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THE appeal of Mr. Edward Atkinson for funds to establish an insurance engineering experiment station seems to have met with an immediate and liberal response from the manufacturers who, under his wise guidance, have come to appreciate, perhaps better than any one else, the incalculable value of intelligent precautions against fire; and the Experiment Station has already been organized, and will begin its work with such resources as are now available, under the charge of Prof. Charles L. Norton, of the Massachusetts Institute of Technology. Architects will be glad to hear that the first problems to be solved will be those relating to fireproof construction, particularly in respect to the corrosion of metal skeletons encased in masonry; and we hope that the managing officials, all of whom are officers of mill mutual insurance companies, will forget the usual underwriter's scorn for architects long enough to invite from some of the latter suggestions as to the varieties of construction to be tested. For example, architects understand, much better than mill-engineers or insurance-men, the departures from the standard construction which really constitute the greatest danger in modern steel-frame buildings. The steel skeleton, conscientiously buried under a foot of solid, well tied and well grouted masonry, can, so far as our present knowledge indicates, be safely left, at least for a few months, while the Experiment Station is studying the present, and probable future, condition of those "wonderful" structures, run up in a few weeks, with bolted joints, and cased with four inches of loosely-fitting brickwork, in which so many millions of dollars have been invested within the past ten years. One of the most recent innovations in these "wonderful" buildings is said to be to lay the wooden floors without any sleepers or nailing-strips whatever, driving the flooring-nails simply into the cinder concrete. An investigation into the length of time that floors laid in this way will stay in place would be of interest to owners, as well as to architects. The action of cinder concrete, made in the usual manner, and of the plaster-of-Paris beam-filling, used in some varieties of fireproof-construction, and of acid hard plasters, on the steel structure which they are supposed to protect, is also a matter of vital importance. It may be observed that the use of plaster-of-Paris for repairing, and filling-out deficiencies, in terra-cotta work is not wholly unknown, and, perhaps, the first portions of most steel structures to show signs of corrosion will be found to be the portions under the windows, where the water soaking through stone sills, or through the joints of terra-cotta sills, keeps the masonry generally moist, even if it does not carry with it acid substances in solution.

SPEAKING of the difficulty which architects find in determining technical questions of this kind for themselves, and the bewilderment into which they are thrown if they attempt to gather instruction from the "expert tests," lectures, "papers" and so on, by eminent professors, engineers and others, accounts of which reach them by nearly every mail, it might be well to call the attention of the new Experiment Station to the peculiarities of certain bricks, and their possible influence upon structural steel embedded in them. Architects were informed, not long ago, that such steel rusted only under the influence of carbonic acid, and that, when surrounded, even at a certain distance, by masonry, the cement in the masonry captured all prowling particles of carbonic acid, so that the steel could never be attacked. Now, even in steel-frame structures, and, perhaps, particularly in them, the bricks used are often seen to be covered with a white efflorescence. This efflorescence varies in composition, but, as chemists tell us, it often consists, wholly or in part, of sulphate of magnesia, and its presence is attributed to the combination of sulphuric acid, derived from the sulphur in the coal used for burning the bricks, with something in the clay of the bricks, or in the cement used for laying them. Now, sulphate of magnesia is an acid salt, capable of corroding iron rapidly, and the simple-minded architect, when he sees a sheet of what he supposes to be this substance on the outside of a four-inch brick wall, the inside of which is in contact with a steel frame, may be forgiven for wondering whether the metal within is not experiencing some effect, and for asking himself why the masonry which catches carbonic acid so cleverly should let sulphuric acid escape in such quantities. Naturally, we are far from presuming to answer these questions, but the founders of the Experiment Station may be assured that no one will study the results obtained by it with greater interest and gratitude than the architects.

THOSE architects who enter competitions in which they bind themselves, if their design is selected, to furnish security that the contract price will not exceed a certain sum, and who imagine that this is only an innocent formality, will do well to take warning from what is now going on in Massachusetts. One of the most prosperous cities in this Commonwealth proposes to build a high-school, and has issued a programme of competition in which, among other things, it is stipulated that the cost of execution shall not be more than one hundred and eighty thousand dollars, and that the successful competitor shall give bonds "in a reasonable amount" that this limit shall not be exceeded. One of the architects invited to compete, having, presumably, something to lose, and entertaining a wholesome distrust of "mere forms" in the shape of bonds, asked the chairman of the committee in charge of the matter certain questions in regard to the bonds which would be required, and received replies in writing. To the first question, whether, in case the contractor should fail before the expiration of his contract, and it should become necessary to make new contracts, at an increased price, for the completion of the building, the architect's bond would be forfeited, the answer was "Yes." To the second question, whether, in case prices of material or labor should advance during the period between the selection and the letting of the contracts, so as to make it impossible to contract for the building for the specified sum, the architect's bond would be forfeited, the same answer was returned. The third question was whether the architect, in case the lowest bid on the completed plans and specifications exceeded the limit, would be discharged without pay, or would be directed to modify the drawings and specifications to reduce the cost to the necessary extent; and the reply to this was that he would be discharged without pay.

