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THE Boston Post has been publishing some very misleading statistics, probably gathered from union officials, about the effect of unionism in raising wages. It says that "Just a century ago the blacksmiths, the carpenters and the coopers of Boston were working for hardly one-third of the wages that they are getting to-day"; and it adds that "If John Brown, a carpenter of to-day, had been laying floors and sheathing walls on September 7, 1803, he would have been well satisfied on Saturday night to draw five dollars and forty cents for his hard week's work"; continuing with corresponding assertions in regard to the wages of blacksmiths and coopers. We will let the blacksmiths and coopers take care of themselves; but, in regard to carpenters, we may be allowed to put the evidence of some old family accounts in our possession against the statements of the Post, the authority for which it does not give. According to these accounts, which date from about the period mentioned by the Post, our ancestors paid their carpenters, in a town within sight of Boston, two dollars a day, apparently as the regular rate, this item appearing many times in the accounts. It is quite likely that the carpenters of a century ago worked harder than their union brethren do now, but it does not appear that they were any worse off on that account; and, considering the enormous increase in the cost of living within the past century, brought about to a considerable extent by labor unions and other monopolistic combinations, they were far more prosperous than they are now. According to the most recent report of the Massachusetts Bureau of Statistics, the average weekly wages of a carpenter is \$15.23. This means, presumably, when he is employed, but the acknowledged tendency of union monopoly of the right to labor is to check building, and diminish the employment of building workmen; so that the average yearly income of carpenters in the large cities is given, in some recent statistics, at less than ten dollars a week. It does not need superhuman intelligence to see that the carpenter of a hundred years ago, who did not have to buy from orators or saloon-keepers a card entitling him to work for a living, and who, if he was skilful and sober, could be practically sure of steady employment, without having to pay the enormous union dues, and without being exposed to the probability of being "called out" at any time, and compelled to abandon his work for an indefinite period at the command of a political heeler of doubtful honesty, was far better off, with his regular twelve dollars a week, including a chance to rise if he exerted himself, than the union carpenter of to-day is with fifteen or sixteen dollars a week, when he is employed, but with, on an average, about three times as much to pay out for rent, flour, meat, eggs, butter and milk, shoes and clothing for himself and his family as he would have had to pay a hundred years ago.

INCIDENTALLY, the interviews with labor magnates reported in the Post's article shed a curious light on some of the aspects of trade unionism, even if they are not altogether consistent with each other. According to the business agent of the painter's union, the struggles of that trade against capi-

tal began in 1886, when the painters of Boston were working for two dollars and a half a day, the day being ten hours. They then joined in a general strike. The struggle lasted, according to this authority, for ten years, until 1895, when the painters "received the grant of an eight-hour working day, at two dollars and a half a day." In other words, the Boston painters wasted an enormous amount of time and money in strikes, only to find themselves, at the end of ten years, earning exactly the same wages that they were earning before they began their "struggles." In the meantime, the cost of living had greatly increased, the building business of Boston, through union exactions and interferences, had been brought almost to a standstill, and the painters, in addition to the falling-off of employment, had been saddled with the heavy union dues, and subjected to the arbitrary dictates of the union magnates. It is singular to see any one boasting of this sort of industrial "progress"; but the business agent of the Boston Building Trades Council gives figures even less encouraging. According to him, the union rate of wages for painters, instead of being two dollars and a half a day, is now only two dollars a day; so that the ten years' "struggle" of the painters has left them, by his figures, with wages only four-fifths as large as those that they were earning in 1886, with building business almost prostrate, and incomes rendered doubly precarious by exposure to "labor" manoeuvres, and with all expenses of living immensely increased.

THE business agent of the Painters' Union also describes an occurrence which might well serve as food for reflection for union mechanics. In 1902 a certain union of painters had fixed the scale of wages at two dollars and seventy-five cents a day; and, as usually happens, the non-union painters doing the same work received the same wages. The union, or presumably, the managers of the union, "seeing that the non-union painter was receiving the benefits of the union in the form of shorter hours and more pay, and doing nothing to maintain these conditions, as he had done nothing to establish them, decided that if the non-union man's wages were reduced it would have the tendency of driving him into the union." With this laudable view the union voluntarily reduced its own wages, we are informed, from two dollars and seventy-five cents to two dollars and a half a day, "for the purpose of organizing the craft more thoroughly." The figures given as to the financial results of this exploit vary so widely from those furnished from the other authority that it is difficult to draw any conclusion from them; but the idea of docking all the members of a union of a slice of their pay for the sake of getting in new members to compete with the old ones is likely to appeal more strongly to the salaried officials of the union than to the working members.

MR. WALTER DICKSON, one of the best-known architects in New York State, died in Brooklyn a few days ago, at the age of sixty-eight. Mr. Dickson was for many years established in Albany, where he executed many important commissions, and gained the highest esteem of the profession and the public. He was the architect of the Albany Post-office, and of the Albany City Prison, among other public buildings. He removed to Brooklyn some fifteen years ago, and formed a partnership with Mr. Withers. The firm of Withers & Dickson carried out much important work, and gained a certain public prominence through its courageous struggle against Tammany methods in the matter of the Tombs prison, which it designed, and should have carried to completion.

THE profession will be interested in the explanation of the removal of Mr. Henry Ives Cobb from his position as architect of the Federal Building in Chicago, and may, perhaps, draw from it a moral as to the standard of professional service that the Government insists upon. Briefly the dissatisfaction of the Government officials seems to have been based upon nothing more serious than the unbusiness-like way in which the building had been carried on. Architects cannot be too often reminded that, in public work, precision and clearness in making contracts, and checking the accounts connected with them, are absolutely essential; and Mr. Cobb, who is a very

busy man, seems to have forgotten this. The contracts for the Chicago building, we are told, are hopelessly confused, and a conference between the Supervising Architect of the Treasury, the new special superintendent of the building, Mr. Von Nerta, and the contractor, will be necessary to put them in proper shape for completing the structure. Meanwhile, it ought to be noted that any oversight or negligence of any private architect employed on Government work seriously affects the whole profession. After years of struggle, the profession has been admitted in this country to public employment, on the ground that private architects were capable of carrying out public work with at least as much efficiency, economy and skill as official architects. All our readers know that this claim is a just one, but it has been difficult to get public officials to admit it at all, and every exhibition of incapacity strengthens the opponents of the present system and makes more precarious the feeble hold which the profession has already gained on public employment.

GENERAL BOOTH TUCKER, of the Salvation Army, writes for the September *Bulletin* of the Bureau of Labor an extremely interesting article on the Farm Colonies of the Salvation Army. These colonies, with the practical common-sense characteristic of the Salvation Army, were established "for the purpose of enabling stranded but worthy families to keep together, and ultimately, by their own exertions and payments, to become home-owners," and the same practical common-sense seems to have made the experiment uniformly successful. In this country only three colonies have been founded, the oldest of which has not completed its fifth year, so that it is too soon to speak with certainty of results, but the principles on which they are conducted give promise of good results. Nothing like community of ownership of land, goods or anything else is proposed, or even tolerated. The Salvation Army believes that communistic schemes usually result in "the lazy doing nothing and expecting everything, while the industrious do everything and get nothing—at least nothing commensurate with their toil," and the end of the affair is that the industrious go where they can get adequate pay, and the lazy ones, left to themselves, quickly scatter. Another mistake which the Salvation Army avoids is that of preferring to colonize the unmarried poor. To say nothing of the importance of encouraging the family life which is the foundation of the Republic, it is shown that, in the long run, it is cheaper to colonize families than single men, for the reason that a married man commands a large amount of unpaid, zealous and intelligent labor. As an illustration, the Report describes a family, which was brought from the city, and settled in one of the colonies. Soon afterwards a visitor found the father cultivating his land, to advantage, while the children were earning two dollars a day apiece, picking berries for a neighbor, and the wife looked after the house, the baby, the meals and the poultry; all of them happy, contented, self-supporting, and on the road to prosperity. In another case a workingman from the city, with his wife and three children, arrived at the Fort Amity colony with a team and some furniture, comprising all the property which he had been able to save in ten or twelve years of married life. He was advanced nine hundred dollars for his railroad fares, land, seed, tools and stock. In three years he had paid off the entire debt, and owned twenty acres of unincumbered land, and a stone cottage, built with his own hands, besides supporting himself and his family during the interval. Moreover, the value of land, in consequence of the improvements, and the creation of a market by settlement, rapidly rises, so that in some cases improved farms sell, at the end of three or four years, for five times their cost; so that the poor, discouraged workingman of three years ago not only has a living assured him, but can take comfort in the knowledge that his family is provided for.

THE system pursued is to select worthy families of the city poor, pay their travelling expenses, if they have no savings of their own, charging them with the cost, and furnish them, on arrival at the colony, with a suitable quantity of land, a cottage, live stock and implements, under a contract for repayment. The settlers take much pride in the sense of ownership, and are eager to pay off their debt at the earliest possible moment; and statements of the amount due are furnished them at regular intervals, not only to keep them up to their obligations, but to encourage them by showing the diminution of the burden as payments are made. General Booth-Tucker says, with truth, that, considered merely as an investment, hardly

anything could be safer than these loans to colonists, for the reason that the settlement itself increases the value of land sufficiently to cover any probable loss of money lent for improvements, with interest and taxes, even if the borrower should fail to pay anything.

IN curious contrast with this beneficent scheme for taking from the great cities the despairing dwellers in the rookeries of the slums, and settling them in their own modest homes in the country is the demand which is said to have been made by the "labor champions" upon the Democratic politicians that, as the price of their support, it shall be made a part of the Democratic policy to prohibit all immigration into this country for fifteen years, the reason given being that there is only work enough here now to keep the present inhabitants employed, and that they must be protected from the competition of new arrivals. Considering the enormous benefits that this country has received from immigration, and the vast territory which still remains to be occupied by useful citizens, producing for the benefit of others, and consuming what others produce, this demand sounds like an echo from the Dark Ages, but it is seriously made, and it would hardly be surprising to see it added to the other miscellaneous ingredients of modern Democratic doctrine. Whether it will make the latter any easier for voters to swallow than it is already remains to be seen, but the merchants and manufacturers who want more customers for what they sell or manufacture, the operatives who help to make the goods to sell to the newcomers, the carpenters, bricklayers, plasterers and painters who would like to be employed in building new houses to accommodate the strangers, the tailors who will supply them with clothes, and the hatters who will furnish them with hats, are likely to be a unit in resistance to the movement.

COUNTRY LIFE IN AMERICA is having what the Sunday newspapers call a "symposium" in regard to fencing in private grounds. Mr. J. Horace McFarland, the President of the American League for Civic Improvement, denounces fences on street lines as "an insult to one's neighbors and the community," and thinks that a fence implies that the person who erects it is himself disposed to trespass on his neighbors' gardens, and therefore attributes to them the inclination which he is conscious of in himself; while Mr. Julian Tinkham thinks that this idea, although widely prevalent in this country, is a mistake, and that the privacy implied by a fence or hedge adds to the charm of a house, instead of detracting from it. If we are not mistaken, the late Mr. Olmsted held the same opinion, considering it desirable, in most cases, that houses on suburban streets should be separated from the public highway by hedges or light fences, while he approved the omission of fences between adjoining properties, as suggesting a pleasant neighborly confidence, as well as affording better and broader landscape effects.

IT may be observed that a fence does not, by any means, imply the churlish brick wall, eight feet high, with broken glass on the top, so beloved of our English cousins. The Italian garden walls, which Mr. McFarland joins with the English ones in his condemnation, are so commonly draped with passion-flowers or purple clematis, or ivy geranium, expressly to give pleasure to the passer-by, that they have a very different effect from the English fences; and the street fences in the newer part of Paris, of light ornamental iron-work, covered with ivy or myrtle, and protecting the tiny gardens or the flowering shrubs behind them, are, to our mind, quite as attractive as the dislocated curbs reminiscent of dogs, and inclosing more or less mangy grass-plots, which line so many miles of streets in the fashionable quarter of Boston. It is true that a fence, even a low and open one, conveys the idea that the proprietor of the house behind it would rather have people come through the gate than wander at random over his flower-beds, but we are not so sure as Mr. McFarland is that this is an objectionable state of mind. Shakespeare has something to say about people who wear their heart upon their sleeve for daws to peck at, and, as a little reticence is not only compatible with perfect courtesy and perfect sincerity, but adds a charm to those virtues, so a pretty fence or hedge on the street line, not high enough to hide anything behind it, but affording a modest barrier against too great familiarity, is, to our mind, decidedly advantageous to the artistic effect of a house, as well as to that of the street on which such houses stand.

JAMES McNEILL WHISTLER: A RETROSPECT AND AN APPRECIATION.

THE "Butterfly" has fluttered away to other climes. The position which this painter will occupy in the history of the world's artists a hundred years hence is difficult, impossible, one may say, to determine, as it depends upon the artistic qualities of our successors. But the position of Whistler among his contemporaries, artistic and Philistine, has probably been due to his choice of epigram as his guiding principle. Had he desired a motto upon which to build up his reputation, he might have chosen Danton's famous words: "*De l'audace, de l'audace, et toujours de l'audace.*"

For many years we were asked to gaze on "nocturnes," and "symphonies" and "studies in blue and brown," or "pink and grey"; and our verdict was given according to our temperament, our sympathy and our artistic knowledge. Was it impudence "to ask 200gs. for two days' work"? or was it a fair and just price for the "knowledge of a life-time"?

It is curious here to observe that when the famous trial of Whistler *vs.* Ruskin took place, neither the attorney-general nor the public had any idea that an artist should be paid for experienced and hard work. The physician gave his patient a few words' advice and received his 2gs. in payment. The barrister might claim his 200gs. or 2,000gs. for a certain amount of time and trouble in getting up his case and arguing it. This was all brain work. But the artist's long plodding years before he could make a shilling, his life of thought and study were of no value — he just sat down before his model or his "view," and painted. How can you compare the work of a "professional man" with that of a "mere painter"? said society. But times have changed; the harmonious "nocturnes in blue and gold, and blue and silver," otherwise beautiful sketches of the effects of gas and moonlight; the pictures of murky Thames reaches and bridges, the London fog, yellow and grimy, the "little white girls," and all or most of the symphonies, have become more or less popular, although the Trustees of the Chantry Bequest still prefer such amazing pictures as the "Two Crowns" and their like. Doubtless when a Whistler goes at Christie's for 2,000gs., good old Chantry's money may then be invested in it.

