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MR. DISTRICT-ATTORNEY JEROME, in his endeavors to get evidence of extortion and bribery, has been overwhelmed with such a mass of testimony that he seems to have given up the matter in despair, and says that the law cannot reach such cases, but that the cure of corruption must come by an improvement in the tone of public morality. It is not likely that the tone of public morality will be improved by the knowledge that bribery and blackmailing are lawful means of making money; and those citizens who deplore corruption might with advantage join those who suffer directly from it in trying to check it. President Roosevelt's saying, that publicity is the best cure for trusts, the truth of which is being illustrated every day, might equally well be applied to bribery and extortion, if it were not for the laws, which, by making it a crime to offer a bribe, prevent anybody from accusing himself by telling about extortion practised upon him, while they do nothing to diminish the evil which they pretend to be aimed at.

WE are inclined to suggest that a partial remedy, at least, for the trouble might be found in relaxing, or even abolishing, the criminal statutes against bribery, and substituting a civil process, by which a person compelled to pay money under threat of injury or annoyance, or to purchase the favor of public officials, might recover back the amount paid, with costs. Such a provision would agree in principle with the common law rule, that payments made, or receipts given, under duress, are void, and that money so paid may be recovered, and receipts set aside, at any subsequent time; and the spectacle of a public official, sued in the courts to recover back money paid him in consideration of the award of a contract, or of a walking-delegate sued for return of money extorted, would be far more effective than a criminal action, both in punishing the wrongdoers, who would be held up before the world in their true light, and in deterring those disposed to do wrong, who would have much more reason to fear civil suits for recovery of money illegally taken than criminal suits, in which the plaintiff, under the statutes of most States, would have to acknowledge himself also a subject for penitentiary treatment. To architects and engineers the subject is one of vital interest, for the number of contracts and commissions, the award of which depends upon "seeing" somebody, or "making it right" with some one else, increases every day; and in proportion to the increase of transactions of this kind the income of professional men who will not sell themselves or their clients diminishes.

THE building situation in New York seems to improve slowly. All the marble-workers' unions have signed the arbitration plan. These unions have about four thousand members, the greater part of whom will find immediate employment. Meanwhile, the walking-delegates have begun making "charges" in the newspapers against the Employers' Associa-

tion. This is quite a different matter from threatening to "make the employers' hair curl," and, in the present state of public opinion in regard to walking-delegates, an appeal to it is rather the resort of desperation. At the same time that the unions are gradually deserting their noisy "champions," the non-union men are plucking up courage. Even in Parks's own trade, the housesmiths are deserting the union standard and applying for work in considerable numbers, fifty having been employed at once by the Thompson-Starrett Company.

OUR readers will be glad to hear that the business of the Norcross Brothers Company is to be continued, a satisfactory arrangement having been made with its creditors. Under this arrangement, the building contracts of the old corporation are to be assumed by a new corporation, which is to take the Worcester shop and equipment, the office furniture and fixtures, the cash on hand and in the banks, and the accounts receivable, including sums due on contracts and completed work, with the good will of the business, which is to be continued under the direction of Mr. O. W. Norcross, as manager, at a reasonable salary. In addition to this corporation a second one is to be created, known as the Norcross Properties Company, which is to hold and manage the various quarrying, manufacturing and other subsidiary enterprises belonging either to the Norcross Brothers Corporation or Mr. Norcross individually. All these enterprises are believed to be solvent, and to have substantial earning power, and it is proposed to mortgage them to secure bonds, carrying six per cent interest, which the creditors of the present Norcross Brothers Company agree to accept for three-fourths of their claims, the remaining one-fourth to be paid in cash by the new construction company. This settlement will relieve the finances of the new construction company, and enable it to complete its contracts profitably. As the Properties corporation owns all the stock of the Construction Company, the profits of the business will accrue to it, and will be used for retiring the bonds, which, by a provision in the indenture, may be drawn each year for payment to a specified amount. After all indebtedness has been paid, the property is to be handed back to Mr. Norcross and his family.

THE death of Mr. James A. Norcross, for many years the senior partner of the building firm of Norcross Brothers, saddens what would otherwise be the very satisfactory solution of the difficulties of the great corporation which succeeded to the business of that firm. Mr. James Norcross's connection with the operations of Norcross Brothers ceased some years ago, when he retired altogether from active business, to devote himself to the management of his large property. Although much less known to architects than his younger brother, as his duties, during the period of his connection with the firm, kept him closely confined at the office, many of the profession will remember him as a quiet, considerate man, who inspired confidence and regard.

WE have not felt particularly disposed to notice the death of James McNeill Whistler, partly because his connection with architectural work was very slight, and not extremely happy, and partly because we think that the attention paid by the public to artists notorious mainly by their eccentricities detracts from the reputation of the greater ones who, finding their time and their thoughts fully occupied with the effort to express in form or color the beauty which fills their minds, have neither leisure nor inclination to advertise themselves. There were, however, some things about Whistler's life which have a professional interest. One of these is the circumstance that he married, late in life, the widow of E. W. Godwin, one of the cleverest architects of the last generation. Mr. Godwin was for many years connected with the *British Architect*, and in the columns of that journal we find the best notice of Whistler that we have yet seen. It appears that his married life was particularly happy, so that his later years were, we may hope, free from the "sadness" which, as he himself said, attended the greater part of his life, and perhaps inspired the brutal sarcasms for which he was renowned. It is related of him that he once asked a young lady pupil if

she really saw things as she painted them. The poor girl innocently replied that she did. "What a horrible world you must live in!" said Whistler. Our readers may detect a similarity between this story and some told of other distinguished artists, and it will, perhaps, be judicious to remind aspiring youth that a sharp tongue is by no means a necessary, or even a desirable part of a painter's outfit, and that consideration for others invites consideration for one's self. The history of the famous "peacock room" affords another illustration of this principle. This room formed a portion of a house at Prince's Gate, in London, belonging to the late Mr. Leyland, a wealthy ship-owner, and a kind, faithful friend of Whistler, as well as of Rossetti. Most of our readers have, undoubtedly, seen photographs of this room, the decoration of which consisted of a mass of peacocks' feathers, with a rather insignificant figure as a centre. As a piece of architectural decoration the room was of no interest whatever, and, as a bit of color, it would probably be advantageously replaced, to modern eyes, wearied by the eternal repetition of peacock harmonies, by a good Oriental rug; but, as a startling novelty at that time, it had a great success. Soon after the completion of this work, Whistler quarrelled with his benefactor, and had the ingratitude and insolence to exhibit a life-size portrait of him in the character of Satan, with horns, hoofs and tail.

MR. WILLIAM DE LEFTWICH DODGE, a very well known New York artist, has brought suit in a case which will excite the sympathy of artists generally. Mr. Dodge, it seems, was engaged to execute certain mural paintings in a hotel in Canada. He submitted sketches, which were approved, and carried out the work in accordance with them. Now it appears that the owner, or the architect, or somebody else, wants the pictures altered. In one of the large groups, as Mr. Dodge says, he is asked to remove the hats from the figures. In another, which represents a sort of procession, with flags and other objects against the sky, he is told that he must paint out the flags, so as to give more sky, making his figures stand up, as he says, like a row of tin soldiers, in silhouette against an unbroken sky. Another singular request is that he shall repaint a group, representing General Wolfe reading Gray's *Elegy* to his soldiers, on the night before the battle of Quebec, so as to give it an effect of bright sunshine, whereas the historical fact is that the reading took place on a dark night, which Mr. Dodge only ventured to take the liberty of changing to a moonlight scene. The architect, according to Mr. Dodge, wishes to have these changes made to lighten the room in which the pictures are placed, and threatens to have them repainted by local talent. Probably the architect has something to say for his side of the matter, but the artist seems to have a real grievance.

DR. LUDWIG MOND, famous as a chemist, and as the inventor of the process for producing a cheap fuel-gas, known under his name, died in Rome a few days ago. Dr. Mond was born at Hesse-Cassel, in Germany, in 1839, and studied at Marburg and afterwards at Heidelberg. Like many of the modern German chemists, he devoted himself to the practical application of his scientific knowledge, and soon became distinguished for his inventions in industrial chemistry. In 1862 he went to England, to introduce a process for recovering sulphur from alkali waste; and, five years later, settled there permanently. In 1872, he introduced the Solvay process for manufacturing soda, and was soon at the head of the largest alkali works in Great Britain. Since then he has devoted himself to the solution of many practical problems, obtaining various patents, relating, particularly, to the economical utilization of coal, by which, it is said, he derived twice as much force from a given quantity of coal as was ever obtained before. The Mond gas system is in successful operation in England, and has been introduced into this country, but its merits are, probably, very inadequately recognized as yet.

A STRIKE insurance company has been formed in Louisville, Ky., after the pattern, apparently, of the German companies. Although its place of business is in Louisville, its members include manufacturers from various States, from New York to Indiana. The risks assumed are moderate, and the expenses of management are restricted to a small percentage of the premiums; but there is a mutual provision, by which assessments can be laid on policy-holders, if necessary.

The newspapers give, as yet, only very incomplete details of this interesting experiment, but it is to be hoped that its success may be such as to lead to the foundation of similar companies in other places. Nothing helps a reform so much as making it for some one's interest to promote it. As the death and disability insurance companies in Germany have, simply as a matter of dollars and cents, reduced the average number of deaths from tuberculosis by a very large percentage, so the officers of strike-insurance companies, being neutrals, so far as the parties to strikes are concerned, and having an important interest in preventing strikes, by smoothing over misunderstandings or otherwise, may, very probably, do much to alleviate the greatest curse from which modern industry suffers.

A WELL-KNOWN firm of architects has had an unfortunate experience in collecting fees. The firm, several years ago, prepared plans for a court-house. The building of the court-house was abandoned, and the architects sued for the services that they had rendered. The case dragged along for several years, and the elder member of the firm, in whose name the suit was brought, assigned one-half the claim to a certain attorney, and the other half to his son, the other member of the firm. Later, the attorney purchased the son's interest in the claim for one hundred and fifty dollars. Finally, the case was decided in favor of the architects, and the sum awarded them, amounting to nearly fifteen thousand dollars, was paid into court, and turned over to the attorney to whom the claim had been assigned. Naturally, the son, who had sold a good claim for more than seven thousand dollars for about one-fiftieth of its value, felt himself aggrieved, and tried to prevent the payment of the money to the attorney, but was unsuccessful.

THIS is certainly the age of large schemes. The Bridge Commissioner of New York and his architect, Mr. Hornbostel, have plans already prepared for buildings around the New York end of the East River Bridge which will cost, with the land, about fifty million dollars. The plans contemplate the removal from the City Hall Park of all buildings except the present City Hall, which is to remain as the Mayor's office, the other city departments being accommodated in a new and magnificent group of buildings extending from Chambers to Duane Street, and comprising a terminal station for the bridge, and a "campanile," six hundred and fifty feet high, containing forty-two stories of offices. This structure, we are told, will "dwarf" the thirty-story Park Row Building, close by, as well as the other "sky-scrapers" in the neighborhood, and it is expected that the general scheme, if carried out "will create a plaza that will surpass in magnitude and general artistic effect even Trafalgar Square, in London, or the Place de la Concorde, in Paris." That the new "plaza" will be different in "artistic effect" from the spaces mentioned every one will concede: whether it will be superior is a question of taste. We may say that the "artistic effect" of Trafalgar Square is something that we never heard mentioned before. There is no doubt that it is large, very much larger, we should say, than the New York City Hall Park, even with the addition of Chambers Street, which it is proposed to incorporate with it; and it has a monument in the middle which would unquestionably be "dwarfed" by a forty-two story "campanile"; but the low and comparatively insignificant buildings surrounding Trafalgar Square are so totally different from the forest of "sky-scrapers" about City Hall Park that it is hardly possible to make any comparison between them. With the Place de la Concorde, also, no comparison is possible, for the reason that the Place de la Concorde has buildings only on one side, which is occupied by the low, balanced masses of the Garde Meuble and the Automobile Club, with the front of the Madeleine appearing between them; the three remaining sides bounding on the vast areas of the Garden of the Tuileries, or the Champs-Élysées, or the open space of the river, without a suggestion anywhere of the huge cliffs of brick and mortar which shut in the City Hall Park on all sides. To obtain, in the lower part of New York, an effect suggesting the air and sunshine of the Place de la Concorde, the Battery Park should be chosen for enlargement, instead of the City Hall Park; and the new municipal buildings, arranged across the upper end, facing south across the Park and the harbor beyond, would have an effect, even without the addition of a "campanile" for dwarfing purposes, that could not be surpassed in any great city in the world.

MEZZOTINTS.¹

WHERE are two distinct ways of engraving metal plates, so as to be able to make prints from them, the *intaglio* and the *relief*.

The *intaglio* forms of engraving comprise line engravings with the burin, dry point, and all forms of etching with acid.

The *relief* forms of engraving comprise such blocks as those cut for Pigouchet's "Books of Hours," in the fifteenth century, and those etched by William Blake for the cheap reproduction of his poems, in the eighteenth century. The first of these two kinds of engraving has been most used so far as metal is concerned, as wood is easier and cheaper to make for relief blocks.

To print from a metal plate, engraved in the *intaglio* manner, a strong pressure is required, but to print from a relief block only a slight pressure is required, and in either case an impression can be made either in white or in black, according to the manner in which the *intaglio* or the relief block is inked and printed.

A mezzotinted metal plate is at first clearly an *intaglio*, but as the rocking proceeds and becomes closer, the resulting burrs are actually raised above the level of the normal surface, and to that extent the plate becomes a relief block. Like a relief block also it will print black, and as the surface is scraped away or burnished down, so also the resulting effect on the print is towards white.

The difference of the commoner lines made on a metal plate for the purpose of reproduction by printing shows clearly on one of my diagrams (Fig. 1). The upper line is a clear cut out of the surface of the metal, a thread of corresponding size to the cut being removed. The next line shows the effect of an etched line on metal;

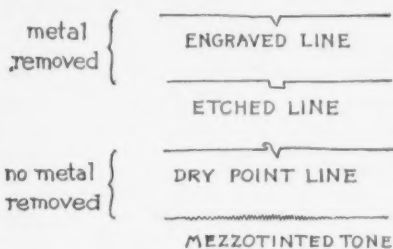


Fig. 1. Diagram showing the Microscopic Forms of Lines cut on Metal.

in this case the metal is first covered with a thin coating of wax, specially prepared, and upon this a design is marked with a sharp point or needle, cutting down to the copper. Then the plate is dipped in a solution of nitric or other acid, which attacks the metal in the places where the wax coating is removed and corrodes it away rapidly. If the plate is left too long in the acid this will undercut beneath the wax and make broad lines. I mean to say that the acid will, of itself, give other effects than those intended by the etcher, and of course it removes some metal. The next shows a dry-point line, no metal being removed, but only a scratch made, throwing up on one side the same amount of metal as is moved by the hard scratching point; the action is similar to that of a plough driving a furrow and throwing up a ridge. On the metal this ridge is called a burr, and it has a very important effect on a print as it catches a quantity of ink behind its sheltering crest, and produces a thick, soft effect on the paper.

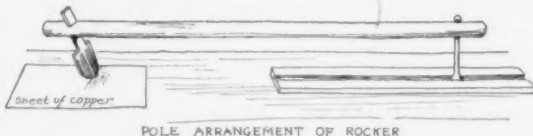
The mezzotinting process removes no metal, except by accident, as, for instance, when the rocking is carried too far, then the burrs will get so small that they are apt to tumble off and leave only a roughened depression.

The most distinctive tool used in the process of mezzotinting a metal plate is called a "rocker." It resembles a small spade, and is bevelled at the broad end, which has a curved outline (Fig. 2). The flat side of the rocker is channelled finely or coarsely according to the wish of the engraver, and whenever the tiny teeth get worn down or perhaps broken in places, it is easily remedied by simply sharpening the edge as if it were a chisel, the effect of the channelling being to produce a toothed edge resembling that of a tooth-comb. In the early times of mezzotinting rockers were made so as to be used in the hand, but of late years an arrangement with a short pole has been substituted, and with this simple appliance it is much easier to roughen a plate than



ROCKER.

Fig. 2.

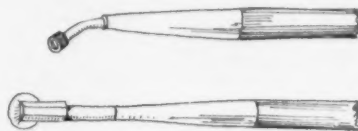


POLE ARRANGEMENT OF ROCKER.

Fig. 2a. Pole Arrangement of Rocker.

it was when the rocker was handled like a gimlet (Fig. 2a.) The rocker, as now used, is no doubt a development from a roulette. The first mezzotints were roughened by means of roulettes held

in the hand. They were of many different forms, ranging from the small tooth wheel like the rowel of a spur, with a single line of points, to the broad disc, resembling a small garden roller, which was used by Prince Rupert and his followers. Between these two



ROULETTES.