THE programme of competition, in this case, is quite free from the odor of cheating rascality with which so many documents of the kind reek, and the committee seem really to wish to get the best building that they can for their money, yet a proceeding less calculated to bring about that result could hardly have been devised. No provision is made for expert advice in making a selection, although, without such advice, the committee is as likely to choose the worst design as the best. We have known a very intelligent committee to select a plan for a high-school in which the main entrance-hall was, practically, without light or air, and it was not until their expert advisers pointed out to them the absence of windows that they regretfully abandoned their choice; and the amount of money which is spent in altering buildings, particularly school-houses, to correct defects in plan which an expert would have seen at

once is something startling. The committee in the present case, by assuming the selection, not only make it tolerably certain that, if they choose and carry out any plan, they will either have to alter their building later, or impose upon the children who are to use it the annoyances and fatigues which are the result of unskilful planning, and which, multiplied by the number of people who suffer from them, constitute a heavy burden on the community, but, by that circumstance alone, they keep capable and skilful architects from accepting their invitation. In England, and in the larger cities of this country, it is considered that an architect who enters a competition which is not to be judged by an expert does so expecting to win, if at all, by unfair means; and those who depend upon the merit of their work for recognition will not compete with him. Moreover, as if to make doubly sure that no respectable architect will enter the contest, the committee imposes on competitors a money forfeit which is, for an architect, pure gambling, with loaded dice in his adversary's hands. An architect who has entrusted his property in this way to a building-committee can be robbed of it at the pleasure of the committee, by collusion between contractors, or by any one of a variety of accidents which he is powerless to prevent. It is true that the pretexts on which his money would be confiscated would rarely bear the test of a judgment of court, but it must be remembered that possession is nine points of the law, and the mangled remains of his savings which he would receive after two or three years' fighting would not make up for the loss of time involved in the contest.

ARCHITECTS, who often have to advise in regard to the grading and planting around the houses which they design, may find instruction in the report of interviews with the officials of the New York and Brooklyn parks. Some one, observing that signs were scattered plentifully around the New York Central Park, warning people to keep off the grass, while, in Prospect Park, in Brooklyn, there were no signs, and visitors were permitted to walk about freely, made inquiries, and found that, while walking over the sod in the Central Park was destructive to it, that in Brooklyn would survive almost any treatment. Application to Mr. Samuel Parsons, the landscape architect of the New York parks, brought out the interesting information that the difference was due to the thinness of the soil in the Central Park as compared with that in Prospect Park. According to Mr. Parsons, the vegetation in the Central Park is in a dying condition, for want of suitable and sufficient soil, and nothing but the greatest care and vigilant protection against ill-treatment can keep it in tolerably presentable condition. The site of Central Park was, originally, a rocky tract, with barely enough grass growing in the crevices of the ledges to feed the goats pastured there. Naturally, the goats made short work of any young trees that might endeavor to grow in the richer spots, and the place, although it presented a picturesqueness which is still one of its most attractive features, was far from suggesting luxuriant vegetation. To secure anything like shrubbery and grass, soil had to be brought from a distance, and spread over the rocks and gravel. This soil has supported the vegetation of the park until now. Unfortunately, the cost of soil made it seem necessary, when the park was first laid out, to limit the quantity used, and it was spread out too thinly. Now, in Mr. Parsons's opinion, the trees and grass, if they are to be preserved, must be supplied with fresh soil, to an average depth of two feet. The cost of this, including that of spreading and replanting, would be a million and a half, and even now, when the Central Park has become the most valued ornament of the richest city but one in the world, it is impossible to get such a sum appropriated for the purpose. Some years hence, when the shrubs are dead, the trees reduced to unsightly stumps, and the grass-plots to patches of alternate brown and green, public opinion will demand the necessary expenditure, but this must then be much greater, and young plants and trees must be set out to take the places of the old ones which no treatment can save.

A MODEST attempt has been made at a beginning of amelioration of the present tariff laws of the United States in regard to works of art, by the introduction of a bill in the House of Representatives, by Mr. Lovering, of Massachusetts, providing that statues, paintings, drawings, engravings and etchings may enter this country free of duty, if they were executed more than fifty years before the date of importation. This reservation, it will be seen, still protects the tin-can artists of the United States against the competition of the Raphaels and Michael Angelos of the effete countries of Europe, for the reason that, as tin-cans were little known fifty years ago, the "pauper labor" of the artists of the Renaissance was devoted almost exclusively to other objects; and it seems as if the most inveterate champions of American "infant industries" could find nothing to object to in the bill. Whether it will be passed is, however, another question. The defenders of the protective system appear to have determined not to permit any change, however innocent or desirable, in the present tariff. The consequence of this attitude will be, as it seems to us, that the people who, in constantly increasing numbers, are aggrieved or injured by the injustices and anomalies of the tariff, finding that it cannot be modified, will have no alternative but to join in destroying it, with the most deplorable effect upon business of all kinds.