It does not seem long since we were all amused by the exhibition in Bond St. (1892) and its smart catalogue, an echo of its forerunners put together through the agencies of paste and scissors, and covered with the familiar brown paper. Its title "Nocturnes, Marines and Chevalet pieces," and its contents, cuttings from newspaper, criticisms of the pictures when first they appeared years before, were both first-class specimens of Whistlerana. It was a document to keep. On the fly-leaf is written "The voice of a people"; at the end, "*Moral.* Modern British (!) art will now be represented in the National Gallery of the Luxembourg by one of the finest paintings due to the brush of an English artist (!) namely, Mr. Whistler's portrait of his mother. *Illustrated London News.*" The italics are, of course, the artist's, who was thoroughly acquainted with his public. For years he had been working along a somewhat monotonous path, repeating himself as does the low comedian in a popular farce, reiterating his words in the same tone and with the same emphasis — as "my goods and chat-tels," or "no fellow can understand that"; and then at last, those who had come to laugh, stayed to admire, and the critics were made to eat their own words. Who would venture to endorse the remarks of the attorney-general now? "I do not know when so much amusement has been afforded to the British public, as by Mr. Whistler's pictures."

So the world wags; great artists live and die, and posterity reaps the harvest. But few have had the opportunity or the desire to slash the slashers. Whistler was independent enough to seize his opportunity, and he always relished the work. Nor can we pity the critics. Take a few specimens: "A Farce in Moonshine, with half-a-dozen dots." Mr. Jones, R. A., thought 200gs. a large price for a nocturne "when you think of the amount of earnest work done for a smaller sum" — yet what do we now consider the value of a nocturne, and where is Mr. Jones's "earnest work"? The painter of the Derby-day considered Whistler's paintings as "not serious work." Ruskin considered that we could "paint a cat and a fiddle, but we cannot imitate the ocean or the Alps" — yet no one tried more than the famous art-critic, so to do. Did he too build up "art out of his own imperfections," as the *Times* said of Whistler? Most of the criticisms would now be reversed — have been quite recently in many of the same journals in which the painter was tabooed years ago; showing that the little keen-eyed "Butterfly" was wiser than his generation. He, like the importunate widow, persisted in his ways for good or for evil, and now the public acknowledges the error of its ways. Possibly also it was the artist's manner; his failure to see a joke when it was pointed at him instead of issuing from him, and his persistence in the "gentle art of making enemies"; all this made the enemy to blaspheme.

But if we forget eccentricities, affectations, clap-trap, and epigrams, what a mass of good points remain in the work itself. No one but the over-prejudiced can do aught but admire the portraits, the delightful "little girls in white," the fine etchings, and the snowy Chelseas. It is true they are all executed in a minor key, these "symphonies" and nocturnes — so are those of Tchaikowsky and Chopin; but should a painter or a musician be run down because he sees mainly the sad side of nature? "*Il ne faut jamais faire agir un homme dans un sens différent de son caractère,*" said Madame G. Sand de Stael.

Whistler's work was often ugly — reaction from the prettinesses of the Books-of-Beauty ladies of a former generation; but how many painters of our time can manage half-a-dozen different blacks and browns? — velvet, silk, felt and feathers. Are not the sea-green trimmings and bows of little Miss Alexander's white frock, as refined in tone as anything Velasquez has given us? And are not the greys and pinks in the portrait of Lady Meux suggestive of the tones of some of the great Spaniard's work? Naturally it is not suggested that the American will rank with the Spaniard in future years; but posterity may place him on a lower rung of the same ladder.

Again, are not Whistler's landscapes among the finest class of Nature study? His moonlights are superior to Turner's, though inferior possibly to Cazin's. The American's "Blue wave at Biarritz," reminds one of Courbet's "Wave" in the Luxembourg — but it is wetter, though not so limpid nor so poetic as Mr. Harrison's many pictures of the sea under conditions of calm and storm. No one has painted the Thames and its fogs as Whistler has portrayed it; no one but he has seen it as born Londoners know and love it, with its marvellous possibilities to the artist. Turner learned much from it; but Chelsea in his day was not a part of London. "The Poetry of Fog" might be the title of many of Whistler's studies of barges and coal lighters.

Mr. Whistler invented his signature of the "Butterfly" himself — it was his *nom de guerre* or *nom de pinceau*; but it is not the least probable that his reputation will resemble the life of the brilliant insect which flickers about in the sunshine, and then fades away into the unknown.

The artist's greatest enemies were his indiscreet friends and his own caustic tongue. Two of them are now discussing in the London papers the snubbing he experienced by official Englishmen; he being, in their opinion, the "greatest painter of the nineteenth century." Were then Constable, Corot, Millais, Daubigny, Turner, Millet and many another mere pigmy painters of the last century? And, then, as to the want of appreciation which he received! The last person am I to take up a brief for the Royal Academy; but we must be just before all things, and the fact remains that Whistler's early works were hung, and later ones might have been also, for one, at least, of the R. A.'s even purchased a picture — "At the Piano." This was John Philip. In the sixties, he was appreciated by many Londoners, notably Mr. Leyland, whose famous peacock room we all remember. In France his first official recognition was in 1889. His own countrymen rejected his etchings, and so he appealed to the English commissioners at the 1889 Paris Exhibition, and he was hung in the British Art Section. He objected to the decision of a "competent and impartial jury of his peers," and judged one of their number as a man who had "never before come upon an 'etching' in his hitherto happy and unchequered Western career," but he found the hanging of his works by the British section (made up largely by Royal Academicians) as "perfect," and he received as a British artist a first-class medal. Are then Mr. Heinemann and Mr. Pennell justified in their protest against a collected exhibition of Whistler's work at Burlington House, supposing it to have been thought of?

S. BEALE.

IMPERVIOUS CONCRETE.¹

B. R. GREEN, M. Am. Soc. C. E.: The question appears to be simple. Of course, it stands to reason that any concrete to be water-tight must be so nearly solid — the interstices of the component materials or aggregates so well filled — that there shall exist in the mass no interstices or connected porosity, through which water can find its way from one side to the other. Most stones are permeable to water. It will soak into them. This is indicated by the tendency of some cements to stain stones that are embedded in or backed up with them, and by the earth stains found at greater or less depth in exposed rocks in nature. Building sand consists of very small stones. Even pure cement, after becoming indurated or set, will also soak water somewhat, especially if not ground to extreme fineness.

If, therefore, the materials of which concrete is composed are permeable to water, the concrete itself must be so, even if so well made as to be free from porosity or spaces between the stones, particles of sand and cement. But, while water will soak through these materials, it is known that its progress is very slow, so slow that under slight heads of water thick and carefully built concrete walls will keep quite dry on the outside if exposed to drying air, the water evaporating as fast as it reaches the surface. This seems to be the whole story.

It would be very easy to determine by experiment the coefficient of soakage of pure cement for different thicknesses of wall and different heads of water, and the same for cement-mortar with good quartz sand.

The speaker firmly believes that cement-concrete can be made as water-tight as a stone wall, but not absolutely moisture-proof, without the application or insertion of a coating or core of some perfectly impervious material, like asphalt.

J. W. SCHAUB, M. Am. Soc. C. E.: In building an ordinary concrete cistern to hold water, all that is necessary to make the concrete impervious is to wash the walls inside with grout. Usually two coats of neat cement grout are sufficient for this purpose. This

¹ Extracts from an informal discussion at the Annual Convention June 11, 1903, before the American Society of Civil Engineers and printed in the *Journal* of that Society.

coating on the inside will hold the water in the cistern, but it is not impervious to water from the outside. In order to make a cistern impervious to water, inside and outside, it would be necessary to wash both sides, if possible, with grout. This is exactly what should be expected: the fine particles of cement closing up the pores of the concrete, similar to the caulking of the seams of a water-tank or boiler. In order to make a tank hold water it is necessary to caulk the seams from the inside; and, in order to make it impervious to water from the outside it is necessary to caulk the seams from the outside. The above applies to concrete when the water-pressure does not exceed a head of, say, 10 feet. For pressures greater than that, the wash of grout does not suffice, and, in addition, the speaker has used asphalt, applied hot, with a mop, until a coat, $\frac{1}{4}$ inch thick, covers the grout, and the results have been entirely satisfactory. To what extent this can be carried, the speaker is not prepared to say, but he believes that a coating of asphalt $\frac{1}{4}$ inch thick, in addition to the grout, is sufficient for a water-pressure of 60 feet, and he has recently specified this coating for this pressure.

When the face of the wall to be waterproofed is accessible, it is a simple matter to apply the washes of grout and hot asphalt. If, however, the face is not accessible, the speaker knows of no method to be used to make that face impervious to water, excepting to build the wall in two parts, and fill the core or hollow space between the walls with asphalt. This method was used successfully in St. Louis, several years ago, in stopping leaks in a conduit, after every other method had failed. To be sure, a coating of asphalt is not permanent, but nothing is permanent in this world, and a coating of this kind, where exposed to the direct action of water, will have to be renewed about every ten years, the water acting on the asphalt as a solvent, as it does on everything else. Where the asphalt is used to fill up the cores in a wall, it will probably last as long as the wall.

In case the concrete is reinforced with steel, it becomes almost necessary to make the concrete impervious to water, for it has been shown,¹ by M. Breuillé, a French engineer, that a chemical union takes place between the metal and the cement, forming the silicate of iron, which is soluble in water. When this salt has been dissolved, the bond between the metal and the concrete is destroyed, and therefore the combination of the concrete and steel is no longer steel-concrete, but a conglomerate of two substances which have nothing in common, excepting, perhaps, their coefficient of linear expansion. M. Breuillé has also shown that, where concrete has been protected by means of an asphalt covering, this union or bond between the concrete and the steel has not been destroyed by the action of the water. The conclusion to be drawn is, that the concrete should have a coat of asphalt, or some other form of waterproofing, in order to make it impervious to water.

The speaker would suggest that this question, together with the entire matter of steel-concrete, be referred to a Special Committee of this Society.

OSCAR LOWINSON, Assoc. M. Am. Soc. C. E.: About four years ago the speaker had an experience, recalled by the remarks of Mr. Green, in reference to the means by which concrete can be made water-tight. He tried to build a cellar on South Street, in New York City, which was to be made impervious to water against a head of about 6 feet. The building is located about 100 feet from the dock-line of the river. The intention was to put a damp-course on a properly prepared bed of 6 inches of concrete; this course to be waterproof, and on top of the damp-course 18 inches of concrete, this having been computed to be of sufficient strength to resist the upward pressure of the water. The cellar was about 48' x 70' in area. The theory was that if the damp-course were not punctured, the only work the upper layer of concrete would have to do would be to act as a medium to resist the hydraulic pressure; however, lest a leak might occur in the damp-course, this top layer of concrete was to be made most carefully, it having been the speaker's opinion that the concrete in it would keep the water out. The speaker was present during the greater part of the time when this concrete was being mixed. The job was done continuously, and, in that manner, no unfinished edge was permitted to set. Some six weeks after the completion of the job a sweat appeared at the lowest part of the cellar, which had been graded so as to permit baling out in case water might gather. At the end of another week several pailfuls of water had gathered, and, from that time on, the water found its way into the cellar at the rate of about a pailful a day. There was no question but that the waterproofing had been punctured, and also that the water had found its way over the concrete, but what surprised the speaker and caused him to conclude that his ideas as to the imperviousness of any concrete required revision was, that when he went to trace the source of the stream the puncture was found 18 feet from where the dampness appeared upon the surface. Several attempts were made to repair this leak, but with no success, and the whole was finally removed, with the exception of the bottom layer, which had served as a bed for the waterproofing.

This cellar was made over twice again with the same result, costing the contractor more than five times the amount of his contract. The cellar was built finally in a different way. On top of the waterproof layer, a layer of brick in a bituminous mortar was placed, and 15 inches of concrete placed on top of the brick. This was successful, and the cellar is perfectly tight to-day. The concrete used for the layer was composed of one part Saylor's Portland-cement, two

parts Cow Bay sand and four parts small broken stone. The speaker believes that the stone was not greater than 1 inch in diameter. Then there was a 2-inch cream of Portland-cement and sand floated on, for a finished surface. The concrete was mixed to a consistency that caused it to sweat when thoroughly rammed.

The concrete was mixed as follows: The sand and cement were first mixed and wet, the wet broken stone was put on top, the whole turned three times and the entire batch put in place within thirty minutes from the time mixing began.

Some of the remarks made in reference to this subject bring to the speaker's mind a paper which he heard read last spring, by Mr. Maximilian Toch, at a meeting of the New York Section of the Society of Chemical Industry, on the preservation of materials of construction, in which was propounded a theory which so interested the speaker that he suggested to Mr. Toch that a like paper read before the American Society of Civil Engineers would be productive of considerable discussion and most likely lead to valuable results.

The theory advanced by him was this: A thin layer of very fine cement, entirely free from all the elements that cause or aid oxidation or disintegration, can be applied so that it will change the initial condition of the surface exposed to dampness, so that, instead of being porous, or exerting capillary action, the effect upon the moisture or water would be similar to the action of oil on water, causing a repulsive, instead of attractive, influence. Mr. Toch was assisted in the preparation of this paper by Clifford Richardson, Assoc. Am. Soc. C. E., and the results that they had attained made the speaker believe that the theory was quite plausible.

The matter referred to interests the speaker in his building work, and he has used this material since as a cement wash on the surface of a building in New York City. It has now been in place some three months, and, so far, it appears to have kept out the moisture where, before that time, dampness had penetrated. It differs from the ordinary cement wash in that it sets almost immediately, does not flake, and is not washed off by the rain.

There is a possibility that concrete can be made impervious to water or dampness by an application of this kind, and this is a matter worthy of the best study that can be applied to it. In order to make it impervious, it would be necessary to apply this wash on both surfaces of the concrete.