Fig. 3.

extremes the varieties of roulettes were many, and it is likely that each mezzotinter designed the form which he preferred for his own use (Fig. 3). Roulettes were first used to roughen metal plates by L. von Siegen, who found that they were able to produce an effect, rapidly and easily, which, if done point by point in the known "pointillé" manner, would be slow and difficult.

The most valuable use of a roulette is not in its use alone, but as an accessory to rocked work; being quite small it is invaluable to deepen the roughening in particular places, and it is also of great use in the event of too much scraping having been accidentally done. In former days mezzotinters generally laid their own grounds, very often only working them when required, but now the whole of the plate is evenly colored with the rough grain, and this laying of a mezzotint ground is, moreover, done professionally, so that a modern engraver works on a ground with which he is in doubtful sympathy. I think that the professional laying of a mezzotint ground militates much against the true art value of the work of any engraver who works upon it. It is, however, a slow and tedious process, the plate having to be crossed some eighty times, and in these days of hurry we must perforce forgive it, as very few mezzotinters could, or would, spare the time to do it for themselves as they ought to.

The next important tool used in the production of a mezzotint is a scraper (Fig. 4). Like the rocker, the scraper is of hard steel. It is a short sharp cutting-edge set in a handle, and by its use the mezzotinter scrapes away the roughness on his rocked plate as much



SCRAPER.

Fig. 4.

as he considers necessary. If the scraping is carried far enough all the marks made by rocker or roulette can be erased, and every scrape, when printed, shows more or less as a light place. Scrapers should be very carefully kept dry, as the sharp edge soon loses its value if any rust gets on it, and instead of a clean sharp cut, it makes a jagged scratch. The main difficulty in engraving a mezzotint is in the use of the scraper, so much so that the phrase "scraped" by so-and-so is often heard, referring to the engraver. Indeed it may almost be said, especially now that the grounding is usually done professionally, that the art of the mezzotinter consists of his skill with the scraper alone. There is, however, one more instrument that is a dangerously powerful one. Dangerous because it can be made to do easily work of the same kind as can be done with some difficulty with the scraper. This instrument is a burnisher, and the work of flattening down the small roughnesses which are left by the scraper falls to its lot (Fig. 5). A burnisher is a more delicate instrument than even a scraper, because its own function requires a perfectly clear polished surface to work with. If there is the smallest speck of rust on a burnisher it is not safe to use it. Early mezzotinters were by no means so careful about this as they might have been, and the result can be seen in numberless



BURNISHER.

Fig. 5.

instances where places intended to be pure white show hair marks along their length. Such marks are probably due to small inequalities on the surface of the burnisher.

A hard-steel burnisher acting on soft copper which has been rocked, is capable of polishing out all marks, and, consequently, of creating a form on the plate which will show white upon a print. Such a small point will be, however, a depression on the copper, and although polished, nevertheless a layer of ink is always likely to remain in it, so it is advisable to go over all such points with a soft wooden point armed with a little whitening, in order to get every atom of the ink out. Such white spots can often be seen on the points of noses, and about the eyes, and for greater effect they are also often helped by the near neighborhood of burin work, sharp and black.

Practically, then, a mezzotinted plate is burred all over, and the art-work upon it is done by means of scraper and burnisher, the effect of each of which is towards lightness. The more it is worked upon by these two instruments the lighter the print will be, and in a few places where greater strength of tone may be required, a roulette can be effectively used to restore the requisite darkness. Many fine

¹ A paper by Cyril Davenport, F. S. A., read before the Society of Arts May 19, 1903, and printed in the *Journal* of that Society.

mezzotints owe much to line engraving, dry-point and etched work, but when any of these are found in any considerable quantity the engraving should properly be called in "mixed manner."

Much importance attaches to the inking of a mezzotint plate, more importance than has been credited to it. A bad inker and printer cannot make a good print from the finest plate, and a good inker and printer can make a decent print from a very bad plate.

Mezzotints were printed in color at an early period in their history. Joannes Teyler, Professor of Mathematics in the military college at Nimeguen, at the end of the seventeenth century, printed several of his plates in color, inking each plate carefully in the proper place with properly colored ink. Then, a little later, J. Christophe Le Blon began three-color work. He engraved a separate plate to carry each color, and used red, yellow and blue, with sometimes a key-plate in neutral tone. At least one of these plates was mezzotinted, but they are sometimes etched. He described his process in a tract entitled, "Coloritto," published about 1723.

The finest color-work of this kind is now done for the "Société des Amis des Livres," at Paris; the registering of their plates is marvellous, and the effect beautiful. In England, Mr. Cadbury Jones endeavored some short time back to introduce color-printing for metal plates in the manner of Joannes Teyler, the plates being inked in the different colors, but his endeavors did not meet with the success they deserved.

The early exponents of mezzotint work were all amateurs. The first mention of it is contained in John Evelyn's "Sculptura," published in London in 1662, and he says it was described to him by Prince Rupert. Prince Rupert engraved a small head of "The Executioner," taken from the larger plate, for Evelyn's book, and this is, I believe, the first mezzotint ever published as a book illustration. Evelyn does not describe the process, but it was described by Alexander Browne in a book called "Ars Pictoria," published by him in 1669. In this description no mention is made of a scraper, but the directions advised the use of a burnisher for lightening the plate.

Prince Rupert was for a long time considered to be the inventor of the mezzotint, but it is now known that Ludwig von Siegen, an officer in the Hessian army, used a system of engraving which ultimately developed into true mezzotint. An excellent account of Von Siegen and his invention can be found in Léon de Laborde's classic "Histoire de la Gravure en Manière Noire," and in this book is a fac-simile of a letter which was sent to the Landgrave of Hesse, accompanied with a print of a portrait of his mother, the Landgravine Amelia Elizabeth, executed in the new manner. This print, of which I have an excellent slide, is, in my belief, all worked by means of a small single-line dotting roulette. Von Siegen's letter is dated August 19, 1642, and his print is considered to be the first important mezzotint. In places where the roulette has been used closely and strongly a certain velvety effect is found, and this no doubt, being entirely new, gave the idea a start, which was followed up by Prince Rupert and others, and eventually became the chief characteristic of mezzotint work. I take it, however, that in all these early prints the mezzotinting or rouletting has only been done in the places where it was wanted, so that scraping was not necessary, whereas in a true mezzotint the rocking or roughening is systematically done all over the plate and afterwards cut away by means of a scraper as required. In Von Siegen's letter there is no mention of a scraper.

Prince Rupert learned the new art from Von Siegen, and rapidly improved upon his master's work. Several of his plates are powerful and cleverly managed, the mezzotinting is only put where it is wanted, and there is little or no use of the scraper. The use of the burnisher on metal was well known in Prince Rupert's time, and any corrections he found it necessary to do upon his plates were probably done by means of this instrument. Prince Rupert most likely used a roller with a grooved surface to roughen his plates, and some of them show broad curved impressions from such an instrument. The early mezzotinters were not only amateurs but Dutchmen as well, the Canon von Fürstenburg being a contemporary with Prince Rupert. Wallerant Vaillant, a Dutch portrait painter, assisted Prince Rupert, and himself worked a few plates in the new manner, but neither his work nor that of the Canon was particularly good. Under one of his plates, a portrait of Prince Rupert, occur the words "Prins Robbert, vinder van de Swaarte Prent Konst." The Van Somers and Abraham Blooteling also worked in England; in the case of Blooteling this is particularly fortunate, as his work is in every way excellent, and in consequence of his working here so largely, we count him in the list of English mezzotint engravers. Blooteling was the first to perceive the great artistic possibilities of the new process of engraving, and he taught an assistant, Blois, to prepare his grounds, and these are well and evenly done. Also Blooteling used the scraper, which does not seem to have been used before in the particular way of lightening on all-over darkened plates. The question naturally occurs here as to whether it is possible to say from a print whether a pale place on a mezzotint has been produced by means of a scraper or by a burnisher. I have not time now to go into this question, but will only say that there are certain signs on all such pale places by which it can be said, with some certainty, how they have been produced. Blooteling came here in 1673, and his work quickly became much admired by line engravers, many of whom took up the new process as an amusement; but gradually its powers became more and more appreciated until at last our native engravers became so preëminently skilful that mezzotinting was known as an English art.

The early mezzotinters engraved principally after their own drawings, but very soon they became interpreters of the work of other men. At the same time, in a first-rate mezzotint, we must acknowledge a considerable amount of original merit, in addition to the skill of the copyist.

Like the Dutch the first English engravers in mezzotint were amateurs, the first two being William Sherwin and Francis Place. Sherwin counts first because he dated one of his prints, a portrait of Charles II, "1669," and Place dated none of his, though they may have been done earlier than Sherwin's. Isaac Beckett may be considered the first English professional mezzotint engraver. He worked about 1670, and took pupils, among whom was John Smith, afterwards one of our most famous engravers, and a very prolific one.

After Isaac Beckett English engravers in mezzotint increased rapidly in number, and they gradually took the art away from its Dutch votaries; at the same time, the foreigners remained here for some time, and executed much good work. Among these were some well-known artists, Vandervort, Verkolje, Van Bleek and Van Haeken.

During the eighteenth century we do not find the same preponderance of Dutch workmen, but the English names occur almost exclusively. In the beginning of the century John Smith worked most successfully, and was followed by a numerous band of famous engravers, many of whom, owing to the revived appreciation of mezzotints, are now well known.

John Faber, junior, is best known for his engravings after the portraits of the members of the Kit Cat Club painted by Sir Godfrey Kneller. The club was originally political but soon lost that distinction, and the club-room in Jacob Tonson's house at Barn-elms was too low to admit the usual full-length figures, so Kneller made his canvasses 28" x 36", and christened this size of picture after the name of the owner of the original meeting-house, Christopher, or Kit Cat.

About 1714 George White inaugurated the introduction of etching into the mezzotint world; he strongly etched his subjects before putting in the mezzotint tones. This principle was afterwards much followed especially in the case of large subject pieces.

A large proportion of eminent eighteenth-century mezzotint engravers came from Ireland, the most eminent of whom was James MacArdell. He largely engraved after Sir Joshua Reynolds, who himself declared his belief that he would be immortalized by MacArdell's work. Then there was his fellow-pupil with Brooks, Richard Houston, and Thomas Frye, who engraved large portrait-heads after his own drawings about 1740. Other noted Irish engravers were E. Luttrell; Thomas Beard, W. Baillie, John Murphy (who, unfortunately, has only left a few rare plates, all very fine), J. Brooks, Ed. Fisher, Ch. Spooner, J. Dixon and Richard Purcell.

These engravers and their English contemporaries of the eighteenth century have left an unequalled series of magnificent portrait-engravings after the works, particularly of Sir Joshua Reynolds, P. R. A., J. Hoppner, R. A., Sir T. Lawrence, P. R. A., G. Romney and T. Gainsborough, R. A., all notable for the beauty of their female types, and in the matter of subject pictures they have engraved chiefly after the works of G. Morland, W. Hogarth, Benjamin West, P. R. A., and J. Zoffany. Among the most notable of the English mezzotinters of the latter half of the eighteenth century, Valentine Green is one of the best known. He had several pupils of whom John Dean, one of the most delicate of engravers, is perhaps the most eminent. In 1777, Richard Earlom engraved a set of mezzotinted etchings after Claude Lorrain, one of which I have to show you as an experimental slide. J. R. Smith, son of Smith of Derby, was one of our greatest engravers in mezzotint; he made some plates after his own drawings, but is chiefly known for his beautiful interpretation of the works of Sir Joshua Reynolds.

J. Walker, Jonathan Spilsbury and C. Turner were all first-rate engravers in mezzotint. C. Turner was a relation of J. M. W. Turner, our greatest landscape painter, and he assisted his eminent kinsman in the engraving of some of the plates of the "Liber Studiorum."

During the early part of the nineteenth century portraiture still maintained its supremacy, but the application of mezzotint to landscape art is characteristic of a later period. S. W. Reynolds, a pupil of J. R. Smith, was a very successful and skilled engraver. He engraved a series of 357 small mezzotints after the work of Sir Joshua Reynolds. These small plates form an illustrated index of Sir Joshua's work as far as S. W. Reynolds could find it. They are, however, not quite satisfactory, as the process of mezzotinting does not suit very small work any more than it suits very large work. S. W. Reynolds also engraved several plates after his own drawings.

William Say is noteworthy among the earlier nineteenth-century engravers, as he executed a small portrait of Queen Caroline in 1820 which is the first mezzotint engraved upon steel. Underneath the first proof made from this plate is a note:—"This attempt to engrave on steel was made in 1820.—W. Say." The portrait is not very pleasing, but many mezzotinters have worked in steel since with much success. No doubt the great durability of steel is much in its favor, but there are several technical difficulties connected with its actual use for engraving upon directly, and this has led to the modern evil of mezzotints engraved upon copper being covered with a thin film of steel, so as to give them a lengthened life. From such a steel plate an infinite number of identical prints can be

drawn. From mezzotints engraved upon a copper plate about fifty prints of the finest quality can be drawn, after that the plate begins to deteriorate. The beauty of a print from a copper plate is a rare beauty; that of a print from a steel plate never can be rare, neither is it equal in quality to a print made before the steeling operation was done. There are certain checks upon the indiscriminate production of prints from steel plates, but I doubt if they are reliable.

J. M. W. Turner no doubt admired R. Earlom's etched mezzotints of Claude Lorrain's "Liber Veritatis," and it appears likely enough that this gave the former the idea of his "Liber Studiorum," issued in parts between 1807 and 1819. Turner made small sepia sketches, from which he etched the outlines on copper, and then had the light and shade filled in by various engravers in mezzotint or aquatint. Turner himself mezzotinted some of them. Of their kind they are the finest things that have been done, and they have always been favorites with collectors because of the difficulty of getting a complete set of proofs. Turner issued the prints in sets, "Prints" and "Proofs," but, as a fact, they were all mixed, so that to get a real set of proofs together involves a long search and much tribulation.

Quite recently Mr. Frank Short, best known as an etcher, produced a few etched and mezzotinted plates from sketches by Turner, done in the same manner as the old ones, to which they clearly approximate in every way.

T. G. Lupton was the first mezzotinter to work largely upon steel, and he chiefly engraved landscapes. For his success in working this process upon soft steel he received the medal of the Society of Arts in 1822. His work is, I think, the most pleasing of any mezzotinted landscapes; this is partly due to the fact that he used a brown ink by preference. Brown ink is troublesome to manage on steel. I think, altogether, that landscapes are hardly satisfactory in mezzotint, but that the finest effects are to be found among the splendid series of full-length portraits of ladies, after Sir Joshua Reynolds, or one or other of the artists of his period. Three-quarter lengths are perhaps the more usual form in portraiture, both in portraits of men as well as women, but there is a completeness about a full-length, which is necessarily wanting in a portrait representing any lesser degree.

David Lucas is particularly known for his interpretations in mezzotint after the landscapes of John Constable, R. A. They are, as a rule, too dark, and are printed in black ink. Sometimes pleasanter prints have been drawn from a worn plate than from a new one, as they are paler. At the same time the original pictures are dark, but I think that if Lucas had used a browner ink, as Lupton did, his landscapes would have been pleasanter. He nearly always engraved on steel. Lucas died in 1881.

Samuel Cousins brings us up to modern times; he gave up work in 1883. His work is always delightful. In 1814 he was apprenticed to S. W. Reynolds, and presently set up for himself at 104 Great Russell Street. He engraved largely both portrait and subject pieces, and his plates are very fully etched before the mezzotinting is put on them. His style may be considered as the modern one, as it has formed the key-note for most of his successors. A large plate, engraved by him, after Landseer, "Bolton Abbey," executed quickly and very effectively in etching and mezzotint, is supposed to have given the death-blow to the old-fashioned, slow and expensive process of line engraving. It was published in 1837. He engraved largely upon steel.

Mezzotints can now be very efficiently copied by means of photogravure, a form of etching, and probably this process may yet attain greater perfection. At present it leaves something to be desired in the matter of brilliancy,—there is too much loss of light. But a photogravured plate can be worked over to almost any desired extent by rocker or roulette, burnisher and scraper, so that it can be made almost identical with the original. A photogravure made direct from a painting is often very good, but here, again, it generally needs a little skilled handwork in weak places.

