New York. Those who have the welfare of their fellow-men at heart should never forget that tuberculosis destroys, in our cities, about one-fifth of all who die, or about one in every family, and that tuberculosis is a preventable, and, in its early stages, a curable disease. Whoever, therefore, helps to make possible the proper treatment of tuberculosis in a city of a million inhabitants assists in saving from premature death, and in restoring to usefulness, about four thousand persons a year; and he who promotes such treatment for children is a benefactor of the most susceptible portion of the community. Physicians find that pronounced tuberculosis of the lungs, in children under fourteen, is rarely curable; but tuberculosis first shows itself most commonly in children in affections of the glands or joints, and in such cases, as French experience shows, the poison can, in very many instances, be entirely eliminated from the system by proper open-air treatment, and the patient prepared for a long and useful life. We wish that Mr. Ward had found time to visit the day sanatoria in the parks of Berlin. These admirable charities could be reproduced here in a few weeks' time and at a trifling expense, and, for a very large class of patients, they are all that is needed for complete restoration to health.

DR. HENRY M. LEIPZIGER, of New York, is quietly earning the gratitude of the community by the courses of lectures which he has arranged, to be given under the auspices of the Board of Education, for the scientific training

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of workingmen. Most workingmen who are good for anything have a decided taste for theoretical, as well as applied science, and the habit of accurate thinking fostered by scientific study is as valuable as the increased fund of resource for his daily work which the practical man finds in such study. The Leipziger lecture courses are not by any means child's play. Those who attend them are expected to do a certain amount of collateral reading, and, if possible, to continue the study of the subject by means of text-books, lists of which are furnished them. This winter, courses are to be given on Metallurgy, Physics, Correlation of Forces, Astronomy and Electricity, all by experts, and all with ample illustration.

BUILDINGS have a hard time in New York. Sometimes "rain" gets "under their foundations," and tumbles them over; sometimes they collapse for no reason discoverable by the newspapers, and, of course, without fault on the part of the builder; and sometimes the wind is so misguided as to blow them down. The last contingency is responsible for the collapse of a new Fire Department building, in process of erection on Fifty-sixth Street. The structure is of considerable size, measuring one hundred and fifty by two hundred feet, and is of steel frame construction. The steel skeleton had been carried up about three stories high, when, one night, the watchman "heard a rumble," followed by a "terrific crash," and saw the whole structure fall into the cellar. The pious contractors of the metropolis, with their lawyers, generally see in such occurrences the hand of an inscrutable Providence; but poor, prosaic architects cannot refrain from asking what sort of steel construction it is that is prone to emit "rumblings," followed by "terrific crashes," and then to dive into the cellar, in order that they may avoid it. We are told that "a gale is said to have been responsible for the collapse"; but no one seems to have been conscious of any gale at the time; and, even if there had been one, gales are not so rare in New York that buildings must necessarily be so designed as to be unable to resist them.

THE distinguished architect of the Collège Chaptal, M. Eugène Train, died recently at his home in the suburbs of Paris. Every architectural tourist who has entered Paris, as most architectural tourists do, by the Saint-Lazare Station, will remember that the train, just before entering the station, passes a large building of mingled stone and brick construction, rather startling in its contrast of color amid the general monotony of Paris and its suburbs, but so delicately studied, and beautifully proportioned, as to attract the professional eye at once. This building is the famous Collège Chaptal, once the most generally discussed building in Paris. It is due to the catholicity of appreciation of the French architects to say that, although few of them, probably, would have ventured upon a similar experiment, the building was generally admired, and, although of very economical construction, it was illustrated in all the professional journals, including the *Croquis* of the School of Fine-Arts, and gained for its designer the cross of the Legion of Honor, and the Duc Prize, then awarded for the first time. It is hardly necessary to say that the example thus set was extensively followed, and an epidemic of brick polychromy threatened to descend upon Paris, but it was happily averted. Meanwhile M. Train entered the architectural service of the city of Paris, and his routine duties, as well as those which he undertook as Professor in the National School of Decorative Arts, kept him for many years too busy to engage in ambitious professional work; but he was able, not long ago, to display again, in the Lycée Voltaire, built for the city of Paris, his admirable skill.

SOME of our Southern friends are, apparently, studying the morals and manners of the Turks with remarkable success, and, if the names were suppressed, it would be difficult to tell whether a large part of the events reported from the South in the daily papers occurred in Mississippi or Macedonia. One of the latest Turko-American sports of the "haughty Southrons" consists in shooting at statues. It will be remembered that the labors of archæologists in Asia Minor have been materially interfered with by the passion of the Turkish laborers for using such marble statues as might be dug up as targets, success in knocking off a nose, or a finger, or an ear, giving them, apparently, such delight as to render the temptation to make the attempt irresistible. In the same way, in Georgia, where a rich cotton-planter recently undertook to erect one of the very few statues which exist in the South, his neighbors, with much less excuse than the poor Mohammedans, who know that the Koran forbids the carving of images, took it upon themselves to rebuke their fellow-citizen's "airs" by shooting at his "figger," which was soon reduced to a shapeless lump. Those who may be disposed to endow Southern communities with works of art will undoubtedly take warning by this example.

A GREAT engineering scheme is being seriously considered in London. This is nothing less than the utilization of the water-power of the Victoria Falls, in Central Africa, for generating electrical currents, to be distributed as circumstances may determine. Considering that it is not a great many years since the Victoria Falls were first seen by white men, and that they lie in a country swarming with savages, this project has a certain boldness, but the English-built railway is already within seventy miles of the cataract, and will undoubtedly reach it next year, so that the scheme is not impracticable. The main difficulty will probably be to find customers for the power generated. The Victoria Fall is more than 400 feet high, while the cataract of Niagara is only one hundred and sixty feet; and taking into consideration all the conditions, it is estimated that about thirty-five million horsepower can be utilized at Victoria, while Niagara can furnish only about seven million. Although the region about the Victoria Fall is inhabited only by barbarians, it is fertile, well-watered and temperate, needing only cultivation to fit it for a large population. Besides this, its mountains are rich in gold, copper and iron, and it possesses extensive deposits of coal. Ultimately, these resources, with cheap power to aid in their development, will bring settlers to the country, and, meanwhile, it is proposed to try sending the power over long distances, to be utilized in the present civilized settlements. Within a radius of six hundred miles from Victoria Falls lie all the goldfields of South Africa, and a large proportion of its railways, besides large districts of German and Portuguese Africa, and of the Congo State. Power is now transmitted by electricity in this country to a distance of nearly three hundred miles, and it seems by no means impossible that it may be successfully transmitted through twice that distance.

THE School of the Boston Museum of Fine-Arts pursues its prosperous course quietly, but with increasing success. With about two hundred pupils, during each of several years past, it has taken its place among the great art-schools of the country, and its lists of scholarships and prizes, which is gradually growing in length, assures it the advantage of emulation which is so desirable in attracting students of fine-art, as well as in stimulating them to their best effort. As our readers know, the Lowell School of Design, later the Massachusetts School of Design, is now incorporated with the Museum School, under the name of the Department of Design, with Mr. C. Howard Walker as Director. The prizes of the School have been rather widely distributed during the past year. In the portrait class, the Sears Prize, given by Mrs. Montgomery Sears, was awarded to Mr. Chester S. Kingsley, with honorable mention to Mr. Leslie P. Thompson, Mrs. Philip Hale and Miss Agnes F. Harrison. The prize in the life class, also given by Mrs. Sears, was awarded to Mr. John Sharman, with mentions to Mr. John E. Bird and Miss Irma M. Seavey; and the Sears prize in the Antique Class was given to Mr. A. W. R. Edwards, with mentions to Mr. Charles F. Bailey, Miss Martha E. Crocker, Miss Marion B. Allen and Miss Marguerite Rogers. The Thayer prizes, given to the class in Decoration by Mrs. Nathaniel Thayer, were carried off by Miss Sarah Barnes, Miss Harriet A. Robeson, Miss Ethel F. Babcock and Miss Edith Ingersoll, with honorable mention to Miss Margaret C. Reed and Miss Clara W. Robbins.

THE competition for a monument at Berne, in commemoration of the foundation of the Postal Union, has resulted in the selection of six designs, by MM. Hundrieser, of Charlottenberg, Morin, of Berlin, Saint-Marceaux, Dubois and Patouillard, of Paris, Chiattone, of Lugarno and Taschner and Heer, of Munich, the authors of which will compete a second time. Most of these names will be recognized as those of very distinguished sculptors, and our only regret is that no American should be found among the victors in one of the most thoroughly international contests ever held.

A PHILADELPHIA ARCHITECT'S VIEWS ON ARCHITECTURE.

THE following pointed and original remarks in regard to the modern position and practice of architecture are taken from a paper read by Mr. W. L. Price, of Philadelphia, at the annual meeting of the Ontario Association of Architects at Toronto, and printed in the published Proceedings of that Association: —

"Much of what I am going to say may appear reactionary, but I want you to notice one thing, that the man lost in the wilderness (and we are just a little lost in the wilderness in art matters), if he has not some guiding point, will go around in a circle — at least I am so told. So while the line of progress may be an upward slope, we may be travelling a line actually turning back upon itself, believing all the while that we are on an upward course.

"And we must not measure the line by what we can see of it; we do not see enough to make one part of it look different from another part at any time. We have to consider a great many outside things; to look at history and experience. To the architect especially that is essential. There is only one thing worse, in my judgment, than ignoring precedent, and that is following it.

"Now I want to take you with me in a little practical talk — we are up against a serious proposition. Having secured our client, the first question for us is, what next? Shall we build around that client our shell or his fitting shell? Now when we stop to think of it, how often are we trying to build the best possible monument to ourselves, and not the best possible house or building for that man?

"During a first interview with a client a year or more ago, after talking to him about an hour, he said, 'I would like to see the house you would design for me, Mr. Price,' and I said I would too. Being agreed on that, he then said: 'Now I have told you the things that I want, the size of the rooms and the number of them; you know the site, make me a sketch of the house you think will fit these requirements.' I said, 'Mr. ——, I will gladly do that; I can do that, I think, but if you take that design and build it you will be a fool.' And then I went on to say, 'for I do not know you well enough to draw a house for you.' I had not the slightest expectation that I would get that job, but right there I got it, because that man began to see something different in architecture from what he had ever seen before; he began to realize that this was to be his house, not an architect's house merely. Afterwards, sure enough, to show you how the good work took effect, one of the leading finishers of the city went to him and said: 'Mr. ——, you are a busy man, you don't want to bother with the designs for the inside of your house; I will refer you to So-and-So — we did the work for him — $47,000 worth of interior work, and we did not take up two hours of his time.' This gentleman said, 'Well, that settles it; you could not decorate my house or do my interior woodwork because I can see that that is your interior woodwork and not his, it does not fit him.' I simply tell you that to point out that what we have to do if we are going to have real architecture is to make our product more than beautiful, more than fitting to the situation, primarily fitting the man that is to live in it, or the purpose for which it is to be used. That means a pretty savage thing sometimes; it means that if we are going to build a house for a vulgar man, that we must build a vulgar house. It would not be architecture if we did not. It must be better than that man; it must be what that man might be, it must represent that, but unless it has in it some element of that thing which makes him the vulgar man, in my judgment, it is not architecture at all. We are up against difficulties and limitations of that kind, and it does not seem to me to be such a bad thing after all. Fortunately, the vulgar man usually goes to a vulgar architect, so that we need not often be seriously troubled that way. But the fact remains that it must fit the man in some way or other, and I think the most of us (even if we do not analyze these questions of design) naturally tend to draw a vulgar house for a vulgar man. But we must be mighty careful of what we mean when we call a man vulgar. A difference in taste does not constitute vulgarity, or the reverse. My client will say: 'I like this or that house at Forty-ninth Street.' And instead of falling dead I go out and try to find what it is he likes about that house; very often it is a bay window on the side of it, or it faces this way or that way, or it has some other feature absolutely irrespective of design or drawing that fits the man. If, for instance, you take a man that likes brilliant colors, and set him down as being ignorant and vulgar because you have put two things before him: one good, in low tones that you care for, and one bad, in high colors that you loath, and that attracts him because he loves color, you make a great mistake, for that is not a fair test; you ought to put before him things good and bad in both bright and quiet colors, and you will find ninety-nine times out of a hundred he will choose the good thing. Find out what it is he likes about the bad thing, give him a chance and he will choose the good thing rather than the bad. If that were not true there would be no civilization; we would have devoluted back into oysters by this time, because we have done so many foolish things and so neglected the laws of nature that it must be some principle in us that seeks the right rather than the wrong, to keep us going at all. As Professor Shortt said to us yesterday, we have gotten away entirely from the mainsprings of the art and architecture of the past; we have come to a time when neither the civic nor the religious is the ideal around which we build our civilization, but the individual, the domestic. Take all these high buildings with which you gentlemen are wrestling in pain and trouble (and it is a serious trouble), what are they for? After all are they not merely the places that we go to (to get away from as soon as we can), that we may have enjoyable surroundings in our home life? That is the sole object, and while we should make them as little obnoxious as possible, and keep them as quiet as possible, because they tend to ramp and rave — while we should do that, it seems to me that our greatest effort should be put upon the making of the object of all this beautiful, and that is, after all, our homes. Therefore, I am talking mainly about house design. I want to say, though, that your President yesterday pointed out what seems to me the only logical materials in which to design the office-building, and that is a skeleton of steel clothed with a plastic material of some kind. I cannot conceive, though I admit I have done it myself, that it is proper to clothe a steel frame by putting brick or stone around it, or any real building-material. It is a lie on the face of it, for it would not stick there and stand unsupported. If we must have that kind of building, let us encase it with some plastic material like cement. The engineers are looking after the bones, and we are, after all, only the planners and decorators of it.