IT is welcome news that New York in the sculptural adornment of its public and semi-public buildings seems likely to differentiate itself permanently from such cities as Berlin and Vienna, where the unthinking facility of architectural sculptors has wrought such deplorable results upon and over façades that have in them at least the elements of architectural serenity. Almost any sculptural treatment would be better than the allegorical imaginings of the German *Bildhauer* as they sprawl or crawl over the broad surfaces or contort themselves so as to crowd into the odd corners of what are really fairly decent façades. Up to the last decade, or until since the Chicago Fair, architects hardly dreamed of employing more than capitals and ornamented string-courses in their buildings, though the far-seeing ones had begun before that to build into their structures the rough blocks in which might perchance be hewn a bit of sculpture in high-relief or in the round — at some time dimly perceptible. Almost the first pieces of real sculpture applied to an American building in a structural sense are Daniel C. French's fine marble groups over the main entrance to the Boston Post-office — too high up to be fairly seen, but even there telling and certainly good. It is matter for gratulation that he is to make a statue of De Witt Clinton for the New York Chamber of Commerce, while Philip Martiny is to model statues of Alexander Hamilton and John Jay for the same building. These figures, following the example of those modelled by J. Massey Rhind for the Exchange Court Building, would seem to establish a fashion of utilizing American notables for decorative purposes which may spread, and with happy artistic effect, so long as the garments of to-day are not too much forced on the attention by the sculptor.

THE Municipal Art Society of New York announces its competition for designs for an electrolier, to be placed on the "island" with which the municipality proposes to divide the traffic at the intersection of Fifth Avenue and Twenty-third Street. The island will not exceed in size eight by twenty feet, so that the electrolier must not be too large to be comfortably accommodated on a plot of these dimensions; and it must be comparatively simple, the limit of cost being fixed at fifteen hundred dollars. Designs or models must be delivered, under motto, to the Secretary of the Municipal Art Society, at the building of the Architectural League, West Fifty-seventh Street, on or before six o'clock in the evening of June 11. They must be accompanied by a brief specification, and by an envelope, sealed with wax, bearing on the outside the competitor's motto, and having his name and address inside. The jury consists of ten artists and architects, and five laymen, and the author of the design placed first will be employed to furnish full-size drawings, and such modelled details as may be necessary for the execution of the work, receiving for these services a fee of five hundred dollars. The second prize will be one hundred dollars, and the third fifty dollars.

THE Pratt Institute, in Brooklyn, N. Y., has developed with a rapidity which shows conclusively that it has supplied a want widely felt. In 1887, it had twelve students; in 1901, it had more than three thousand. With the rest, and perhaps even more than the rest, the Department of Fine-Arts has increased in importance, until, from a single studio, it now includes thirty. The facilities available for the necessary study have led the Trustees to establish a two-years' course in architecture, designed more particularly to train students for efficient and responsible work as assistants in architect's offices. The programme indicates that this object is attained, so far as is possible in a two-years' course.

NOTES ON IRON AND STEEL CONSTRUCTION.[1] — VII.

THE columns in the modern building, and especially in the construction known as the skeleton type, are the most important members or elements in the structure. They may be either of cast-iron or structural steel. When of the former they are usually of a hollow cylindrical or rectangular section, when of the latter, it is customary to build up the section of rolled shapes and plates securely riveted together throughout their length. There is much debate between engineers regarding the relative efficacy of cast-iron and structural-steel columns. It is a fallacy to suppose that cast-iron behaves badly in case of fire, and that columns of this material upon being suddenly cooled are subject to fracture by unequal expansion. A systematic examination of the results of fires in buildings shows that cast-iron columns stand remarkably well — in fact, have fire-resisting qualities superior to columns of structural steel. The principal disadvantage in the use of cast-iron columns consists in the fact that it is difficult to make rigid connections between the columns of the several tiers, and cases have occurred where tall buildings that depended upon the rigidity of the beam-connections and the connections of one column to another for their lateral strength have been thrown out of plumb by the horizontal wind-pressure. Such a failure was particularly noticeable in a ten-story building erected in New York, which when partially completed was found, after a heavy storm, to be about 10 inches out of the vertical. By the use of the numerous rolled shapes a multiplicity of structural-steel columns have been designed. The principal ones have become standard and are known as the angle column, the Z-bar, the box, the Grey and the Larimer. The usual sections of these columns are shown in Figure 42.

Fig. 42.

Columns under ten diameters in length are liable to fail by crushing, while columns where the ratio between the diameter and the length is greater than this are liable to fail by lateral flexture and crushing at the ends. The strength of the column depends, therefore, upon its length and also upon the distribution of the metal in its section, for where columns have the same area the one in which the metal is distributed farthest from the centre will offer the greatest resistance. The distribution of the metal in the column-section is determined by the radius-of-gyration of the section. If all the metal in a column-section were assembled at a distance from the centre equal to the radius-of-gyration, the column would offer the same resistance to flexure as if the material were distributed throughout the cross-section.