EDWARD CUNNINGHAM, Esq. (by letter): The writer recently made some tests for waterproofing mortar, which, though crude, were entirely satisfactory.

Using the materials at hand, two vessels, having an internal diameter of 11 $\frac{1}{4}$ inches and an outer diameter of 12 inches, and about 26 inches deep, were made in the following manner: A sheet of "chicken wire" was rolled and wrapped with wrapping paper. This was placed on a square board and filled with sand, making a heavy core. A split 12-inch terra-cotta side-collector pipe was used for an outer shell and placed about the core, leaving a space of approximately $\frac{1}{4}$ inch between the core and the pipe. This space was then filled with rather wet mortar, which was worked down by "ramming" with thin narrow sticks. When filled to the top, a bottom was formed over the sand core. Mechanically, the two vessels were as nearly alike as they could be made from such simple materials. The paper was not a so-called waterproof paper. The pipes were slightly greased before placing, in order to prevent the cement from sticking.

The mortar placed in the first vessel was of the ordinary 2:1 mixture, in which was used Allegheny River sand, as it came from the pile. The mortar for the second vessel contained the same proportions of cement and sand, with the addition of one per cent of the weight of the sand and cement in powdered alum, and one per cent of the weight of the water in yellow soap. The alum was mixed in the sand and cement while dry, and the soap had been dissolved in the water.

The difference in the texture of the two vessels, when taken from the forms, was very noticeable. The waterproofed vessel was fine-grained and close, and was much smoother to the touch than the other. Lids of roofing slate were "rubbed" on after putting a ring of neat cement around the top, in order to prevent evaporation.

After about three months the vessels were filled with water. The vessel made of the plain mixture immediately began to sweat, and "pin-holes" to weep. On damp days this was very noticeable. On dry, windy days the water on the surface of the vessel was apt to evaporate as quickly as it seeped through. The soap and alum vessel developed two or three "pin-holes," which showed slight weeping, otherwise it was dry. Without any records, the writer's recollection is that while the plain vessel was losing about 12 inches the other vessel lost about 1 inch, and that was through the "pin-holes," the surface never appearing generally damp.

In plastering the inside of a covered clear-water well, a potash soft-soap was used. The water for the plaster was used from a barrel into which one and one-fourth pounds of soap was put for each five buckets of water. The alum was used from paper bags by the mixers, a bag of alum to a bag of cement. As the walls leaked badly the contractor did this part of the work conscientiously. The mortar was fine to handle with the trowel, but the masons frequently were nauseated by the odor, had to come out to ventilate themselves.

Two plastering coats were applied, both being not more than $\frac{1}{4}$ inch thick. The writer's instructions were simply to cover up the stone and make no attempt to bring it to a surface. There was seldom more than $\frac{1}{4}$ inch in the coating.

¹ *Annales des Ponts et Chaussées.*

The results were entirely satisfactory. The application was made when there was no leakage; and, when rain set in, in the fall, the walls remained almost entirely dry.

In the filtered-water regulating houses the 18-inch dividing wall showed no leak when one side held 16 feet of water. In the clear-water well there was slight leakage at the joint between the work from the floor, and that from the scaffold.

There are some soaps in which the potash is much stronger than in others. The "old-fashioned" soft-soap, made on the farms, from soap fats and wood-ashes, is one kind of potash soap, and has a dark color because clean fats are not used. The soap used by the writer was white, because made of clarified fats, and was expensive—seven and one-half cents a pound—but should be obtained for much less. It came in bulk, in barrels.

Using one part cement to two parts sand, it takes from two to three twelve-quart buckets of water for each barrel of cement to mix mortar to trowelling temper. Concrete requires from six to eight buckets of water. The wetness or dryness of the sand (except the very extremes) may be disregarded, as laborers will vary the quantity of water, from batch to batch.

Lehigh cement is put up in bags of ninety-six pounds each. When mortar is mixed in the proportion of 2:1 there will be approximately 100 pounds of cement to 200 pounds of sand, therefore the alum was put up in three-pound bags, and one bag of alum was used with each bag of cement.

Therefore it takes 3×4 , or 12 pounds of alum to each barrel of cement in 1:2 mixtures.

The extra cost would be:—

Soap, 2 lbs. (with 8 buckets, or 200 lbs. of water) at 7½ cents....	15 cents.
Alum, 16 lbs. (with 1:3 mixtures) at 3½ cents.....	56 "
Extra cost per batch of concrete.....	71 "

In a concrete proportioned 1:3:5, each batch will make about .75 cubic yard of masonry in place. At that rate, the extra cost would be, approximately, \$1 per yard. But both soap and alum, in larger quantities and in grades not as fine, should be obtained for much less money.

The writer, however, does not believe that it is at all necessary to build a concrete wall in this manner, as a 2-inch mortar face should be ample. In the filtration works at Apollo, a skin averaging less than ½ inch in thickness seemed to be sufficient.

W. K. HATT, Assoc. M. Am. Soc. C. E.: Various solutions have been used to render concretes water-tight, or to protect stonework. Some of these solutions form the basis of patents granted for the manufacture of artificial stone. The speaker has experimented with two of these: silicate of soda, and alum and soap. The silicate of soda, called water-glass, is used locally in Northern Indiana as a surface coating for reservoirs and water-cisterns. The soap and alum solution has been used for some time, as alternate coatings for the surface of masonry, under the name of Sylvester's wash.

Alum forms the hardening agent of many patent mixtures for making artificial stone. One patent, granted in 1876 to L. L. Leathers, for artificial stone,¹ prescribes a mixture of cement and sand moistened with a solution formed of a mixture of fat and lye with alum.

The speaker was confronted a few years ago with the problem of designing a mortar for use in forming the segments or plates out of which burial vaults are moulded. These burial vaults must be water-tight, and since the expense of freight soon limits the area to which shipments may profitably be made, the mortar should be as light as possible. The conditions were met by a design of a mortar of two cement, and five fine bituminous ash made into plates strengthened by ordinary poultry mesh. Experiments were conducted with silicate of soda, and with the alum and soap solutions, to determine the effect of these on the strength and porosity of the mortar. The following results, in general, are of interest:

The effect of silicate of soda is to diminish the strength of both ash and sand mortars more than fifty per cent, and to diminish the absorption of the ash mortars about fifty per cent.

The effect of alum and soap mixed in with the mortar at the time it is gauged is to strengthen and harden the ash mortar about fifty per cent and to diminish its absorption by fifty per cent. A soap solution alone will diminish the absorption (by the action of the alkali in the cement on the soap) but will not increase the strength.

The strength of the sand mortar is not greatly affected by the soap and alum, but its absorption is decreased about fifty per cent. The effect on the absorption was measured by comparison of the weight of water taken up by briquettes which were immersed after having been dried out. Check tests were made by measuring the water which percolated from the outside through the walls of hollow cylinders.

The speaker believes that this is the first use of a soap and alum solution for waterproofing, in place of the usual gauging water.

The method used by the speaker is as follows: A five-per-cent solution of ground alum and water is prepared; and a seven-per-cent solution of soap and water. The alum solution is mixed with the mortar to the amount of one-half the ordinary gauging water. The soap solution is then applied in amount to bring the mortar to the desired plasticity. The soap and alum, acting together, cause

the precipitation of an insoluble compound in the pores of the mortar.

A solution of lye and alum is said to produce the same effect.

In regard to the problem of making pipes, the French engineers believe that in order to make a concrete pipe hold water, a sheet-iron tube must be placed inside of it when the head is about 50 feet, and such pipes have been used under a head of 300 feet. When the head is less than 50 feet they make a reinforced concrete pipe without any steel lining.

J. JAMES R. CROES, Past-President, Am. Soc. C. E.: The proposition for discussion is whether it is possible to make concrete which will be impervious to water. This is a very different thing from making an existing mass of concrete impenetrable by water. The latter requires only the application of an impenetrable coating to the surface of the mass. The former requires the entire interior composition of the mass to be such that water will not percolate through it at any point.

That a small mass of concrete can be made which will be entirely impervious to water, is incontrovertible. The question is, whether, in practice, a number of such small masses can be united in such a manner that the joints between them would be impermeable, also. Theoretically, there is no doubt that they can. Practically, the difficulty is in securing proper manipulation of the materials, at a reasonable cost, and it is to be hoped that the discussion of the subject here will elicit descriptions of methods used by various practitioners in constructing large masses of concrete, and statements of the results obtained, both as to efficacy of the means used and the expenditure required to produce certain results.

But the mechanical combinations and the manipulation of the materials required to reduce the void spaces in a mass of fragments of different materials to a minimum and thus prevent the percolation of water, are not the only points to be considered. Chemical changes take place in materials thus compounded, and, of late years, studies have been made of the action produced by the introduction of other substances than stone, sand and water, into the composition of the mass which is to be made impervious, producing chemical action which reduces the porosity of the mass. It is to be hoped that anyone who has taken part in investigations of this kind will contribute to this discussion.

Mr. Cunningham's communication refers to an application of the Sylvester process, which was invented about sixty years ago and was used with success on the exterior walls of buildings. It was applied to the gate-houses of the Croton Reservoir in Central Park, New York City, and is described in the *Transactions*² of this Society. That was a wash of soap and alum applied to the surface of a brick wall to prevent the percolation of water through that wall. In the case mentioned by Mr. Cunningham the experimenter mixed all his materials together, that is, the soap, the water and the alum were put in as constituent parts of the mortar itself, and the chemical action, which in the case of the wash occurred only on the exterior of the wall, was made applicable to the whole interior.

In the case of the cellar mentioned by Mr. Lowinson, an impervious material was placed between the layers of concrete. That was not making concrete impervious to water, but was simply keeping the water away from the concrete.

The question is, can the concrete itself be made impervious, and it seems to the speaker that the experiment mentioned by Mr. Cunningham is a most interesting one, and one which is capable of further amplification, that is, of producing the chemical change in the constituents, so that when they are all mixed and placed together, the water will not penetrate them. Chemical action takes place in the whole of the wall, and, somehow or other, the pores are filled up by the addition of the soap and alum.

Now, can we not make a concrete which contains some materials which will act together chemically? The composition of concrete is purely, or almost entirely, mechanical. Can some substance be introduced into the concrete by which a chemical change will take place, which will make that concrete thoroughly impervious to water? This experiment indicates that such can be done.

Although masonry is impermeable to water, a crack may occur in it the same as in concrete. It is desired to make the concrete itself, in the mass, impermeable to water, but cracks cannot be prevented from occurring on account of unequal settlement, without very great care in construction. What is wanted is a material which, when made in a large mass, will be impermeable to water, provided it does not crack from unequal settlement, or expansion and contraction. Either wall or either material may be impermeable, but if a crack occurs, the water will go through it.

DEFECTIVE VISION AND ARCHITECTURE.³

I READ very lately that, in the opinion of an eminent oculist, a great deal of the defective eyesight which is annually becoming more prevalent in towns is due to the fact that these urban dwellers look so seldom on the pleasant restful green of the woods and fields, and so constantly on dull bricks and mortar, and if this opinion is well founded, it might undoubtedly make us give more consideration to the prominent tints which we use for both the insides and outsides of our dwellings. The condition of the brain is

¹ *Transactions*, Am. Soc. C. E., Vol. I, p. 203.

² Extract from a lecture by J. Slater, F. R. I. B. A., before the Sanitary Institute Congress at Bradford, Eng., July 9.

³ Letters Patent No. 178 307.

seriously affected by the state of the nerves of the eye, and the undoubted increase in diseases of the brain of late years may possibly depend, not only on the hurry and bustle of the daily life of the average business man, but also upon the dull, gloomy, repulsive nature of his outlook for so many hours of the day. Just as light causes us to feel cheerful and warmth makes us feel comfortable, so I believe it will be found that color in soft graduated tones has an immense effect on our well-being. Staring, garish, inharmonious tints must have a somewhat similar effect through the eye on the brain, as loud cacophonous sounds have through the ear, and, strange as it may sound, I firmly believe that it is almost as essential for the construction of healthy homes that the tints of the woodwork and the wall-coverings should be considered as that the drains should be properly laid. Why is it that, however luxurious and well furnished a house may be, we frequently feel a sensation of fatigue when we pass an hour or two in its rooms, whereas in another we feel restful? Often, I believe, because the nerves of the eye are strained and wearied. And here certainly is an opportunity for the builder to adopt sanitary methods rather than unsanitary ones at practically no expense at all. Instead of the haphazard arrangements of wall-papers, without any consideration of the aspect of the room and the quantity of light which it enjoys, a very little knowledge and thought would show that neutral tints are desirable in rooms which get a large quantity of sunlight and warmer tints for north-facing rooms. This consideration leads me to my next point, viz, the enormous importance of paying proper attention to aspect. The immense value of sunshine, especially in these northern latitudes, cannot be too strongly insisted upon, and in this respect it appears to me that the large blocks of artisans' dwellings which have lately been erected in so many cities lamentably fail. As a rule, particularly in the cases where the municipalities build these dwellings, and the cost is charged to the rates, care is taken that all the blocks have an ample air-space between them, but even with the London County Council, whose artisans' blocks are excellently designed, well-built, and with plenty of air-space, the height to which they are carried makes them dull and somewhat gloomy. Of course, here again the question of cost comes in, and generally where old buildings have to be pulled down and insanitary areas cleared away, the capital expenditure becomes very large before a brick of the new buildings is laid, and in order to accommodate a sufficient number of families to obtain a rental that will give any return at all upon this expenditure, the buildings must be carried to a great height. I do not believe this can be done without prejudicially affecting the health of the inmates, especially the children. No doubt the conditions of life are infinitely superior to what obtained before, and the enforced cleanliness and general submission to regulations cannot but have an excellent effect on the dwellers in these buildings; and the mortality is admittedly low. But I should be sorry to see these huge blocks multiplied in the heart of our great cities. The object should be to get the workers away from their work when it is finished by increasing the facilities for quick and cheap transit.