"The most serious question, as I see it, in designing a house that we have to meet with is, what shall the concrete thing be made of, and how shall it be made? Or, perhaps, how shall it be made, and what shall it be made of? We will treat what shall it be made of first. The material must be moderately cheap. We do not often have palaces to build; we are not working for Gould or J. Pierpont Morgan, but for each other, the average community which we find around us; therefore the buildings which we build must be cheap. They must not, or should not, require any great amount of ornament; and I want to point out that the bulk of the ornament that we use is used purely to get surface, and not for the value of the ornament itself. The pressed brick of good old Philadelphia was so horrible that after we once waked up and got past the marble steps and marble lintels, we flew to the other extreme and brought in the tortured mud (the terra-cotta man), with his substitutes for surface; and we put wriggles all over it to make up this surface — that is what it amounts to, most of the ornament is just that, wriggles — and we smear that over it for no other reason than that we want surface. I do not think that the lack of ornament enters our mind one time in twenty when we put that kind of stuff on. I do not refer especially to terra-cotta, but to all senseless ornament. It is because we are afraid the surface will look flat without the ornament, and that is a mighty poor excuse for putting it on. As I say, texture should be the first consideration, because the bulk of our building will depend for its beauty on texture and on the disposal of its masses, and not on ornament. In the first place real ornament that really beautifies the building is too expensive to spread all over it; and in the second place you cannot see it if you do so. It becomes merely surface, and here is where fortune favors us, as it so happens that the cheaper and rougher materials naturally have the better textures. I remember when building a house some years ago, I arrived on the scaffold just as the bricklayer was starting to build a high kitchen chimney — it was my own house, and I could do as I pleased — and he had there two piles of bricks, very nice bricks. One pile was of quite smooth, beautiful bricks, the other pile was of the roughest bricks that he could get. I said, 'What are you going to do with those bricks?' He said, 'I am going to use these rough bricks for the lining, and the others for the outside.' I said, 'Reverse it.' He nearly fell off the scaffold. I said, 'Won't those smooth bricks make a good lining for the flue?' He said, 'Yes, very good, excellent lining.' I said, 'I am quite sure the other bricks will make a much better looking outside, and that is the part I am interested in, apart from its drawing qualities.' So he put the chimney up wrong side out; and when he had his scaffold down he said to me, 'That is the best looking chimney in this town.' The bricks on the inside cost probably $11 a thousand, and those on the outside $6.50; and those rough, hard bricks are the only kind, in my judgment, of which to build a country house — the roughest ordinary hard brick that you can get. I will stand fight with a client on that before I will utilize anything else, because it is the brick with texture and color — the brick that has the burned head on it — not to be picked into a pattern necessarily, but put there to have its influence on the texture and color of the building. What is true of brickwork is true also of stonework, with us. When we really want to get expensive stone, then we get Avondale stone, which is as white as the driven snow and as uninteresting as anything in God's creation; or we use rubbed or sawed limestone, and if not satisfied with the surface being perfectly smooth, we specify that it shall be drove-tooled, when it is generally planed on a machine. Whenever they get the chance to put the machine on and make groves, they do it; and all the texture and sense of stone is got out of it. For house-building, the rough stone, the common flat stone that we use down there, makes, in my judgment, the finest wall surface in color and texture, and interesting light and shade, that we can get. Next comes another material, and, in spite of what our friends who like dark exteriors say, I am extremely fond of it, and that is rough plaster, the roughest sort of dashed work or pebble dash. I think that when we are considering the color of the exterior, we must remember, as your President said, shadow, the shadow of the eaves — make it big if you want to; the shadow of the trees that overhang it; the shadows of the vines that grow on it. What is there more charming, more beautiful, than the white cottages and thatched or tiled roofs of England, with their beautiful vegetation around them? We may, perhaps, consign white to a grayer climate than ours, but much of the time we could stand white, or nearly

white, here. And this material, it seems to me, is a very valuable one that is much neglected. It gives us mass, it does not chop the surface up, and it gives us a fine contrast with either stone or brick, whether it be white or colored. Of course we use a great deal of timberwork down with us, and I am sorry to say we very seldom use it honestly, most of our timberwork being stuck on the outside of the house and not part of the structure. That, of course, is inexcusable, there is no possible excuse for it, so far as I can see — I do it myself, but I am ashamed of it and I am trying to stop. It is almost impossible in this country to use it honestly; I doubt if the timbers will stand in our climate long enough when really built in the wall to make it a practical mode of building.

"These are, to my mind, the kinds of material that it is worth while to deal with in house-building. . . .

"Perhaps the most serious problem we are up against is, how to get this material put together so that it may properly be called architecture after it is done. How much of the building that we are doing in this country would we walk out of our way to see in the old country; or would we collect pieces of as we do pieces of the old buildings? That comes back to the proposition of my friend that the architect is not a designer of buildings, but a designer of opportunities, and if we cannot find the people about us who will seize these opportunities and together with us make architecture, the net result will not be architecture; we will have design, but not architecture. Here is where I am going to get "reactionary" in trying to go on straight. People say that we are in a condition, and always have been, of evolution, and that we cannot fight against tendencies. But we know how mankind has evoluted in the past; it has been in spirals. When they were rebuilding a brick Rome in marble, they little thought that Rome was in its decline. Their literature they thought better than the more rugged and tough literature of former days; their architecture they thought better, more refined and elegant; but just the same, Rome was in a decline and not on an ascent. It seems to me that it is worth while for architects especially to see what can be done in stemming the tide, or at least in diverting the tide, from methods that are suicidal so far as art goes. You must remember that though the body of architects is a very small one compared with the community, it has been a very efficient mover of the community. The difference between the Philadelphia — I speak of Philadelphia because it is my own place — of thirty years ago and of to-day, is almost entirely due to the few architects who have worked for better things there. They insisted, and insisted again and again, in spite of the conservatism of client and builder, that material and design should be better, and they have bettered them. Now it is in our hands very largely to influence the men who do our work, by continually insisting on honest work. The men who erect our buildings are divided into two classes — the contractors, with whom we come in touch, and the men who actually do the work. The contractor has, in a large measure, ceased to be a builder; he is simply a contractor; he gets a number of sub-bids, adds them together, and puts on his commission for profit and superintendence, and finances the job, and, to a certain extent, sees that it is carried out — that the people working under him do carry it out. But he has comparatively little touch and little sympathy with the actual workmen who carry out the work, and they are the men that we must go after. It is not the contractors who have much to do with the actual building, it is the craftsmen, if you can call them that, who do the work.

"Now, it seems a reactionary proposition, and possibly a hopeless one, to fight against the machine. Here we are at the end of the nineteenth century, the century that brags more of its methods of production than any other one thing; and I say that those methods of production are themselves absolutely immoral and reactionary. And I mean it. I mean that the method of production that considers only the amount of the product and the profit that can be made upon it is absolutely immoral, and that the products of these methods are essentially inartistic, especially in our decorative friends' materials. I know, for instance, what it is to try to select papers for other people; I know that always, or nearly always, when the people get the paper on the wall they will come into the room and say: 'That is not the paper I selected; it was not that color, it was not that design.' There is a difference between the design, which may be very beautiful, and the thing you get upon your walls, wherever it is mechanically made. And that is an essential difference. It is a difference that is bound to exist. I do not care how far you may perfect your methods of production, if they are mechanical the result cannot be artistic, because art is, after all, as far as I can see it, only the expression of one's own individuality. Hubbard has said that art is the visible evidence of man's joy in his work. And that is almost a definition, but it is not the real definition, because the art is in the doing of the thing, and not in the product of the doing. You cannot, if that be true, get art material or art results without artists. The proof that it is true is that the artist never hoards the things that he makes; his real joy is in the making. The rich people do not possess the art of the country; they have the crumbs that fall from the artist's table, and that is all that they can get of it. The artists are the fellows that get the fun out of it. Art truly is to the artist. Now we architects are only half artists, because while we guide the hand we are not the hand. It is a pity, but it is true. And yet we have the biggest opportunity in the world, and that is the making of ourselves and the crowd better men at the same time, and it is in our hands to do it. We may be really leaders, but the evidence of leadership is a following. If we have not a following among the people that create the things that we are supposed to create, then we are in nowise leaders; but we have the privilege of being leaders and educators of the people, and especially educators of our co-workers in making architecture. And how shall we go about it?

"This machinery question is a vital one, and one we cannot ignore — as to where we can draw the line on the machine. I was trying to make a distinction, and I think I can make one. I think you will agree that the place where we can draw the line is this — just so long as a machine is a tool with which a man works, it is a benefit, no matter how highly it may be developed; but the moment it ceases to be a tool, and becomes a mere automatic machine into which material is fed, and out of which the product comes without any volition of the man who is working it, then that machine becomes an immoral affair, and the product of it becomes absolutely worthless as far as the art world is concerned. That seems to me to be the place to draw the line. That does not cut out band-saws or turning lathes, or other power tools, but it does cut out much of the work we have to put up with; for instance, it cuts out machine carving in all its forms. It is an easy way to make a yard, or a yard and a half, or a whole piece of so-called ornament, but of what value is such ornament? Now can we get the people we build for, and the people we build with, to go with us, and return — if it be a return — towards a more simple method of construction? I think we can. I think that there is one way we can do it if no other, but it would be a drastic method. That would be to cut off all the ornaments, make the thing absolutely simple and plain, with only the essential features in it. Then, at least, there would be no bad ornaments in it. I think we can go a step farther, and instead of cluttering up the inside or the outside of our houses with numberless mouldings and brackets, and "the Lord knows what, of round and square, stuck here, there and everywhere," without any special meaning except that our ancestors or forefathers did it in marble or some other material, for I am afraid that is the reason we put most of those things in, we can eliminate most of these things, and substitute for them extreme honest simplicity in construction, and a little bit of good carving, for we still have the carvers left to us, and some of the carvers and decorators are really artists and artisans. I would rather have on my wall a patch a foot square of real decoration, interesting enough to go and look at twice, than to have the room covered with decoration that has no interest except as to design. That seems to me a most practical line of elimination. Cut the quantity of it down to the quick, if need be, to get the quality a little where we want it. We can do that, and the people will go with us, for they are just as sick of the uninteresting wall-papers and truck that their houses are cluttered up with as we are. I have had no difficulty in getting people to allow me to simplify their houses for them. The tendency to ornament comes from the architect rather than from the client, almost every time. Of course, there are exceptions, and people want a lot of gaudy ornamentation and display; and I think in these cases we had better give in to them. I think that is possibly the best way to cure them. It is a little rough on us, but I think we had better suffer it if we can make architecture possible in the doing of it."

THE ESSENTIALS OF SCHOOL-BUILDINGS.

A REPORT was presented to the British Association on the condition of health essential to carrying on the work of instruction in schools. The following relates to buildings: —

In drawing up the following remarks upon school-buildings in relation to health the sub-committee had before them the regulations issued by the Board of Education both for elementary and secondary school-buildings. As these are open to any one, and give a large amount of detailed instruction as to the planning and fitting-up of both classes of schools, it seems better to the sub-committee to confine themselves to some general observations applicable to all classes of school-buildings, avoiding as far as possible details applicable to particular classes of schools, which can be readily obtained from the regulations mentioned above.

Generally. — The plan or general scheme of the building should be arranged with a view to providing for the particular system of organization and routine that is intended to be adopted in the school.

The main points to be kept in view are simplicity and directness, that is to say, narrow corridors or passages are to be avoided; all parts of the building and playgrounds should be easily overlooked, so that the duties of supervision may be reduced to a minimum. There should be no buttresses or projecting parts of the building to form corners or places screened from observation.

Every part of the inside should be thoroughly well lighted.

The staircase should be planned so that there is easy and direct access from every part of the building to the open air, and so distributed that no part of the building can be cut off by fire; they should be arranged to discharge into open places of sufficient size to prevent jostling or crowding in case of two or more classes being dismissed at the same time. The general scheme must provide for rapid and orderly movements of large numbers and easy accessibility to every part of the building for the principal.

In the case of large boarding-schools the residential buildings should be kept separate from the educational block; in this way

each boarding-house may be placed so as to have the most favorable aspect, can be more easily isolated in case of sickness, and the air can be allowed free play all round.

The objection to arranging a school in the form of a quadrangle is that there will necessarily be a certain amount of stagnant air, and that only two sides can have a favorable aspect.

Site. — A damp or low-lying ground should be avoided; if possible a position on the top or side of a hill facing south with a gravel, sand or chalk soil, sheltered to the north and east by trees, preferably pines. Ground water should not come within about 10 or 12 feet of the surface. The advantages of a good soil, such as sand or gravel, may be entirely neutralized by an impervious layer of clay a little below the surface.

The erection of a school-building upon made ground is very undesirable.

In towns care should be taken to place the school away from main or noisy thoroughfares, the neighborhood of railways, factories or any industries causing dust and smell. A wide street with the houses on the opposite side low should be chosen, both for light and the avoidance of noise. Otherwise, unless the building can be put at least 60 feet back from the street, there will be disturbance to the work. In any case the room where noise is of less importance, such as studios, laboratories, cloak-rooms, staircases, corridors and the assembly hall, should be placed on the street side, aspect having been taken into consideration. Double windows should only be allowed where there is an effective and complete independent system of ventilation. The places that the children may have to pass on the way to school should also be considered when settling the position of a school.

Aspect. — The building must be placed so that the sun has free access to every part that is in constant use. The best aspect is probably southeast; this allows the morning sun to shine into the room, while it is off before the hot part of the day. Rooms facing due west will be very hot in summer, and should if possible be only used in schools where work is not carried on in the afternoon. It is suggested that on a free site the best plan will be to place the side of the hall in which the windows are (in a school on the central hall plan) to the northwest, placing the studio at the north end and grouping the class-rooms on the south and east.

Entrances. — In arranging the entrances regard should be had to the prevailing wind in order to provide shelter; there should be covered space for early comers to wait in on wet mornings. They should not open directly into the hall nor be used for cloak-rooms. A strong draught is produced when two entrances open opposite to each other with a straight corridor between. In mixed schools there must be a separate entrance for boys and girls.

Cloak-rooms must be large, airy and well lighted, and placed so that they are under easy observation from outside. They should be easily reached from the main entrances, and the doors so arranged as to allow the various forms of cloak-room drill that are customary in the elementary schools. The stands should be some distance apart with 12 inches between the pegs, of which there should be only one row, so arranged that the clothes can hang clear away from the wall and allow of the proper circulation of air. In the case of boys' schools less space will be required. The best umbrella-holders are the "turnstiles." Cloak-rooms should be warmed and special attention be paid to their ventilation. Lavatory basins should not be placed in the cloak-rooms.

Class-rooms. — (*a*) Area. The area of the floor-space to be occupied by the pupils should be not less than 18 square feet per child. (*b*) Lighting. The main light to be from the left, other windows being subsidiary and for the purpose of ventilation.

The transparent glass surface should be, if possible, one-quarter of the floor-space, to allow for the dark days, and should never, even on the south side, be less than one-sixth. The sill of the window should not be more than 3 feet 6 inches from the floor, but if higher should be bevelled off.

The glass should be carried as near the ceiling as may be constructionally possible. The piers between the windows should be as narrow as possible, and splayed or bevelled off. The back row of desks must not be placed behind the last window. Transoms or heavy mullions should not be allowed even if the requisite amount of glass area is provided, as they cast shadows. The color of the walls is important with regard to lighting. The light yellows and buffs often found and recommended are not satisfactory, yellow in particular producing fatigue and nervousness in a marked degree as compared with other colors. Some light shade of green or gray seems on the whole the most satisfactory color. Blackboards placed at a height within an easy reach of the children should run round the walls.

Sleeping-rooms. — The most satisfactory arrangement is probably that of open dormitories containing a moderate number of beds. The cubicle system is less to be recommended, while that of having rooms for two or three should be unhesitatingly condemned. Not less than 65 square feet of floor-area should be provided for each occupant.

Playground. — Every school should be provided with sufficient open space immediately round the school-building for the purpose of a playground; this should in no case be less than 30 square feet per head. In the case of secondary schools this should be in addition to the playing-field for regular games. Boarding-schools require considerably more space than day-schools.

Ventilation. — The committee while feeling to the full the enormous importance of the subject of proper ventilation in regard to the success of the school, both as to the mental and physical development of the pupils, feel some difficulty in offering any suggestions as to how a satisfactory result can be secured. Many schemes are put forward, both "mechanical" and "natural," each of which claims to secure perfect ventilation, but all of which in actual practice fall far short of their promises. The committee would, however, like to utter a word of warning with regard to certain systems that rely on the introduction of hot air both for the warming and ventilation of the rooms. Such a system may work well enough in the case of one or two large rooms, but in a school, with its large number of rooms with an always varying number of occupants, the difficulty of adjusting the pressure becomes very great. The continual movement and opening of doors is also apt to interfere with the proper working of the system; in addition to this there is the breathing of the warmed air. In winter the incoming air must be raised to a considerable temperature to allow for the cooling effect of the windows, walls, etc.; and although somewhat cooled down by the time it reaches the pupils it must, it would seem, lose most of its invigorating qualities, even though it has not been heated sufficiently to burn the organic particles present. Rooms heated by hot air are apt to have an enervating and debilitating effect. In order to warm and ventilate a room by hot air only it is, of course, necessary to introduce the fresh air at the top, extracting the foul air at the bottom. This, again, is open to several objections; those sitting near the outlets are in a continuous stream of all the bad air in the room; the breathed air is brought down again past all the people in the room (as are the products of combustion if artificial light is in use); the windows can never be opened, because if they were the whole working of the system would be upset; finally, in summer, when the incoming air is cooler than that in the room, there is a tendency for the entering air to fall straight down to the outlet below. This system has undoubtedly many strong supporters, but the unsatisfactory state of things existing in many schools where it has been installed has induced the committee to urge that a good deal more experiment and experience of it is required before it can be safely recommended. On the whole, it seems that the solution is likely to be found in some plan by which the fresh air (warmed when the weather is cold so that it can be freely introduced without discomfort and maintained at a temperature not less than fifty-five degrees) is brought in at a low level, the foul air being taken off at the highest point (mechanical power being used to make sure of sufficient movement) and the actual warming of the room being done by some form of direct radiation.