What with steel-plating of copper-plates, and the direct competition of photographic processes, it is probable that mezzotinting as a high art has had its day. Except for the work of a very few living engravers of the first rank in this method, mezzotinting has already reached its highest development, and we may well be proud of the beautiful examples which have been left to us by MacArdell, Valentine Green, J. R. Smith, and others of their period, men whose talent has been great enough to earn for their particular art of engraving the title of "La Manière Anglaise."

MODERN WAREHOUSES AND SHEDS IN THE FREE HANSA CITY OF HAMBURG.¹

IN the German Empire it is necessary, according to the regulations laid down in par. 16, and the following paragraphs, to obtain the permission of the authorities empowered by the laws of the nation: "For such buildings as by their local position or by the nature of the industries carried on in them, might cause important prejudice, danger or annoyance to the proprietors or inhabitants of the neighboring sites or to the public in general." It is, therefore, the duty of the authorities to prescribe in each case the measures

necessary to secure safety from fire in the construction of the building and the working of the business.

But mercantile warehouses and stores do not fall under these regulations, although they contain great quantities of combustible goods, and also include some industries, except when the regulations from par. 16 *et seq.* are applicable to the latter, which, however, does not often happen.

In Hamburg, moreover, the Police Building Law now in force must be taken into consideration. This contains a number of regulations for fire protection, and, among other things, enjoins that the outside walls must be solid and the roofs fireproof; but it provides no definition whatever of the space permissible between the party-walls, nor any regulations concerning the nature of the interior construction of the stores.

Only for that district of Hamburg which has been handed over to the "Freihafen Lagerhaus Gesellschaft" established under State guaranty has it been laid down in a law, *ad hoc*, that special sanction is necessary both for the building and working of stores. To this company belongs a very important part of the store district in Hamburg, containing up to the present 114 stores, covering an area of about 62,000 square metres. For these buildings, then, the authorities prescribe regulations and conditions both for construction and working as occasion arises.

Besides this, on the quays at Hamburg a great number of store-sheds have been erected almost exclusively by the State of Hamburg for its own use. These store-sheds cover a total space of about 385,000 square metres.

The business carried on in these quay sheds requires that large modern ships (carrying up to 22,000 cubic metres of goods) may be unloaded and loaded again in the shortest possible time. This is done by iron cranes on the quay, 272 of which are worked by steam, 215 by electricity, 17 by hydraulic power and 139 small ones by hand.

The goods lying only a short time in these store-sheds, and being forwarded as soon as possible, must not therefore be piled up high. They must also be promptly sorted after unloading. Accordingly each shed must be on ground-level and have space to take comfortably the whole cargo of the largest steamers.

The newest sheds are about 200 metres long and 50 metres deep. They have no partition-walls. They are quite open to the quay in front and the rear wall is of wood; at the two ends are solid gable-walls which are carried above the roof.

Between the different sheds there is generally a space of about 30 metres; in a few cases where two sheds are built together, being separated by the gable-wall, any doors in this wall are fireproof.

In this kind of construction each shed, occupying a space of about 10,000 square metres, presents a single great risk.

The internal supports as well as the roof-construction are of wood, while the roof itself is made of "pappe" (paper). Considering the circumstances, these are altogether the best materials. For one cannot use for these sheds materials which would completely resist a really large fire; the roof would, therefore, in any case suffer with the rest of the building through the fire, and also a light wooden construction can more easily be cleared away and renewed than one of iron. Wooden construction has the further advantage that the cost of a renewal is not a great consideration; on the other hand, the interruption of business caused by work of long duration would cripple any part of the quay in which it might happen and entail great loss of money.

The modern stores in Hamburg are constructed quite differently from these sheds. To the former, of course, different principles and different conditions are applicable. The ground on which these stores stand is very valuable, and the goods generally remain in them a long time; they are therefore built with a number of stories.

The newest Hamburg stores of this kind are about 16 metres wide and 22 metres deep inside, and each has therefore, after deducting the staircases, an available floor-space of about 325 square metres in each story.

The outer walls are naturally of solid masonry, and the roof is fireproof, the gable-walls being carried 1½ metres above it.

The inside construction consists of iron supports protected by fireproof material and iron girders protected in the same manner. The ceiling between are made of "béton" with layers of iron (System "Koenen"). Above this lies a floor of wood.

Complete encasement with thoroughly fireproof material, for instance, hard-burned hollow bricks, as is often practised elsewhere, would naturally offer the greatest security against danger from fire, but it costs considerably more than that used at Hamburg, and with the good alarm system and organization of the Hamburg fire-brigade it must be taken for granted that the internal construction of these stores will resist a fire until the fire brigade has had time to extinguish it.

The floor in each of the stories has a slight fall towards the front and back in order to carry off the water that may have been used for extinguishing fire inside the stores, and by means of the outflow pipes fixed on the front prevent it from doing damage.

In these modern Hamburg stores each story has therefore its own separated risk, which is not at all a great one.

The staircases of these stores deserve special notice. For each store there are two stairs, the one at the front for general use and that at the back for use only in case of fire. In order that the back

¹ A paper by Chief Officer Westphalen, Fire-brigade, Hamburg, Ger., prepared for the International Fire Prevention Congress, held in London, Eng., July 6-11, 1903.

staircase should take up as little of the valuable floor-space as possible, each staircase is so arranged that it serves at the same time for two stores. Access to these staircases is obtained by an iron balcony on each story. The back staircase has a fireproof entrance in the cellar and leads up to the roof, where small iron stairs provide an escape in case of need over the parapet wall. This practical arrangement of the stairs allows of the greatest possible use of the floor-space for storage purposes and at the same time gives the fire-brigade the power of attacking the fire from two sides.

Most of the Hamburg stores serve only for storing goods, but some of them also contain working machinery. This cannot be avoided, as many business houses must manufacture their goods direct in the stores, but in such cases the plant is put in special compartments, which are separated by fireproof partitions from the stores. The unavoidable openings in the floors are also, as much as possible, protected by fireproof material, so that in such cases everything possible has been done to divide the whole building into as numerous, and therefore small, risks as possible.

If, on the one side, the Hamburg stores of the modern type may be considered "model buildings" from the standpoint of fire prevention, yet, on the other side, it must be pointed out that the fire organization of Hamburg has only been able to gain this success after many struggles. For a long time the building engineers offered insurmountable opposition. Perhaps they were anxious not to hide their intelligently designed and elegantly executed iron structures, but to maintain them in full view of all the world. The old myth was continually served up anew that the iron might suffer from rust behind the fireproof covering. Therefore this covering ought at least to be made removable. Such removable coverings are much too expensive and utterly impracticable for warehouse purposes.

When the fire organization, supported by the fire-insurance companies, energetically refused to maintain any more stores with unprotected iron construction, at first wood was again employed and supports and girders made of oak; but at last the fact that such a quantity of oak could not be obtained, or at least only at an impossible price, furthered the ends of the fire-brigade.

Since then the stores at Hamburg have been built according to the modern fireproof system.

Now we might suppose that the fire-insurance companies would allow a considerable reduction off the premium for goods which are stored in modern warehouses, but unhappily this is not the case. The fire-insurance companies have formed a ring, and are fixing the amount of the premium to suit their own views, and they take care that the high premium shall be maintained as long as possible. This is indeed greatly to be regretted. I think the fire-insurance companies, if they properly considered their own interests, ought, by reducing their premiums, no longer to refuse a practical recognition of the able and successful struggle of the fire-brigade for fire prevention, otherwise the State may yet carry out the idea of insuring such favorable risks as the Hamburg warehouses present.

BOOKS AND PAPERS

SIGNOR ALFREDO MELANI'S pocket-size manual "*Architettura Italiana antica e moderna*"¹ becomes more portly with each edition and the fourth edition, which has just reached us, is altogether too large for pocket transport or even for use as an agreeable travelling companion; but a welcoming place can be found for it on the book-shelves even of those who do not read Italian, for the illustrations and the indices of artists and monuments can be of service even to them.

ALTHOUGH the great majority of architectural books are affairs of but a single edition, there is nothing to be wondered at in the fact that so good, and especially so readable, a book as Mr. T. M. Clark's "*Building Superintendence*"² now appears in its fifteenth edition; but it is remarkable that the publishers should have waited until fourteen editions had been printed from the original plates before they could bring themselves to incur the cost of resetting the book. The first plates were cast from the type in which the articles were originally set for publication in this journal, type that is at least two sizes smaller than the type usually used for book printing and, as a consequence, the page never had anything but a starved and unattractive air, which must always have stood somewhat in the way of sales. In its new dress the book is certainly more attractive; but we cannot understand how the publishers could bring themselves to make use of the same old worn cuts that have done service in the earlier editions, the consequence being that lines are broken where they should be whole and voids are filled up where they should stand open. The combination makes a slovenly piece of book-making.

Besides revising and correcting the original chapters Mr. Clark has added an entirely new chapter on the steel construction of the modern high office-building.

¹ One of the series "*Manuali Hoepli*," published at Milan by Ulrico Hoepli. Price 7½ lire.

² "*Building Superintendence*": a Manual for Young Architects, Students and others interested in Building Operations as carried on at the present day. By T. M. Clark, Fellow of the American Institute of Architects. New edition revised and enlarged. New York: The Macmillan Co. London: Macmillan & Co., Ltd. 1903. Price \$3 net.

EVERY one reads with interest and respect whatever Mr. Jacob Riis writes about poor people, their misfortunes and their needs, and he has been a good friend, not only to the poor, whose trials he shared for so many years, but to the rich, whom he has taught, more efficiently, perhaps, than any one else, how to help their less fortunate fellows, not alone by charity, but by the sympathy which never pauperizes, and which is quite as precious to most of the simple and warm hearted people of the slums as some of the hygienic reforms which they find it so difficult to understand, but which are not the less necessary for that reason.

We should not quite satisfy our conscience, in consideration of the importance of the work which many others beside Mr. Riis have at heart, if we did not say that, in the present book,³ he seems to us to have injured his cause by unnecessary exaggeration, and by thoughtless assertions which, in many cases, are not only foreign to the subject, but are quite unjustified. For example, we are told, on page 20, that after warning had been given in France that to "kill the home" was to "destroy family, manhood, patriotism," the "warning was vain, and the home-loving Germans won easily over the people in whose language there is not even a word to describe what we express in the word 'home.'" This ancient slander has not grown any more respectable with age, and it would be difficult to conceive anything more contrary to the facts than the conclusions which Mr. Riis expects his readers to draw from it. Was there any lack, we should like to ask Mr. Riis, of manhood or patriotism on the part of the French during the Prussian War? If he has any information to indicate that the Germans "won easily" over the French in consequence of the lack of manhood or patriotism of the latter, historians, even German historians, would be glad to hear where he obtained it, the universal impression being that the German success was obtained by overwhelming military superiority, in preparation and organization, over as brave and devoted a people as ever stood before an invader. As to the absurd joke, for it is nothing better, about the French language having "not even a word to describe what we express in the word 'home,'" it may be of interest to quote a sentence from M. Georges Picot, President of the Société Française des Habitations à Bon Marché, who, in a recent speech, declared the object of the association to be the promotion of the "Respect et union de la famille groupée autour d'un foyer stable et attrayant."

If these words do not "describe what we express in the word 'home,'" it would be a satisfaction to be informed of any better ones, in any language.

However, we may leave it to M. Mabileau and M. Bourget to defend French homes, only remarking that, so far as our experience of them extends, if they have not the name, they at least have the substance; and that nothing, perhaps, would do more for the happiness of this country than the spread of the mutual affection between brothers and sisters, and the love of children for their parents, which is characteristic of the French.

In trying to defend the owners of tenement-houses against some of the epithets which Mr. Riis lavishes upon them we shall have, perhaps, a more difficult task, but it is worth undertaking, for the obvious reason that the wholesale denunciation of people who own tenements as "murderers," "robbers," and various other things, tends to defeat the object which Mr. Riis himself has in view, that of promoting the interest of one class in another, which is the source of all real and efficient charity. Mr. Riis, in describing the "piggeries" which the great majority of owners of tenements deprecate as much as he does, says that three, and even four, families often inhabit a single room. No doubt that is true, but is it the landlord's fault? We have yet to hear of a landlord who took rent from more than one family to a room, and the practice of poor people, particularly of the Russian and Polish Jews, of subletting portions of their rooms, not only profits the landlord nothing, but constitutes an abuse which he would rejoice to see broken up. Mr. Riis seems to think that the landlord ought to prevent it, but he does not tell us how he is to accomplish it. We know a man who owns five hundred tenements, aggregating, probably, more than three thousand rooms. How is he to know whether his tenants, as soon as his agent's back is turned, take lodgers? Moreover, it is questionable whether he could control them, perhaps not in this respect, but in other similar ones, even if he tried. We had once a tenant, a much richer man than his landlord, who insisted on keeping a calf in the cellar of his house. There was nothing in his lease to prevent him from doing so, and he only yielded to our expostulation out of friendly feeling. For dealing with such cases as this, as well as for the prevention of overcrowding, the public authority is the proper means. Anything else must be inefficient and unreliable, and inefficient and unreliable regulation is worse than none. If every tenant subletting a portion of a room could, on being reported by the police, be fined a trifling sum, the practice would soon disappear, and most landlords would be glad to coöperate in the work, so far as they could.

The same may be said of the criminal use of tenements. Mr. Riis tells us that "the most terrible of all the features of tenement-house life in New York, however, is the indiscriminate herding of all kinds of people in close contact; the fact that, mingled with the drunken, the dissolute, the improvident, the diseased, dwell the great

³ "*The Peril and the Preservation of the Home.*" Being the William L. Bull Lectures for the Year 1903. By Jacob A. Riis. Philadelphia: George W. Jacobs & Co.

mass of the respectable workingmen of the city with their families."

No doubt this is true, but the answer is, where are the police? Are drunkenness and dissoluteness licensed in New York? If they are, nothing can save family life there, and if they are not, why are not the legal means for the protection of family life applied?

To a great extent, the question is one simply of police, and the sentimental treatment of it, which finds expression in vague yearnings, and rantings, and denunciations of landlords and builders, does enormous harm, in turning public attention away from the corruption and dishonesty of the officials whose duty it is to defend the homes of citizens. We may be sure that no one chuckles louder over oratorical assaults upon landlords, who encourage the "murder of the home" through the character of some of their tenants, than the police captain who wrings money, stained with tears of shame, from the miserable women as the price of his "protection." Thanks to Mr. De Forest, Mr. Riis himself and many others, New York has now a good tenement-house law; but fresh air and light can do little to help the family life of their occupants, so long as criminals are allowed to live in them; and the repression of criminality in them is exclusively the duty of the police. When this work is properly performed, the friends of the poor will have a comparatively light task before them; but until it is performed, they are working against fate.

ILLUSTRATIONS

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

A COMPETITIVE DESIGN FOR THE IMPROVEMENTS AT THE U. S. MILITARY ACADEMY, WEST POINT, N. Y. MESSRS. COPE & STEWARDSON, ARCHITECTS, PHILADELPHIA, PA.: QUADRUPLE PLATE.

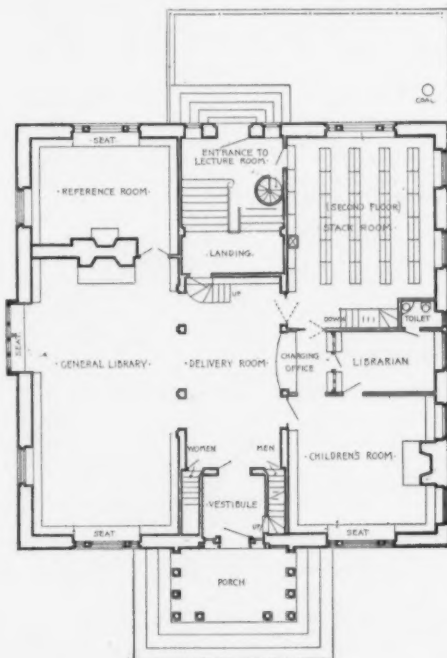
GENERAL PLAN OF THE SAME.

SECTIONAL VIEWS OF THE SAME.

THIS series of interesting drawings, some of them twelve feet long and only eighteen inches wide, rendered mainly in pencil and weak washes, have given our photographers and printers the most difficult piece of work they have been called on to handle for many years.

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ENTRANCE PORTICO TO SAME.

REAR VIEW OF SAME.

VIEW IN DELIVERY-ROOM OF THE SAME.

COMMUNICATIONS

[The editors cannot pay attention to demands of correspondents who forget to give their names and addresses as guaranty of good faith; nor do they hold themselves responsible for opinions expressed by their correspondents.]

A QUESTION OF COMMISSION.