The startling development of electric traction, which is the most marked feature of these last few years, offers a solution of the difficulty. I do not think the time is far distant when it will be the exception, and not the rule, for the workers to live in close proximity to their work when this is performed in crowded areas, and this would result in an enormous amelioration of the average health of the people as well as a fresh increase in the output of their work. There can be no doubt that the success of the bold experiment of which such places as Port Sunlight are the result, will encourage other large private firms to follow this example, and that manufacturing industries will have a tendency to be carried on at a distance from our large towns; but there must always be a large army of workers connected with the distribution and not the manufacture of commodities who will be compelled to carry on this work in the daytime under somewhat depressing conditions, and for these will come salvation in the shape of the tramway or the light railway. It is in this direction, combined with the erection of good small houses, amid bright and cheerful country surroundings, that I hope municipal enterprise will soon be turned. If some such policy could be carried out, just think how far-reaching would its results be. I sometimes look at the costly, well-equipped Board Schools, which have been erected in thousands during the last thirty years, and when I see these places, as they often are, in the most dingy and depressing surroundings, I wonder how the children who attend these schools can possibly grow up healthy. Asphalted playgrounds, surrounded often by high walls, where the only view is of bricks and mortar, are not the ideal training-ground for the future mothers and fathers of the people. You have only to compare the pale faces and weakly forms of the town-bred children with the ruddy bloom of those who are in the country, to see what an advantage the latter have, and I look forward to the day when all the elementary education will be carried on away from the large towns. You will think that I am wandering from my subject, but while on the question of schools there is one matter which I have very much at heart, and which I have more than once alluded to in other places, and this is directly relevant to the subject of this address. I have been speaking of the outer surroundings of our elementary schools, but turn to the inside; these buildings are well-built and well-found in all respects, but are they beautiful? As a rule, perfectly plain walls, with no decoration on them, are all that you will find. Could not this be altered and improved at practically no cost at all to the ratepayers? There is scarcely a large city in the kingdom

that has not its art school, where most excellent work is done in painting, modelling, ironwork, etc., founded by the ratepayers and under municipal control. Why should not the art-school students be employed in decorating the Board Schools? It would be far better practice for a student than merely designing and painting a colored decorative frieze to be placed he knows not where, that he should, of course under the guidance of the art master, take an actual classroom and decorate it well. Or why should not a modelling student design and carry out some plaster enrichments or a little statuette for a niche? It might all be done as part of the work of the session, as I said, at no appreciable cost at all. And just think of the effect on the Board School children of spending so much of every day in surroundings which are bright and cheerful and which would teach them to know and appreciate what is beautiful! Their work would be better done, their characters improved, their minds trained unconsciously, and undoubtedly their physical health would be better. I might considerably amplify these remarks, but I cannot do better than conclude with a quotation from the old Greek philosopher, Plato, who says: "In the case of our artists, the bad habit must be stopped of depicting in statues or buildings or any other artistic production, what is coarse or illiberal or ugly. If a man cannot refrain from this, we must forbid him to produce anything, lest our children, if reared among images of evil as in a bad soil, drawing their impressions one by one from many sources every day, may unconsciously establish an evil precedent in their own souls. We must rather seek for artists to trace out what is beautiful and noble in nature, and thereby enable our children, like plants in a good soil, to be assisted by their environment, so that whatever meets eye or ear from these beautiful works may, like a health-bearing breeze, lead them unconsciously from their earliest years to love and be in accord with beauty and reason." These words are as true now as they were 2,500 years ago.

It is impossible to over-estimate the good which has been done in the last thirty years by the Sanitary Institute, by its examinations, its publications, and not least by its Congresses, which do so much to spread abroad in all parts of the country a knowledge of the principles of sanitation; and if its founders could see the results achieved, they would feel fully repaid for their exertions. But there must be no cessation of activity. Very much has been done, salient abuses have been abolished, and an excellent foundation has been laid, but the superstructure has yet to be erected. And every one can help in the work. It cannot too often be dinned into the ears of the governing bodies that upon the health of the people depends the wealth and well-being of the nation, and the suggestions which I have thrown out will, I hope, show you that the health of the people depends upon very much wider considerations than the mere regulation of drains and ventilation, and that architecture, not only on its structural side but on its highest and artistic side, has a closer and more intimate connection with hygiene than might be at first sight supposed. — *The Builder*.

BOOKS AND PAPERS

IT seems quite a lifetime since we all wrangled and squabbled over the annual exhibition of the Impressionists in Paris. "What in the world can you see in those hideous things?" said some: while others found the said things all that art should be. The show was the artistic battlefield of the day. It was in a sense very popular, because it afforded half an hour's diversion — and the work of Manet and his friends was visited much in the same manner as Monsieur Guignol or the Palais Royal theatre, to raise a laugh. M. Durand-Ruel believed in the movement, and believing in those days meant being a tremendous partisan. How we have changed! Now any one can see for himself at the Luxembourg Gallery the merits and demerits of the school.

M. Camille Maclair's book¹ is translated, not very satisfactorily, by P. G. Konody. "It is here where he . . ." is not quite grammatical, and using "or" thus: "or, color being simply . . ." is certainly not English — presumably the translator meant "thus"; "f. i." may possibly be intended as "for instance"; but the French "par exemple" might be rendered as "for example," or by i. e. The translator also uses "school" when he means an academy (école); and "Académie" for academy (a body of artists). Some other errors are: "the charm of his force," "he submitted the most perfect epitome of his atmospheric researches," "a great personality who knew"; they exhibited in "hired apartments."

The early Impressionists were rebels against Classical shams. Just as the pre-Raphaelites went back to the Primitives to get truth, so the Impressionists found truth in absolutely copying Nature. Whereas Millais, Mr. Holman Hunt, and a host of others, religiously copied each leaf of a tree, each twist of a stalk, the eyelashes of a face, so the Impressionists, Manet at their head, took pleasure in painting every detail of the "Bar at the Folies-Bergère," or the "Déjeuner sur l'herbe." So, too, Nature was depicted in her ugliest moods; rather, may we not say, she was distorted, for Nature is never absolutely ugly. But such works as the "Spaniard," the "Reader," the "Dead Toreador," and "Le Fife," not only prove Manet to have

¹ "The French Impressionists." By Camille Maclair. London: Duckworth & Co. 3s.

been an original painter, but stamp him as a reformer from the stagnation into which a good deal of art had sunk half a century ago.

Manet was the great innovator—he led the way for Degas, Renoir, Monet, Sisley and the Neo-Impressionists. The pity of it is that they delighted in ugliness for its own sake, and eccentric compositions. For example, because a head painted out of doors takes green reflections from the trees, is it necessary to paint the face in bright purple for shadows, orange lights, and emerald green cheeks? Such coloring may be true, but is it necessary to place your model in such a position as to oblige this treatment? Surely one quality of art is selection? There are many effects in Nature which transferred to canvas make very poor art. Some of M. Degas's ballet pictures, for instance, are charming as color, but why have painted the girl and her mother called "Waiting," from an eminence just above their heads, as if the artist had seated himself in a chair suspended from the ceiling?

The manner of work is unpleasant in the newer school. No doubt the placing of patches of bright colors in juxtaposition to one another, instead of mixing them, gives far more sunlight; and M. Claude Monet, Henri Martin, and others, demonstrate the fact in their work. But, inasmuch as it is necessary to place one's self at a great distance for the different tones to amalgamate, such theories carried to extremes do not work out well for pictures which are to be placed on the walls of small rooms—they become patchy. "Light," says M. Maclair, "becomes the sole object of the picture." That is true; but we cannot forget that paints are not sunlight itself, and cannot reflect the rays of the sun (the translator writes refraction); at best, one must substitute something which conveys the idea of sunshine, and such painters as M. Montenard and others who depict the South, have shown a method that is happier than the Impressionists,' which is so fatally wanting in repose.

M. Maclair defines Edouard Manet as a "beautiful painter," because apparently he "painted without bitumen, without glazing, without tricks." That he was an original painter waging war against mere prettiness and false sentiment, we may concede; but that he ever worshipped beauty as the rest of the world conceives it is certainly not possible to believe; and as to other painters' methods, surely bitumen is essentially a pigment of the past. Had Manet not gone out of his way to be eccentric and hideous (see his frames cutting off half a head, or the top of it), he might have been one of the leading painters of the time; but the vulgarity of his models, and even of his coloring, prevents him taking a place above the other Impressionists, although he fought the first battles. Degas was a better colorist—his greys and pinks are delightful, and force one to see poetry in his ballet subjects in spite of the common type of women he depicts. His "Horses in the Meadows" make one wish he had been an animal painter. M. Maclair considers that Renoir's "Box" recalls Reynolds. A woman of vulgar Parisian type in evening dress and a child with a bouquet, certainly "recall" to no one else the refined grace of a Reynolds, whose portraits are those of ladies, whether the originals were so or not.

The Impressionists are to be praised for following their convictions; they were original thinkers and original workers—men of power having consciences which guided them towards what they held to be truth—whether their work is absolutely truthful is doubtful. In so far as an impressionist work is one, which, when it has conveyed to the beholder the impression felt by the artist, need go no farther, in other words, a sketch, it is good. Finish for the sake of finish is bad; but equally bad is the eccentricity which is the foster parent of notoriety, and it is difficult to absolve the older members of the school and the Neo-Impressionists of this vice. Composition they threw to the winds, emulating the principles of Japanese art; but they forgot that a Jap painter always places his figures and plants exactly where they should be to make a successful decorative composition. However, art probably owes much to Manet and his followers, for they saved us from decadence through false sentiment, and above all, they took us out of a groove and made us take Nature as we found her.

MR. F. T. HODGSON'S useful little book¹ on the Steel Square has been rewritten and expanded into a work in two convenient volumes, proving, as its author claims, with good reason, "an encyclopedia of steel-square knowledge." It is needless to say that no one has yet exhausted the possibilities of usefulness of what Mr. Hodgson well calls "that wonderful instrument, the American steel square," and his book, comprehensive as it is, will suggest to the intelligent reader, still more extended applications. To mention only a few of the uses to which it can be put, Mr. Hodgson shows us how to calculate with it the tensile strength of different steel rods; the cost of lumber, the distance of an inaccessible object; the height of a tree or building; the accuracy of a semicircle; the side of an octagon, hexagon or various other polygons, and so on; besides the familiar measurements of rafters, hips and valleys. Considering the importance of the steel square to every worker in wood, it is not surprising that, as Mr. Hodgson tells us, several hundred thousand copies of the various editions of his book have been sold. The demand, as he tells us, shows no sign of diminution, and the new edition is so much more comprehensive than the old ones that those who have read the latter will certainly want the other.

¹ "A Practical Treatise on the Steel Square and Its Application to Everyday Use." In two volumes. By Fred T. Hodgson, Member of the Canadian Association of Architects, Author of "Modern Carpentry," etc. Chicago: Frederick T. Drake & Co., Publishers. 1903. Price \$2.



[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. D. H. BURNHAM & CO., ARCHITECTS, CHICAGO, ILL.

A STUDY of the ground on which the United States Military Academy is located leads to the belief that there is one main axis superior to all others for a monumental treatment of this post. When one stands on the balcony of the Observatory, from which is obtained a broad view of the Government domain and the surrounding country, this belief is confirmed, for this axis is the natural one in the landscape. It begins on the east side of the river, and, passing across the water, bisects the plateau which forms the parade-ground, and then passes upward toward the mountains of the background through a dip between the foothills that lie at their feet. It has seemed wrong to neglect the course to be pursued when Nature herself has so plainly indicated it. It therefore becomes a question whether one should adopt any compromise offering an inferior solution of the problem, and it would be a compromise to attempt to retain many of the buildings already erected when an ideal design is plainly possible for both the practical and beautiful sides of the problem. And because this work is to be for all time, we have, after much hesitation, come to the conclusion that we should present that scheme which will ultimately bring about the noblest results rather than that which at best must ever be unequal to it. The main reason for this choice lies in a conviction that order and system of a high quality surrounding a young soldier will strengthen within him a respect for law, so far as environments can affect him.

The design has three principal divisions:—

1. The central one, having to do most directly with the life and training of the cadets of the United States Army.
2. That at the left, having to do with the life of the officers on duty and with visitors, in short, with the social side of the post.
3. That part at the right, which has to do with enlisted men, the commissary, and the more essentially working parts of the post.

These three divisions have been made in order that the men of each section may, as far as possible, carry on their distinctive functions without interfering with the necessary activities of others whose duties do not commingle. These three divisions obviate to a great degree the necessity for using the parade-ground and the avenues in front of the Academy and barracks, for carrying supplies and for passing troops of men. For the same reason, the cavalry and artillery ground has been placed in the plain on the northwest of the post, conveniently near this section of the scheme.

The central part is on a grand axis running northeast and southwest, the cadet barracks on three sides of a square, in the centre of which is the Academic Building. The extension of the cadet barracks is to be used on one side for the Y. M. C. A. and the reception-room, and the museum and library on the other. These extensions complete the architectural treatment of the southwest and of the parade ground. The cadet courtyard is ample for all formations of the corps, and equally accessible to all the barracks. Behind the barracks is a plantation bordering on the drive that passes back of it. The cadet court is dominated by the Commandant's headquarters and those of the officers of the day, which are in the southeast part of the Academic Building.

From the cadet court through a broad arch, the way opens into an amphitheatre of a size that can easily be canopied, and where can be held large formal or informal gatherings of the cadets, of members of the army or of mixed companies of military men and civilians. This amphitheatre forms a sort of lower court to the sacred terrace above, on which terrace stands the house of God, properly placed there as the crowning feature of the grand design, high above all other buildings, but kept in strict relationship to them and upon the main axis. This church is reached by broad stairs and by a walk, furnishing easy access from the hotel and officers' town. From the cadet court under an archway and through a wooded alley access to the mess-hall is had. A similar passage is opened to the important cadet buildings on the right, the gymnasium, the riding-hall and the store.

The administration buildings and the gymnasium complete the northwest and southwest corners of the framing of the parade-ground, and they are connected with the main buildings by covered porticos. Behind each is a large elliptical fore-court. The two courts are arranged so that the finest distant views over the river are obtained from them.