Sanitary. — The sanitary conveniences in boys' schools may well be placed outside the main building; but in girls' schools and where there are very young children they must be provided in the main building, but should be cut off by a properly arranged ventilating lobby. This part of the school-building should be thoroughly well lighted, so as to insure its being kept properly clean. Deodorants or disinfectants should not be allowed, as they take away one certain and easy means of detecting anything wrong. To prevent unpleasantness, reliance should be placed on perfect cleanliness. Frequent inspection by the principal is of the greatest importance, as when these matters are left entirely to the school-keeper it is not uncommon to find in schools otherwise splendidly equipped and managed a very undesirable state of things. In planning a school great care should be exercised as to the position of lavatories, etc. No windows in the main building should overlook the approach to them.

Lighting of Class-rooms. — 1 A. A class-room is considered to be sufficiently lighted by daylight in all parts in which a portion of the sky is visible by the scholar; by artificial light when small type known as "brilliant" can be read in any part of the room at the distance of 18 inches from the normal eyes. In place of blinds a sliding screen covering only part of the window should be arranged so that sunlight may be prevented falling directly on the scholars, and that with a minimum loss of daylight. Windows should always be carried as near to the ceiling as possible so as to secure the largest amount of sky. The height of the window-sill from the floor also requires careful consideration. It should never be so low as to cause dazzling of the scholars' eyes. The window glass should be perfectly clear without any muffling or clouding, not only on account of securing the largest amount of light, but to save the check to the eye-nerve of thwarted vision. Windows ought not to be broken up by bars where these can be avoided, and plate glass is preferable, where possible, as being a good non conductor. It retains the heat of the fire in the room and also takes the heat out of the sunlight entering the room. Careful attention should be paid to the ratio between window area and floor-space.

2 A. The correct position for a child, when sitting at a desk to write, is such that his feet may be firmly planted on the floor or foot-rest, the seat of his chair reaching forward to his knee, the back of the seat supporting both middle spine and shoulders. The front of the desk should come well over the knees and be at such a height that both arms can be laid on it easily without raising the shoulders. The slope of the desk should be about thirty degrees, and this position will be found to bring the paper at about the distance of from 18 to 20 inches from the eyes of the normally proportioned child. In reading the slope of the book should be forty-five degrees, and this exercise should for the most part be taken sitting

rather than standing, in order not to dissipate nervous energy from intelligence and eyesight, and great liberty of movement must be allowed within these requirements, either when standing or sitting, to avoid strain upon the delicate nervous organism. Desks and seats must be so placed that light falls from above (dispersed light causing no shadows) or from the left. Light must be steady and not flickering, and must fall upon the work and not upon the eyes of the worker.

FIREPROOF CONSTRUCTION.[1]

IT would seem to indicate almost mental aberration to seriously question to-day the efficiency of the better types of fireproof construction. No better proof can be wished for of the fact that fireproof construction really does reduce the fire-loss than is afforded by the favorable premium rates granted by fire insurance underwriters on superior types of construction.

More thrifty men than these same fire insurance underwriters may not be found, and when they approve any adjunct to their business to the extent of even a temporary subtraction from the profit column of their ledgers, it may be asserted with the greatest confidence that such approval is based on an exceedingly firm foundation.

Without more ado, therefore, I shall assume the efficiency of fireproof construction as demonstrated, and pass to a consideration of some of its phases as they are presented to an official of a Building Department.

Fire protection is a term broad and elastic. Roughly speaking, like "All Gaul," it may be divided into three parts. *First.* — The protection from without afforded by the municipality. *Second.* — The ability of the building itself, in consequence of its structural excellence, to withstand the effects of fire, either from within or from without, and *Third,* — the multitude of fire-detecting and fire-fighting devices installed in, but not integrally a part of, the building itself.

Concerning the first division, it would be presumptuous for me to speak to this audience.

Anything like a comprehensive review of the third division would run far beyond the limits of a paper such as this, besides involving a technical familiarity possessed only by the specialists.

Prior to, however, and during my term of office as Superintendent of the Department of Buildings, Borough of Manhattan, New York City, somewhat unusual opportunity was afforded me to study the question of fireproof construction pure and simple, and it is concerning a few phases of this, that I shall call your attention.

As an expression of the importance of technical investigation on the subject of fire prevention, and fire preventing methods, I can cite no better proof than the several collegiate courses and testing laboratories which have been established to deal with this subject all over the world.

Prominent among such may be mentioned the Insurance Engineering Experiment Station founded in connection with the experimental work, which, for many years, has been carried on by the New England Mutual Fire Insurance Companies, largely under the personal direction of Edward Atkinson. This institution is now operated under the patronage of the Massachusetts Institute of Technology in Boston, and enjoys the personal and technical supervision of Prof. Charles L. Norton, of that institution.

This experimental station exemplifies the vast scope of technical investigation which is at the present time being devoted, both in this country and abroad, to the subject of scientific fire protection. Frequent reports are issued by this station, giving the results of the various investigations pursued, particularly along the line of the several types of fireproof building-construction.

The laboratory and testing-station established several years ago by the National Board of Fire Underwriters in Chicago, and operated under the auspices of the National Fire Protection Association, and dealing with the general question of the reduction of fire loss, is unique in this country and its results are in evidence in every city and town of the land as affecting the matter of fire insurance premiums.

Similar in spirit, although, perhaps, not so comprehensive in scope as the Chicago institution, is the testing-station in London operated by the British Fire Protection Committee. This Association issues from time to time pamphlets covering the work accomplished.

American colleges, too, realize the importance of introducing into their curriculums a separate department dealing with the general subject of fire protection. Prominent in such work is the four-year course in fire-protection engineering now available to students at the Armour Institute in Chicago. This is of a comprehensively engineering character, together with such additions as may be applicable essentially and distinctively to the subject of fire protection. In connection with this course students are given the opportunity of taking advantage of the facilities afforded by the Laboratory maintained by the National Board of Fire Underwriters in Chicago, and through this medium the largest scope for practical study is offered.

A careful consideration of the matter of fire protection should convince every owner that the introduction of safeguards against fire will bring a fair return in reduced rates on the increased outlay, besides fulfilling a moral obligation which he owes to his lessees, tenants, neighbors and himself.

Several theatres in New York have had their insurance rates materially reduced because of changes in their construction made at the instigation of the Department of Buildings. That the fireproof character of a hotel is a most desirable advertisement is indicated by the fact that some proprietors who cannot honestly claim that characteristic, attempt to deceive their patrons by untrue representations. One of the large hotels of New York maintains a room in a burnt condition as an indication of what can happen in a fireproof hotel without the knowledge of any of the patrons or the proprietor. A fire that originated in this room nearly burned itself out before anyone was aware of it.

This is preliminary to a question which I wish to ask: Why is so much in the way of municipal regulation given to the subject of theatres and so little to the subject of department-stores?

Municipal regulations all over the country provide for almost every contingency which may occur affecting human life in theatres, or other places of public assemblage. Department-stores, however, seem to be passed over entirely in the requisites of the City Fathers. Theatres and their management are provided for by a code as long as the moral law. In the case of department-stores, however, probably three to five times as many people are allowed to congregate, to the square feet of building occupied, and yet no adequate provision for their safety is made.

At the present time, however, many owners of department-stores realize not only the moral duty they owe to humanity in safeguarding its interests, but also the benefit they receive in insurance rates by making their stores as fireproof as possible.

The concentration of commercial interests as embodied in the department-store of to-day concerns vitally the fire hazard. Combining an almost infinite variety of industries, the department-store represents, so far as the fire hazard is concerned, an aggregation of many individual fire hazards.

The department-store, as we find it to-day, consists primarily of a large ground area extended to considerable height, and connected in this height by what is usually known as the light well.

An examination of any one of the typical department-stores of New York during the period of any celebration or holiday, such for example as a Christmas holiday, shows some conditions well worthy of study.

The impression seems to obtain among department-store proprietors that any extravagance of decoration is permissible, notwithstanding the fire hazard involved.

As an example of this recklessness, I may cite the snow storm which was produced in the light well of a prominent department store and which was composed of thousands upon thousands of bits of cotton suspended at different altitudes. Similar extravagances may be observed in department stores elsewhere and on every holiday occasion we witness the same occurrence.

In considering the manner in which construction tends to reduce the fire hazard, we find that the subject naturally divides itself into three heads: 1. The use of incombustible and fireproof material. 2. The manner of combining the materials of construction. 3. The provision of devices and forms of construction that afford protection against fire from the outside.

The advantage in the use of incombustible materials is almost self-evident, as thereby the food for fire is reduced in the same ratio in which incombustible materials are used.

Among the materials most commonly used in building construction which are generally considered incombustible, may be enumerated the following: brick, stone, terra-cotta, wire-glass, iron, steel and concrete. By such incombustible materials is meant those which will not burn or produce flame when subjected to a heat of 2,000 to 3,000 degrees Fahr. Incombustible materials are not necessarily fireproof. It is important that this should be kept in mind.

By fireproof materials is meant such as not only do not burn, but which, under the action of fire, remain intact and preserve their strength or the strength of those parts which they protect.

As a notable example of what has been done in eliminating combustible materials in the furnishing of a building, St. Bartholomew's Clinic, in New York City, may be mentioned. In seeking to make the building as absolutely germproof as possible, the architect also made it as fireproof as it is possible to make it. The furniture throughout the building is made of incombustible material, except in the trustees' offices. Even here the architect was desirous of having only iron or stone furniture used, but the trustees were too solicitous of their comfort and had their rooms fitted up with hardwood furniture and a soft rug on the floor. As it is, there is probably less combustible material in this building than any other building in this country.

As an illustration of the distinction between incombustible materials and fireproof materials, we need only refer to the unprotected as against the protected or fireproof column. Cast-iron certainly will not burn, yet the effect of the heat of a fire is well shown in the bulging and collapsing of the unprotected columns of the Hackett-Carhart building, at the corner of Broadway and Thirteenth Street, in New York City, last winter, causing nearly the entire roof and part of the floor below it to fall in. As against this may be mentioned the case of the McMahon Building in Chicago. This was a building occupied as a cracker-bakery. One-half of the building was of the so-called slow-burning construction, consisting of columns, girders and floors of yellow pine material. At one end was erected a bakery, consisting

[1] A paper by Hon. Perez M. Stewart, late Superintendent Department of Buildings, Borough of Manhattan, New York City, read at the Thirty-first Annual Convention of the International Association of Fire Engineers, held at Atlantic City, N. J., September, 1903.

of brick walls and steel beam and column construction, all protected by concrete.

A fire destroyed entirely the portion of the building of slow-burning construction. As exemplifying the splendid protection afforded to steel construction by a properly applied envelope of concrete it may be stated that notwithstanding the intense fire existing in the slow-burning section, which abutted on the section occupied by the bakery, the bakery ovens, weighing in the neighborhood of one thousand tons, and supported upon the concrete-protected steel columns, remained in position at the end of the fire at their original height, extending from the third to the fourth stories.

A more spectacular example of the efficiency of properly protected iron work against the inroads of fire has seldom been afforded.

It will thus be seen that the manner of construction or the disposition and arrangement of parts of construction is even more important than the use of incombustible material. It is contended by many, and with a good show of justice in the claim, that with the proper use of ordinary combustible materials (which practically means wood) for the interior work of buildings, a structure can be made as safe against the spread of fire as if nothing but incombustible materials were used. Where wood is used and is exposed, it should be so placed that as little surface is exposed as possible. A fire will spread with greater difficulty when the flames have only one side to work on and the supply of air for the combustion is limited. The selection of wood is of great importance. Hard woods are much more difficult to burn than softer woods and sustain the flames less readily. Oak and yellow pine make the best structural materials among the different kinds of woods. Ordinary paints, and especially varnishes, should be avoided.

The danger of the spread of fire in a building increases first, with the increase in area covered, and second, in greater degree with the increase in height.

The danger is met in the first instance by providing fire-stops in the way of brick walls or fireproof partitions. Any openings that may be necessary in these partitions should be provided with fireproof doors and windows.

The spread of fire in a vertical direction is undoubtedly most effectively guarded against by making the floors continuous and unbroken, that is eliminating all openings in the floors and placing the necessary means of communication, such as stairways, elevators, pipes, shafts, belts, etc., in shafts entirely separated from the rest of the building by brick walls. A close attention to this detail is very important. In one of our early fireproof office-buildings there occurred a fire some years ago in which the greatest damage was done in an office two stories above the one in which the fire originated. The flames in the lower story burned away the woodwork casing around the smoke or drain pipes and were drawn up through the openings in the floor for the pipes, and in this way ascended to the upper story where they destroyed the pipe casing and set fire to the contents of the room.

In this incident, too, is shown the danger in the use of furring and casing, especially when of wood. Air-spaces are thus formed which constitute channels through which fire, by creating draught in them, is spread. All casings, wainscoting, trim, etc., should be solidly backed up with some incombustible material; or in case it is impracticable to so back them up, good and sufficient fire-stops should at least be provided at intervals. In non-fireproof buildings where wood floors or stud partitions are used, a judicious use of fire-stops is very desirable. In the spaces formed by wood floor-beams, the floor and ceiling act as a flue through which the fire spreads very rapidly; so do the spaces between the treads in the soffits of stairs. In the case of wooden stairways it is very desirable that fire-stops of some incombustible material should be provided. Steam-coal ashes or similar incombustible materials placed flush with the floor beams make not only an excellent fire-stop by protecting the floors to a great extent, but serve the additional purpose of deafening or preventing the transmission of sound. In fireproof floors where wood flooring is used secured to wooden sleepers, it is very important that the space between the sleepers up to the underside of the flooring be filled in solidly with some incombustible material.

Reference has already been made to the elevator shaft as a very frequent means of spreading fire. The shaft in its construction constitutes a flue up which a fire is drawn with great force. On account of the necessarily large openings at each story, particularly in the case of freight-elevators, the danger of communicating fires is great. The construction of the shaft and enclosed apparatus therefore becomes a matter of great importance. The shaft walls in the first place should be absolutely fireproof, and constructed of incombustible materials. The requirements of the Department of Buildings of New York City, to which any construction before being approved for use as enclosing walls for elevators must be submitted, cannot be said to be too severe. These requirements are that the proposed construction shall practically remain intact after being exposed to a fire maintained for one hour at a temperature of 1,700 Fahr., and then subjected to a stream of water at thirty pounds pressure for five minutes. Any construction that is used should be self-supporting. Such ironwork as is necessary for the construction of the shaft should be thoroughly protected by fireproof covering. No woodwork whatever must enter into the construction. The necessary openings must be provided with fireproof doors. For this purpose the Fire Underwriters' door is the best, although for offices and residence buildings it is generally regarded as impracticable on account of its unsightliness. In such cases doors and frames of metal or wood covered with metal, the so-called Kalimined process, which are now being produced in a variety of shapes and finish, can be well used. Door openings should be the only ones allowed in shafts. Where it is necessary to provide light, and it cannot be obtained by windows opening directly to the outer air, it can be secured by window lights in the doors; or if that is not sufficient, by stationary metal sashes set in metal frames. In all cases the windows should be glazed with wire glass.