READING, PA., August 3, 1903.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—Will you state what an architect's proper remuneration is under the following circumstances:—A client has plans and specifications prepared for a building and bids received on the same. The lowest bid is \$45,000. At this stage the work is abandoned, not because the price is too high, but on other considerations altogether.

Very truly yours,

"READER."

[The usual charge in such cases is seven-tenths of the total fee.—EDS. AMERICAN ARCHITECT.]

NOTES AND CLIPPINGS

OLD TIN CANS.—I was much surprised and greatly interested a few days since, when shown through a certain establishment near New York City, to find that the "raw material" used consisted chiefly of empty fruit and vegetable cans rescued by the cartload from the dumps of the city. I had supposed, up to that time, that the only purposes for which such material was suited were food for goats or to be attached to the tails of unfortunate canines. The principal products of this establishment, which is a foundry, are window sash-weights, elevator-weights and ballast for boats. The weight castings are very hard, and when struck with a hammer ring like steel. About the only tool which can be used for removing sprues and fins is the hammer, as a cold chisel or file will not stand up to the work. The fracture of the round sash-weights is smooth and shows crystals radiating from the centre like spokes of a wheel. After delivery at the foundry the cans are first piled onto a large iron grating, located under a sheet-iron hood which terminates in a smokestack. They are sprinkled liberally with crude-oil, which is set on fire. This process consumes the labels, loosens the dirt and melts the solder, which falls through the grating, is collected, washed and melted, cast into ingots, and sold to be used again. Some of the cans which are simply lapped and soldered melt apart completely. These are sorted out and the sheets forming the shell are straightened and bound into bundles to be sold to trunk-makers, who utilize them for protecting the corners of Saratoga trunks. They are also bought by button manufacturers, who stamp from them the disks used in cloth-covered buttons. The remainder of the cans, being machine-made, do not come apart. These are loaded into large carts, taken to the charging floor on an elevator and dumped into the cupola. The cupola is fed with coke and cans in alternation. There is occasionally an old wash-boiler or a bundle of tin roofing used, but cans form the bulk of the material. The cans are so light that some of them are carried out at the top of the stack by the force of the blast, and a large screen has been arranged to prevent the pieces from falling on the roof. If among those readers of *The American Machinist* to whom these facts are new there are any who have occasion to use the elevators in the skyscrapers of New York, I can imagine such wondering how many empty cans it took to make the weights which balance the car in which they ride.—*The American Machinist*.

IMPROVING FRENCH CANALS AND HARBORS.—A scheme of no small magnitude, involving an expenditure of more than \$50,000,000, has just been adopted by the French Senate. It relates to the improvement of a number of French ports and the construction or enlargement of canals in connection with them. The sum of nearly \$6,000,000 is to be spent in improving the navigability of the Garonne, the Orleans Canal and a series of waterways in the north and south of France. New canals are to be constructed at a cost of \$30,000,000. They include the Canal du Nord, destined to cut off a bend of the Oise and supplement the Saint Quentin and Ourcq Canals, the Loire Canal and other water-courses intended to link Combleux to Orleans, and Certe and Marseilles with the Rhone. The remainder of the credit will be devoted to improving the harbor accommodation at Dunkirk, where it is proposed to spend \$5,000,000, and at Boulogne, Dieppe, Havre, Rouen, Saint Nazaire, Nantes—where the expenditure will be between \$4,000,000 and \$5,000,000—Bordeaux, Bayonne and Certe. In his statement the Minister of Public Works said he did not expect that a loan would be needed, and hoped that the works would be completed in seven or eight years. All these works are considered necessary in order to meet the growing competition of the Italian ports with the southern littoral of France, especially in view of the opening of the Simplon tunnel, and also to promote the development of the northern coal-fields. A similar bill, passed through the Chamber of Deputies by the Waldeck-Rousseau Ministry two years ago, contemplated a much larger expenditure but failed to become law. It is expected that the present measure will be more fortunate, as the need for many of the improvements is known to be urgent.—*N. Y. Evening Post*.

SHEET-ZINC ROOFING.—Sheet-zinc owes its value for roofing purposes to its durability, lightness and economy as compared to galvanized-iron, tin-plate, copper, lead, slate and tile. Galvanized-iron being

coated with zinc should possess theoretically as much durability as sheet-zinc and less weight for the same strength, together with less first cost, but as a matter of fact the union of the zinc and iron effected in the ordinary process of galvanizing is not sufficiently strong to withstand long the expansion of the two metals, wherefore the zinc coating gradually scales off, exposing the iron, and thus creates an electric couple, which results in the more rapid corrosion of the iron and destruction of the roof, although that may be delayed somewhat by a frequent and thorough painting. With the greatest care, however, fifteen years is a long life for a roof of galvanized-iron. The superiority of sheet-zinc over galvanized-iron was shown in the case of the Northwestern Railroad Station in Birmingham, England, which was roofed in 1853 with the latter and carefully painted on both sides every three years and repaired whenever necessary, but at the end of twelve years was found to be so rotten that it had to be removed; it was replaced by a sheet-zinc roof which still exists in perfect condition and has given but little trouble or expense for repairs. The coating of basic zinc carbonate which forms on the surface of a zinc roof is practically insoluble in atmospheric water and thoroughly protects the underlying metal from further oxidation by atmospheric agents. — *W. R. Ingalls.*

TERMINATING A CONTRACT.—That one who considers a contract terminated should not allow the other party to proceed with its performance is shown by the decision of the Second Appellate Division in the case of the H. Krantz Manufacturing Company against the Gould Storage Battery. The action before the court was one to recover for the manufacture of an electric switch. Additional work was done on the switch and from time to time it was modified. The contract was in the form of correspondence, supplemented by verbal instructions. The defense was that the contract had been cancelled and the work abandoned. This alleged cancellation was brought about, the defendant averred, by a telephone message. The plaintiff denied sending the message, and the subsequent conduct of the defendant, said the Appellate Court, by Justice Woodward, did not confirm the truth of his contention. There was a conference between representatives of both parties to the suit nearly two months after the alleged message of cancellation, at which the progress of the work was discussed. There was also produced a letter sent by the plaintiff to the defendant plainly indicating that the former was still at work on the switch and expected soon to deliver it. Justice Woodward said, in part: "Aside from the inconsistency suggested by the reading of the defendant's evidence of cancellation in the light of this subsequent conduct of the parties—an inconsistency which renders the defendant's testimony on the point extremely improbable—the plaintiff's evidence of the defendant's acquiescence in the continuance of the work on the switch, subsequent to the date of the alleged cancellation, is sufficient to warrant the plaintiff in invoking the rule that one cannot stand by in silence when he knows that another is acting upon an erroneous state of facts and thereafter claim the benefit of the correct state of affairs, if such claim will tend to the injury of the other person." — *N. Y. Times.*

PURIFICATION BY RAIN.—The health department has often called the attention of the public to the fact that rain is a great purifier, and there is some highly interesting testimony to the same effect in a recent number of the *London Lancet*, which is fortified by references to a recent examination and analysis. Beginning with June 13 London had a continuous rainfall for five days, the total precipitation being estimated at 3.8 inches. On the third day of the period a supply of raindrops was secured for an investigation, and it was found that the solid matters contained therein amounted to 9.1 grains per gallon. Among the constituents noted were common salt, ammonium sulphate, organic ammonia, soot and suspended matters and nitrates. The *Lancet* assures us that the quantity of ammonia sulphate, .652 grain, was remarkable, and that its chief origin is the combustion of coal. Salt contributed .8 grain and soot and suspended matter 5 grains. With this analysis and an estimate of 6,437,229,860 gallons for the total rainfall over the London County area as the basis of the calculation, it is figured that the enormous downpour "represents the washing out of no less than 3,738 tons of solid impurities, of which 330 tons consisted of common salt, 267 tons of sulphate of ammonia, and 2,000 tons of soot and suspended matters." Another interesting computation is given as follows: "Regarding the combustion of one ton of coal to produce twenty pounds of ammonium sulphate (a very fair average) the quantity of coal represented by the storm would be 29,904 tons." The *Lancet* adds that besides the purification which is shown by the analysis there is a bacteriological purification also, which of course is a very important factor in the beneficent work of the rain. — *Chicago Record-Herald.*

PIG-IRON STATISTICS.—The American Iron and Steel Association has received from the manufacturers complete statistics of the productions of all kinds of pig-iron in the United States in the first half of 1903, also complete statistics of the stocks of pig-iron which were on hand and for sale on June 30, 1903. Total production of pig-iron in the first half of 1903 was 9,707,367 gross tons, against 8,808,574 tons in the first half of 1902 and 9,012,733 tons in the second half of 1902. The production of Bessemer pig-iron in the first half of 1903 was 5,480,619 gross tons, against 5,105,932 tons in the first half of 1902 and 5,287,236 tons in the second half of 1902. The production of basic pig-iron in the first half of 1903 was 1,203,803 gross tons, against 1,053,274 tons in the first half of 1902, and 985,316 tons in the second half of 1902. The production of charcoal pig-iron in the first half of 1903 was 232,717 gross tons, against 186,098 tons in the first half of 1902, and 192,406 tons in the second half of 1902. The stocks which were unsold in the hands of manufacturers or their agents on June 30, 1903, amounted to 126,301 tons, against 49,951 tons on December 31, 1902, and 30,861 tons on June 30, 1902. — *Bulletin of American Iron and Steel Association.*

LONDON'S BREATHING-PLACES.—London is said to possess at present no less than 313 parks and open spaces, while in 1884 their number was only 103. They are reckoned to have cost \$10,995,000. On a rough calculation there is an acre to 752 persons. — *Exchange.*

A JUST AND HONEST UNION.—The International Longshoremen, Marine and Transportworkers' Union has long had the reputation of being the one labor organization in the United States that respected its obligations and treated its contracts as inviolable. When individual members of the union have broken faith with employers and refused to carry out their agreements, the officers of the union have often hired non-union men to do the work. It is not surprising to find that the vessel-owners of the Great Lakes are not only willing but glad to deal with the union. They know that an agreement once signed means what it says, and that while the union will seek the utmost advantages, when the contract is once made it will be carried out to the last, least letter. Secretary Barter, in his Annual Report to the National Convention at Bay City, described the union's Code of Ethics in these words: "We have demonstrated that our members can be trusted and depended upon to carry out agreements which they may enter into from time to time. We have shown that through their organization they are capable of managing large contracts, which necessitate skillful direction in order to give the dispatch that is necessary in these times of sharp competition. By living up to all contracts in both letter and spirit this Association has reached the point of its present success, and success in the future depends upon the furtherance of these principles. Each year it is easier to approach those who employ the services of members of this Association, and by strict compliance with our agreements we enlarge our most valuable asset—integrity. They are willing to meet us, treat with us, and comply more readily with our requests for better conditions, knowing that any contract to which are affixed the signatures of the officers of this Association will be carried out." This report is worth the consideration of all labor organizations. It spells the secret of a great success, and, incidentally, the recommendation that sympathetic strikes be abolished marks another advance in the direction of sanity. When all trades-unions emulate the longshoremen by holding their contracts sacred, by discouraging sympathetic strikes and encouraging the use of labor-saving machinery, there will be few serious conflicts between the employer and employed. Organizations of employers will stop trying to raise millions of dollars to fight the unions. The unions will have become as responsible as the employer, and this responsibility will make for peace in the industrial world. When the unions learn that their moral responsibility is commensurate with their power, there will be more organizations like that of the longshoremen and fewer of the other kind. — *Detroit Free Press.*

STRAW IN EGYPTIAN BRICK.—The ancient Egyptians had a process for making bricks which rendered them very hard, yet easy to work. An American engineer, Mr. Acheson, thinks he has discovered their secret. The Egyptians used straw, and by boiling straw in water and mixing clay with it he found that it gave hard, shapely bricks that did not crack or deform in baking. Analysis proved the effect due to tannin dissolved in water. Further experiments showed that from one-half to one per cent of the tannin of commerce added to the resistance of the brick. The process also economizes water, and such bricks dried in the sun are even more solid than those of the kiln. — *London Globe.*

COPPER-PLATED PLASTER CASTS.—One of the latest outgrowths of the wonderful art of electro-plating is the use of the "galvano-electrical method" in taxidermy in making casts of fishes, reptiles, birds and animals. The Smithsonian taxidermists were among the first to adopt this new method. It has been the experience in sending about plaster and papier-mâché casts of animals to various expositions that they are subject to much damage in packing and shipping. Instead of fragile objects of this kind, therefore, persons who visit the St. Louis Exposition will see animals of hollow copper and brass, so life-like, however, that many will think that the real thing is before them. — *American Inventor.*

ARCHITECTS AND THE LIEN LAW.—Architects are to be protected by the mechanics' lien law, so the Supreme Court of Rhode Island decided July 9 in the suit of Field & Slocum, architects, vs. the Consolidated Mineral Water Company. The Court says: "The statute is intended to afford a liberal remedy to all who have contributed labor or material toward adding to the value of the property to which the lien attaches. The plans of the architect are written directions to the workmen and contribute to the building as much as the verbal directions of the overseers." — *Exchange.*

THE RIVER GIVES AS IT TOOK AWAY.—Some University students making a geological survey along the Kaw River a few miles west of Lawrence discovered an old stone house which had been uncovered by the flood on the farm of Henry Collins. The house had been completely covered, a field of corn being above it, but its walls and the chimney are in a fair state of preservation. Within the house, which has been partially excavated, was found an iron stove, showing that it had been the abode of civilized people. — *Lawrence (Kan.) Gazette.*