Commanding the superb view of the Hudson River, a theatre has been arranged on the northwest slope; this is adapted to music, drama and athletics, and its situation is like that of the theatre of Dionysius under the Acropolis at Athens. It is this view, across the theatre, that greets the visitor at the main entrance on passing through the triumphal arch of the fore-court, at the southwest corner of the parade-ground.

It will be remarked that the orientation of this axis northeast and southwest presents great sanitary advantages, also that the mess-hall and hospital are retained, the Cullum Hall being lowered to a terrace below its present position.

The officers' and visitors' parts: This is naturally subdivided into two axes, that of the arrival and the common social life of officers and visitors, and that of the more intimate and exclusive life of the post. Passing through the natural landing-place, an axis traverses successive terraces until the hotel is reached. The visitor is thus greeted at once on his arrival and commands, during his approach, the view of the river, and from the hotel terrace the parade-ground. Grouped around this axis on terraces are the houses of those officers whose interests place them in relation with the outside world.

(2) Here is the heart of the officers' home; it is placed in touch with the park land of the southeast and follows in successive terraces and gardens the natural nest of the ground. Advantage is taken of the overflow of the reservoir to form a cascade and lake in the centre of this composition.

(3) The soldiers' town we have grouped around one court; the band-practice building and the commissary directly below. Facing the recreation-ground is the assembly-hall for enlisted men. The guard-house is on the axis of the court commanding the approach from north dock and a new freight station, the sources of supplies. To the northwest, in proximity to cavalry and artillery barracks, are the stables, within easy reach of both riding-hall, and cavalry and artillery ground.

As a frieze, the proposed scheme skirts the Point. In the centre is the Academy proper, to the south its command and instruction, to the north its service, connected, the one by the post headquarters and the other by the athletic group.

Thus, while seeking an ideal working scheme, the aim has been to preserve and enhance the natural beauties of the site, in our estimation the real basis of historic associations, nowhere obtruding the architectural to the detriment of the natural. We have chosen a background of hills as a frame for the composition.

Built largely of native stone, relieved in effect by smaller monuments of marble, the new Academy lies in harmony with nature, and is in itself a perfect organization.

CUBICAL CONTENTS.

- (1) Additional cadet barracks. Four buildings, 275,000 cubic feet each; two buildings, 535,000 cubic feet each.
- (2) New academic building, 3,975,000 cubic feet, including wing.
- (3) Chapel, 1,020,000 cubic feet.
- (4) Riding-hall, 6,400,000 cubic feet.
- (5) Post headquarters, 550,000 cubic feet.
- (6) Administration building of the corps of cadets, 185,000 cubic feet.
- A — Reception-hall of cadets, 425,000 cubic feet. B — Museum and library, 425,000 cubic feet.
- (7) Building for contagious diseases, adjacent to cadet hospital, 120,000 cubic feet.
- (8) Cadet store, 475,000 cubic feet.
- (9) Post-office, telegraph and telephone exchange building, 105,000 cubic feet.
- (10) Building for bachelor officers' quarters, 130,000 cubic feet.
- (11) Quarters for married officers:

53 buildings;	45,000 cubic feet each.
2 " "	85,000 " " "
4 " "	40,000 " " "
- Apartment building, 400,000 " " "
- (12) Main guard-house; 105,000 cubic feet.
- (13) Post exchange and commissary building, 230,000 cubic feet.
- (14) Cavalry barracks, 300,000 cubic feet.
- (15) Cavalry stables, 600,000 cubic feet.
- (16) Artillery barracks, 300,000 cubic feet.
- (17) Artillery stables and gun-shed, 650,000 cubic feet.
- (18) Cadet laundry, 190,000 cubic feet.
- (19) Two fire-engine houses, 85,000 cubic feet each.
- (20) Heating and lighting plant, 180,000 cubic feet.
- (21) Hotel for 200 guests, 1,000,000 cubic feet.

PLAN OF THE SAME.

THE DOMUS VETTIIORUM, POMPEII. MEASURED AND DRAWN BY MR. WM. L. WELTON.

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COMPETITIVE DESIGNS FOR CHAPEL: U. S. MILITARY ACADEMY, WEST POINT, N. Y. MESSRS. D. H. BURNHAM & CO., ARCHITECTS: THREE PLATES.



PROPOSED DAM ACROSS THE MISSISSIPPI.—There is a proposition to build another dam across the Mississippi River, this time at the foot of the Des Moines Rapids at Keokuk, to produce a water-power of 50,000 or 60,000 horse-power, which can be used for industrial purposes in all of the cities and towns in that vicinity, and at the same time furnish deep-water navigation for more than forty miles between Keokuk and Burlington. Engineers who have studied the proposition consider it not only feasible, but as promising great advantages to all that section of the country. They not only recommend but predict the construction of other dams up and down the river for similar purposes in the future; one which will perform a like service, furnishing water-power and navigation between Rock Island and Clinton, another below Prescott to create deep water between St. Paul and Lake Pepin, until the entire upper Mississippi is harnessed to electric plants and distributing its mighty power over wires through the States which lie upon its banks. This is the French plan, and France offers the best example for the development of internal water-ways. By the canalization of her rivers and connecting them she has secured an interior water transportation system of over 7,000 miles, one-third the mileage of her railways. The area of France is about 200,000 square miles, a little less than that of Wisconsin, Minnesota, Iowa and Illinois combined—the four States to be directly affected by the improvement of the upper Mississippi—and each of these States has several contributing streams no larger than those which now form a part of the French water-way system. In fact, engineers who have studied both situations assert that the canalization of the tributaries of the northern Mississippi will cost very much less than the \$200,000,000 which the French Government has spent for a similar purpose. The traffic of the French canals is about one-third of that of its railways, and consists mostly of coal, iron and other bulky merchandise. Nor has the development of the system affected the railways unfavorably. On the contrary, the increase of business has been as much as they could handle, and, but for the assistance of the canals, there would have been frequent and embarrassing blockades. — *Boston Transcript*.

A STORY OF BANGOR CATHEDRAL.—The death of the Dean of Bangor, who was looking forward to the reopening of the choir of the Cathedral on September 3, after its redecoration at the expense of Lord Penrhyn, recalls a good story of the restoration of the Cathedral under Dean Vincent. The Dean was one of those who helped the late Mr. Henry Hoare, the banker, in his work for the revival of convocation. Mr. Hoare often stayed at Bangor. He used always to attend the early morning service, and one day complained to the Dean of the coldness of the Cathedral and its ruinous condition.

"Why do you not take steps to restore it?" said the banker.

"What am I to do?" said the Dean.

"Go and see Lord Penrhyn (the late), and tell him that I have not an acre of property in the diocese, and will give £1,000."

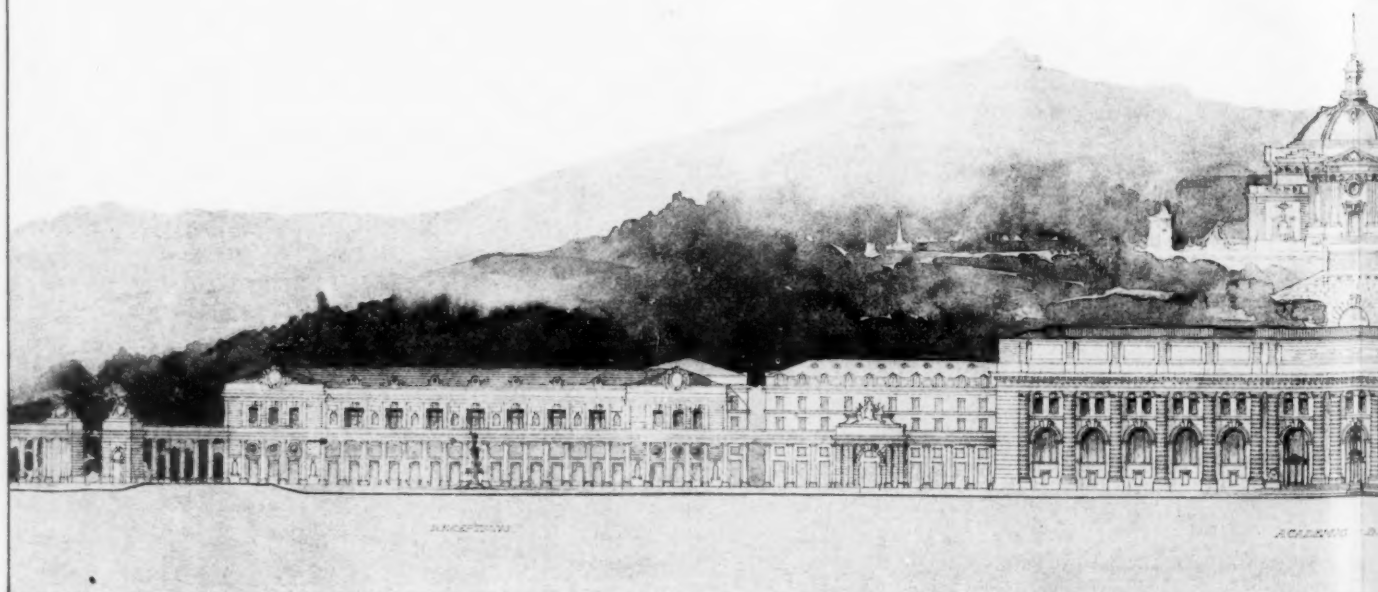
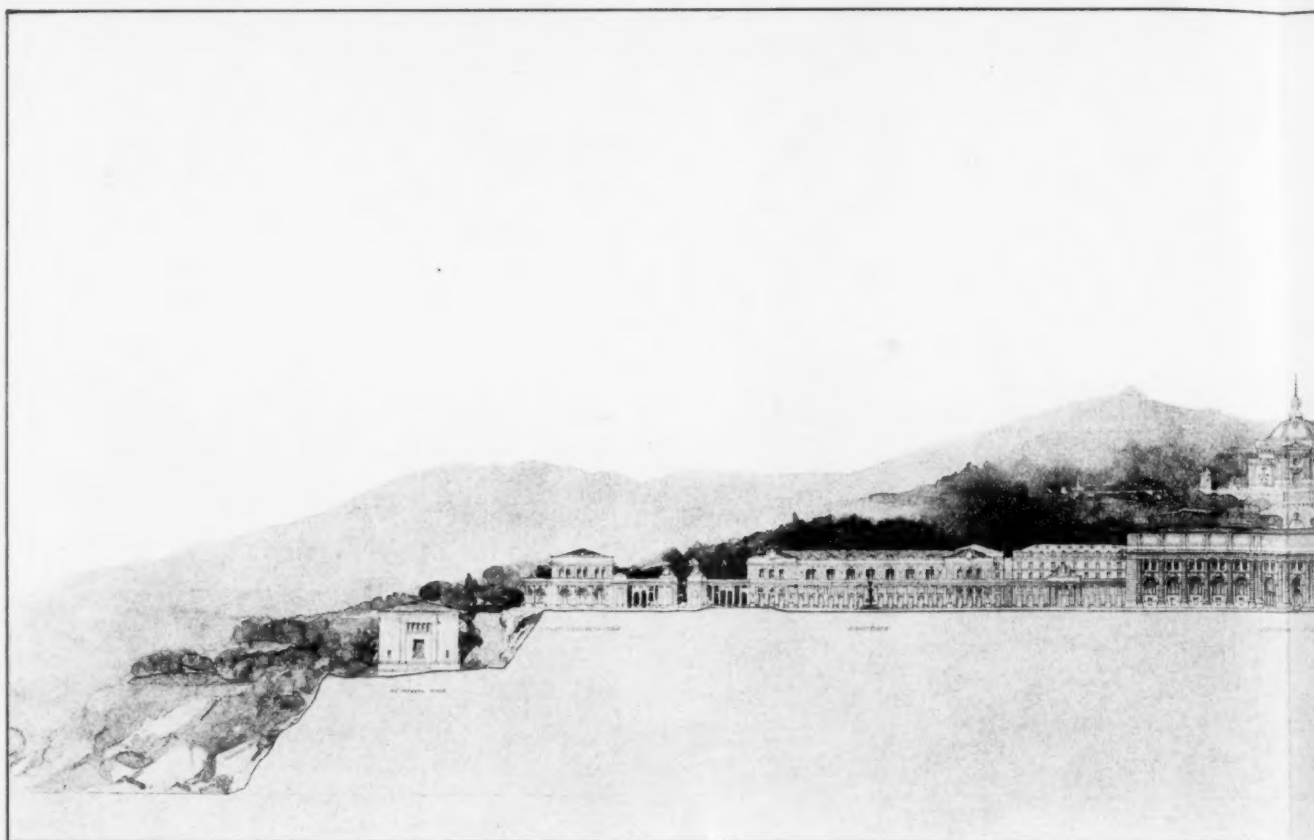
Mr. Hoare went to Carnarvon for the day, and at dinner asked his host how he had got on.

"Why, wonderfully," was the reply. "Lord Penrhyn was surprised I had not asked him before, and gave me £5,000 to go on with."

After that Lord Penrhyn gave immense sums to the Cathedral. — *Westminster Gazette*.