Not only does the strength of a column depend upon its length and radius-of-gyration, but it also depends upon the shape of the ends and the manner in which they are secured. Cast-iron columns in buildings are provided with flat ends only, and one formula will cover all cases which may arise. The formulas for hollow, round and rectangular cast-iron columns with square ends are based upon Gordon's formulas. These formulas may be stated as follows: —

Rule I. — The safe load in tons per square inch that a hollow cylindrical cast-iron column with square ends will support is equal to the quotient obtained by dividing 5 by the sum of 1 and the quotient obtained by dividing the square of the length of the column in inches by 800 times the square of the outside diameter in inches.

Rule II. — The safe load in tons per square inch of section for hollow square cast-iron columns with square ends is equal to the quotient obtained by dividing 5 by the sum of 1 and the quotient of the length of the column in inches, squared, divided by 1,067 times the least diameter squared.

[1] Continued from No. 1371, page 6.

The results of both of these rules are in tons of 2,000 pounds, and provide for a factor-of-safety of 8, when a unit ultimate compressive strength of 80,000 pounds is considered. The rules may be expressed by the following formulas: —

For hollow cyclindrical columns

$$s = \frac{5}{1 + \frac{l^2}{800\,D^2}}$$

For hollow square columns

$$s = \frac{5}{1 + \frac{l^2}{1{,}067\,D^2}}$$

in which s equals the safe unit compressive stress in tons, l equals the length of the columns in inches, and D equals the outside diameter, or the length of the least side in inches.

Where the ultimate strength of cast-iron columns in pounds per square inch of cross-section is desired the following formulas may be used instead of the above: —

For hollow cylindrical columns

$$s = \frac{80{,}000}{1 + \frac{(12\,L)^2}{800\,D^2}}$$

For hollow rectangular columns

$$s = \frac{80{,}000}{1 + \frac{(12\,L)^2}{1{,}067\,D^2}}$$

In these formulas s equals the ultimate unit compressive strength in pounds, L equals the length of the column in feet, and D, as before, equals the outside diameter, or the length of the least side in inches. In application of the above formulas assume the following problem: —

Example. — Required, the safe load for a hollow round cast-iron column 18 feet long and 12 inches in outside diameter, provided the metal is 1 inch thick, and a factor of safety of 8 is desired.

Solution. — The sectional area of the column is equal to $.7854\,D^2 - .7854\,d^2$, or, since D is the outside diameter of the column, and d is the inside diameter of the column, the area equals

$$(.7854 \times 12 \times 12) - (.7854 \times 10 \times 10) = 34.55 \text{ square inches.}$$

Having obtained the sectional area, the safe unit compressive stress in tons may be determined by substituting in the formula

$$s = \frac{5}{1 + \frac{l^2}{800\,D^2}}$$

which then becomes: —

$$s = \frac{5}{1 + \frac{216 \times 216}{800 \times 12 \times 12}} = 3.57 \text{ tons.}$$

By multiplying this value by the area, 34.55 square inches, as previously obtained, the entire bearing-capacity of the column is found to be 123.34 tons.

For convenience in determining the safe load any cast-iron column will support, without working out the lengthy formulas described, the following tables have been evolved: these tables

STRENGTH OF HOLLOW CYLINDRICAL AND HOLLOW SQUARE CAST-IRON COLUMNS.

$\frac{L}{D}$	Ultimate unit compressive stress.		$\frac{L}{D}$	Ultimate unit compressive stress.	
	Cylindrical.	Rectangular.		Cylindrical.	Rectangular.
1.0	67,800	70,400	2.5	37,600	43,300
1.1	65,600	68,700	2.6	36,000	41,800
1.2	63,500	66,900	2.7	34,500	40,300
1.3	61,300	65,100	2.8	33,100	38,800
1.4	59,100	63,200	2.9	31,800	37,400
1.5	56,900	61,300	3.0	30,500	36,100
1.6	54,700	59,400	3.1	29,300	34,800
1.7	52,600	57,500	3.2	28,100	33,500
1.8	50,500	55,600	3.3	27,000	32,300
1.9	48,400	53,700	3.4	25,900	31,200
2.0	46,500	51,900	3.5	24,900	30,100
2.1	44,500	50,100	3.6	24,000	29,100
2.2	42,700	48,300	3.7	23,000	28,000
2.3	40,900	46,600	3.8	22,200	27,100
2.4	39,200	45,000	3.9	21,400	26,200

NOTE. — The value of L is in feet, while the value of D is in inches.

gives the ultimate strength in pounds per square inch of section for columns having different values of $\frac{L}{D}$, that is, the ratio between the length of the column in feet and the diameter in inches. In order to use this table, first fix upon the factor of safety, and then determine the sectional area of the column. Having found the ratio of $\frac{L}{D}$ for the column under consideration, divide the value in the table by the factor of safety, and multiply this quotient by the sectional area of the column. For instance, assume that a column is 16 feet in length and 10 inches in diameter. The ratio of $\frac{L}{D}$ is 1.6, and from the table the ultimate strength in pounds per square inch for a hollow cylindrical column having this proportion between the diameter and length is 54,700 pounds. If a factor of safety of 6 is required, the safe bearing-value for each square inch of section will equal 9,116, provided the column is $\frac{3}{4}$-inch metal, this sectional area will equal 21.7948 square inches, and the working-strength of the column will be 9,116 × 21.79, or 198,637 pounds.