What has been said of elevator-shafts applies equally well to interior light and vent shafts, except, of course, that in such cases the window sashes cannot be made stationary. Pipe-shafts should be solid for their full length. Provision should be made for expansion and contraction, so that the openings for service-pipes at each story can be completely filled up by the pipes without danger of damage to either pipe or partition.

But, coming to the third division of our subject, in a closely built up location, no matter how much care or money has been expended upon a building to make it safe against fire within itself, there still remains the danger of fire damage, if not destruction, from the outside. Insurance underwriters generally regard a brick wall increasing in thickness from the top down as the most satisfactory protection against the attacks of fire from the outside.

If a building can be enclosed in solid brick walls on all sides, carried 3 feet above the roof-level, it would be practically safe against fire from the outside. But the public is not yet ready to sacrifice the space necessary for the interior court-yard that would be required for light and ventilation purposes under such conditions.

One of the most potent natural conditions tending to augment the fire loss is what is known as the exposure hazard. This defines the likelihood of a building to become ignited by a fire from without the walls. Tables of fire-loss, covering a number of years, show that nearly one-third of the fire-loss of the country is due to the exposure hazard. Fire is communicated from one building to another in almost every case through wall openings, through doors or windows, and to provide against this danger fire protectionists have devoted some of their best endeavors.

Since wall openings must normally be open more or less of the time either to traffic or to the passage of light, the first form of protection took the obvious form of a sheet-iron door or shutter, arranged to be closed at night Practical experience, however, soon showed that any considerable amount of heat warped the sheet-iron shutter to such an extent as to seriously impair its usefulness. A great improvement on the iron shutter came with the design of the tin-clad wooden shutter, a device without a superior for many forms of wall opening protection. As applied to the windows of mercantile establishments, however, the tin-clad shutter shared with the sheet-iron shutter several defects. It did not admit a night fire in a building to be seen from the outside; it did not lend itself readily to the adaptation of devices to close the shutter automatically in the event of fire, and it was very unsightly.

A substitute, which eliminates these weaknesses, besides possessing many added advantages, is to be found in the fireproof window glazed with wire-glass, set in sash and window frame covered with metal. This window is made in a number of different styles, some with sash of wood covered with metal, some with hollow sash of metal.

Wire-glass is made either with an opaque or polished surface, and the wire reinforcing, embedded in the glass itself although keeping the window intact against the attack of a fire of almost any intensity, may be broken readily by the fireman when it becomes necessary to enter the building or introduce a fire stream. Among the recent important fires showing the efficiency of wire-glass windows in reducing the exposure hazard, may be cited the Armour Lard Refinery, Union Stock Yards, Chicago; the Case Plow Works, in Racine, Wis., and the Mitchell Wool Warehouse, in Philadelphia. In each of these instances the spread of fire to very valuable properties standing but a few yards distant was prevented through the resistance offered by wire-glass windows in the walls of the adjoining building.

The walls of buildings, wherever practicable, should extend 2 or 3 feet above the roof-level. This is absolutely essential in the case of parapet walls, or walls adjacent to other buildings, to prevent the creeping of fire along the roofs.

Roof coverings must always be of some fireproof materials such as tin, iron, slate or tile, and where openings exist a filling of wire-glass skylights. These materials best resist the passage of heat from falling embers, or flames lapping over the parapet walls. The tile and slate are slower in transmitting heat than the iron or tin, and for this reason perhaps, afford a better protection.

Only the barest outline of what is essential in the construction of fireproof buildings has been given in the preceding paragraphs. To attempt more would be outside of the purpose of this paper. A careful application of the general principles herein mentioned will undoubtedly reduce the fire-hazard. This is not a mere idle statement based on deductions from laboratory experiments, but one confirmed as well by facts obtained from actual fires. Fires do, and probably always will, occur even in fireproof buildings, as it is impracticable if not impossible, to eliminate combustible furnishings in our dwellings, offices and even our workshops. In addition to the instances already given, others could be cited where fires originating in fireproof buildings have been positively confined to the lofts or rooms in which they started, and in which the buildings themselves

suffered no further injury than a discoloration of the paint, breaking of the window glass, etc. Such cases, it seems to me, undoubtedly prove that the fire-hazard is reduced by proper fireproof construction and added protection given.

In closing, I think it may be said with entire justice, that in no American municipality has the subject of fireproof construction been given more painstaking study than in New York, and the results achieved have more than justified the labor.

Prominent among the buildings erected in New York on which the imprint of the Building Department's advice is in evidence, may be cited the colossal department-store of R. H. Macy & Co., the Chelsea Central Station of the New York Telephone Co., the Manhattan Life Insurance Building, the Butterick Building, *Town Topics* Building, as also the new department-store of John Wanamaker and the Barclay Building, now in course of erection.

The design of the Barclay Building realizes, perhaps, the greatest advance made, to date, in the elimination of combustible materials.

ILLUSTRATIONS

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

ALL SAINTS' CHURCH, SYRACUSE, N. Y. MESSRS. HENRY M. CONGDON & SON, ARCHITECTS, NEW YORK, N. Y.

THE church consists of a nave without aisles, 36′ x 84′, chancel 25′ x 42′, and baptistery, sacristies, etc. The choristers' robing-room, east of the chancel, may be used as a chapel, a sanctuary and altar being screened off at its south end.

A cloister will connect the west porch with the future parish house.

The nave will seat 430, chancel 48, and chapel from 50 to 60, in chairs.

DESIGN FOR A STATE COMMEMORATIVE MONUMENT. MR. FRANK CHOUTEAU BROWN, ARCHITECT, BOSTON, MASS.

HOUSE FOR DONALD DOLAN, ESQ. MR. E. G. W. DIETRICH, ARCHITECT, NEW YORK, N. Y.

ALL SAINTS' CONVENT, COLNEY CHAPEL, ST. ALBANS, ENG. MR. LEONARD STOKES, ARCHITECT.

THIS plate is copied from the *Architectural Review*, London.

Additional Illustrations in the International Edition.

CLOISTER OF THE BENEDICTINE CONVENT, MONREALE, SICILY.

THE SECOND CLOISTER: S. ROMUALDO IN CLASSE, RAVENNA, ITALY.

THE CLOISTER: ABBEY OF SASSOVIVO, NEAR FOLIGNO, ITALY.

THE GREEN CLOISTER: STA. MARIA NOVELLA, FLORENCE, ITALY.

DOME AND PORTICO: RHODE ISLAND STATE-HOUSE, PROVIDENCE, R. I. MESSRS. MCKIM, MEAD & WHITE, ARCHITECTS, NEW YORK, N. Y.

HOUSE OF MR. TOURTELLOTT, KANSAS CITY, MO. MR. W. W. ROSE, ARCHITECT, KANSAS CITY, MO.

NOTES AND CLIPPINGS

TUNNELLING THE HUDSON. — The idea of tunnelling the Hudson is by no means of recent birth. Several attempts in this direction have been made since 1874, when the first company to undertake the construction of a sub-Hudson tunnel came into being. Little progress had been made, however, when, through an accident to the door of an air-lock at a critical moment, the tunnel was flooded and a number of laborers were drowned. The water was pumped out and work resumed, but a bad leak once more caused a long delay. By this time something had been accomplished in both tunnels, but the company had now come to the end of its financial resources and was obliged to order a permanent cessation of work. The years passed, and eventually an English syndicate undertook to complete the tunnel. In their turn they found the task beyond their powers. Finally Mr. Jacobs declared his willingness to begin where the others, defeated, had withdrawn. He and his associates are now satisfied that they have solved the most difficult problem likely to arise in this or future subaqueous tunnelwork. They have assuredly proved that air, if properly reënforced, will serve to stem the most powerful of torrents, and the demonstration of this must be said to mark a milestone in the march of engineering science. — *From "Fighting the Hudson" in the November Century.*

ST. CLOUD. — The new architect to the domain of St. Cloud, who is also architect to the Château de Rambouillet, is taking up in earnest the restoration and embellishment of the park of St. Cloud, which, since the war of 1870, has been in a lamentable state. The fine terrace of the Trocadéro, as it is called, has already been completely restored, as well as the old terrace of the palace, and basins of the fountains. Work of the same kind is now being carried out in the Jardin du Prince Impérial, and the restoration has been undertaken of the basins and canals, which form an uninterrupted perspective of *jets d'eau* beneath a complete tunnel of foliage. If we cannot again have the old palace, which was the finest work of Mansart, we can at least have the gardens as they existed before the *année terrible*. — *The Builder.*

ROTTON ROW. — Rotten Row, the celebrated ride in Hyde Park which for so many generations has been the trysting-place of London society at certain hours of the day, is by no means the only road or track known by that name in the United Kingdom. There are scores of Rotten Rows, indeed, south of the Tweed, particularly in Yorkshire, and hundreds of them in Scotland. Among the most notable is the one at Glasgow, which may be described as one of the sleepiest and most commonplace thoroughfares of that city, but which has been known by that name ever since the year 1283, when it was described in the contemporary records as "Ratonraw," while at the time of the Reformation five of the canons of Glasgow Cathedral occupied "ludgings" in the street called the "Rotton Row." The Rotten Row of Glasgow, as well as those in the ancient burghs of Montross, Dunfermline, Aberdeen and elsewhere in Scotland, all of them derived their name from the fact that they had originally constituted the mustering ground for the soldiers. The old word "roteran" ("to muster") still survives to-day in the form of "roster," and in the Middle Ages a file of six or twelve soldiers was known as a "rot." Scotch antiquarians are agreed that the Rotten Rows now in existence north of the Tweed owe their name to their having been used as the muster ground of the "rots," or squads, of city and town soldiery, and, as Rotten Row in Hyde Park was put to an analogous use in the days of Oliver Cromwell, who ordained that nine "rots" of pikes and twelve "rots" of muskets should constitute one company, it is evident that the famous ride is indebted for its name to the same derivation as the Rotten Rows in Scotland, and that no further account must be taken of the legend according to which the Rotten Row in the British metropolis is indebted for its name to an English corruption of the French words "route du roi," or "roadway of the king." Popular belief in this mythical derivation has been to a great extent confirmed by the fact that since the days of the Stuart kings no one has been allowed to drive down Rotten Row in Hyde Park except the sovereign and the Duke of St. Albans, as hereditary Lord High Falconer. None of the dukes of St. Albans, so far as I can recall, have ever made use of the privilege. But Queen Victoria, whenever she traversed Hyde Park on her way between Buckingham Palace and the Great Western Railroad terminus, where she took the train for Windsor, would always make a point of driving down Rotten Row, which is otherwise severely restricted to equestrians. — *Marquise de Fontenoy in N. Y. Tribune.*

FIRES FROM ELECTRIC WIRING. — In the course of an article on this subject in *Cassier's Magazine* for October, Mr. J. C. Forsyth says: "The ease with which an electric light or fan can be installed at any point in a building, or with which changes can be made in the position of a lamp, using for this purpose a flexible cord and connecting it to the most convenient source of supply, is perhaps one of the most common and flagrant violations of prescribed rules. As it requires but a short time, usually, for the insulation on this cord to become abraded, or so dry and hard as to break at any point where it may be disturbed, it can be seen that this condition is likely to result in trouble at any place on the circuit. The use of large copper wire and extraordinarily heavy fuses in cut-outs, after the fuse originally installed has operated, is on the same order. This can be compared in recklessness only to the tying-down of the safety valve on a steam boiler. A little knowledge of electricity and the laws which govern it in its application to power and lighting systems, well seasoned with ordinary commonsense, would enable almost any one to understand the average precautions necessary in the safeguarding of electrical wiring and apparatus, and if this knowledge, so seasoned, were only occasionally applied, the fire losses from electrical causes would be largely diminished."

THE DEAN AND THE WESTERNER. — Dean Stubbs of Ely told this story the other day, apropos of sightseeing in foreign parts: Four American ladies, bearing a letter of introduction, presented themselves at the deanery and wanted to see the Cathedral. The letter of introduction was so exceptional, and the ladies were so charming, that the dean himself undertook to show them through the Cathedral. Halfway down the nave, they were joined by a man from Chicago, who insisted that he should have the benefit of the dean's explications. When they reached Bishop Alcock's chapel, the dean said: "You perhaps will be specially interested in this chapel, as the bishop was the author of the prayer 'for all sorts and conditions of men.'" Whereupon the Chicago man said, "Mr. Dean, I guess you know more about this Cathedral than I do; but I know for dead cocksure that 'All Sorts and Conditions of Men' was written by Sir Walter Besant." — *Boston Transcript.*

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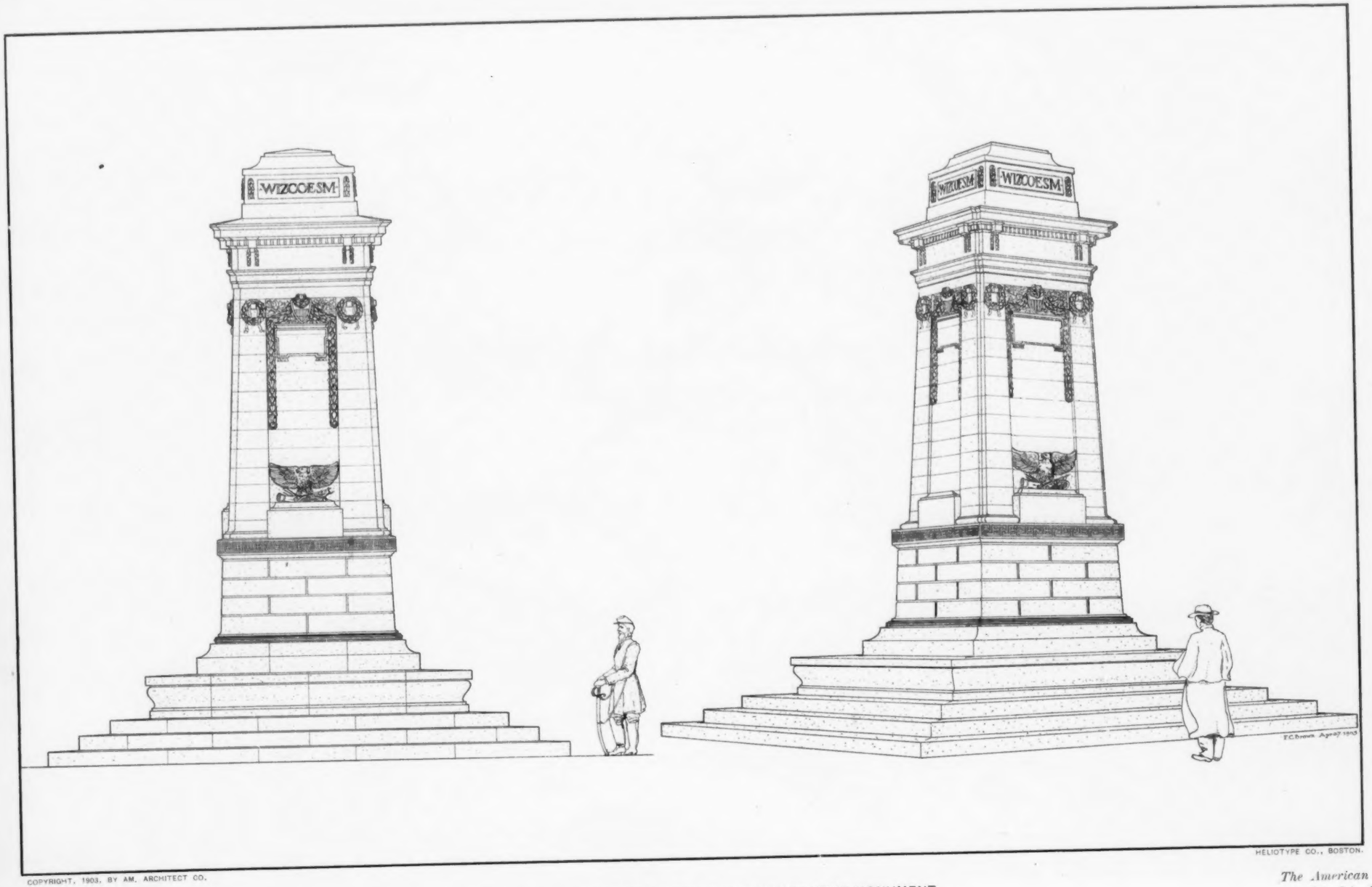