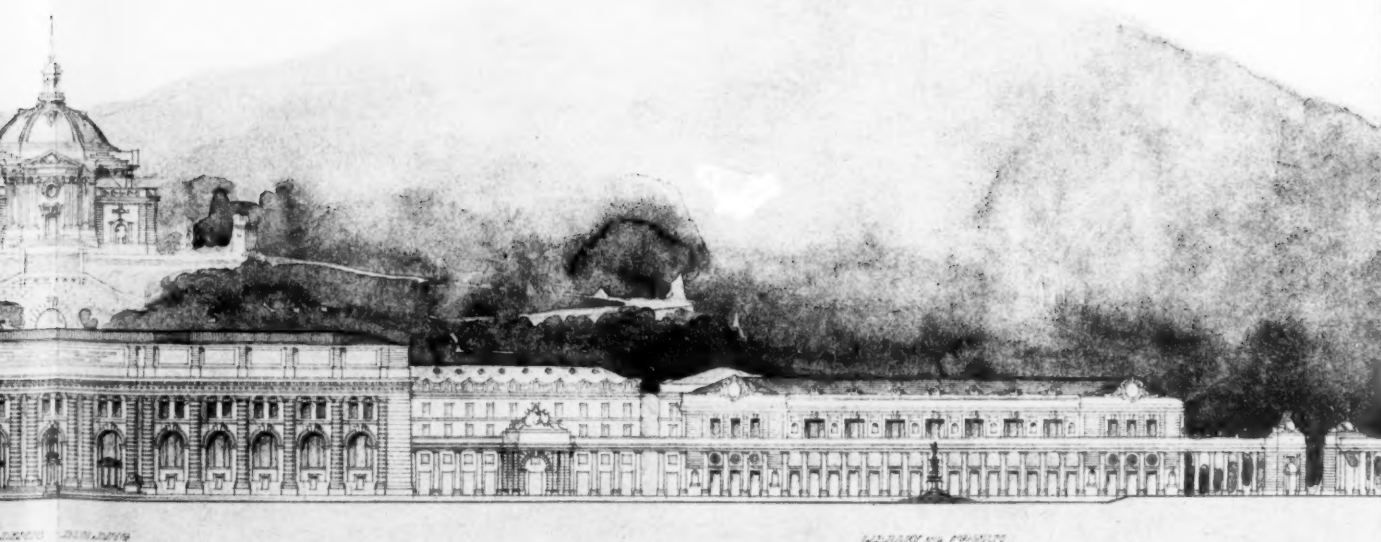
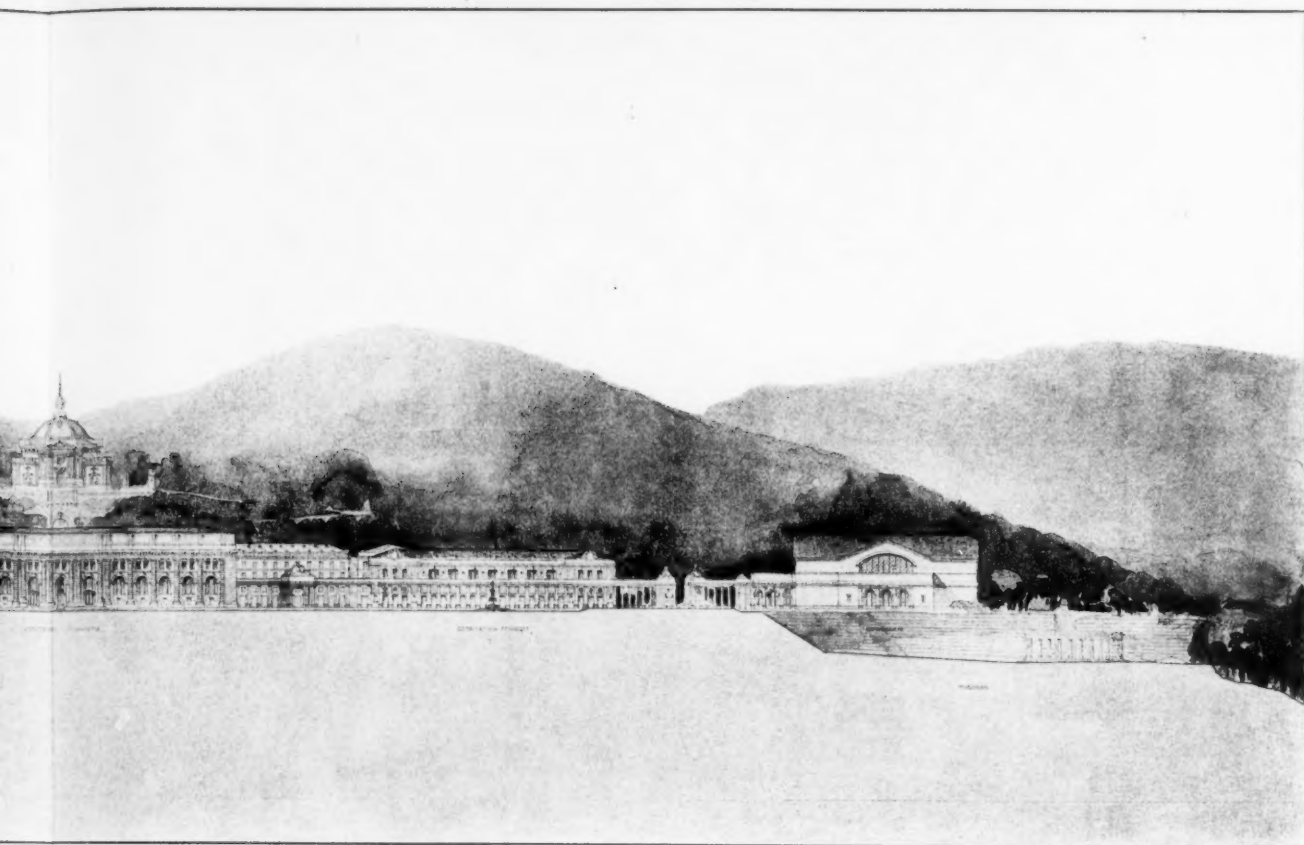
HOTEL LABEL COMPETITION.—The *Daily Messenger* of Paris, formerly *Galignani's Messenger*, has announced three prizes which it will give for the best hotel labels—1,000, 500 and 250 francs, respectively. The designs in competition will be reproduced in December. It appears that tourists, being watched so closely that they find it difficult to abstract pieces of stone from historic buildings, bits of curtains from palaces, and toes and fingers from works of public art, have taken to collecting the labels which the hotel porter smears on trunks and valises as an advertisement of his hotel. The announcement is headed: "Open to Hotel Keepers," and begins: "The increasing habit among tourists of collecting hotel labels, and the value which tourists so often attach to having their trunks display a large number of labels has suggested," etc. This brings into grotesque relief the mentality of the average tourist, for it is not to be supposed that such a competition would be undertaken unless there were grounds for the belief that many travellers do really collect such things. It will be interesting to learn whether art will enter into the designs of a competition which is "Open to Hotel Keepers." — *Exchange*.

CREMATION LAST YEAR.—The number of cremations in the several countries during the year 1902, according to crematory statistics was as follows: the United States, 3,158; Germany, 856; England, 452; Italy, 322; France, 4,805 (of which 305 were paid for, the others being gratis); Switzerland, 217; Sweden, 66; and Denmark, 44; total, 9,920. The total cremations in the principal cities of Germany are given as follows: Gotha (1878-1902), 2,934; Heidelberg (1891-1902), 1,174; Hamburg (1892-1902), 1,014; Jena (1898-1902), 289; Offenbach (1899-1902), 323; Mannheim (1901-'02), 63; Eisenbach (1902), 17; total, 5,814. — *Consular Reports*.



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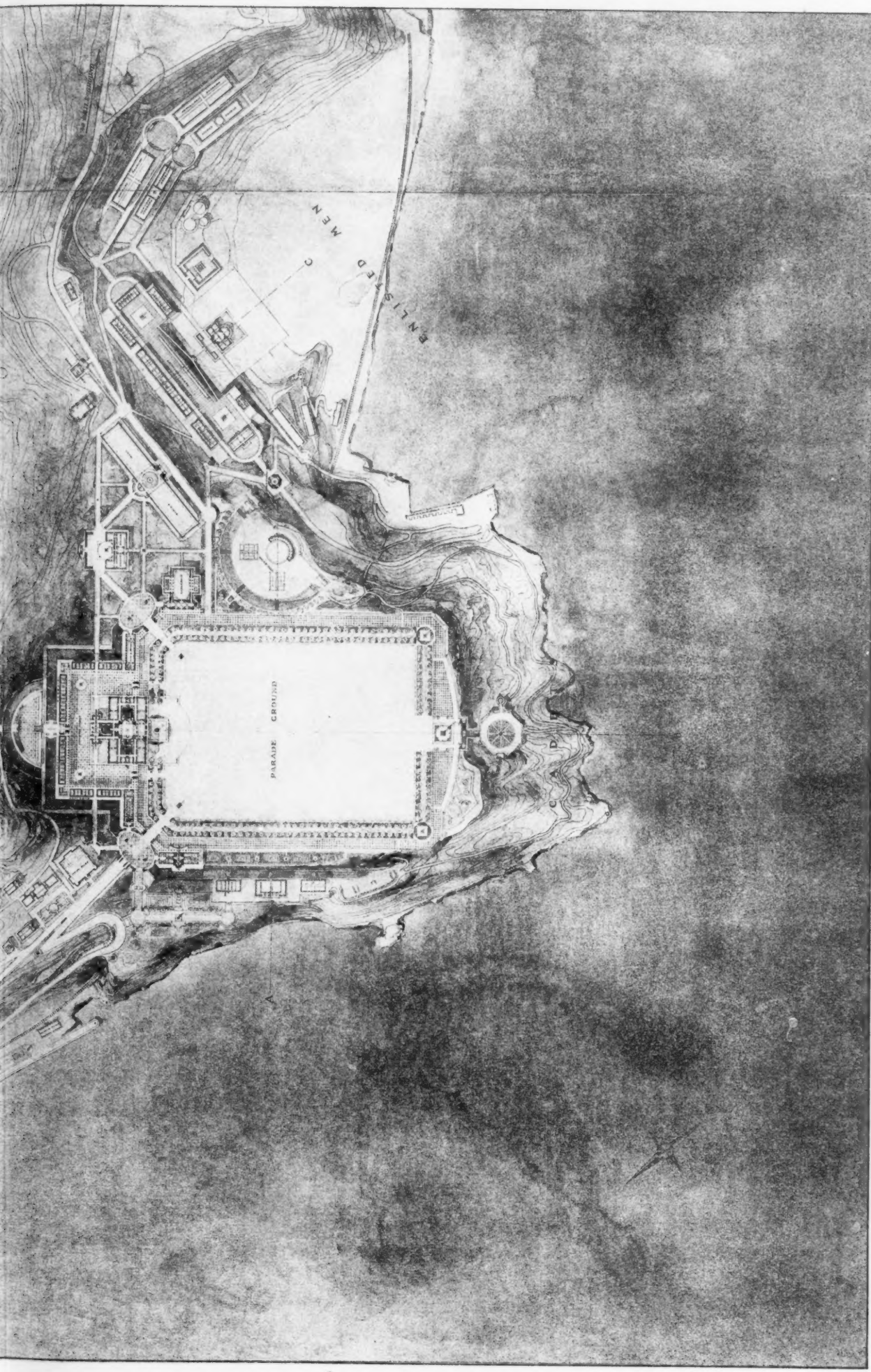
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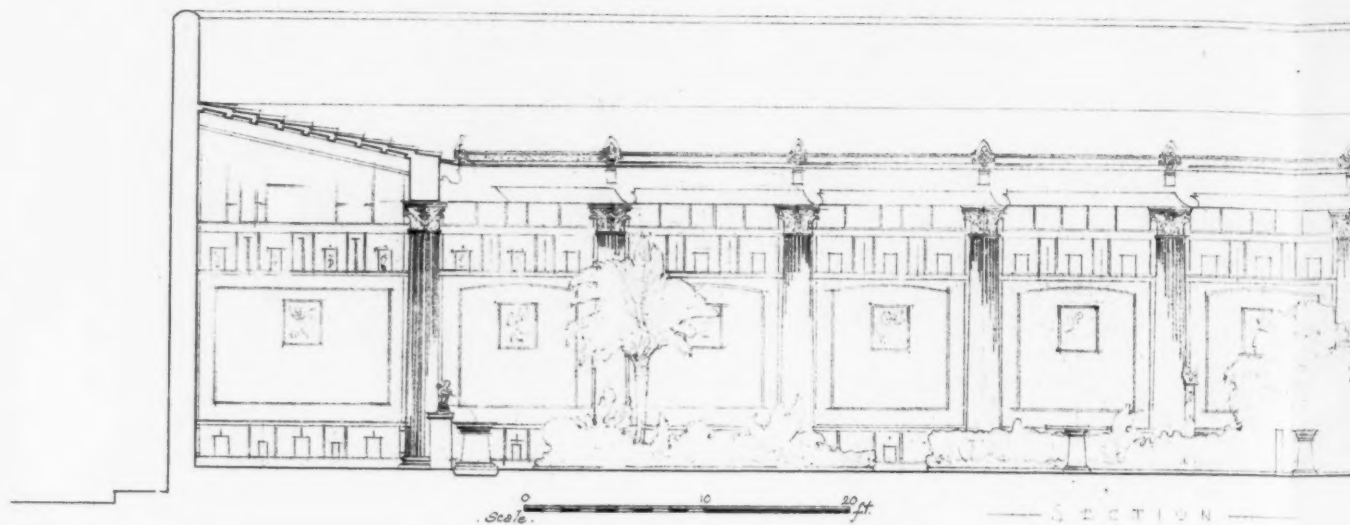