The formulas commonly used in figuring the strength of structural-steel columns are the Gordon formula and the straight-line formulas. The Gordon formula is the most complicated, and has been substituted by the straight-line formulas, which appear to give results more nearly agreeing with tests made upon full-sized column-sections.

The columns, as previously stated, may be either hinged flat on the ends or fixed. Hinged columns are those which are connected in a structure by pins, and only occur in bridge and heavy truss work. Flat-ended columns occur frequently in building-construction, in fact are usual where the columns continue from floor to floor, the base of one resting upon the cap of the other.

Columns with fixed ends are principally struts that occur in riveted frame structures, and it is not usual to consider columns where the floor-beams are bolted or riveted to brackets as having fixed ends. The Gordon formulas for the different columns are as follows: —

Hinged ends

$$s = \frac{s_1}{1 + \left(\frac{l^2}{18{,}000\,R^2}\right)}$$

Square ends

$$s = \frac{s_1}{1 + \left(\frac{l^2}{24{,}000\,R^2}\right)}$$

Fixed ends

$$s = \frac{s_1}{1 + \left(\frac{l^2}{36{,}000\,R^2}\right)}$$

In these formulas s equals the ultimate unit compressive stress upon the column-section; s_1 equals the ultimate unit compressive stress of the material (in structural-steel columns generally assumed at from 50,000 to 60,000 pounds), l equals the length of the column in inches, and R equals the least radius-of-gyration, which may be determined by means described in connection with article which appeared in the January 18th issue of the *American Architect*. The results obtained by these formulas will give approximately the ultimate supporting strength of any structural-steel column, per square inch of section, and the value should be divided by the factor of safety,

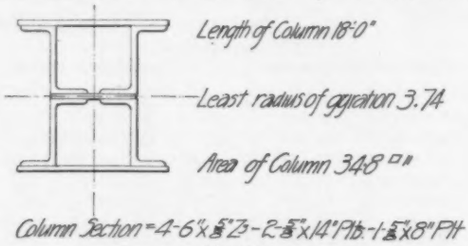


Fig. 43.

from 3 to 5, though commonly taken at about 4. In application of the above formula, assume the following problem: —

Example. — The Z-bar column shown in Figure 43 has a least radius-of-gyration of 3.74 and a length of 18 feet; provided medium steel, with an ultimate compressive strength of 60,000 pounds, is used, what will be the safe load the column will support? The ends of the column are flat.

Solution. — The safe unit compressive strength of the column-section is equal to s, or

$$\frac{60{,}000}{1 + \frac{216 \times 216}{24{,}000 \times 3.74}} = 39{,}474 \text{ pounds.}$$

If a factor of safety of 4 is used the allowable unit stress will equal 39,474 ÷ 4 = 9,868. Since the area of the column in

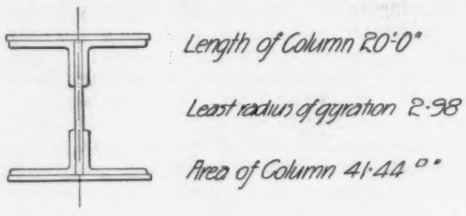


Fig. 44.

Figure 43 equals 34.8 square inches, the allowable working stress on the column will equal 9,868 × 34.8 = 343,406 pounds, answer.

The straight-line formulas (so called because when plotted they will give a straight line) are more convenient and more accurate than the Gordon formulas just given. These formulas are for columns whose lengths are between 50 and 150 radii-of-gyration. The formulas for the several types of columns and for medium and soft steel are as follows: —

MEDIUM STEEL.

Hinged or pin-connected ends, $s = 60{,}000 - 260\,\frac{l}{R}$

Square or flat ends..... $s = 60{,}000 - 230\,\frac{l}{R}$

Fixed ends..... $s = 60{,}000 - 210\,\frac{l}{R}$

SOFT STEEL.

Hinged or pin-connected ends, $s = 54{,}000 - 225\,\frac{l}{R}$

Square or flat ends..... $s = 54{,}000 - 200\,\frac{l}{R}$

Fixed ends..... $s = 54{,}000 - 185\,\frac{l}{R}$

In these formulas l equals the length of the column and R the radius-of-gyration, both values being in inches. In application of the above formulas, assume the following problem: —

Example. — Required, the safe bearing-strength of the angle column shown in Figure 44, when its length is 20 feet, its sectional area 41.44 square inches, and its least radius-of-gyration 2.98, provided the column is built of medium steel, has square or flat ends, and is to have a factor of safety of 5.