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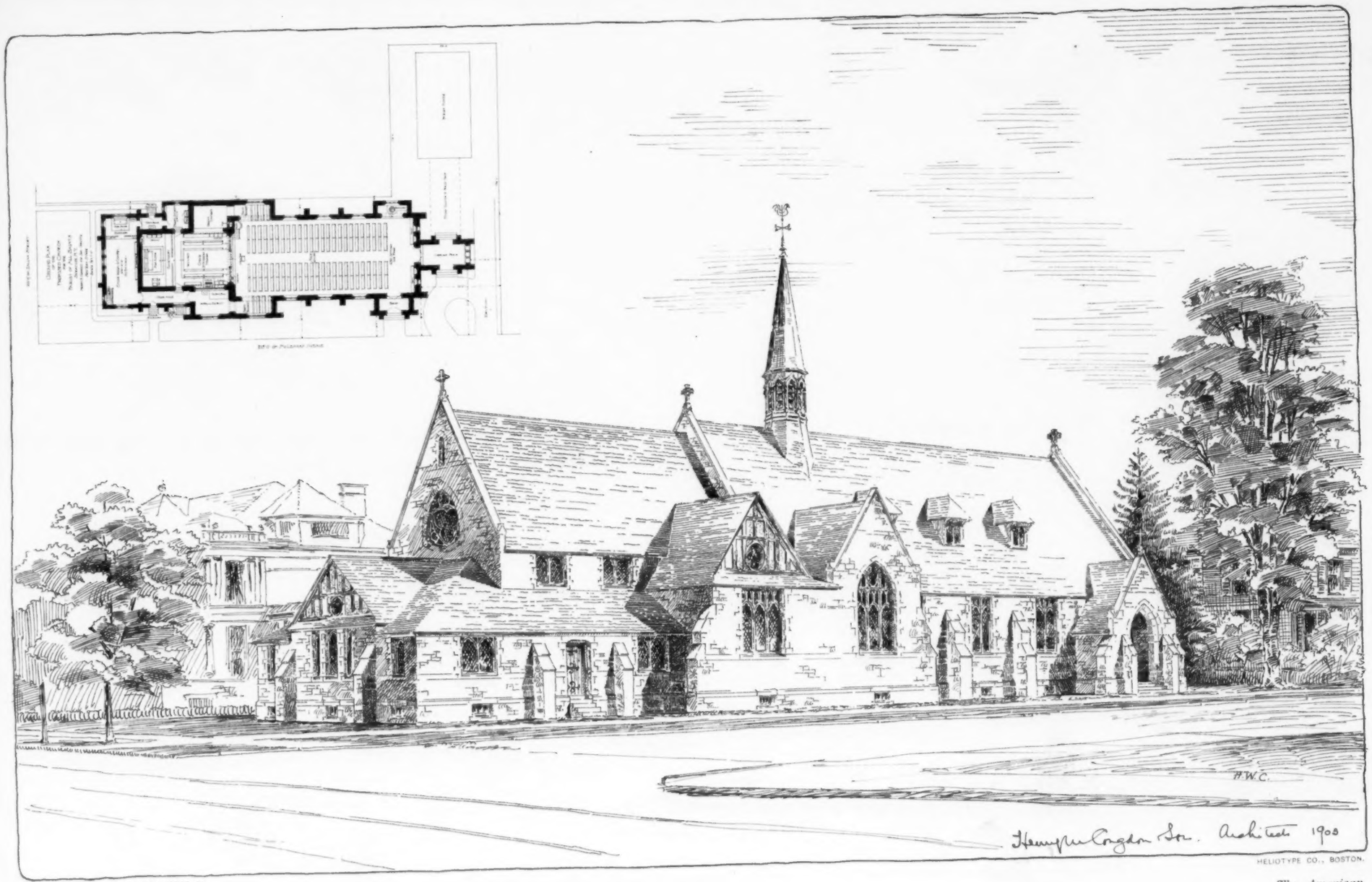
A COMPETITIVE DESIGN FOR A STATE COMMEMORATIVE MONUMENT.

FRANK CHOUTEAU BROWN, ARCHITECT.

The American Architect
Oct. 24, 1903.
No. 1452.

FRANK CHOUTEAU BROWN, ARCHITECT.



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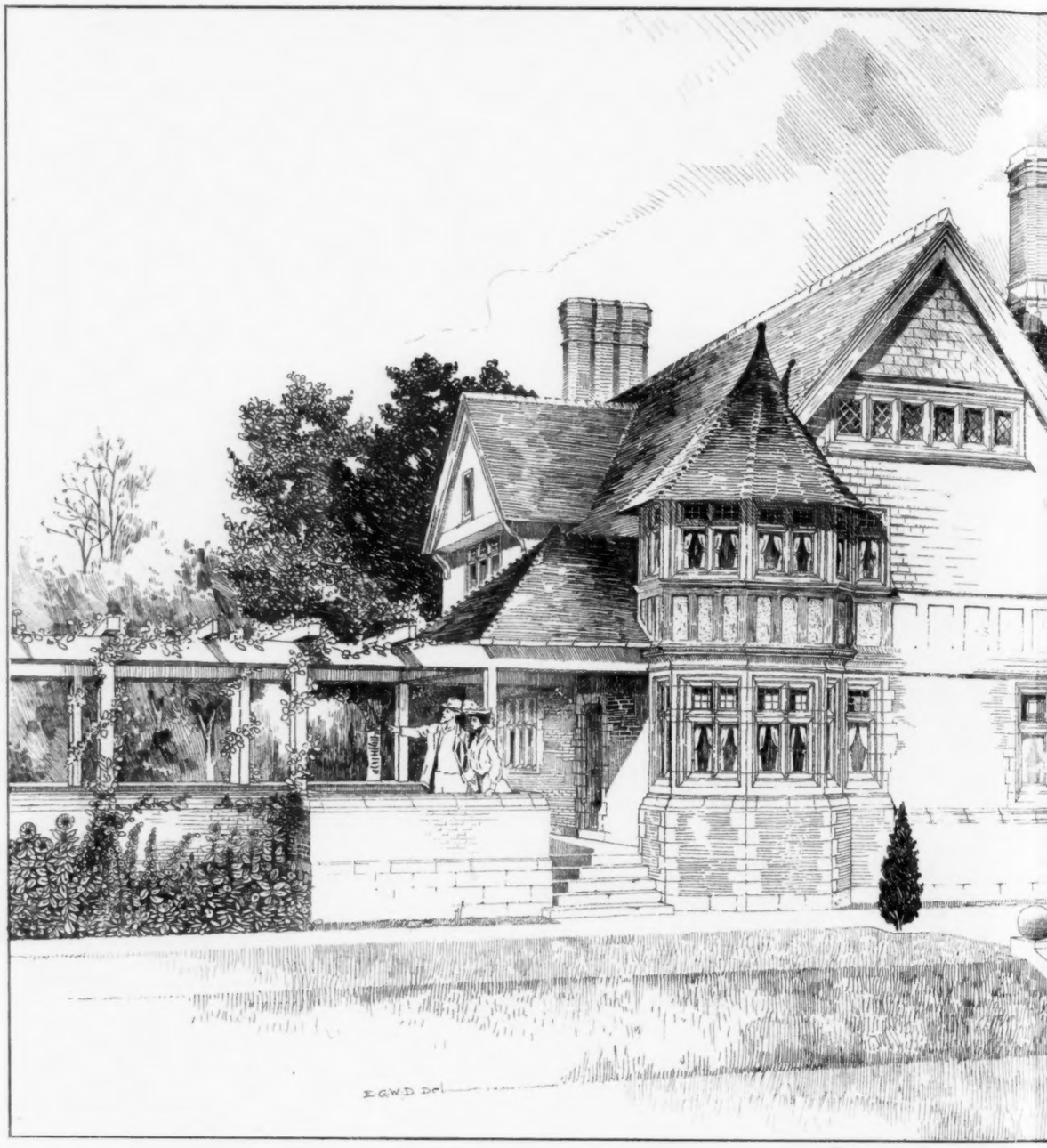

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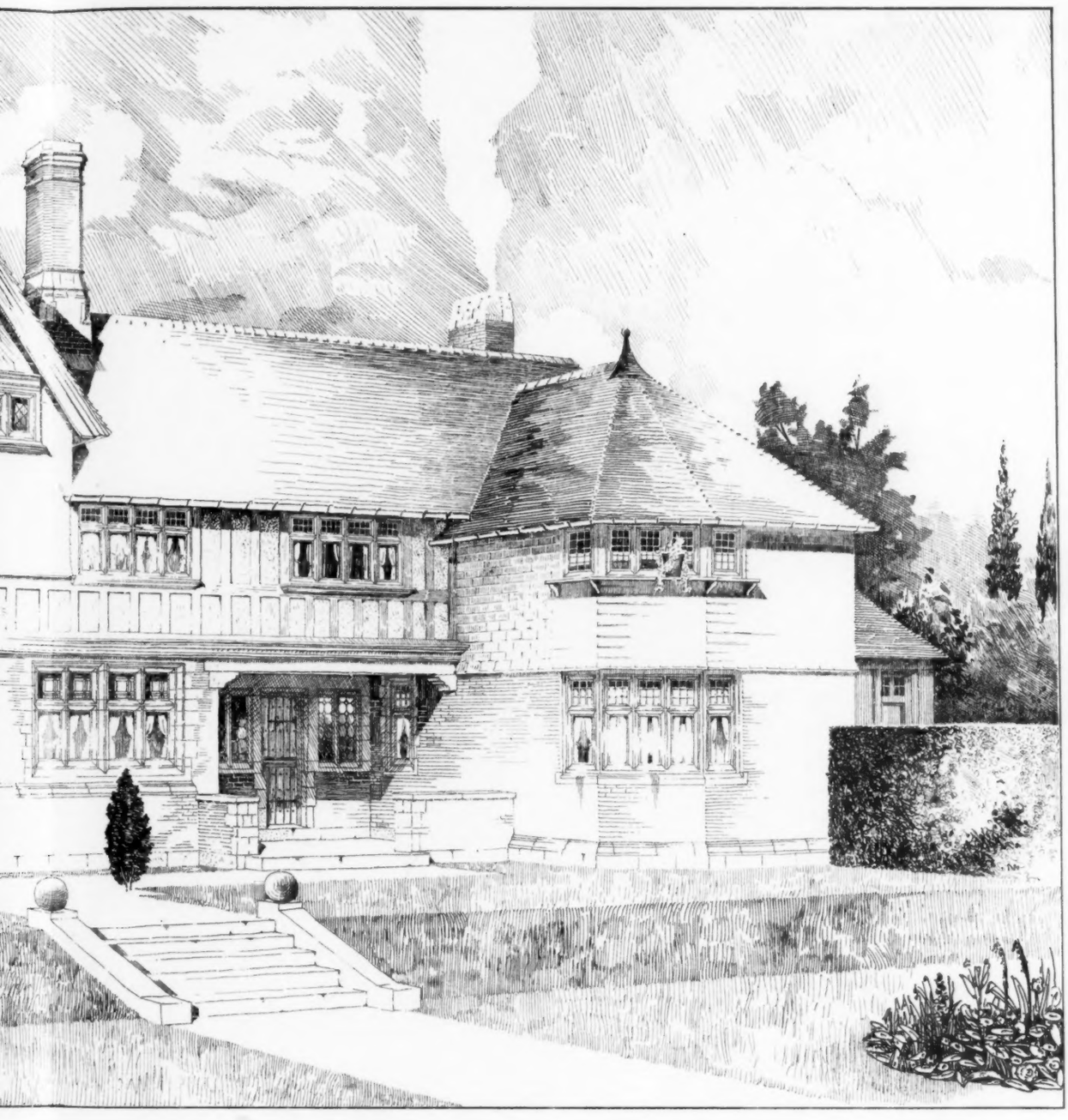

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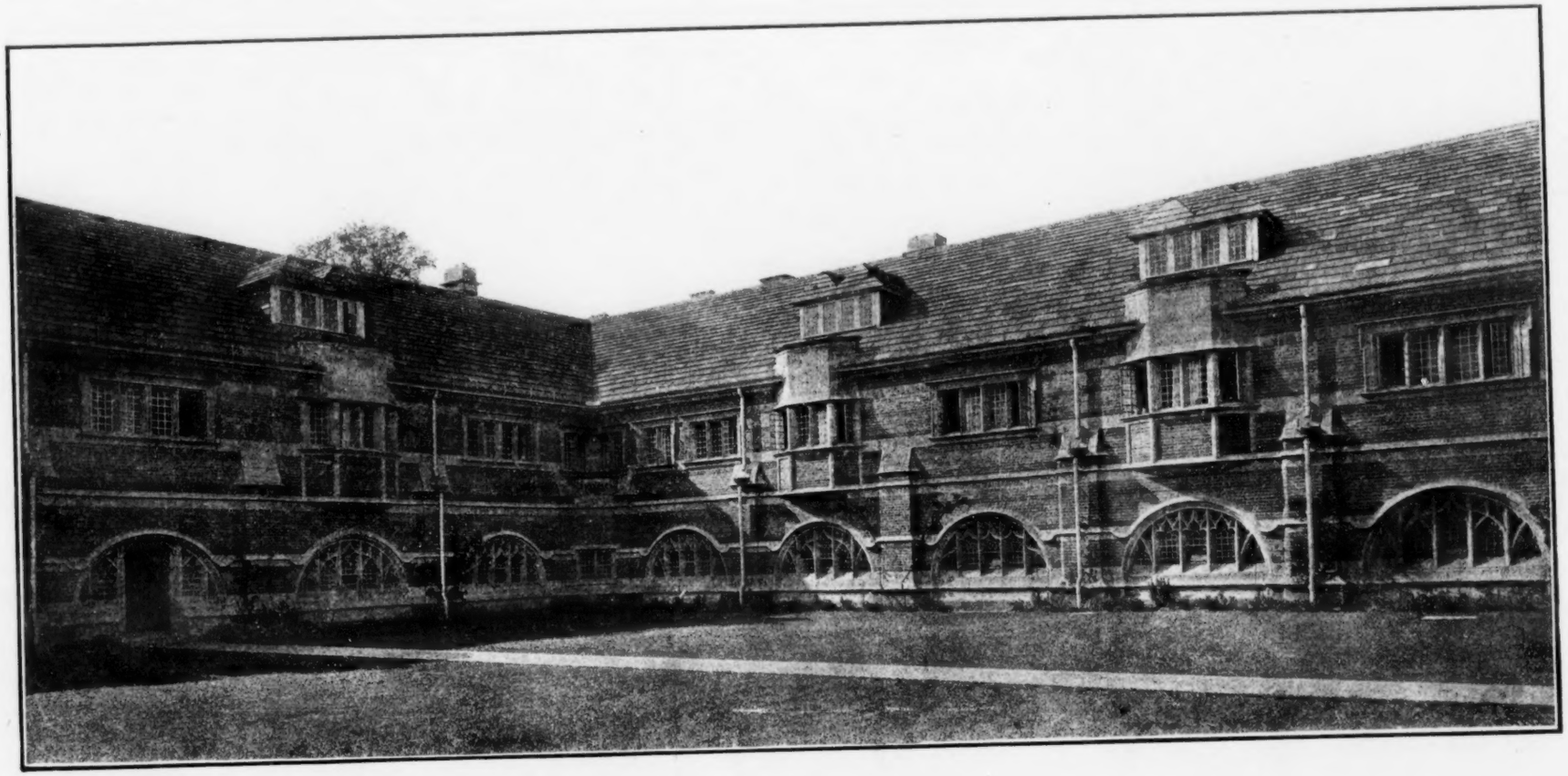