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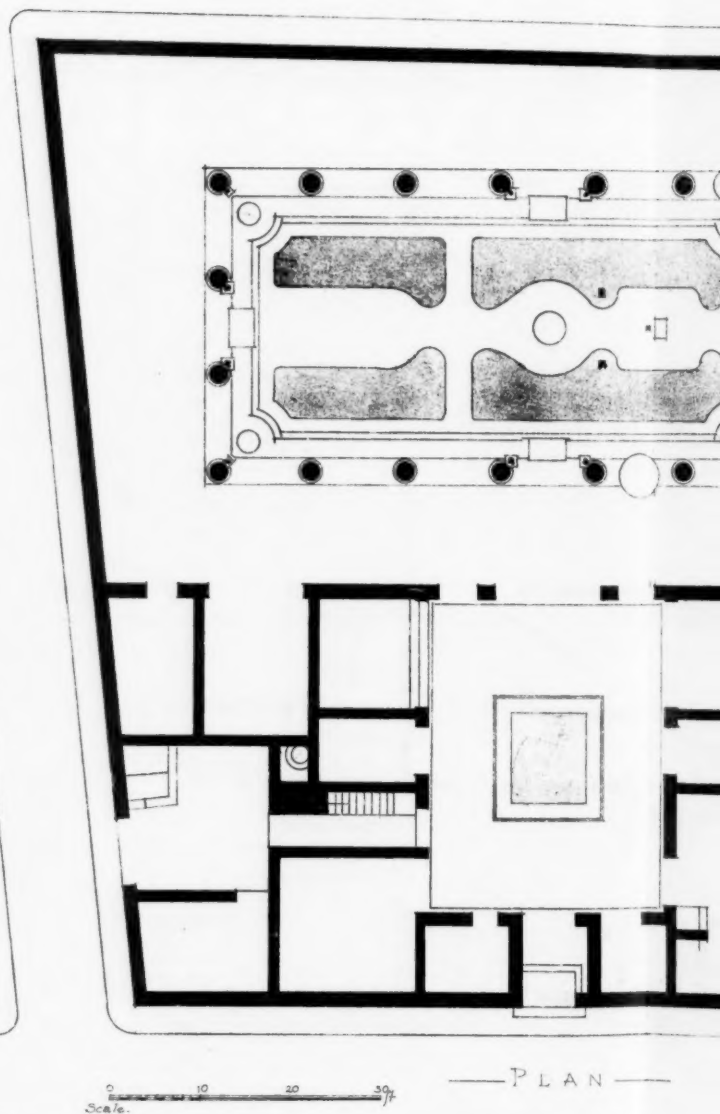
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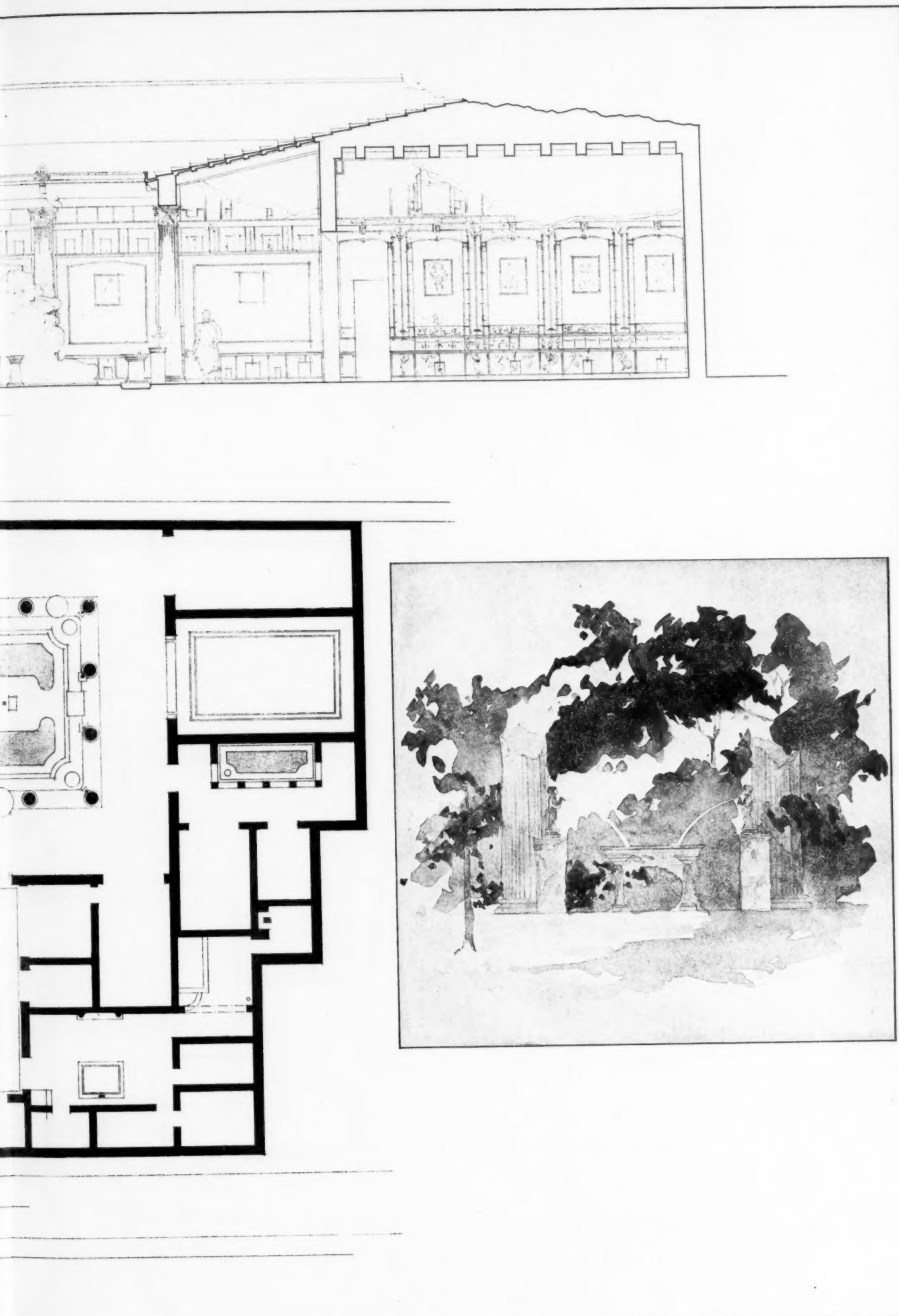
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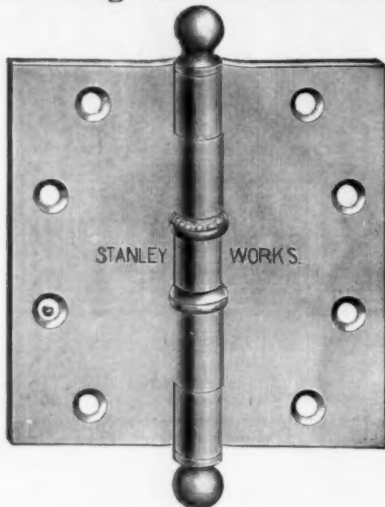
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CODE OF PRACTICE FOR SUB-ESTIMATING AND SUB- CONTRACTING

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 no one for what are usually known as sub-estimates, but it is not legitimate for him to receive bids from others for sub-work if he is himself figuring those portions independently.

ARTICLE II.

Award of Sub-Contracts.

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

ARTICLE III.

Penalty for not Awarding Contract to Lowest Sub-Bidder.

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

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

ARTICLE V.

Payments to Sub-Contractors.

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

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

ARTICLE VII.

Obligation of Sub-Contractor to Principal Contractor.

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

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

ARTICLE X.

Bids to Architects or Owners.

When bids for separate departments of work on a building are solicited by the architect or the owner, they should be directed 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 then 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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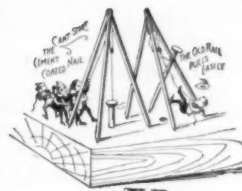
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Carpenters' Hall, Philadelphia, Pa.		" 1770
Independence Hall, Philadelphia, Pa.		" 1729
Faneuil Hall, Boston, Mass.		" 1741
and others.		

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
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Gloria Dei Church, Philadelphia, Pa.		" 1700
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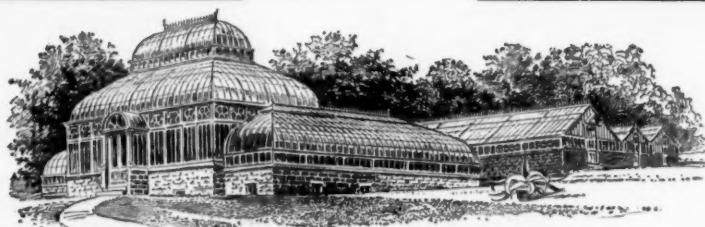
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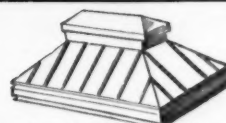
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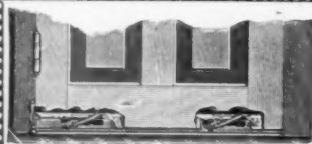
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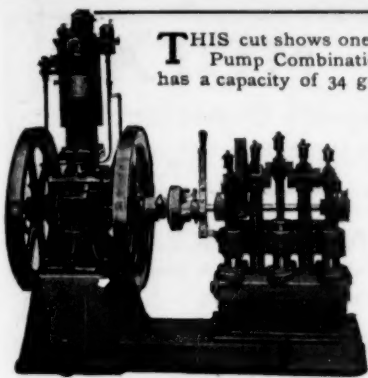
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BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

R. C. Fletcher has designed for the Gregory Electric Co. a one-story addition, 35' x 200', to the company's plant at W. 16th and Lincoln Sts. It will be of steel construction, and cost \$30,000.

William W. Blair has designed for Froehling & Heppa a three-story store and flat building, 45' x 111', to be built of pressed brick and stone, at 567-569 N. Clark St., at a cost of \$45,000.

William Stevenson will build a four-story apartment-house of 16 suites, containing ten or eleven rooms each, at 4745-49 Lake Ave. The building will have 100' x 110' of ground dimensions, and will be constructed of pressed brick and stone, at a cost of \$30,000.

The plans of Bruce Watson, county architect, for several important buildings have been approved by the County Board. One is the hospital for contagious diseases to be built in connection with the county hospital. It will be four stories high, 54' x 154', of fireproof construction and will have room for 116 patients. The cost is estimated at \$70,000. The other are 3 two-story cottages, one for insane and two for consumptive patients, at Dunning. The cost will be about \$125,000.

Mr. N. L. Anderson, 926 W. North Ave., has had plans prepared by Architect J. F. Knudson, 801 W. North Ave., for a flat building to be erected at the corner of North and Fairfield Aves., at a cost of \$12,000. Designs show a three-story structure, 25' x 164', of brick and stone, to have composition roof and all modern appliances.

John Jeffrey will build a three-story apartment-house at the northwest corner of 59th St. and Calumet Ave. It will be three stories high, 100' x 150' in ground dimensions, contain 24 suites, ranging from three to seven rooms, and will cost about \$60,000.

Mr. Weber has completed plans for a theatre which is to be built for A. C. Frost, president of the Chicago & Milwaukee Electric Railway Co., at Fort Sheridan. It will be one-story high, 83' x 136' in ground dimensions, of brick and stone, and will cost \$25,000.

Cincinnati, O.—Diltz & Wisenall, architects, Blymer Building, have prepared plans for a brick temple to be erected at Columbia and Delta Aves. for the Yeatman Lodge F. and A. M. 162, at a cost of \$25,000.

Decatur, Ill.—R. O. Rosen, Review Building, has prepared plans for an edifice for the congregation of the Central Church of Christ. Cost, \$25,000.

Denver, Col.—F. E. Kidder, 628 Fourteenth St., has drawn plans for a three-story brick and stone office-building to be erected at 15th and Court Sts. for Rodney Curtis. Cost, \$35,000.

Plans have been designed by Architect F. J. Störner, Jackson Building, for a three-story brick and stone store building to be erected at 16th and Stout Sts. for G. W. Right, at a cost of \$33,000.

Des Moines, Ia.—E. L. Watrous has completed arrangements for the erection of a fireproof office building, eight-story, at W. 6th and Mulberry Sts., to cost about \$100,000.

Detroit, Mich.—Architect J. E. Mills has completed plans for an apartment-house for McCurdy C. Le Beau, to be located on the north side of the Boulevard, between Woodward and 2d Aves. The construction will be of brick and stone, with a composition roof. The size on the ground floor will be 52' x 67', and the height, four stories. The building will be heated by steam and lighted by electricity. The interior will be finished in hard woods and the cost will be \$30,000.

Garden City, L. I., N. Y.—William J. Ryan, architect, of Brooklyn, has prepared plans for the new Catholic Church to be erected in this village. The plans provide for a handsome and imposing brick structure, 46' 8" x 99' 4", with a tower on the north side about two-thirds back from the front, 12' x 18'. The exterior will be constructed of red pressed brick, interior walls of buff and brown pressed brick. The church will be located at the corner of Franklin and 5th Sts. Edward J. Coles, of Hempstead, has received the contract for the carpenter work.

Greely, Col.—Robert Roeschlaub, architect, 52 King Block, Denver, has drawn plans for an addition to be erected to the Normal School, at a cost of \$55,000.

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

Jacksonville, Fla.—W. P. Richardson & Co., of this city, have secured the contract to erect the opera-house here. Cost to be about \$50,000.

Los Angeles, Cal.—Rumor states that the Farmers' and Merchants' National Bank will improve the property purchased at 4th and Main Sts. with a two story bank building to cost \$200,000.

The Riverside Hospital Association has appointed a committee to select plans for a new hospital to be erected between 12th and 13th Sts.

Middletown, Conn.—Competitive plans are being prepared for a new hospital to be erected here and the Middlesex County Hospital Association will make a selection in September. Dr. F. D. Edgerton, of this town, is Chairman of the Building Committee.

Nashville, Tenn.—Miles & Bradt, of Atlanta, Ga., have been awarded the contract for building the extension to the post-office here at \$166,000.

Newton, Mass.—Stickney & Austin, architects, have prepared plans for an office-building for the use of the Metropolitan Park Commissioners to be erected here by the Commonwealth. It will be located in Commonwealth Ave., and it is estimated that \$18,000 will be expended in its construction.

New York, N. Y.—Plans have been completed in the office of Barney & Chapman, architects, of 44 W. 44th St., for extensive alterations to the aquarium at Battery Park. Work will call for alterations to the reservoir, new skylights, new steam heating and other improvements. Cost, \$30,000.

Pollard & Steinam, 3 E. 14th St., are preparing plans for an annex to the Hotel Bristol at 122 W. 49th St., at a cost of \$90,000.

New York builders are estimating on the large new hospital which will be erected at Jersey City, N. J., from plans and specifications by Architect C. F. Long, 76 Montgomery St., Jersey City. The new building will be located at Baldwin and Montgomery Sts. and will be three stories high, measuring 40' x 121'. It will be constructed of brick and stone and have the latest improvements and appliances. Cost, \$200,000.

Several New York architects will submit competitive plans for the new buildings which are to be erected at Baltimore, Md., for the Johns Hopkins University of that city. Four new structures will be erected to cost about \$1,000,000. Architect Walter Cook, 3 W. 29th St., is a member of the advisory board of architects who will select the plans. The buildings will be thoroughly modern in construction and equipment.