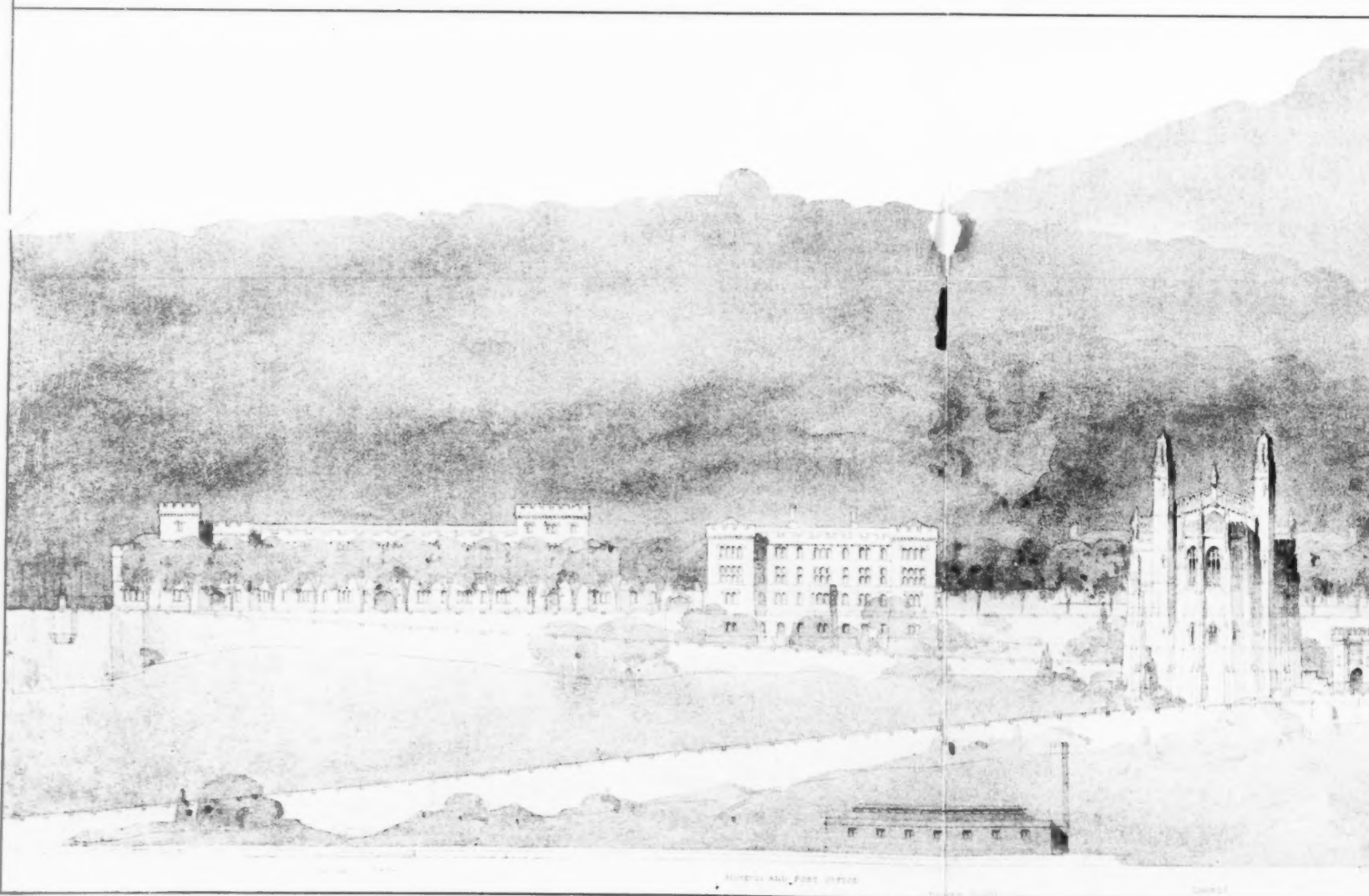
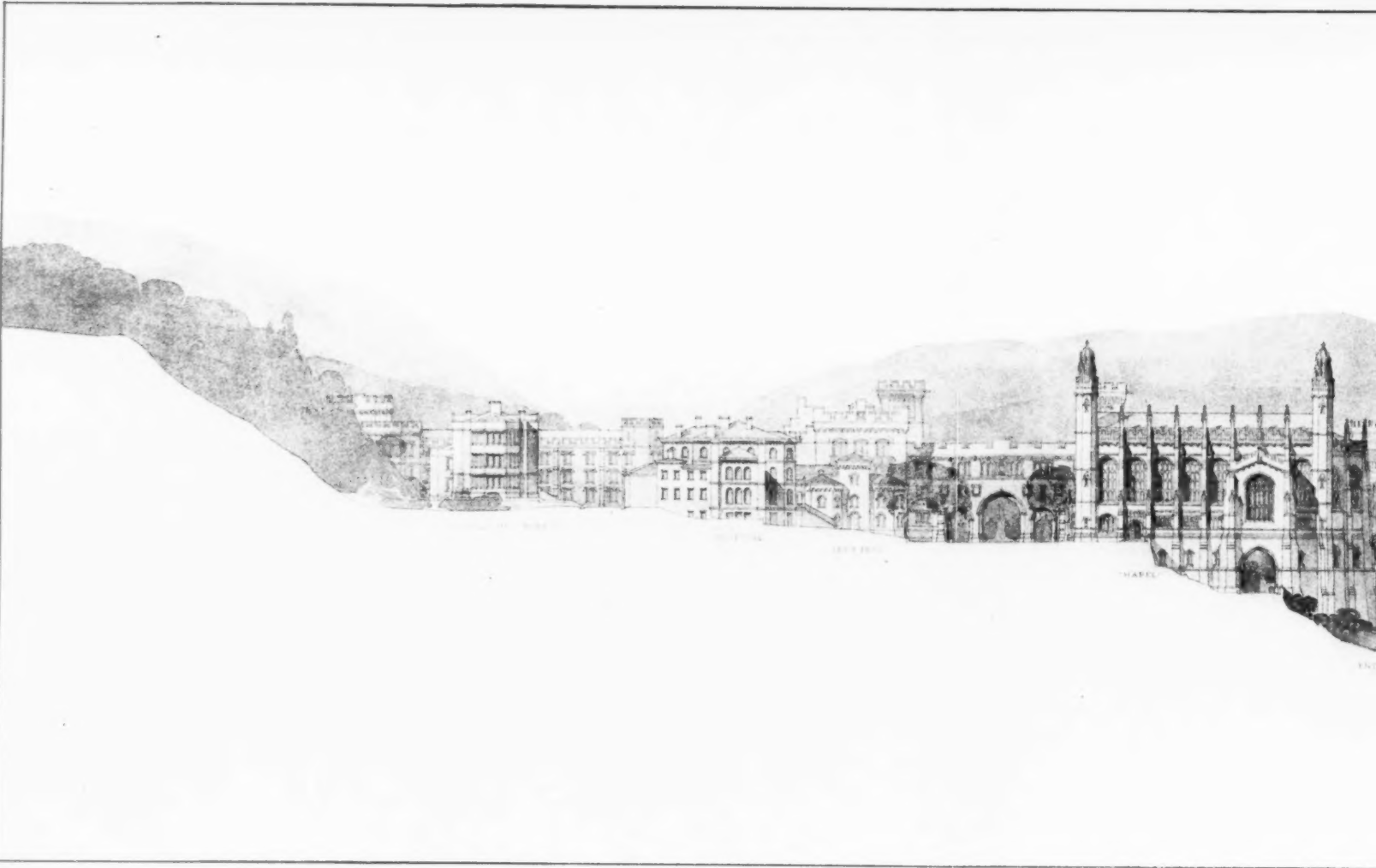
THE GEORGIA MARBLE BELT.—As a marble-producing State Georgia may rival Vermont. The marble belt is about sixty miles in length, extending in a southwesterly direction from the North Carolina line through Pickens County. The supply is practically inexhaustible, as the depth of the deposit in many places is over 100 feet. Both white and colored varieties are found. — *Exchange.*

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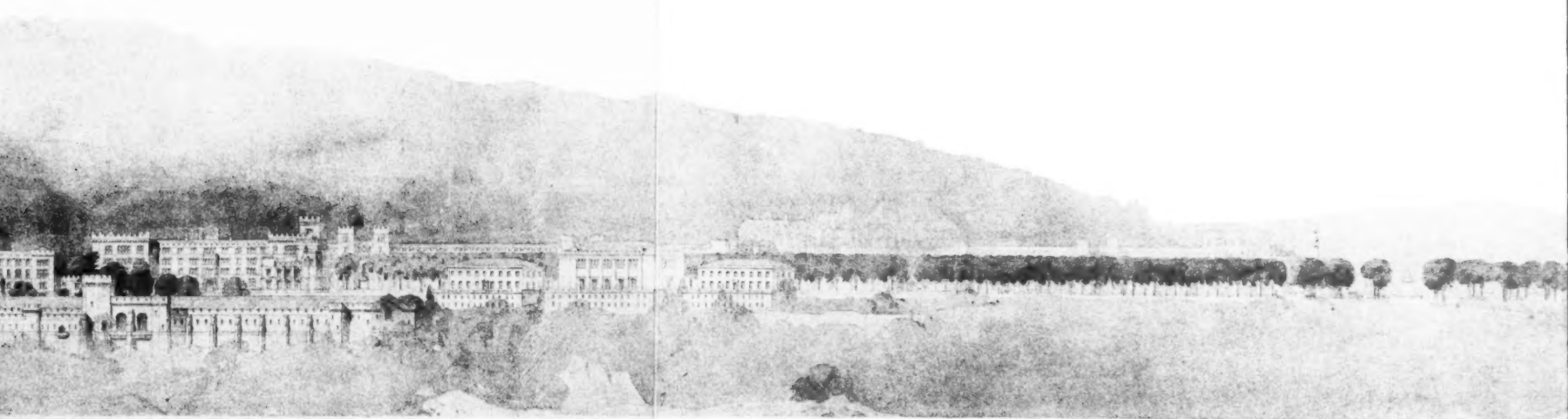
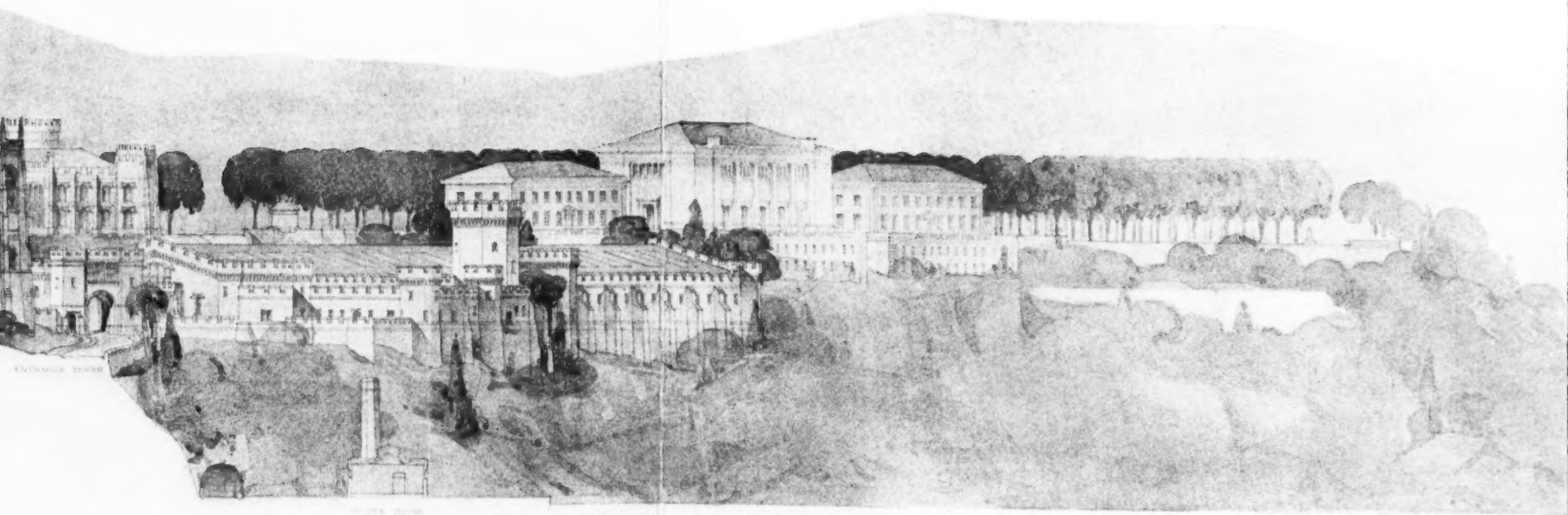
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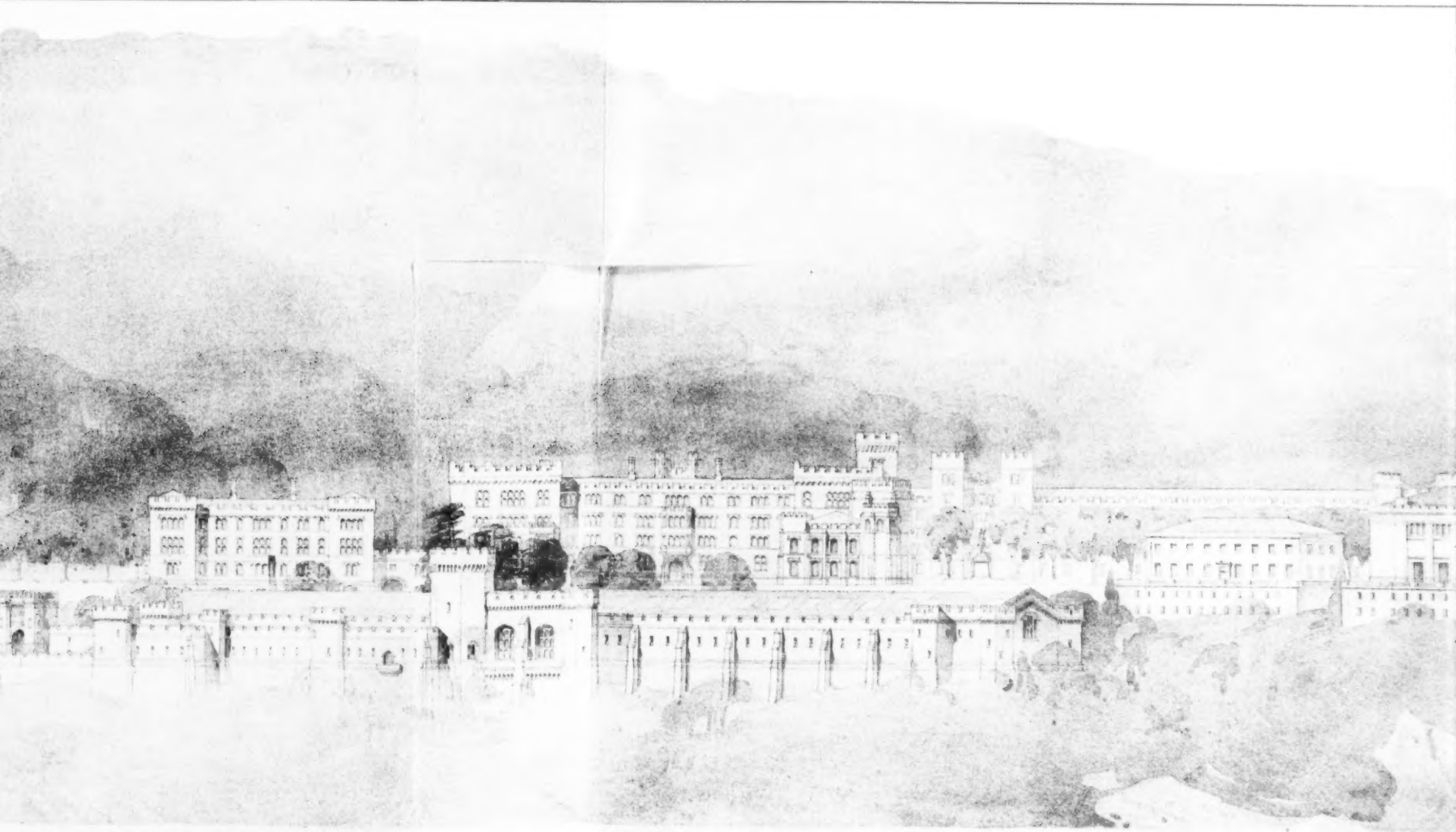