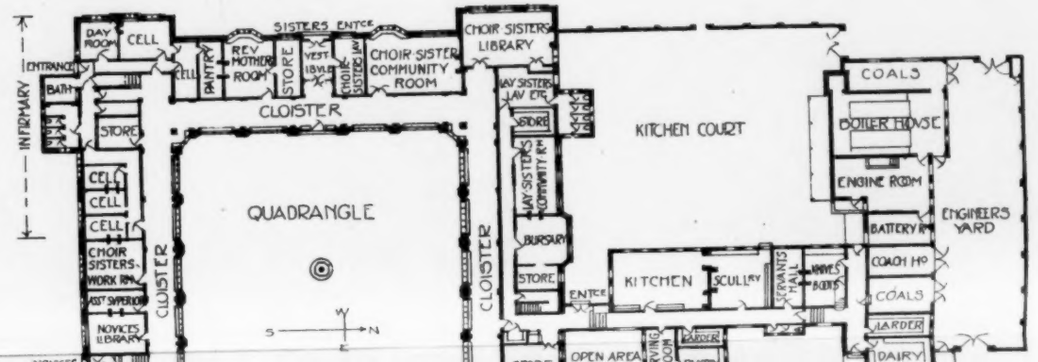
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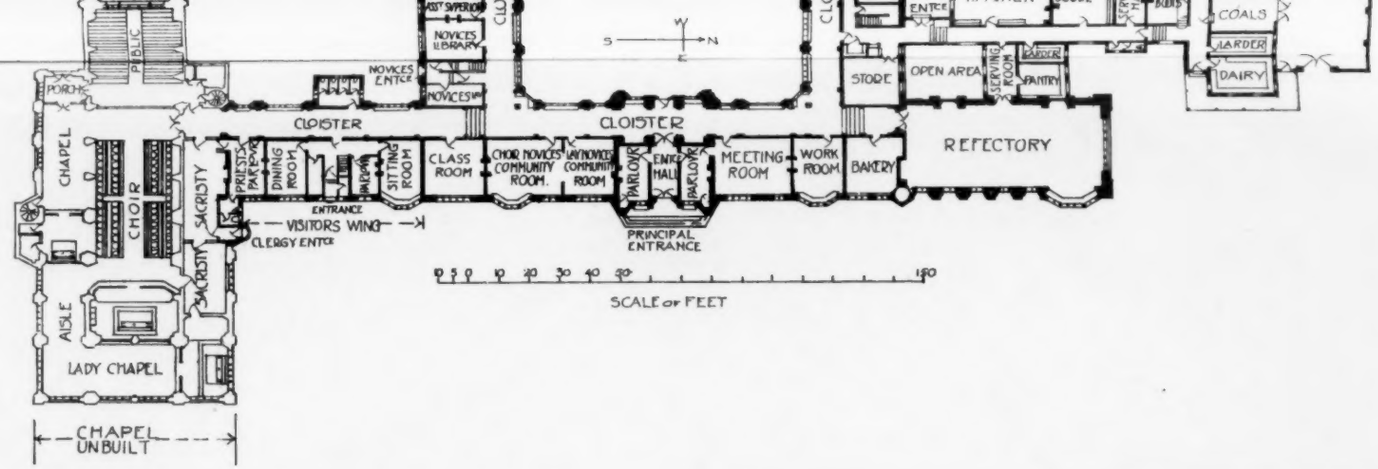

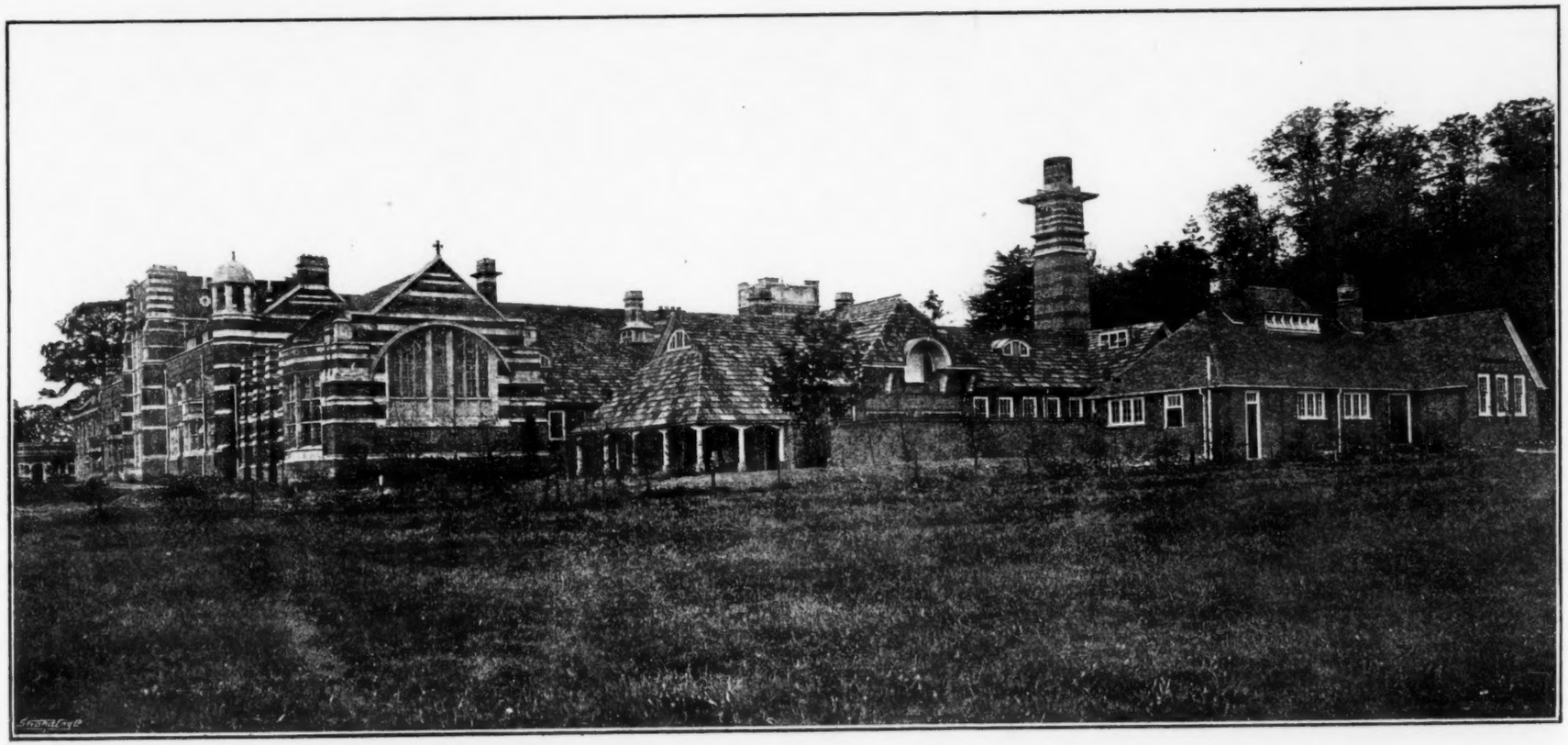

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LEONARD STOKES, ARCHITECT.

The American Architect
Oct. 24, 1903.
No. 1452.

The American Architect and Building News

A WEEKLY JOURNAL OF CONSTRUCTIVE AND DECORATIVE ART

VOL. LXXXII.—No. 1452.] SATURDAY, OCTOBER 24, 1903. PRICE, { INTERNATIONAL ISSUE, 50 CTS / REGULAR " 15 "

Topographical Index of Advertisers.

[*For pagination, see Alphabetical Index on Cover 2.*]

Code Of Practice

FOR SUB-ESTIMATING AND SUB-CONTRACTING

Adopted by the Master Builders' Association of the City of Boston, Aug. 2, 1894.

ARTICLE I.

Obligation of Principal Contractor to Sub-Contractor.

A principal contractor is under obligation to treat upon an equal basis all estimates which he "receives" prior to putting in his own bid. Estimates must be considered as "received" when they come into a principal contractor's possession, either by his direct solicitation or by being accepted by him. *The opening of a bid, knowing it to be such, constitutes receipt of the same.*

A principal contractor is under no obligation to use a bid which he has not solicited, accepted, or received, but if he does not wish to use the estimate of a sub-bidder he should decline it, if proffered personally, or should return it unopened if sent to him by mail or otherwise. The retention of a bid should be construed as a receipt of the same.

* * * * * * * * * * *

A principal contractor, when making up his estimate, is not entitled to receive bids from sub-contractors if he is at the same time making himself their competitor by figuring their portion of the contemplated work. It is legitimate for a principal contractor to figure all portions of work, depending upon no one for what are usually known as sub-estimates, but it is not legitimate for him to receive bids from others for sub-work if he is himself figuring those portions independently.

ARTICLE II.

Award of Sub-Contracts.

The principal contractor having been awarded a general contract should immediately award the sub-contracts to the lowest bidder in each branch.

ARTICLE III.

Penalty for not Awarding Contract to Lowest Sub-Bidder.

A principal contractor failing to award a sub-contract to the lowest sub-bidder to whom he is under obligation as previously provided should be liable to pay damages to the said lowest bidder, in amount not less than ten per cent of the amount of the estimate.

Payment of such damages will not relieve the principal contractor from liability to discipline under provisions of Article X of the By-Laws of this Association.

* * * * * * * * * * *

ARTICLE V.

Payments to Sub-Contractors.

Unless the contracts made with sub-contractors otherwise provide, payments during the progress of the work should be made by the principal contractor to the sub-contractors upon the same basis of payment, in relation to amount of work performed, as is prescribed in the contract made by the principal contractor with the owner.

Final payment to a sub-contractor should be considered as *due* at the expiration of thirty days after the completion of his work and its approval by the architect or owner, unless otherwise provided by the sub-contract or agreement.

* * * * * * * * * * *

ARTICLE VII.

Obligation of Sub-Contractor to Principal Contractor.

Should a sub-contractor refuse to contract at the amount of the estimate he has given to a principal contractor who has used the said estimate in good faith, he then should be liable to the said principal contractor for damages in amount not less than the difference between the amount of the estimate which was submitted by him and the amount at which the principal contractor may be obliged to contract the work.

Payment of such damages will not relieve the sub-contractor from liability to discipline under provisions of Article X of the By-Laws of this Association.

* * * * * * * * * * *

ARTICLE X.

Bids to Architects or Owners.

When bids for separate departments of work on a building are solicited by the architect or the owner, they should be submitted with the understanding that they are direct estimates, for which direct contracts are to be made by the owner with the lowest bidder, and no other disposition of such bids should be permitted without consent of the bidder submitting the same.

Sub-bids should be given only to the principal contractors who are estimating the work in question, and should not be left with architects or owners for the inspection and information of principal contractors. Sub-contractors must understand that bids thus left with architects or owners are in great danger of losing their confidential character, and that if they so leave them they cannot claim protection or redress under the first article of this Code.

SUGGESTIONS.

Members of this Association having sub-contracts to let, or material to buy, should, as far as may be consistent with business principles, deal only with members of the Association, or at all events give their fellow-members an opportunity to compete, and ther give them the preference, other things being equal.

All bidders should take cognizance of the danger they may be subjected to through the practice, so prevalent in some architects' offices, of making change in plans or specifications, or in both, during the progress of estimating. Correction of this pernicious practice can only be obtained through refusal by contractors to estimate under such conditions.

A true copy.

Attest: WM. H. SAYWARD,
Secretary, M. B. A.

The American Architect and Building News

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BUILDING INTELLIGENCE.

(Reported for the American Architect and Building News.)

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

ADVANCE RUMORS.

Anadarko, O. T.—Plans have been received for the new court-house and jail for this county. The drawings show these buildings to be of a magnificent style of architecture, classic in type, both sightly and substantial structures. The court-house will cost $30,000 and the jail $20,000.

Attleboro, Mass. — Last year a site on N. Main St. for a library was given the town by Joseph Lyman Sweet, with the understanding that a library should be erected within three years, at a cost of not less than $25,000. This sum has now been subscribed.

Boston, Mass. — The Boston Bar Association is considering the expediency of acquiring quarters of its own which might accommodate its library and also furnish a lunch-room. It seems probable that a strong effort will be made to carry out some plan which will make the library of the association, which has already grown to be one of some importance, more available to the members, and also to give to the association a somewhat more social aspect, such as is the case with the bar associations of other leading cities.

Press reports state that improvements will be made in the business property numbered 944 to 948, corner of Washington St., owned by Rachel Prager. The plans by J. A. Hasty, call for an entire new front for the first and second stories. The building has a frontage of 40 feet, and is four stories high. It is understood that the space above the stores will be finished for light manufacturing business.

Brookline, Mass. — Foundations are in for a six-apartment house to be erected in Linden Pl., near Perry St., for F. F. Whittier, of Boston. The building will be constructed of brick and stone, three stories high, and cost $22,000. George W. Watson is the architect.

Brooklyn, N. Y. — For the building of a new armory for Troop C, at Bedford Ave. and President St. the Armory Board has recommended an appropriation of $500,000 by the Board of Estimate and Apportionment.

Chapel Hill, N. C. — Judge W. P. Bynum, of Charlotte, has given to the University of North Carolina $25,000 with which to erect a gymnasium on the University campus as a memorial to his grandson.

Chattanooga, Tenn. — The Carnegie Library trustees have adopted the ground plan for the library for which excavations are now being made in this city, and all plans are now complete for carrying forward the work, and a large force of men are employed excavating and laying the foundation.

The Stonefort Land Co will begin at once the erection of a five-story building on Market St., costing $60,000. It will be occupied exclusively by Trotter Bros., wholesale grocers.

Chicago, Ill. — Carson, Pirie, Scott & Co. have secured a strip on the west side of the river south of W. 18th St. and will erect a warehouse to cost $500,000.

Plans are under way by the West End Woman's Club for the erection of a model club-house for the members. The building will cost $25,000 and occupy a lot in Washington Boulevard which has a frontage of 75 feet and a depth of 131 feet. It is proposed to make the building a centre of intellectuality, with hall and committee room privileges for other organizations of women interested in educational, philanthropic and religious affairs.

The American Radiator Co. has begun the construction of a handsome building on Michigan Boulevard, between Peck and Eldredge Courts. Plans for the building have been completed by Architects Holabird & Roche. The front will be of an attractive design and will be carried out in light-colored pressed brick. The building will cost $75,000, and will be completed within three months.