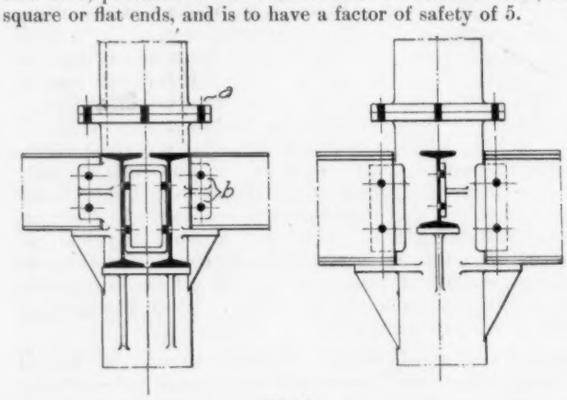
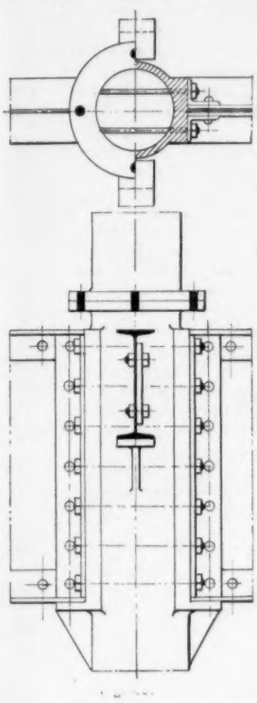


Fig. 45.

Solution. — From the example $l = 240$ and $R = 2.98$; then by substitution in the formula $s = 60{,}000 - 230 \times \frac{240}{2.98}$, or 41,485 pounds per square inch; this divided by 5 gives 8,297 pounds, the allowable compressive stress per inch of area upon the column-section; from the problem the area of the column is 41.44; therefore, the allowable bearing-strength of the column equals 8,297 pounds × 41.44, or 343,827.

Considerable study can well be put upon the design of cast-iron columns, and especially should careful consideration be given to the brackets and connections for securing the floor-girders to the columns. Where the column is cylindrical the general design shown in Figure 45 is usually employed for the supporting brackets and connecting webs of the floor-system.



The upper column is secured to the lower by means of bolts through the flanges, as at *a*, and care should be taken to have these bolts a snug fit, for upon them depends the alignment of the column, and, to a certain extent, its rigidity from floor to floor. Tests made upon brackets cast upon columns show that they usually fail by tearing out an adjacent section of the column shell. For this reason it is found advisable to thicken up the metal in the column shell around the brackets, and especially should large fillets be provided in all corners. The top and bottom surfaces of all cast-iron columns should be faced true, at right angles to the axis of the column, and all columns of a tier should be of uniform length. The holes in the connecting-webs, as at *b b*, are cored, usually $\frac{1}{8}$ inch larger in diameter than the bolt, while the best practice requires the holes drilled, as at *a a*, in the flanges.

Where a plate-girder forms one of the principals of a floor-system the construction shown in Figure 46 is usually employed. Such a connection is very rigid, and furnishes considerable lateral stiffness to the structure. The base of each column should be designed as shown in Figure 47. The bottom flange is usually made from $1\frac{1}{4}$ to $1\frac{1}{2}$ inches in thickness. It is not advisable, however, to have it greatly thicker than the shell, for the mass of metal at this point causes undue shrinkage, and is likely to create initial strains. The webs are preferably placed upon the diagonal. The base of the column, as shown, may rest directly upon the capstone of the pier, but it is far preferable to provide a bearing-block of cast-iron, as designated in Figure 48. The advantage obtained by the use of these blocks consists in the fact that they can be erected upon the tops of the piers, and carefully aligned and levelled, forming a reliable and accurate means for setting the columns.

For protection against fire a column with a double shell is often employed, as shown in Figure 49. The interior column sustains the weight of the floor, while the exterior is merely a fireproof protection. This practice is not used to any great extent, as a fireproof covering of terra-cotta or concrete upon expanded-metal is considered fully as reliable, and far less expensive.

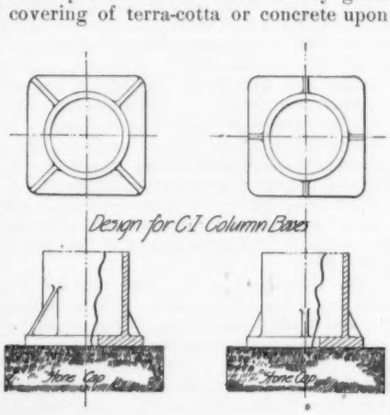


Fig. 47.