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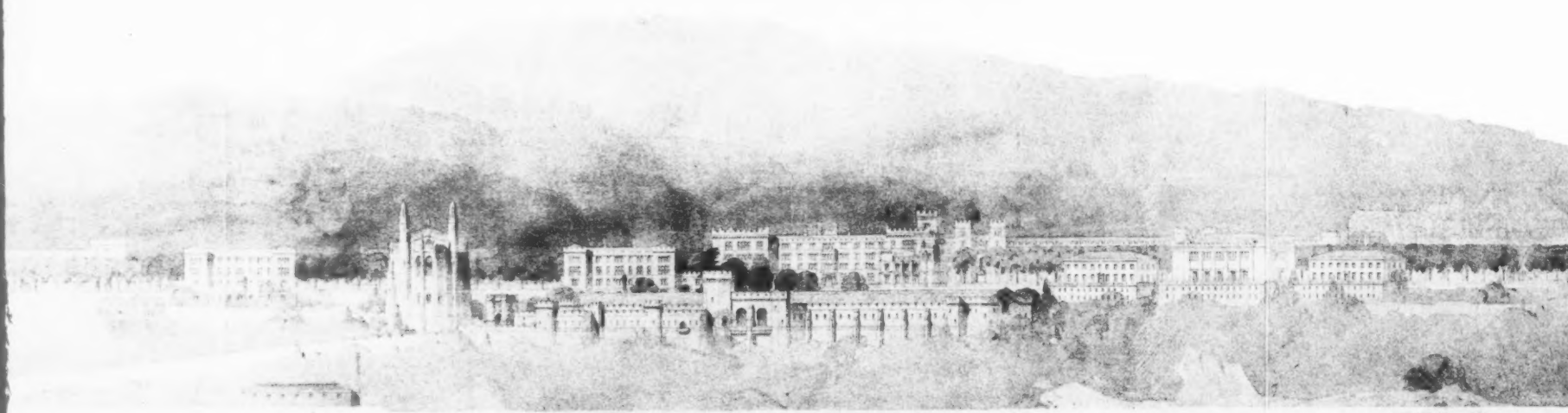
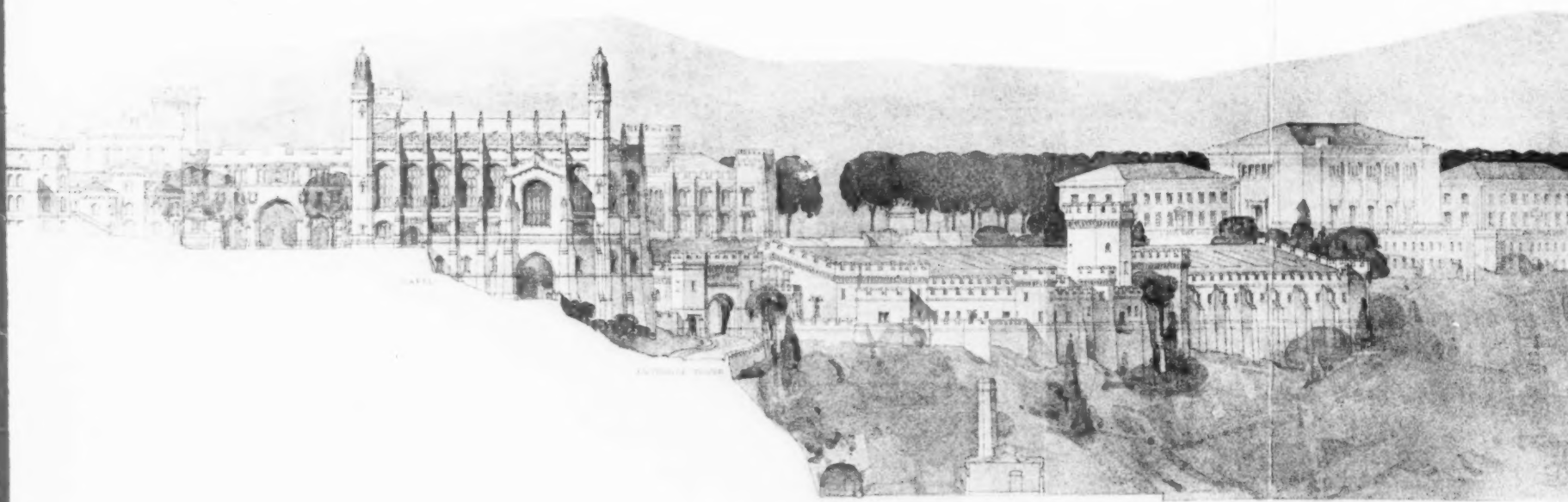
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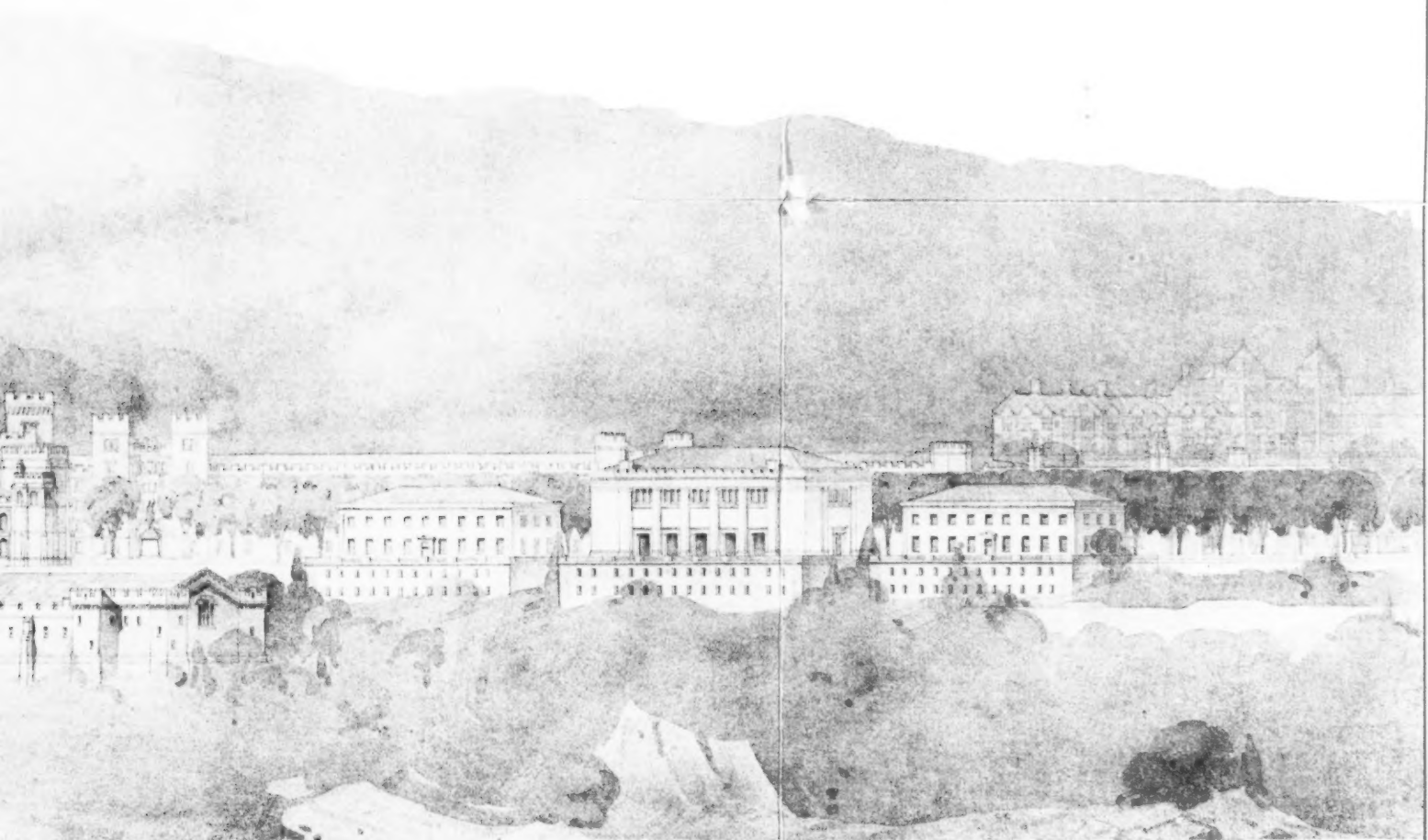
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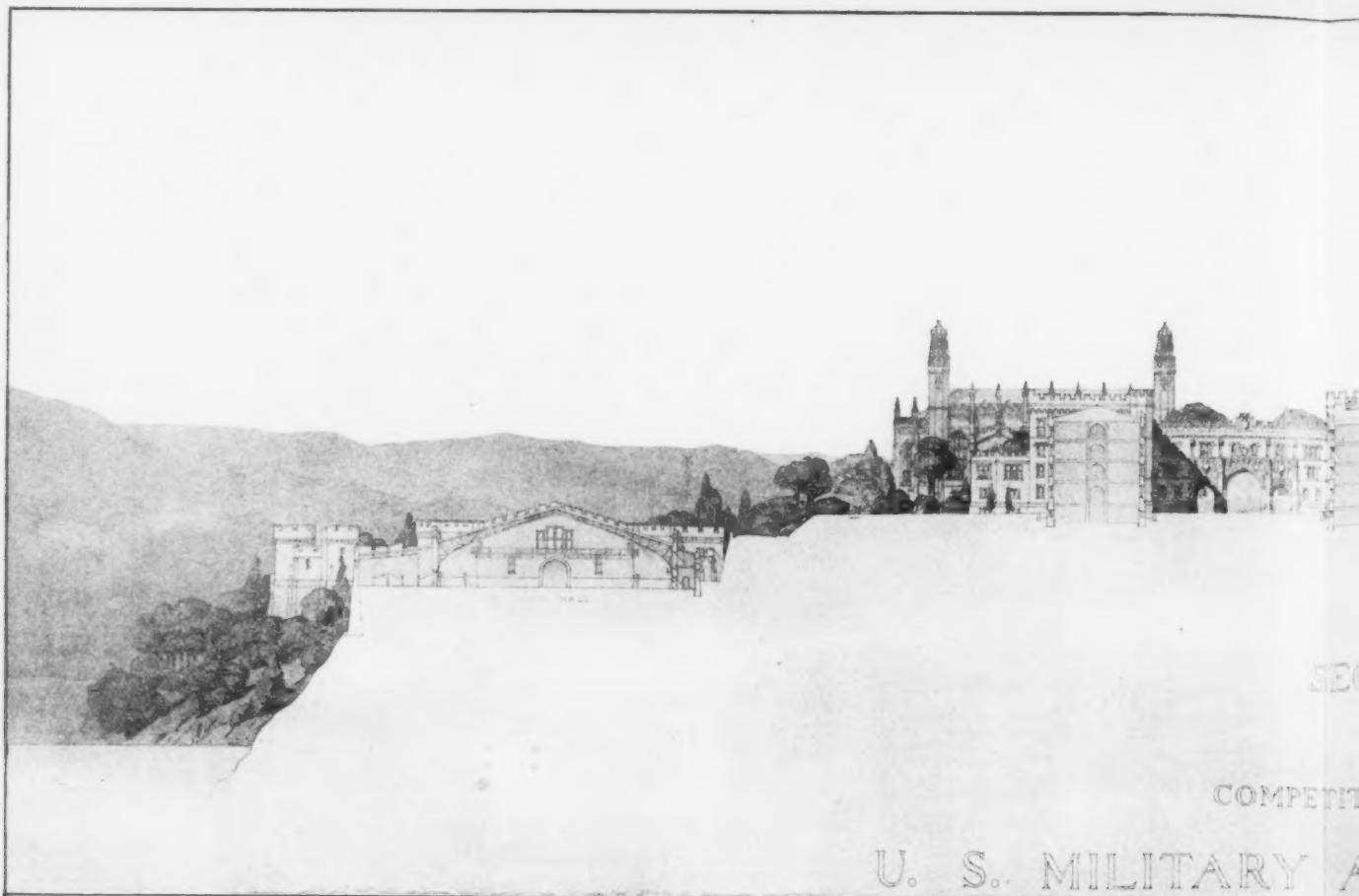
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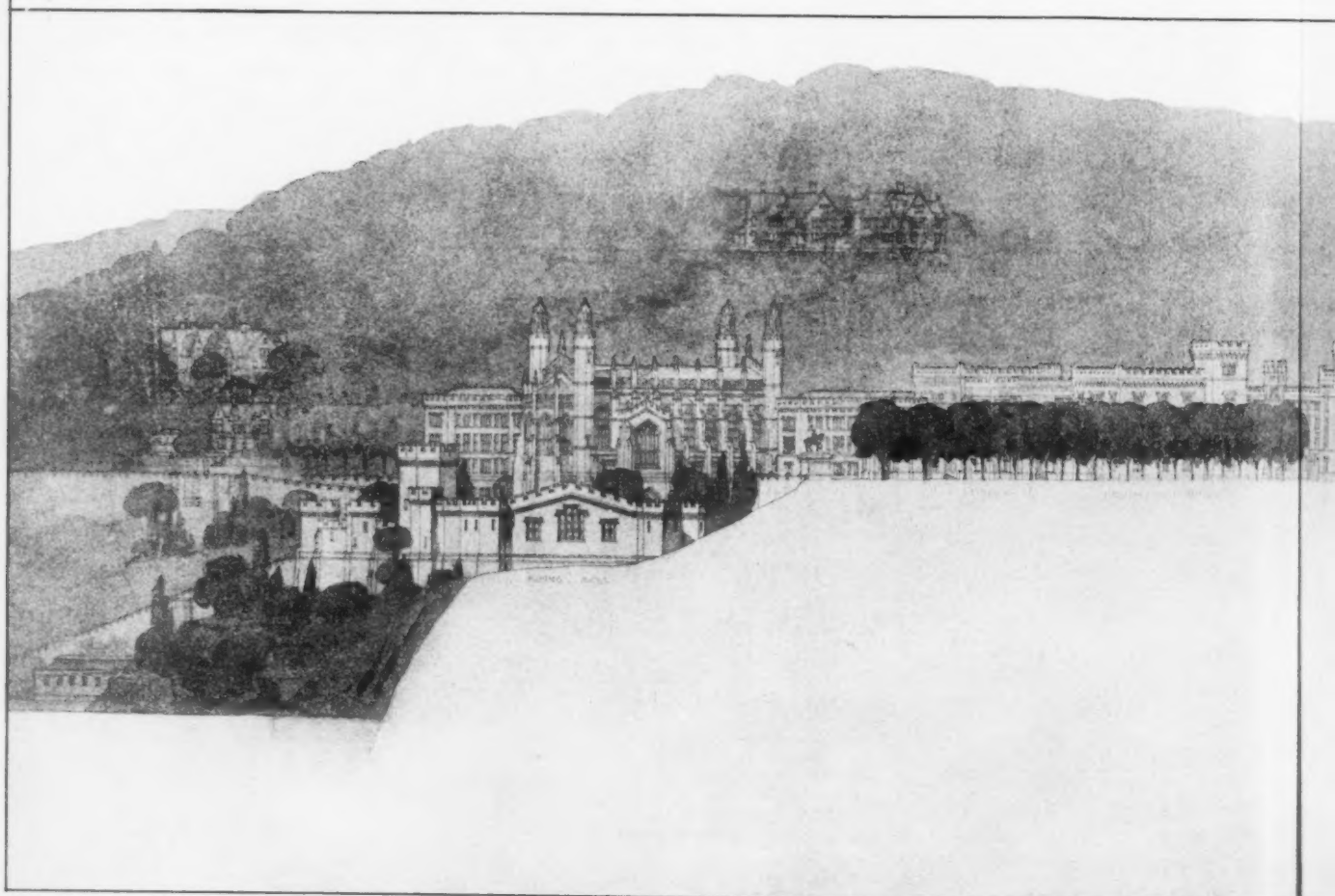
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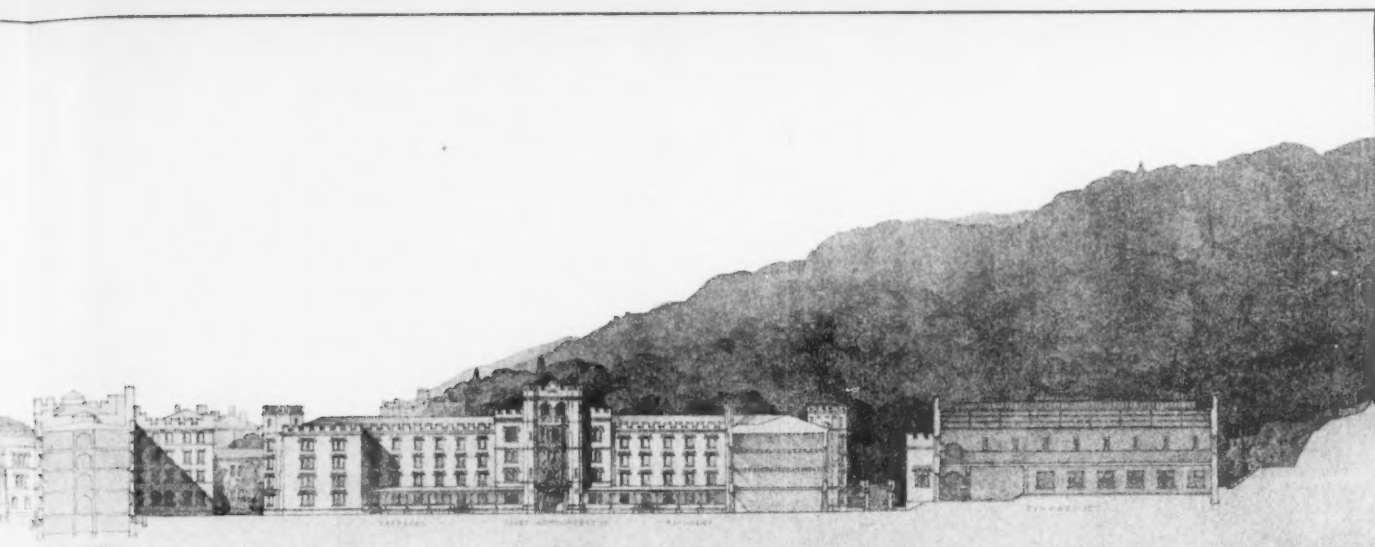
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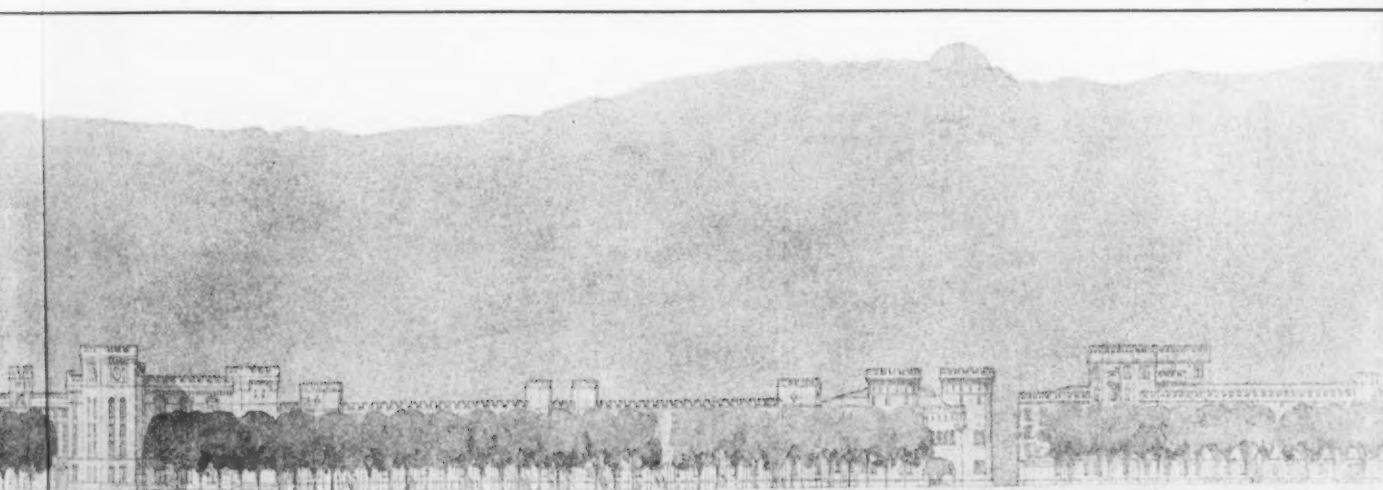
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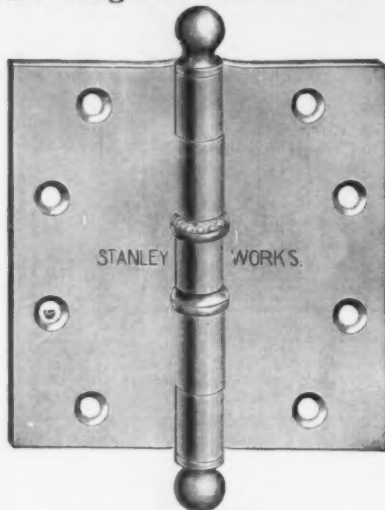
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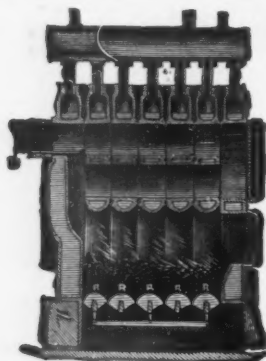
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CODE OF PRACTICE FOR SUB-ESTIMATING AND SUB-CONTRACTING

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 none 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 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.