Penn. Neb.—Plans by G. A. Berlinghof, architect, of Beatrice, were adopted for the new chapel for the local normal school. Cost, \$43,500.

Philadelphia, Pa.—A handsome new office-building will be erected for the Atlantic Refining Co. on the south side of Passyunk Ave., near Schuylkill Ave. It will be two stories high, measuring 63' x 118' and will be of brick and stone construction. Cost will be about \$50,000.

A large new manufacturing plant will be erected at the southwest corner of 11th and York Sts. for the Western Electric Co. from plans and specifications by William Steele & Sons, architects and engineers. The new building will be two and three stories high and measure 170' x 240'. The cost will be about \$100,000.

Polk, Pa.—The trustees of the Western Pennsylvania Institute for the Feeble Minded are to erect two custodial buildings here near the site of the present group of buildings, from plans drawn by Architect F. J. Osterling, of Pittsburgh. The plans call for two adjoining buildings of cottage style to be built of brick and each 300' x 500' in dimensions. The cost is estimated at \$175,000.

Quincy, Mass.—A new freight-house for the N. Y. N. H. & H. R. R. Co. is being built here from plans drawn by L. B. Bidwell of South Boston.

Ridgewood, Pa.—Plans have been prepared for a home for the Polish Catholic Orphanage for Girls to be built here. Cost, \$40,000.

Salt Lake City, Utah.—The Knutsford Hotel is to be remodelled and a ten-story addition erected at an estimated cost of \$250,000.



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(Advance Rumors Continued.)

San Francisco, Cal.—Architect H. Geiffuss & Son have drawn plans for a \$30,000 bakery building to be erected on the southwest corner of Eddy and Fillmore Sts., for the California Baking Co.

Seattle, Wash.—Rounds & Driver secured the contract for the erection of a building containing 22 flats for J. R. Nachant, from plans drawn by Max Umbrecht. Cost complete, \$35,100.

Sharon, Pa.—Rumor states that Morgan Bros., owners of the Morgan Grand Opera-house, are preparing to erect a \$200,000 hotel.

St. Louis, Mo.—Rumor states that the International Supreme Lodge of Colored Pythians has decided to erect a temple here to cost about \$50,000.

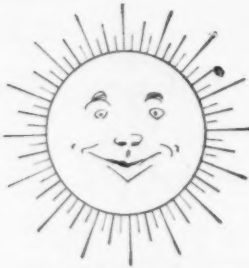
St. Paul, Minn.—The West Publishing Co. has filed plans of its new annex with the city building inspector and has been given a permit for the constructing of the building. The foundation is now



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(Advance Rumors Continued.)

being built and when the entire structure is com-
plete it will, exclusive of the machinery, represent
an investment of \$75,000. It is to have a frontage
of 50 feet, and will be the same height as the main
building.

Wabash, Ind.—C. H. Risser, architect, is prepar-
ing plans for a brick flat to be erected here for
D. S. Murphy, at a cost of \$20,000.

Washington, D. C.—Plans and specifications for
the Holyoke post-office building have been made by
James Knox Taylor, Supervising Architect of the
Treasury Department. The building, the dimen-
sions of which are 64' x 72', is to be of fireproof
construction, and including the site will cost \$135,-
000.

Geo. A. Fuller Construction Co., of New York
City, has secured the contract for erecting an apart-
ment-house at Connecticut Ave. and M St. Esti-
mated cost, \$400,000.

Waterbury, Conn.—The Tracy Bros. Co. has been
awarded the contract for the carpenter work on the
new factory building for the Waterbury Brass Co.
The building will be in the form of a hollow square,
117' x 195', three stories.

Estimates are being received on plans drawn by
Architects Griggs & Hunt for a new machine-shop
for the Waterbury Farrel Foundry and Machine
Co. It will be 40' x 40', of brick, and will be three
stories high.

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Watertown, Mass.—A. F. Hayes, 425 Tremont
Building, Boston, has prepared plans for a dye-
house for the Lewando Dyeing & Cleansing Co. to
be built here. It will be of brick with stone trim-
mings, two stories, 33' x 114'. The contract has
been awarded to A. B. Mordough, of this place.

Willimantic, Conn.—J. C. Walsh & Co., of Provi-
dence, have been awarded the contract for the
erection of St. Mary's Church here. Cost, \$55,920.

ALTERATIONS AND ADDITIONS.

New York, N. Y.—Fifty-eighth St., n. s. 336' w 9th
Ave., one-st'y & base, front bk. extension, 16' x 46',
rearranging windows, install iron columns & girders
to two-st'y & base, bk. hospital; \$14,000; o. Roose-
velt Hospital, Dr. J. W. McLane, 51 W. 38th St.,
trustee; a. W. Wheeler Smith, Westervelt &
Austin, 7 Wall St.

N. York, N. Y.—No. 57, one-st'y rear bk. extension,
11' 6" x 13' 4", rearranging windows & partitions to
four-st'y & base, bk. dwell.; \$10,000; o. D. Finkel-
stein, 110 Livingston St.; a. Alfred E. Badt, 1 Union
Sq.

BUILDING INTELLIGENCE.

LIBRARIES.

New York, N. Y.—E. Tenth St., Nos. 331-333, three-
st'y & base, bk. & st. public library, 50' 6" x 94' 8";
\$67,000; o. New York Public Library, John J.
Kennedy, chairman, 40 Lafayette Pl.; a. McKim,
Mead & White, 160 Fifth Ave.; b. M. Reid & Co., 18
E. 20th St.

STABLES.

New York, N. Y.—W. Fifty-fifth St., No. 231, two-
st'y bk. & st. stable, 18' 9" x 100' 5", plastic roof;
\$5,000; o. Michael McDonald, 233 W. Fifty-fifth St.;
a. James W. Cole, 403 W. 51st St.

Webster Ave., s. s. and Moshulu Parkway, rear,
two & one-st'y bk. stable, 46' x 67' 8" & 9' x 13', peak
tile roof; \$20,000; o. City of New York; a. Arthur
A. Stoughton, 96 Fifth Ave.

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New York, N. Y.—Lewis St., s. w. cor. 4th St., six-st'y
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ment, 90' x 100' 8"; \$150,000; o. Wm. F. Rohrig,
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PROPOSALS.

JAIL AND SHERIFF'S RESIDENCE.

[At New Ulm, Minn.]
Notice is hereby given that sealed written bids will be received until the 21st day of September, 1903, by the County Auditor of Brown County, Minn., at his office, in New Ulm, Minn., for the erection of a jail and sheriff's residence for said Brown County, according to plans and specifications therefor, now on file. Plans and specifications for the information of all persons desiring to bid may be seen at the office of the County Auditor, at the Builders' Exchange, in St. Paul, Minneapolis and Mankato, or can be obtained from the architect, A. J. Van Deusen, Winona, Minn. Samples of stone, brick and steel must accompany each bid. By order of the Board of County Commissioners of Brown County, Minn. LOUIS G. VOGEL, County Auditor. 1447

ADDITION TO SCHOOL-HOUSE.

[At Boston, Mass.]
The School-house Commissioners of Boston invite proposals for building addition to Francis Parkman School, Walk Hill St., West Roxbury, Boston, Mass. Only proposals obtained at the office of the Commissioners, 120 Boylston St., signed by the bidder and left before Thursday, September 24, 1903, at said office, with a certified check for \$2,000, payable to the city if the proposal is not carried out, will then and there be publicly opened and read. C. B. Perkins, architect, 8 Beacon St., Boston. R. CLIPSTON STURGIS, FREDERIC O. NORTH, JOSEPH J. CORBETT, Commissioners. 1447

LIBRARY.

[At Luverne, Minn.]
Sealed proposals will be received by the undersigned until October 1, 1903, for the erection at Luverne, Minn., of a library building, in accordance with plans and specifications on file in the offices of Mayor Furlow, Luverne, the Improvement Bulletin, Minneapolis, and the Argus-Leader, Sioux Falls, S. D. A. P. ADAMS, Chairman. MRS. E. A. BROWN, Secretary. 1448

Treasury Department, Office of the Supervising Architect, Washington, D. C., September 15, 1903. Sealed proposals will be received at this office until 3 o'clock P. M. on the 22d day of October, 1903, and then opened, for the construction (including plumbing, heating apparatus, electric wiring and conduits) of the U. S. Post-office at Kirksville, Missouri, in accordance with the drawings and specification, copies of which may be had at this office or at the office of the Postmaster at Kirksville, Missouri, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1448

Treasury Department, Office of the Supervising Architect, Washington, D. C., September 5, 1903. Sealed proposals will be received at this office until 3 o'clock P. M. on the 12th day of October, 1903, and then opened, for the low pressure steam heating apparatus, complete in place for the U. S. Court-house, Post-office and Custom-house at Tampa, Florida, in accordance with the drawings and specification, copies of which may be had at this office or at the office of the Superintendent at Tampa, Florida, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1448

Treasury Department, Office of the Supervising Architect, Washington, D. C., September 3, 1903. Sealed proposals will be received at this office until 3 o'clock P. M. on the 29th day of September, 1903, and then opened, for the installation of an electric passenger elevator and a hydraulic freight lift in the U. S. Court-house, Custom-house and Post-office building at Memphis, Tennessee, in accordance with the drawing and specification, copies of which may be obtained at this office at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1448

PROPOSALS.

CONCRETE SIDEWALK.

[At Watervliet, N. Y.]
Sealed proposals will be received here until September 21, 1903, for constructing concrete sidewalk about 1,645 feet long and 11 feet wide at Arsenal. Information furnished on application to MAJOR D. M. TAYLOR, Comdg. 1447

LIBRARY STACK WORK.

[At New York, N. Y.]
Sealed bids will be received by the Park Board at the office of the Department of Parks until Thursday, October 8, 1903, Borough of Manhattan. Contract No. 4. For work and materials for erection and completion of the library stack work in the New York Public Library, Astor, Lenox and Tilden Foundations, 5th Ave., 40th and 42d Sts. Blank forms may be obtained and plans may be seen at the office of the Department of Parks, the Arsenal, Central Park, and also at the office of the architects, Carrère & Hastings, No. 28 E. 41st St. For full particulars see City Record. WILLIAM R. WILLCOX, JOHN E. EUSTIS, RICHARD YOUNG. 1449

BRIDGE.

[At Canton, N. Y.]
Sealed proposals will be received by the Town Board at the office of the Town Clerk in the Town-hall, in the village of Canton, N. Y., until Saturday, September 26, 1903, for the construction of a stone arch bridge across Grasse River, on Main St., in the town of Canton, N. Y. Plans and specifications may be seen at the office of the Town Clerk on and after August 27, 1903. F. J. WHEELER, Town Clerk. 1447

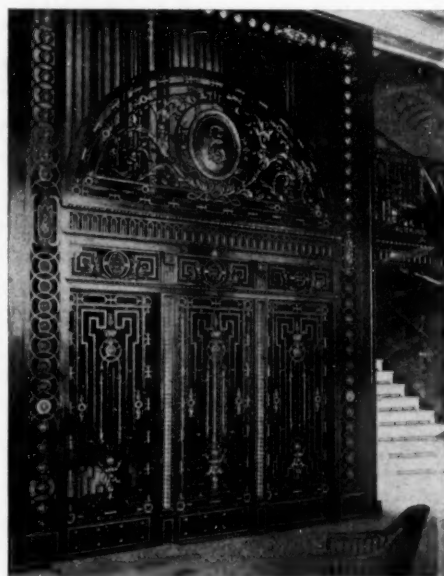
PROPOSALS.

BUILDINGS.

[At Washington, D. C.]
Board of Commissioners, U. S. Soldiers' Home, Office of Constructing Officer, Washington, D. C., September 5, 1903. Sealed proposals will be received at this office until 2 o'clock P. M. on the 5th of October, 1903, and then opened for the construction of an administration building and of an addition to the Barnes Hospital at the U. S. Soldiers' Home, Washington, D. C., in accordance with the drawings and specifications, copies of which may be had at the office of the architect, W. M. Poindexter, 806 Seventeenth St., Washington, D. C., in the discretion of the undersigned. Separate proposals will be received for plumbing and gas-fitting, electric-light work and elevator. CHAUNCEY B. BAKER, Captain and Q. M. U. S. A. Constructing Officer, Room 320, War Department. 1448

SCHOOL-BUILDING.

[At Lehigh, Pa.]
Sealed proposals will be received by the School Board of the Independent School District of Lehigh, Pa., to be sent to J. C. Retallick, President of the Board, Lehigh, Pa., until September 26, 1903, for the erection and completion of a school-building at Lehigh, Pa., in accordance with plans and specifications which will be on file on and after August 26, 1903, at J. C. Retallick's office in Lehigh, Pa., and at the office of Murphy & Ralston, architects, Waterloo, Pa. Sealed proposals will be received at the same time and under the same conditions for the construction and installation of a hot air heating plant and also for all necessary plumbing for such proposed school-buildings as per specifications. J. C. RETALLICK, President. N. J. WILLIAMS. 1447



Elevator Enclosure, Hotel Essex, N. Y. City,
Howard, Cauldwell & Morgan, Architects

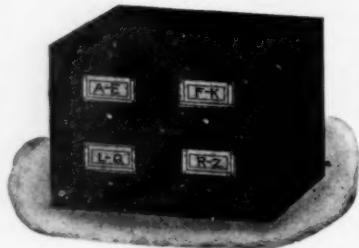
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SECTION 1. No Member should enter into partnership, in any form or degree, with any builder, contractor, or manufacturer.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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"The Nation"	"One of the most important American works on architecture."
"Architectural Review" [London]	"This great work."
"The Builder" [London]	"Of great value."
"Building News" [London]	"Beautifully printed and well delineated."
"Irish Builder" [Dublin]	"Of superior excellence and great usefulness."
"Journal of the R. I. B. A." [London]	"We can only hope the publishers will continue the series."
"N. Y. Tribune"	"A peculiarly fascinating and instructive work."
"N. Y. Evening Post"	"Grows in interest with every succeeding number."
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