In inspecting cast-iron columns at the building it is often necessary to reject some, on account of the unequal thickness of the shell. Where the column is cast in a horizontal position the core is liable to drop, and the metal on one side of the column may be $\frac{3}{8}$ inch thick, while on the other it is $1\frac{1}{2}$ inches, when the uniform thickness of the column should have been $\frac{3}{4}$ inch. This unequal distribution of the metal is likely to cause the failure of the column by side flexure. Blow-holes and cold-shuts, when of sufficient size, will condemn a building column. Unscrupulous foundrymen sometimes cover up such defects with a filler and putty, or Babbitt metal, and such filling when under paint can only be detected with a knife or hammer. In order to determine whether the shell of the column is of uniform thickness $\frac{1}{8}$-inch holes should be drilled through the column on the diameter at right angles to the parting. Through these holes, by means of a piece of bent wire, the thickness on the two sides can readily be ascertained. The shaft of the column should be straight, not deviating more than $\frac{1}{4}$ inch or $\frac{3}{8}$ inch, and it is well for appearance to accept only such castings as are true to pattern, having sharp corners and smooth surfaces.

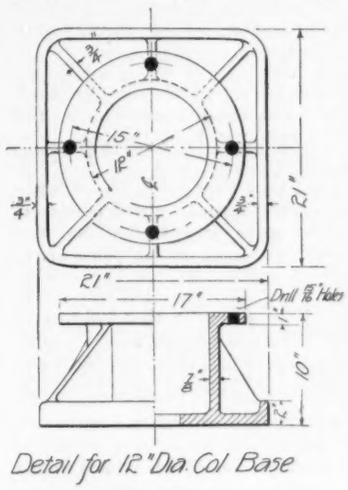


Fig. 48.

Columns in building-construction are often subjected to eccentric loading — that is, where the point of application of the load is without the centre of the column. Such a load exists in outside columns where the heavy weight of the wall on one side is not counterbalanced by the floor load. Provision must be made in the sectional area of the column to take care of this eccentric load. The eccentric load creates a bending-moment in the column, and the bending-moment is equal to the amount of the load multiplied by the distance of its line of action from the centre of the column.

For instance, in Figure 50 the amount of the load upon the bracket to one side of the column is 20,000 pounds, and the distance from its point of application to the centre of the column is 20 inches. In consequence, the bending-moment upon the column equals $20{,}000 \times 20 = 400{,}000$ inch-pounds. The bending-moment due to an eccentric load upon a column, then, is found by the formula $M = Wl$, in which W equals the weight or load in pounds, and l the distance from the line of action of the load to the centre of the column. From a previous article it was found that M must equal M_1 — that is, the bending-moment must equal the resisting-moment. Since M_1 equals $\frac{s\,I}{c}$, $M = M_1 = \frac{s\,I}{c}$, in which s equals the safe unit fibre-stress, I the moment-of-inertia of the section, and c the least distance of the outside fibres of the section from the neutral axis. The radius of-gyration, or R, is always equal to the square root of $\frac{I}{A}$, or $R^2 = \frac{I}{A}$, in which A equals the entire area of the section. From this formula I must equal $R^2\,A$, and the value $R^2\,A$ must be substituted for the value of I in the formula $M = M_1 = \frac{s\,I}{c}$,

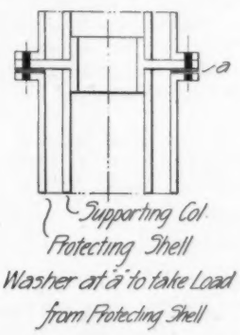


Fig. 49.

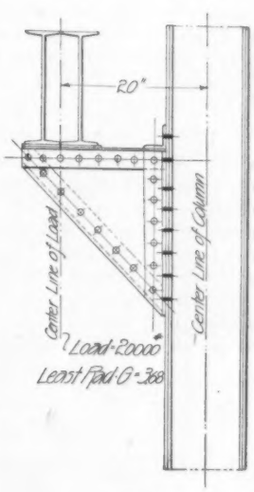


Fig. 50.

so that $M = \frac{s\,R^2\,A}{c}$, or, by transposition, $A = \frac{M\,c}{s\,R^2}$. This latter formula gives the area that it is necessary to add to the section of any column in order to resist the bending-stress due to an eccentric load. Upon providing for this increase in area in the

column-section the radius-of-gyration should be carefully figured or determined, to see that it does not vary materially from the value of R^2 used in the formula for determining the additional area required.

In application of this formula, assume the following

Example. — Determine the additional area that it will be necessary to add to the column-section, subject to the conditions of loading described in Figure 50.

Solution. — The bending-moment, as previously explained, equals WI, or $M = 20{,}000 \times 20 = 400{,}000$ inch-pounds, and A equals by the formula $\frac{400{,}000 \times 6}{15{,}000 \times 3.68 \times 3.68} = 11.8$ square inches; this being the additional area required in the column-section in order to resist the bending-moment caused by the eccentric load. Provision can be made for this additional load by increasing the weight of the channels, or the thickness of the cover-plates.