The F. W. Wolf Co. will erect a six-story manufacturing building, 76′ x 104′, adjoining its present plant at 139 Rees St. It will be of mill construction and cost $80,000.

Claremont, N. H. — The Library Building Committee have let the contract to James L. Dean, of this city, and George H. Fuller, of Hartford, Vt.

Cleveland, O. — Deputy City Treasurer Thomas Monks has received the first installment of the gift of Andrew Carnegie to establish branch libraries in this city. This first installment of the $250,000 was for $75,000, and is intended to pay for the branches on Woodland Ave. and at the corner of Willson Ave. and Marquette St.

Clinton, Mass. — The building which Mr. Frank T. Holder has offered the Historical Society will be a memorial to his parents, Mr. and Mrs. David Holder, for many years residents of this place. Sketches approved call for a building 48′ x 64′, two stories high, of brick with granite trimmings and terra-cotta pillars and fireproof. Mr. Holder proposes giving to the society his collection of paintings, statuary and Indian relics, valued at $30,000. The cost of the building is estimated at $50,000, and as Mr. Holder proposes to give a sum sufficient for its perpetual maintenance his entire gift is estimated at $150,000.

Colorado City, Col. — George M. Bryson, architect, has completed his preliminary plans for the new Carnegie Library building, and his sketches have been approved by the members of the Library Board appointed by Mayor Henry Ellithorpe.

Dallas, Tex. — The Building Committee of the State Agricultural and Mechanical College met recently to discuss and pass upon plans and specifications for the new textile building to be built at College Station, for which there is a State appropriation of $50,000. The plans adopted are by Architect S. Errine, of Greenville, S. C.

Denver, Col. — Secretary Thomas C. Knowles of the Denver Vocal Society has a plan for the erection of an auditorium for Denver which he will present at the next meeting of the Society. He has secured an option on the old Evans property at the corner of 14th and Arapahoe Sts. for a lease and proposes to raise the money for a $100,000 auditorium by popular subscription.

Detroit, Mich. — The construction of the new laboratory for Parke, Davis & Co., at the foot of McDougall Ave., has been commenced. It will be a substantial brick structure, 200′ x 220′, three stories high, and will cost $100,000. Donaldson & Meier are the architects.

Jos. E. Mills has commenced plans for a terrace of eight dwellings on the corner of Seward and 2d Aves., to be modern in all respects, each provided with a separate furnace. The cost is estimated at about $17,000. The owner's name is withheld for the present.

Dover, N. H. — The Public Library trustees have decided to advertise for bids for the construction of the proposed new Carnegie Library just as soon as Mr. Olmsted, the landscape-gardener, who has been here looking over the Hale lot for the purpose of locating the building, submits his report.

Fort Dodge, Ia. — W. I. Zitterell, of Webster City, has the contract to erect a five-story hotel, 100′ x 140′, for the Crawford Realty Investment Co., at $153,000. When completed, it will be leased and managed by Harry C. Tremaine, of Algona.

Gonzales, Tex. — A new city-hall and fire-station is to be erected here.

Hudson, Wis. — The Carnegie Library committee has awarded the contract to Peter Kirscher & Son for the library building. The price is $9,250, which does not include the heating plant.

Ithaca, N. Y. — The Department of Railway Engineering of Sibley College has received two substantial gifts of money for the erection of a laboratory

(*Advance Rumors Continued.*)

BUILDING INTELLIGENCE.

(*Advance Rumors Continued.*)

for that department. H. H. Vreeland, President of the Interurban Street Railway Co., of New York City, starts the fund with $1,000. M. N. Forney, of New York, a well known consulting railway engineer, has also promised a large gift. The plans call for a hall of experimental engineering and a locomotive laboratory adjoining. The buildings will cost between $10,000 and $15,000.

Jamaica, L. I.—The city of New York has purchased from the Jamaica Heights Improvement Co. twenty-two and three-quarters acres, known as the Vanderbergh farm, located on the east side of Flushing Ave., between the villages of Jamaica and Flushing, for the purposes of the Health Department. A hospital for contagious diseases for the Borough of Queens and a laboratory for the manufacture of antitoxin and for bacteriological experiments for the city of New York will be established.

Kaukauna, Wis.—There is the not unusual trouble in getting a site for the proposed Carnegie Library.

Laconia, N. H.—The will of the late Dr. Ossian W. Goss provides $10,000 for the erection of a suitable building on the lot, at Lakeport, where the homestead of Dr. Goss stood, to be known as the Ossian Wilber Goss Reading-rooms, for the free use and enjoyment of the general public of Lakeport. The trustees are empowered to erect this building at a cost not to exceed $8,000, the income of the remainder to be used in maintaining the rooms. They are also authorized to accept gifts or bequests of money, books, papers, etc., for the benefit of the institution or for the erection of additions thereto.

Lansing, Mich.—Contractor Sylvester Burd, who broke ground for the Carnegie Library July 31, expects to have the building finished by February 1, two months soo er than the contract calls for.

Lawrence, Kan.—The library designed by Mr. Berlinghof will be built by the contractor Geo. H. Shaul, of Seneca.

Lewiston, I. T.—Architect I. J. Galbraith, of Spokane, has drawn plans for the new $10,000 Carnegie Library building to be erected at Lewiston, Idaho.

BUILDING INTELLIGENCE.

(*Advance Rumors Continued.*)

Lexington, Va.—The contract for the new science hall to be erected on the grounds at Washington and Lee University was let during the week. The site has already been graded, and the foundation laid. The plans by T. C. Link, of St. Louis, call for a building in the Colonial style of architecture harmonizing with the main college structure. The donor of the building desires to remain unknown, and all that can be said is that he is a Chicago banker.

Manchester, Mass.—Harry Moran, of Rockland, Me., is to take charge of the erection of the million-dollar summer cottage here for Henry Frick, the steel king of Pittsburgh.

Manchester, N. H.—Plans have been filed for the new State armory on Pleasant St.

Manistee, Mich.—The Library Board has awarded the contract for the building of the Carnegie Library to Nelson & Hanson, of this city, for $33,176. The plans were prepared by Architect Harvey, of Port Huron.

Menominee, Mich.—R. M. Garthwait, of Chicago, has the contract for the new library building which Augustus Spies is to present to the city. The foundations will be laid this fall and work on the superstructure will commence in the spring. Complete, the library will cost $30,000. It will be of Bedford stone, and after plans furnished by Patton & Miller, of Chicago.

Milford, N. H.—There will soon disappear one of the old landmarks which, from early history, has been identified with this town's growth and prosperity. A fine, three-story brick block will be erected here by C. H. V. Smith. The fact that applications for rental purposes are being constantly received shows the need of a structure of this kind, which will soon take the place of the ancient buildings.

Milwaukee, Wis.—The Wisconsin College of Physicians and Surgeons has bought a lot adjoining and intends next year to build an addition which will cost not less than $40,000.

BUILDING INTELLIGENCE.

(*Advance Rumors Continued.*)

Nashua, N. H.—The joint committee of the city council and the board of education has awarded the contract for building the new high school to the Nashua Building Co., for $49,980.

New Orleans, La.—Work on the foundation for the addition to the Lane Cotton Mills has begun. The present Lane Mill occupies the square bounded by Cadiz, Valence, Tchoupitoulas and Water Sts., but owing to the rapidly increasing business is entirely too small. The new mill will occupy the square bounded by Cadiz, Jena, Tchoupitoulas and Water Sts. It will be two stories, 180′ x 300′, fireproof, and thoroughly ventilated. The roof over the second floor will be glass, which will act both as skylight and ventilator. All possible effort will be made to complete the mill and have it in operation by January 1. It will cost $75,000 and the machinery as much more. Extensive improvements will be made in the present plant of the company, just as soon as the new structure is completed.

New Rochelle, N. Y.—Charles Henry Niehaus, the sculptor, has purchased property here and will build a residence and studio. Mr. Niehaus was educated at the Royal Academy of Munich, and won the first medal ever given an American.

Omaha, Neb.—Bonds for $45,000 have been issued and sold for the erection of two new engine-houses.

Palo Alto, Cal.—By unanimous vote of the Board of Trustees of the Palo Alto Library, the plans submitted by Dodge & Dolliver, of San Francisco, were accepted August 10. The new library, the gift of Andrew Carnegie, will cost $10,000, and will be built on the corner of Bryant St. and Hamilton Ave.

Paxton, Ill.—The corner-stone of the Carnegie Free Library building was laid recently.

Peoria, Ill.—Plans have been prepared for an apartment building to be erected by J. M. Sholl on Morton St. The structure will contain six flats of six rooms each and will be built of pressed brick, with stone trimmings. It will be three stories in height and will contain all the latest improvements.

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

The estimated cost is in the neighborhood of $25,000.

Philadelphia, Pa.—Work has begun on the erection of the $150,000 warehouse for freight and merchandise at 15th and Carpenter Sts. for the Pennsylvania Railroad Co. The building will be three stories high, and will extend 398 feet along the south side of Carpenter St. from 15th to 16th Sts. Roydhouse, Arey & Co. are the contractors.

Pittsburgh, Pa.—A permit has been issued by the Pittsburgh Bureau of Building Inspection to C. Sunstein & Son, distillers, for the erection of a brick, stone and terra-cotta warehouse on 1st and 2d Aves., between Smithfield and Wood Sts., 2d Ward, to cost $100,000. The building will be eight stories high, and will have a front on each of the avenues. The old structures on the site have already been razed and work on the new one will be prosecuted without delay.

Portland, Me.—William J. Ryan, of this city, the best known blind man in Maine, is working in every way, by the giving of concerts and by the making of personal appeals to the people of Maine, in behalf of a proposed home for the blind people of the State, thoroughly industrial, and designed to help them to earn their own living.

Portsmouth, N. H.—Plans have been approved for a naval prison to be erected at the navy yard. It will be of brick, with stone trimmings, and have a fireproof interior of concrete and steel construction. The architecture is of mediæval castle style. The structure will comprise the administration building and two adjoining wings.

Rangeley, Me.—It is proposed to erect a library building here, costing about $6,000, and townspeople are asked to subscribe $2,000 in material, labor or money. Rev. Dr. F. A. Noble is at the head of the movement, a number of other summer visitors also being interested. A lot on W. Main St., opposite the town house, has already been bought as the proposed site.

Rockville, Conn.—The contract for the George Maxwell Memorial Library calls for the completion of the building in December, 1904. It will, it is said, be one of the handsomest structures in the State and will cost in the neighborhood of $100,000.

Rumford Falls, Me.—Mr. John W. Burrowes, of Portland, has the contract to erect the Carnegie Library. Work has already begun.

Salem, Mass.—It is reported that Cleveland & Bro., of Houlton, Me., have bought the wharf property in Lafayette St., adjoining their present produce store. The firm will demolish the old stable, which has been a landmark for years, and erect a three-story block to contain three stores and four tenements. The property has a street frontage of 100 feet and the lot contains 10,000 feet.

Rev. N. B. Fisk, pastor of the Lafayette Street Methodist Episcopal Church, has bought the Foster estate, corner of Holly and Lafayette Sts. It is reported that some time in the future a new church edifice may be erected on that corner and the house moved to the Holly Street lot in the rear.

Santa Cruz, Cal.—The City Council has awarded a contract for the construction of a new library building, to cost something over $18,000. It is to be completed within six months.

Santa Monica, Cal.—At a recent meeting of the Board of Library Trustees several plans were considered for the new Carnegie Library, the most desirable one being that of the Pomona Library, presented by the secretary, D. G. Holt.

Saunderstown, Conn.—Efforts are being made by the cottage people and summer guests generally to secure a new library building, as the Willet Library with its 1,600 volumes has far outgrown its present cramped quarters. The Misses Carpenter have given a lot suitable for building a library upon, and efforts are being made to raise funds to erect the building.

St. Louis, Mo.—Gov. Dockery has approved the purchase of the Magnolia property here, on which it is proposed to erect a State school for the blind. An appropriation of $120,000 has been made by the Legislature for the erection of said building.

Stoneham, Mass.—Work has begun on the Carnegie Library at Maple and Warren Sts., Loring & Phippe, architects, Boston. The stack-room, practically fireproof and separated from the main building by a steel fireproof shutter, will accommodate 20,000 volumes.

Tacoma, Wash.—Knowell Bros. have a contract to build a four-story brick apartment-house for F. B. Cole. The contract price is $22,000.

Temple, Tex.—Mr Carnegie agrees to give an additional $5,000 for the library here. This will complete the library in first rate style. The building was really a $15,000 structure from the start. The work will now be pushed with all energy, so that by early fall it will be ready for occupancy.

Utica, N. Y.—Frederick H. Gouge is at work on the plans for the new office-building to be erected by the Commercial Travelers' Mutual Accident Association of America on the site of the old Butler Bank, 70 Genesee St. The drawings have not yet been completed or adopted. They call for a five-story structure.

Vancouver, B. C.—J. B. Blanchot, architect of Spokane, has completed the plans for the new addition to the St. Paul Hotel. The cost will be about $40,000.

Vermilion, S. D.—A Sioux Falls architect has completed the plans for the Carnegie Library to be erected this year. The building is to be 40′ x 52′, one story high, with basement.

Waco, Tex.—All bids on the building of the Carnegie Library were too high, in view of the sum in hand for the erection of the building, and Chairman W. H. Hoffman, of the building committee, thinks a change of plan will be made.

Waterville, Me.—The contract for the construction of the Carnegie Library building has been awarded to Horace Purinton & Co. for $17,943.

West Huntsville, Ala.—Miss Virginia McCormick, of Chicago, has given the Presbyterians of this place $2,000 to be expended in the erection of a parsonage, library and social hall adjoining their new church.

Wilmette, Ill.—Like many other places this town has had serious contention over the selection of the site for the $10,000 Carnegie Library building.

Winchendon, Mass.—The question of a Public Library had reached such a stage some time ago that some of the promoters favored a plan to communicate with Andrew Carnegie to see what could be done in the way of procuring a library for this place. The plan was abandoned later, as it was learned that the great philanthropist did not look with favor on towns which were prospering and yet were not able to lay by a pittance for the founding of these institutions, and the question went by default; but the present renewal of the agitation, the friends of the cause say, will bring about better accommodations, with a new library building in the near future in Winchendon.

STABLES.

Brooklyn, N. Y.—*De Kalb Ave.*, nr. Evergreen Ave., two-st'y bk. stable & loft, 59′ x 100′, gravel roof; $8,500; o., L. Meyer, 1000 Broadway; a., W. Debus, 808 Broadway.

Ocean Parkway, nr. Avenue C, one st'y & loft fr. stable, 32′ x 32′; $1,200; o., E. Gaus, 342 Vernon Ave.; a., J. S. Kennedy, Temple Bar Building.

New York, N. Y.—*Sullivan St., Nos.* 96-100, six-st'y bk. & st. stable, 70′ x irregular x 100′ & 129′ 7″, asphalt roof; $60,000; o., Austin Leake, 234 Spring St.; a., J. B. Franklin, 335 Broadway.

Twelfth Ave., Forty-seventh St., Forty-eighth St., 1½-st'y bk. & concrete stable, 100′ x 150′, plastic slate; $8,000; o., Estate of Bradish Johnson, 39 Cortlandt St.; a., James W. Cole, 403 W. 51st St.

E. Ninety-fourth St., No. 303, two-st'y bk. & st. stable & office, 20′ x 95′; $5,000; o., Rapp Construction Co., 315 E. 94th St.; a., Henry Falle, 315 E. 94th St.