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Old State House, Boston, Mass.		" 1748
Pennsylvania Hospital, Philadelphia, Pa.		" 1755
Carpenters' Hall, Philadelphia, Pa.		" 1770
Independence Hall, Philadelphia, Pa.		" 1729
Faneuil Hall, Boston, Mass.		" 1741
and others.		

CHURCHES

King's Chapel, Boston, Mass.		Date 1749
Seventh-day Baptist Church, Newport, R. I.		" 1729
Christ Church, Alexandria, Va.		" 1767
Christ Church, Philadelphia, Pa.		" 1727
St. Paul's Chapel, New York, N. Y.		" 1764
Old South Church, Boston, Mass.		" 1729
First Church, Hingham, Mass.		" 1681
St. John's Chapel, New York, N. Y.		" 1803
First Congregational Church, Canandaigua, N. Y.		" 1812
St. Peter's P. E. Church, Philadelphia, Pa.		" 1758
Gloria Dei Church, Philadelphia, Pa.		" 1700
and others.		

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Fairbanks House, Dedham, Mass.		Date 1636
Royall Mansion, Dedham, Mass.		" 1737
Philipse Manor House, Yonkers, N. Y.		" 1745
Tudor Place, Georgetown, D. C.		" 179-
Mappa House, Trenton, N. Y.		" 1809
Woodlawn, Va.		" 1799
Mount Vernon, Va.		" 1743
and others.		

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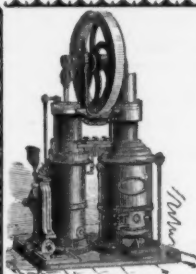
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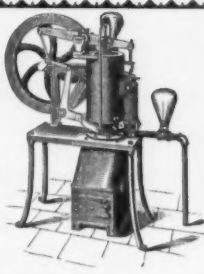
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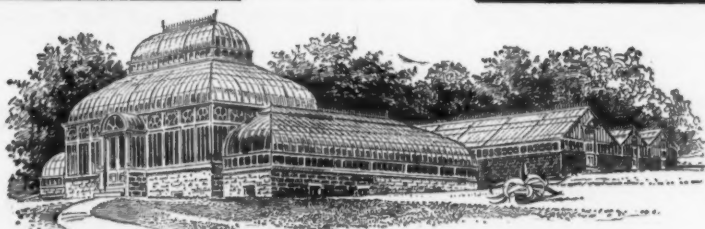
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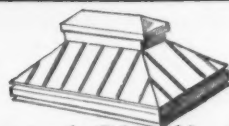
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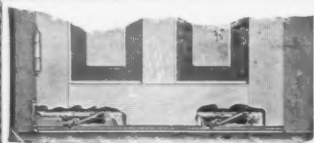
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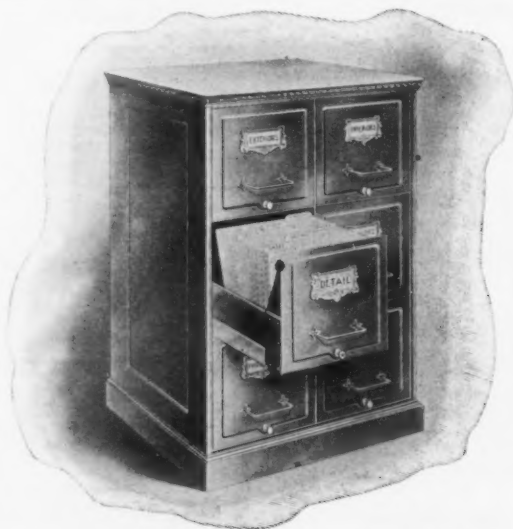
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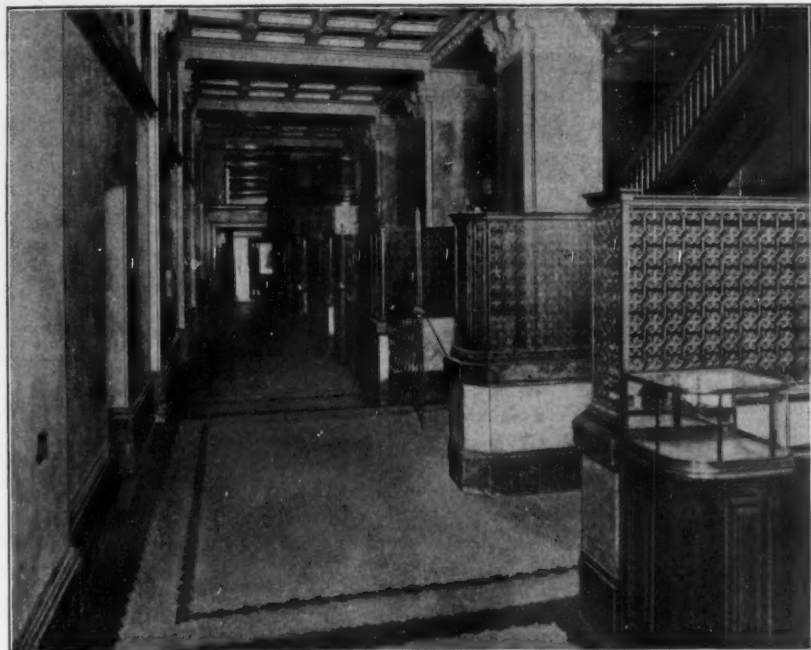
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ADVANCE RUMORS.

Appleton, Wis.—Plans are being prepared by Architect Ernest A. Mayo, Marquette Building, Chicago, for a one-story stone church, 45' x 140', to be erected here for the Grace Episcopal congregation at a cost of \$40,000.

Ballard, Wash.—At a meeting of the trustees of the Ballard Public Library held recently the plans of H. Ryan & Co., of Seattle, were formally accepted for the new building. It will be of pressed brick, with stone trimmings, two stories high.

Barrington, E. I.—Operations have been begun toward the construction of a new car-barn and rotary station for the Rhode Island Suburban Railway Co., to take the place of the old wooden power station of the company now operated to furnish

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BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

power for the operation of the Suburban line in Bristol County. The new building is to be of brick with granite trimmings, with considerable in the way of ornamentation on the exterior. It will be built by E. K. Watson on the land recently purchased by the Rhode Island Co. on the east bank of the Barrington River and close beside the highway on which is located the company's line of rails. The structure is to be one and a half stories in height, 80 feet in length by 32 feet in width and to cost \$13,000.

Bellevue, O.—The contract for the new library here has been let to Kimmel & Son, for \$10,568.

Boston, Mass.—An ordinance has recently passed both branches of the city government, and is now before Mayor Collins for his approval or veto, authorizing the Board of Health to expend an appropriation of \$150,000 made two years ago for the construction of a consumptives' hospital. There are estimated to be to-day 3,000 cases of tuberculosis in this city. The means of caring for them are now very insufficient. The City Hospital has its hands full with other patients, and its officers have already expressed the opinion that tuberculosis cases should be treated in a separate hospital.

Chicago, Ill.—In the immediate future an annex to the Art Institute costing several hundred thousand dollars, is to be erected east of the Illinois Central tracks and connected with the main building by a covered bridge. The annex is to be as large as the present building, and splendidly equipped.

The Chicago Edison Co. has begun work on a substation at 63 65 Ohio St. The building, which was designed by Shepley, Rutan & Coolidge, will have 50' x 71' ground dimensions, and will be constructed of brick and stone at a cost of \$40,000.

It is stated that Marshall Field has formally accepted the offer of a site on the lake front for the Field Columbian Museum. A building is to be put up which will cost upward of \$5,000,000.

Contracts for the following buildings have just been let: Two-story building, 50' x 65', corner Pierce and Spaulding Aves., \$20,000; double store and flat building, two stories, 50' x 80', Michigan Ave., near

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

114th St., \$20,000; 6 two-story buildings, 24' x 56' each, on Ridge Ave., west of Magnolia Ave., \$36,000; three-story building, 48' x 75', 5330-32 Prairie Ave., \$20,000.

Frost & Granger have let contracts for the exhibition building to be erected for the Union Stock Yards and Transit Co. on 43d, near Halsted St. It will be a one-story structure, covering 127' x 527', and will be constructed of brick and stone, at a cost of \$40,000. There will be 200 stalls, and the auditorium is to have a seating capacity of 10,000.

John B. Manz has purchased from Louis C. Vanuxem the vacant site, 99' x 150', at the southwest corner of Sheridan Drive and Hollywood Ave., for \$12,000, and will build a large residence there. John T. Pirie, Jr., of the firm of Carson, Pirie, Scott & Co., has purchased a tract of seven acres of land at Lake Forest, adjoining Granger Farwell's place, for \$24,500. Mr. Pirie will build a residence on the site.

Decatur, Tenn.—The brick for rebuilding the courthouse, which was burned at this place about a year ago, are now being made and in course of a short time the house will be begun. A Mr. Henry, of Knoxville, has the contract for building the house.

Detroit, Mich.—T. F. Shotwell will build an apartment-house on Cass Ave., near Baggs St. The building will be 66' x 77', and contain 24 apartments.

Joy & Bancroft are preparing plans for an apartment-house for Tufts & Gifford to be located on south side of Charlot Ave., near Cass Ave. The building will contain 32 apartments.

It is reported that the University of Michigan will build a large apartment on Woodward Ave. as an investment.

Dover, N. H.—The plans of Otis E. Moulton have been accepted for the new high school. The cost will be \$52,000.

El Paso, Tex.—The general managers of the different railroads running into this city met here recently and adopted plans and specifications for a union depot to cost \$240,000. The contract for grading and excavating has been let and work of construction begun.

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BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

Friend, Neb.—The corner-stone has been laid for the new Catholic Church. Cost, \$20,000.

Indianapolis, Ind.—The memorial building for James Mustard, a Mason, who died in 1841, will be erected by the Broad Ripple lodge of Masons with some of the money derived from the sale of forty acres of land valued at \$30,000, which has been deeded to the lodge by his son, Jacob S. Mustard. The gift was made with the stipulation that his father be remembered in that manner.

A permit for a \$40,000 structure for Fahney & McCrea has been taken out at the city comptroller's office. It will occupy the site so long held by the well-known Weinberger place, at Nos. 10, 12 and 14 E. Louisiana St., opposite the train-sheds. The work of razing the old building has already started. The new building will be a six-story structure, of brick and stone.

Kansas City, Mo.—Flanagan Bros. have the contract for building Benton public school at Benton Boulevard and 30th St. Plans call for a two-story brick structure, slate roof, 100' x 140', to cost \$54,000, exclusive of the lighting and heating plant, which is estimated to cost \$6,000 additional. Under the terms of the contract the building is to be ready for occupancy December 1.

Clinton Morrison has taken out a permit for a two-story store building at 5th Ave. and 3d St. south. The structure will be 88' x 150', and will cost complete \$40,000. The front on 3d St. and the side on 5th Ave. will be of plate-glass set in gray pressed brick.

Lawrence, Mass.—Proposals for the construction of the new federal building here have been opened by the supervising architect of the treasury as follows: Richardson & Burgess, Washington, D. C., \$90,877; W. M. Pike, Lawrence, \$96,809; Dick, Driscoll & O'Brien, Lawrence, \$133,229.

Architect Ashton expects to complete the plans for the new Ward 2 school in a few days. It is expected that bids for its construction will be asked for in about two weeks. The school will cost in the vicinity of \$100,000.

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

Lincoln, Neb.—The Second Presbyterian Society will erect a church, 57' x 94', of brick and iron. Cost, \$20,000.

Louisville, Ky.—A large freight depot will be built for the Monon Railroad on the west side of 14th St., between Main and Market Sts. The depot is to cost \$125,000, and work will begin at once.

Milwaukee, Wis.—The Milwaukee University Club will erect its new \$30,000 home opposite the court-house park on Jefferson St. A building committee will soon be appointed by the president of the club to consider plans and specifications upon which Architects Howland, Russel and A. C. Eschweiler have for some time been working.

Minneapolis, Minn.—The Republic Chemical & Creosoting Co. will erect a plant at Marshall and 22d Aves. S. E., for the manufacture of creosoted wooden paving blocks. There will be three buildings of steel and iron and two creosote tanks. Cost, \$40,000.

Nashville, Tenn.—Plans and specifications are being received for the addition to the custom-house, for which \$260,000 has been appropriated. Some of the have already been delivered to bidders. Bids will be opened at the office of the supervising architect until August 26th for construction.

New London, Conn.—William H. Chapman, Esq., has given the sum of \$100,000 for the purpose of erecting and equipping in this city a building to be used for manual and industrial training and toward the maintenance of such a school.

Newport, R. I.—A special election will be held by the tax-payers for the purpose of voting on a site for the new high school, for an additional \$50,000 to complete the school, \$50,000 for granolithic sidewalks, sewer and pumping station in the swamp district and for the purchase of additional land for the city asylum.

New York, N. Y.—The plans for the new building to be erected at 327 to 333 E. 60th St. for the Manhattan Maternity Hospital have been filed with Building Superintendent Henry S. Thompson. The

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

structure is to cost \$58,000 and will be of ornamental brick, 45' 3" front and 66' 3" deep, on a lot 100' x 100' 3". It will be four stories high and fireproof throughout.

The Publishers and Printers' Realty Co. have filed plans with the Buildings Department for the Graphic Arts Building, which is to be erected at a cost of \$1,000,000 in 38th St., near 8th Ave., Manhattan. It is to be fourteen stories high, and will be constructed especially for use by printers, engravers, lithographers, electrotypers and those engaged in other of the graphic arts. The building will be fireproof.

Providence, R. I.—Plans have been completed for an eight-story modern business structure to be erected on Westminster St. Estimated cost, \$200,000. Architects, Hoppin & Ely. Already a lease of the building has been secured by the firm of F. M. Kirby & Co., of Wilkesbarre, Pa., who have secured an option upon it for a long period of years. This company has stores in various cities, having one in this city. It is proposed by this concern to use the ground floor and the basement for its own business and to sublet the upper floors for such commercial interests as could be carried on there, while a number of offices will be rented.

APARTMENT-HOUSES.

Chicago, Ill.—Fullerton Ave., Nos. 5222-5336, 8 two-sty' bk. flats, each 22' x 39'; \$40,000; o., E. F. George, 91 State St.; a., L. M. Mitchell, 145 La Salle St.; b., J. W. Snyder, 966 N. 43d Ave.

Fullerton Ave., Nos. 548-562, 8 two-sty' bk. flats, each 22' x 39'; \$40,000; o., E. F. George, 91 State St.; a., L. M. Mitchell, 145 La Salle St.; b., J. W. Snyder, 966 N. 43d Ave.

Washington Boulevard, Nos. 1082-88, three-sty' bk. apart., 80' x 108'; \$40,000; o., A. W. Lewis estate; a., W. Tomlinson, 17 Van Buren St.; b., Napoleon Provost, 620 W. Taylor St.