Walnut Ave., nr. 140th St., 2 one-st'y bk. stables, 35′ 8″ x 86′ 5″ & 11′ 8″ x 35′, peak slate roofs; $17,500; o., Central Union Gas Co., 138th St. & Walnut Ave.; a., E. L. Spencer, 138th St. & Walnut Ave.

COMPETITIONS.

LIBRARY. [At Colorado Springs, Col.]

Competitive designs for the $60,000 Carnegie Library building will be received by the Board of Directors of the Colorado Springs Free Library up to **November 1, 1903.** 1452

PROPOSALS.

STEAM-HEATING PLANT. [At Fort Greble, R. I.]

Office Constructing Quartermaster, 209 Thames St., Newport, R. I. Sealed proposals for installing steam heating plant in guard-house, Fort Greble, R. I., will be received here **until October 30, 1903.** Information furnished on application. CAPT. H. O. HODGES, JR., Q. M. 1452

ELECTRIC ELEVATOR. [At League Island, Pa.]

Sealed proposals will be received at the Bureau of Yards and Docks, Navy Department, Washington, **until November 7, 1903,** for an electric elevator for building No. 25, Navy Yard, League Island, Pa. Appropriation $3,000. Plans and specifications will be furnished by the Commandant of the naval station named or can be seen at the Bureau. MORDECAI T. ENDICOTT, Chief of Bureau. 1453

Treasury Department, Office of the Supervising Architect, Washington, D. C., October 14, 1903. Sealed proposals will be received at this office until 3 o'clock P. M. on the 15th day of December, 1903, and then opened, for the construction (including plumbing, heating apparatus, electric wiring and conduits) of the U. S. Post-office, Custom-house, etc., extension of Jacksonville, Florida, in accordance with drawings and specification, copies of which may be had at this office or at the office of the Custodian at Jacksonville, Fla., at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1453

PROPOSALS.

ALTERATIONS. [At Fort Morgan, Ala.]
Fort Morgan, Ala. Sealed proposals will be received **until November 9, 1903**, for constructing extension to and alterations in guard-house here. Information furnished on application. A. D. RAYMOND, Q. M. 1452

Treasury Department, Office of the Supervising Architect, Washington, D.C., October 15th, 1903 Sealed proposals will be received at this office until 3 o'clock P. M. on the 8th day of December, 1903, and then opened, for the construction (except heating apparatus) of the U. S. Post-office at Meriden, Connecticut, in accordance with the drawings and specification, copies of which may be had at this office, or at the office of the Postmaster at Meriden, Conn., at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1453

Treasury Department, Office of the Supervising Architect, Washington, D. C., October 14, 1903. Sealed proposals will be received at this office until 3 o'clock P. M. on the 16th day of November, 1903, and then opened, for the construction (including plumbing and heating apparatus) of stable and laundry building, U. S. Bureau Engraving and Printing, Washington, D. C., in accordance with drawings and specification, copies of which may be had at this office. JAMES KNOX TAYLOR, Supervising Architect. 1453

HOSPITAL AND STEWARD'S QUARTERS. [At New Bedford, Mass.]
Office Constructing Quartermaster, 209 Thames St., Newport, R. I. Sealed proposals will be received here **until November 11, 1903**, for constructing frame hospital and frame hospital steward's quarters at Fort Rodman, New Bedford, Mass. Information furnished on application. CAPT. H. C. HODGES, JR., U. S. Infantry, Q. M. 1453

CHURCH. [At Dutton, Ont.]
Proposals will be received **until November 15** for erecting a Presbyterian Church. F. W. DRAKE, Secretary. 1454

CEMENT, STONE, ETC. [At Fort Monroe, Va.]
Engineer Office, U. S. Army, Room 2, Custom-house, Norfolk, Va. Sealed proposals for furnishing and delivering Portland cement, broken stone and lumber at Fort Monroe, Va., will be received here **until November 23, 1903**. Information furnished on application. E. EVELETH WINSLOW, Capt., Engrs. 1454

HEATING. [At Portsmouth, N. H.]
Sealed proposals will be received at the Bureau of Yards and Docks, Navy Department, Washington, **until November 21, 1903**, for a heating system for the new naval prison, navy yard, Portsmouth, N. H. Plans and specifications will be furnished by the bureau upon deposit of $5 as security for their return. MORDECAI T. ENDICOTT, Chief of Bureau. 1454

BUILDING. [At New Orleans, La.]
Sealed proposals will be received at the Bureau of Yards and Docks, Navy Department, Washington, **until November 28, 1903**, for constructing a brick and steel building for shops and offices at the naval station, New Orleans, La. Appropriation, $70,000. Plan and specifications can be seen at the Bureau, or will be furnished by the commandant of the navy yard named upon deposit of $10 as security for their return. MORDECAI T. ENDICOTT, Chief of Bureau. 1454

PLUMBING. [At Portsmouth, N. H.]
Sealed proposals will be received at the Bureau of Yards and Docks, Navy Department, Washington, **until November 21, 1903**, for a plumbing system for the new naval prison, navy yard, Portsmouth, N. H. Plans and specifications will be furnished by the bureau upon deposit of $5 as security for their return. MORDECAI T. ENDICOTT, Chief of Bureau. 1454

LOCK GATES, VALVES, ETC. [At Nashville, Tenn.]
U. S. Engineer Office, Nashville, Tenn. Sealed proposals for construction, delivery, etc., of 4 pairs steel lock gates, filling valves, etc., for Locks A and No. 1, Cumberland River, will be received here **until November 9, 1903**. Information furnished on application. CLINTON B. SEARS, Lieut. Col., Engrs. 1452

PROPOSALS.

COUNTY BRIDGE. [At Kansas City, Kan.]
Office of County Clerk, Court-house, Kansas City, Kan. Sealed proposals will be received at this office **until November 9, 1903**, for furnishing and erecting a steel bridge across the Kansas River at 5th St., said city. Plans, specifications, forms of bids and necessary information may be obtained at this office. Each bid must be accompanied by a certified check in the sum of one thousand dollars. FRANK HOLCOMB, County Clerk. 1452

BUILDING. [At Columbus, O.]
Sealed proposals will be received by the Memorial Association of Franklin County, O., **until October 31, 1903**, for performing the labor and furnishing the necessary materials to erect Franklin County Memorial Building on building site located on E. Broad St., near 5th St., Columbus, O., according to the plans, descriptions, bills and specifications, prepared by Frank L. Packard, architect, which are on file at the office of the association, Room 1210 New Hayden Building located at 16-18 E. Broad St., Columbus, O., and open to public inspection at the above office between the hours of 8 A. M. and 5 P. M. on all working days, until the date of letting. Plans are also on file at the Columbus Builders' exchange and at the office of the architect. By order of the Memorial Association of Franklin County, O. N. B. ABBOTT, Chairman. 1452

MARKET-HOUSE. [At Monroe, La.]
Bids will be received **until November 2, 1903**, for the erection and entire completion of a market-house building by the city of Monroe, La., according to plans and specifications prepared by L. M. Weathers, architect, of Memphis, Tenn., which can be had from J. M. Breard, chairman public building committee, Monroe, La., and also at the office of L. M. Weathers, architect, Room 25, Cotton Exchange Building, Memphis, Tenn. J. M. BREARD, Chairman Public Building Committee. 1453

CHURCH. [At Columbia, S. C.]
Proposals for the erection of a $40,000 church will be received **until November 1** by the building committee of St. Peter's Roman Catholic Church. F. P. MILBURN, architect, Columbia. 1452

PROPOSALS.

FURNITURE. [New Capitol for the State of Minnesota.]
NOTICE TO CONTRACTORS.

Sealed proposals in duplicate will be received at the office of the Board of State Capitol Commissioners, No. 512 Endicott Building, St. Paul, Minn., **until 12 o'clock noon on the 1st day of December, 1903**, for the furniture, carpets, draperies, shades and miscellaneous furnishings 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 offices on and after this date. Copies of said drawings and specifications may be obtained from Cass Gilbert, architect, No. 524 Endicott Building, St. Paul, Minn., or 79 Wall St., 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. Each bid must be accompanied by a certified check for a sum not less than five per cent of the amount of the bid, 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 be 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 on printed forms, which will be furnished by the Board, and must be inclosed in envelopes, sealed and marked "Proposals for Furniture and Furnishings for New Minnesota State Capitol at St. Paul," and addressed to the Board of State Capitol Commissioners. For Board of State Capitol Commissioners CHANNING SEABURY, Vice-president. St. Paul, October 6, 1903. 1452

POST EXCHANGE. [At Governor's Island, N. Y.]
Sealed proposals will be received here **until November 9, 1903**, for constructing a post exchange and gymnasium. Information furnished on application. T. NORMAN, Q. M. 1452

COURT-HOUSE. [At Windom, Minn.]
John A. Brown, County Auditor, invites the submission of detailed plans and specifications for the proposed new court-house **until November 17** the cost, constructed and furnished, not to exceed $50 000. 1452

NEW ENGLAND MATERIAL-MEN AND CONTRACTORS.

Professional Ethics.

The following . . .
. . . CODE OF ETHICS . . .
Prepared in Conformity with the Best Standards of Practice, and Recommended to its Members by the Boston Society of Architects, was . . . . . .

ADOPTED BY THE SOCIETY, FEBRUARY 1 . . 1895. . .

SECTION 1. No Member should enter into partnership, in any form or degree, with any builder, contractor, or manufacturer.

SECTION 2. A Member having any ownership in any building material, device or invention, proposed to be used on work for which he is architect, should inform his employer of the fact of such ownership.

SECTION 3. No Member should be a party to a building contract except as "owner."

SECTION 4. No Member should guarantee an estimate or contract by personal bond.

SECTION 5. It is unprofessional to offer drawings or other services "on approval" and without adequate pecuniary compensation.

SECTION 6. It is unprofessional to advertise in any other way than by a notice giving name, address, profession, and office hours, and special branch (if such) of practice.

SECTION 7. It is unprofessional to make alterations of a building designed by another architect, within ten years of its completion, without ascertaining that the owner refuses to employ the original designer, or, in event of the property having changed hands, without due notice to the said designer.

SECTION 8. It is unprofessional to attempt to supplant an architect after definite steps have been taken toward his employment.

SECTION 9. It is unprofessional for a Member to criticise in the public prints the professional conduct or work of another architect except over his own name or under the authority of a professional journal.

SECTION 10. It is unprofessional to furnish designs in competition for private work or for public work, unless for proper compensation, and unless a competent professional adviser is employed to draw up the "conditions" and assist in the award.

SECTION 11. No Member should submit drawings except as an original contributor in any duly instituted competition, or attempt to secure any work for which such a competition remains undecided.

SECTION 12. The American Institute of Architects' "schedule of charges" represents minimum rates for full, faithful and competent service. It is the duty of every architect to charge higher rates whenever the demand for his services will justify the increase, rather than to accept work to which he cannot give proper personal attention.

SECTION 13. No Member shall compete in amount of commission, or offer to work for less than another, in order to secure the work.

SECTION 14. It is unprofessional to enter into competition with or to consult with an architect who has been dishonorably expelled from the "Institute" or "Society."

SECTION 15. The assumption of the title of "Architect" should be held to mean that the bearer has the professional knowledge and natural ability needed for the proper invention, illustration and supervision of all building operations which he may undertake.

SECTION 16. A Member should so conduct his practice as to forward the cause of professional education and render all possible help to juniors, draughtsmen and students.

[See Alphabetical Index on Cover 2 for Pagination.]

CLASSIFIED ADVERTISEMENTS.

[Advertisers can be indexed only under a single head free of charge.]

ARCHITECTURAL METALWORK.
Mullins, W. H., Salem, O.

ARTISTIC WIRE AND METAL WORKS.
Morss & Whyte, Boston.

ART METALWORK.
Art Metal Construction Co., Jamestown, N. Y.

ASPHALT.
Neuchatel Asphalt Co., New York.

ASPHALT ROOFING.
Warren Chemical & Mfg. Co., N. Y.

BLUE PRINTS.
Makepeace, B. L., Boston.
Moss, Chas. E., Boston.
Parks & Jeeves, Boston.
Spaulding Print Paper Co., Boston (eow)

BRASS FINISHERS.
Marble Co., W. P., Boston.

BRONZEWORK (Ornamental).
Richey, Browne & Donald, Long Island City, N. Y.
Tyler Co., The W. S., Cleveland, O.
Winslow Bros. Co., The, Chicago, Ill.

BUILDINGS TORN DOWN.
Elston & Co., A. A., Boston.

CAPITALS (Carved).
O. T. Nelson Co., The, Columbus, Ohio

CARVING.
Waddell Mfg. Co., Grand Rapids, Mich.

CEMENT.
Alsen's Cement Works, N. Y. (eow)
Atlas Cement Co., New York.

CLEAN-OUT.
Craig, David, Boston.

CLOCKS.
Blodgett Clock Co., Boston.
Howard Clock Co., The E., Boston.

CONSERVATORIES.
Lord & Burnham Co., Irvington-on-Hudson, N. Y.

CONTRACTING.
Flynt Building & Construction Co., Palmer, Mass.
Rutan, William L., Boston.

CONTRACTORS AND BUILDERS.
McKay & Woolner, Boston.
Rutan, William L., Boston.

CORDAGE.
Samson Cordage Works, Boston. (eow)

CRANES.
Northern Engineering Works, Detroit, Mich.

CUPOLAS (Foundry).
Northern Engineering Works, Detroit, Mich.

CUTLER PAT. MAILING SYSTEM.
Cutler Mfg. Co., Rochester, N. Y.

DEAFENING QUILT.
Samuel Cabot, Boston, Mass.

DOORS (Steel Rolling).
Kinnear Mfg. Co., The, Columbus, O.

DOORS, WINDOWS, ETC.
Carlisle, Pope & Co., E. A., Boston.

DRAUGHTSMAN.
E. Eldon Deane, New York.

DRAWING INSTRUMENTS.
G. G. Ledder, Boston, Mass.

DUMB-WAITER.
Perry, W. J., Boston.

ELECTRICAL CONTRACTORS.
Erickson Electric Equipment Co., Boston.

ELECTRIC SIGNALS.
Elevator Supply & Repair Co., New York.

ELEVATORS, ETC.
Kimball Bros. Co., Council Bluffs, Ia.
Morse, Williams & Co., Philadelphia.
Whittier Machine Co., Boston.

ELEVATORS (Foundry).
Northern Engineering Works, Detroit, Mich.

ELEVATOR SIGNALS.
Herzog Telesema Co., New York.

ENGINEERS.
Jager Co., Charles J., Boston.

ENGINES (Hot-Air).
Rider-Ericsson Engine Co., New York.

FAN SYSTEM.
Sturtevant Co., B. F., Boston, Mass.

FAUCETS (Combination).
Union Brass Works Co., Boston.

FILING DEVICES.
Art Metal Construction Co., Jamestown, N. Y.

FILTER.
Loomis-Manning Filter Co., Phila., Pa.

FIRE-ESCAPES.
Standard Fire-escape & Mfg. Co., Boston.

FIREPROOFING.
Associated Expanded Metal Co., New York.
Brown Hoisting Machinery Co., The, New York.
National Fireproofing Co., Pittsburg, Pa.

FIREPROOF LATHING.
Hayes, Geo., New York.

FIREPROOF SHUTTERS.
Kinnear Mfg. Co., The, Columbus, O.

FLOOR POLISH.
Butcher Polish Co., Boston.

FOUNDRY EQUIPMENT.
Northern Engineering Works, Detroit, Mich.