Minneapolis, Minn.—Chestnut Ave., Nos. 1122-24, four-sty' bk. & st. apart., 40' x 80', gravel roof, steam; \$28,000; o., J. C. Hubinger, Keokuk, Ia.; a., A. L. Dorr.



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HOUSES.

Chicago, Ill.—*W. Eighteenth St.*, Nos. 179-181, two-st'y bk. dwell., 31' x 54'; \$6,000; o., Catholic Bishop of Chicago; b., Theodore Ostrowski, 711 Dickson St.

S. Central Ave., No. 408, two-st'y fr. dwell., 26' x 40'; \$4,500; o., H. K. Stratford, 92 State St.; b., A. C. Morris, 120 S. Pine Ave.

Locust St., No. 61, two-st'y bk. dwell., 28' x 70'; \$10,000; o., Miss Edith Metcalf, 149 Sedgwick St.; a., Patton & Miller, 155 La Salle St.; b., H. D. Moreland & Co., Reaper Block.

Minneapolis, Minn.—*Pleasant Ave.*, No. 2438, two-st'y fr. dwell., 30' x 35', combination heating; \$5,000; o., Henry W. Benton; a., F. G. Corser.
Park St., nr. 22d St., two-st'y bk. & st. dwell., 50' x 68', slate roof, hot water; \$25,000; o., George W. Pearey; a., W. C. Whitney.

St. Paul, Minn.—*Marshall Ave.*, two-st'y fr. dwell., 37' x 59', hot water; \$12,000; o., Robert Mangler; a., Louis Lockwood.

STABLES.

Chicago, Ill.—*Boston Ave.*, Nos. 48-52, two-st'y bk. private barn, 75' x 88'; \$7,800; o., Alton Parkhurst; a., W. T. Brantisky, 79 Dearborn St.; b., Gillespie & Sutherland, 7251 Rhodes Ave.

MISCELLANEOUS.

Chicago, Ill.—*W. Taylor St.*, Nos. 1-75, three-st'y bk. starch house, 100' x 135' & 24' x 135'; \$30,000; o., Glucose Sugar Refinery, Rookery Building; a., Ritter & Mott, 204 Dearborn St.; b., E. M. Bent & Co., 172 E. Washington St.

Minneapolis, Minn.—*Washington Ave.* and *Twentieth St.*, two-st'y bk. & st. mission building, 88' x 95', hot air; \$20,000; o., Westminster Presbyterian Church; a., W. M. Kenyon.

COMPETITIONS.

COURT-HOUSE.

[At Jackson, Minn.]
At 9 o'clock September 30, 1903, the Board of County Commissioners of Jackson County, Minn., will receive plans and specifications at the office of County Auditor at Jackson, Minn., for a \$60,000 fireproof court-house. P. D. McKELLAR, County Auditor. 1444

PROPOSALS.

SIDEWALKS.

[At New Bedford, Mass.]
Office Constructing Quartermaster, 209 Thames St. Newport, R. I. Sealed proposals will be received here until August 20, 1903, for constructing granite sidewalks at Fort Rodman, New Bedford, Mass. Information furnished on application. CAPT. THOMAS H. SLAVENS, Qr. Mr. 1442

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PROPOSALS.

Treasury Department, Office of the Supervising Architect, Washington, D. C., August 11, 1903. Sealed proposals will be received at this office until 3 o'clock P. M. on the 10th day of September, 1903, and then opened, for the installation of a conduit and electric wiring system for the U. S. Court-house and Post-office building at Fergus Falls, Minnesota, in accordance with the drawings and specification, copies of which may be obtained at this office or the office of the Superintendent of Construction at Fergus Falls, Minnesota, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1443

Treasury Department, Office of the Supervising Architect, Washington, D. C., August 10, 1903. Sealed proposals will be received at this office until 3 o'clock P. M. on the 24th day of September, 1903, and then opened, for the erection and completion of a flying cage for the U. S. Government at the Louisiana Purchase Exposition, St. Louis, Missouri, in accordance with the drawings and specification, copies of which may be had at this office or at the office of the Superintendent of Construction, St. Louis, Mo., at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1443

SCHOOL-BUILDING.

[At Glenville, O.]
Sealed proposals will be received by the Clerk of the Board of Education of the School District of the City of Glenville, of Cuyahoga County, O., at 815 New England Building, Cleveland, O., until 12 o'clock, noon, of the 31st day of August, 1903, for furnishing all of the materials and doing all of the work necessary to the erection and completion of a twelve-room brick school-building, in accordance with the plans and specifications on file at the office of F. S. Barnum & Co., architects, Rose Building, Cleveland, O. 1442

BUILDING RESERVOIR.

[Near Reading, Pa.]
Sealed proposals will be received by the Mt. Penn Suburban Water Co., near Reading, Pa., until August 25, 1903, for building reservoir, furnishing and laying cast-iron pipes about 4,000 feet 4 inch and about 8,000 feet 6 inch; fire hydrants, valves, etc., for gravity flow. Company reserves right to reject any or all bids. For particulars address M. D. HUNTER, Sec'y, Box 283, Reading, Pa. 1442

PROPOSALS.

ALTERATIONS.

[At Niagara, N. Y.]
Sealed proposals for furnishing the materials and labor for alterations to Inclined Railway Building in the State Reservation at Niagara, will be received by the Commissioners of the State Reservation at Niagara at the Administration Building in Prospect Park up to 12 o'clock noon, on Thursday, August 20, 1903. Drawings and specifications may be consulted and blank forms of proposal obtained at the office of the Superintendent of the State Reservation, Niagara Falls, N. Y. THOMAS V. WELCH, Superintendent, Niagara Falls, N. Y. 1442

SCHOOL-BUILDING.

[At Cleveland, O.]
Sealed proposals will be received at the office of the Clerk of the Board of Education, Rose Building, Cleveland, O., until August 31, 1903, for furnishing all the materials and for doing all the work necessary to complete the school-building on the property owned by the Board of Education on Broadway and to be known as the annex to South High School, in accordance with the plans and specifications on file in the office of the Superintendent of Buildings, Rose Building. STARR CADWALLADER, School Director. 1442

SCHOOL-BUILDING.

[At Edmond, O. T.]
The plans and specifications for the new normal school-building to be built at Edmond, O. T., are on exhibition at the following places: President's office, Normal School building, Edmond, O. T.; Territorial Treasurer C. E. Rambo's office, Guthrie, O. T.; office of the Secretary of the Board, E. B. Rankin, No. 215 Ryan Building, Oklahoma City, O. T. The Board of Education will meet on August 21, 1903, to open bids. Bids of contractors should be filed with L. W. Baxter, Guthrie, O. T., president of the Board of Education, on or before August 20, 1903. 1442

LIBRARY.

[At Athens, O.]
Bids will be received August 28 by the Bd. of Trus. of the Ohio Univ. for furnishing material and erecting a library for said University. Frank L. Packard, archt., Columbus. L. M. JEWETT, Sec'y. 1443

Treasury Department, Office of the Supervising Architect, Washington, D. C., August 8, 1903. Sealed proposals will be received at this office until 3 o'clock P. M. on the 14th day of September, 1903, and then opened, for the installation of a conduit and electric wiring system for the U. S. Post-office at Aberdeen, South Dakota, in accordance with the drawings and specification, copies of which may be obtained at this office, or at the office of the Superintendent of Construction at Aberdeen, S. D., at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1443

Treasury Department, Office of the Supervising Architect, Washington, D. C., August 8, 1903. Sealed proposals will be received at this office until 3 o'clock P. M. on the 16th day of September, 1903, and then opened, for the low pressure steam heating apparatus, complete in place for the U. S. Court-house and Post-office building at Cumberland, Maryland, in accordance with drawings and specification, copies of which may be had at this office or at the office of the Superintendent at Cumberland, Maryland, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1443

Treasury Department, Office of the Supervising Architect, Washington, D. C., August 10, 1903. Sealed proposals will be received at this office until 3 o'clock P. M. on the 24th day of September, 1903, and then opened, for the construction (except heating apparatus, elevators, electric wiring and conduits) of the U. S. Court-house, Custom-house and Post-office at Seattle, Washington, in accordance with the drawings and specification, copies of which may be had at this office or the office of the Postmaster at Seattle, Washington, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1443

Treasury Department, Office of the Supervising Architect, Washington, D. C., August 5, 1903. Sealed proposals will be received at this office until 3 o'clock P. M. on the 9th day of September, 1903, and then opened, for the construction (including heating apparatus, electric wiring and conduits) of the U. S. Post-office at Holyoke, Massachusetts, in accordance with the drawings and specification, copies of which may be had at this office or at the office of the Postmaster at Holyoke, Mass., at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1443

HEATING AND VENTILATING.

[At Indianola, Ia.]
Bids for the installation of a heating and ventilating plant in the high school building now being erected in Indianola, Ia., will be received at the office of the Secretary of the School Board, E. W. Hartman, Indianola, Ia., until August 31, 1903. Plans and specifications now at the Secretary's office. GEO. CLAMMER, President Board. 1443

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PROPOSALS.

Treasury Department, Office of the Supervising Architect, Washington, D. C., August 8, 1903. Sealed proposals will be received at this office until 3 o'clock P. M. on the 15th day of September, 1903, and then opened, for the installation of a conduit and electric wiring system for the U. S. Post-office at Cumberland, Md., in accordance with the drawings and specification, copies of which may be obtained at this office or at the office of the Superintendent of Construction, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1443

BUILDINGS.

[At Wayne, Mich.] Chief Quartermaster's Office, 415 Pullman Building, Chicago, Ill. Sealed proposals will be received at this office until August 28, 1903, for the construction of a brick building for non-commissioned officers' quarters, and of a brick building for bakehouse at Fort Wayne, Mich. Plans and specifications may be seen here and at office of Quartermaster, Fort Wayne, Mich. MAJOR W. H. MILLER, Quartermaster, U. S. A., in charge. 1443

OFFICERS' QUARTERS.

[At Fort Rosecrans, Cal.] Bids will be received at the office of the constructing quartermaster, 34 Keating Block, San Diego, Cal., until September 4, for the construction, plumbing, heating and electric wiring of two double officers' quarters, one double N. C. O. quarter, one coast artillery barracks at Fort Rosecrans, Cal. CAPTAIN R. H. ROLFE, quartermaster. 1443

ARMORY.

[At New York, N. Y.] The Armory Board invite bids for the erection of an armory for the Second Naval Battalion on the bay between 51st and 52d Sts. Bids will be opened September 1. The amount of security required is \$75,000 and the contract is to be completed in 300 working days. 1443

ART GALLERY.

[At Charleston, S. C.] The trustees of the James S. Gibbs Art Gallery, viz: Judge Charles H. Simonton and Mayor J. Adger Smyth, invite sealed proposals for the erection and completion of an art gallery, in the city of Charleston, S. C., agreeably to the plans and specifications now on file with J. H. Dingle, City Engineer, Charleston, S. C., and at the office of the architect, Frank P. Milburn, Columbia, S. C. For more detailed information see plans and specifications. Bids must be filed with Architect Frank P. Milburn, Columbia, S. C., on or before August 29, 1903. 1443

REPAIRS AT HOSPITAL.

[At San Francisco, Cal.] Sealed proposals will be received here until August 31, 1903, for repainting, plastering, kalsomining, tinning, shingling and repairing at the general hospital at the Presidio of San Francisco, Cal. Information furnished on application to J. McE. HYDE, Deputy Quartermaster General, Chief Q. M. Dept. of California. Office of the Board of Supervisors of Napa County, State of California. 1443

BUILDINGS.

[At Key West Barracks, Fla.] Sealed proposals for constructing 3 sets officers' quarters, set N. C. staff quarters, Q. M. storehouse and band barracks will be received here until September 2, 1903. Information furnished on application. 1444

PROPOSALS.

SCHOOL-BUILDING.

[At Cleveland, O.]

Sealed proposals will be received at the office of the Clerk of the Board of Education, Rose Building, Cleveland, O., until August 24, 1903, for furnishing all the materials and for doing all the work necessary to complete the school-building on the property owned by the Board of Education between Willson Ave. and Arlington St., and to be known as the annex to Central High School, in accordance with the plans and specifications on file in the office of the Superintendent of Buildings, Rose Building, and as determined by the Board of Education by resolution No. 1645, adopted June 22, 1903. STARR CADWALLADER, School Director. 1442

NORMAL SCHOOL.

[At Cape Girardeau, Mo.]

Bids will be received by the Third District Normal School, Cape Girardeau, Mo., on or before August 19, 1903, for the construction and completion of the Academic Hall, a stone building two hundred sixty by one hundred seventy-six feet, three stories, fireproof. Bids to be addressed to L. J. Albert, secretary, Cape Girardeau, Mo. Plans and specifications for said work are on file in the Science Hall on the Normal campus at Cape Girardeau; also in the office of Legg & Holloway in St. Louis. The plumbing and sewerage for said building will be let separately. LOUIS HOUCK, President Board of Regents. 1442

SEWERAGE SYSTEM.

[At Fort Bliss, Tex.]

Bids are wanted August 20 for improvement of sewerage system at this post. JOHN L. CLEM, Ch. Q. M., San Antonio, Tex. 1442

REPAIRS TO COURT-HOUSE.

[At Thibodaux, La.]

Bids will be received August 27 by the Police Jury of Lafourche Parish for repairing and remodeling the court-house. Wm. S. Hull, archt., Jackson, Miss. H. N. COULON, Clk. 1442

HIGH SCHOOL.

[At Prineville, Ore.]

Bids will be received August 31 by the Co. High School Bd. for erecting a brick and stone high school. John B. Shipp, archt. WM. BOEGLI, Sec'y. 1443

PROPOSALS.

ROCK EXCAVATION.

[At Boston, Mass.]

U. S. Engineer Office, 25 Pemberton Sq., Boston, Mass. Sealed proposals for rock excavation in Boston Harbor, Mass., will be received here until August 21, 1903. Information furnished on application. W. S. STANTON, Lt. Col. Engrs. 1442

BUILDINGS.

[At Chickamauga Park, Ga.]

Chattanooga, Tenn. Sealed proposals will be received here until August 26, 1903, for constructing, plumbing, heating and gas-piping fifteen frame buildings at new military post, Chickamauga Park, Ga. Information furnished here or at Room 392, War Department, Washington, D. C. Bids will be received here only. H. J. SLOCUM, Capt. Cav., Q. M. 1442

SEWER CONSTRUCTION.

[At Washington, D. C.]

Office of the Commissioners, D. C., Washington. Sealed proposals will be received at this office until August 29, 1903, for constructing Section B of the B St. and New Jersey Ave. trunk sewer in the District of Columbia. Forms, specifications and necessary information may be obtained at this office. HENRY B. F. MACFARLAND, HENRY L. WEST, JOHN BIDDLE, Commissioners, D. C. 1443

REPAIRS.

[At Hudson, N. Y.]

Bids will be received September 12 by Chas. H. Strong, Pres. Bd. of Mgrs. at House of Refuge for Women for repairs, alterations and fire-escapes in administration building, hospital and reconstructing prison building at said House of Refuge. G. L. HEINS, State Architect, Albany. 1443

BRIDGE.

[At Kansas City, Kan.]

Sealed proposals for furnishing and erecting a steel bridge across the Kansas River, at 12th St. in Kansas City, Kan., will be received August 31, 1903, and forth opened by the Board of County Commissioners of Wyandott County, Kan., at the office of the County Clerk, in the court-house of said county, in Kansas City, Kan. Plans, specifications and forms for submitting bids will be on file in the office of said County Clerk on and after August 1, 1903. F. M. HOLCOMB, County Clerk. 1443



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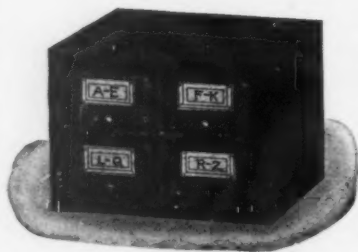
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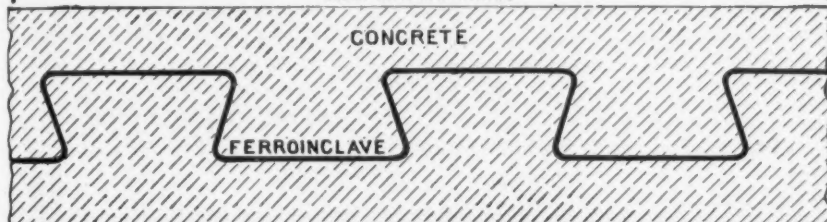
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ADOPTED BY THE SOCIETY, FEBRUARY 1, . . . 1895. . .

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 criticize 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.

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