Careful consideration should be given by the designer of skeleton-construction to what is the best type of column applicable to the work in hand, and, in deciding, the following points should be carefully reviewed: —

First. — Economy both as regards material and workmanship. The column should be as light as possible consistent with the work that it has to perform, though due regard should be paid to the possibility of corrosion and the ultimate weakening of the column from this effect. The column-section in which the radii-of-gyration upon the two axes are most nearly equal probably offers the most economical section. The riveting throughout the column should be arranged so that it can be readily done by power. The rolled sections should be selected with due regard to stock sizes of rolled shapes, so that no difficulty will be experienced in obtaining the material. Patented sections are subject to the disadvantage, when the supply is located at a distance from the point of erection, of being not readily obtainable, and prompt shipments not always possible.

Second. — The column-section is preferable that allows the floor beams or girders to be connected close to the centre of the column, for by this means dangerous eccentric loads are avoided, and the reactions of the girders or beams are transmitted directly to the centre of the column.

Third. — Simple construction at the connections is preferable. Bent or swaged plates of peculiar shape are objectionable, and, in designing the connection, rigidity in assembling the work should always be borne in mind.

Fourth. — Such a column-section should be designed that the reduction in the sectional area of the columns throughout the several tiers may readily be attained by reducing the sectional area of the rolled-steel shapes. The design should be such as to permit of this reduction without changing materially the dimensions of the column-sections. Should the column-sections be materially changed it is evident that the upper tier of columns would be of such light construction and small diameter as to make adequate beam-connections difficult.

Fifth. — In designing the column-section careful attention should be given to accessibility for inspection and painting. When the fireproofing is complete this consideration is of little importance, as the covering cannot generally be removed to inspect columns, and besides the fireproof covering tends to prevent the accumulation of moisture on the column, and hence lessens the liability of deterioration.

Further data with regard to the design of structural-steel columns, their beam and girder connections and lateral bracing will be taken up in the next article. M. M. Sloan.

[To be continued.]

A FEW PARIS JOTTINGS.

PROBABLY the man is unknown who having a day, or even a few hours, in Paris *en route* for any place in Europe, or in any part of the wide world, does not find something new to amuse or instruct him. The mere streets are constantly changing, although the shops remain the same, with the same *articles de Paris*, the same photographs, the same colored frivolities. One part of Paris seems to vie with the other, — progress and conservative conventions glide on side by side, as in no other city. Only a year ago, the Exhibition buildings were disappearing, trams were regaining their normal ways, and the débris of the World's Fair was scarcely swept away. Now all is spick and span, and the city is once more a delightful specimen of what a city ought to be.

Many of the buildings of Paris are in bad taste and some are most atrociously ugly; but one and all are made decorative, in forming centres or vistas of streets and squares. There is no haphazard in Paris improvements. When the two new palaces were designed for the Retrospective and Beaux-Arts departments of the Exposition, they were placed on each side of the approach to the new bridge, the Alexandre III. The bridge started from the centre of the Place des Invalides, and the whole design was intended to form an architectural decoration leading up to Bruant's old hospital. It was a fine idea, and the result is beautiful; from the Champs Elysées one looks across the bridge and up the Place to the gilded dome. It is one of the finest vistas one can see anywhere.

The old rooms of the Louvre which used to contain drawings by the masters, faïence, glass and the Sauvageot Collection are now resplendent with painted ceilings, tapestried walls, rich damask curtains and old furniture — all from the Garde Meuble. Many of these treasures were in the Retrospective Exhibition of 1900. Boulle cabinets, the great *gaines* in Rouen-ware, some fire-dogs by Gouthière (a stag and wild boar beautifully chiselled), Oriental vases with Gouthière mounts, a wonderful *commode, tempo Directoire* with *plaques* of Wedgwood framed in the finest metalwork, and various other examples of the periods of Louis XIV, XV, XVI, may be studied in place. A bedstead made by Bennmann from the designs of Philippe de la Salle is a gem of its kind. The whole arrangement is that of the Wallace Collection, each room being arranged as a dwelling-room, with the exception that cords or rails protect the objects from ignorant hands. The walls are decorated with pictures — among others, some pastel portraits by de la Tour.

The collections which used to be in these rooms seem to have been dispersed among the various *musées;* but the drawings have been placed elsewhere, though they are not yet visible to the public.

There is one arrangement at the Louvre of which one may speak with disapprobation. Formerly we were allowed to keep our sticks and umbrellas. During the Exhibition we were compelled to leave them with the custodians, and, like the prices at the restaurants, the disappearance of the Exhibition has not brought one or the other to its normal condition. If the Louvre had but one entrance, like the National Gallery or British Museum, it would not matter; but to be obliged to tramp all round the building to fetch one's umbrella when one has already been round it is hard, and adds much to the fatigue. I cannot see why the *gardiens* could not send the sticks, etc., round to the main entrance where the public might find them. The leaving of our property is not our desire — it is for the good of the museum; therefore I think it very hard to have to leave my umbrella in the Place du Carrousel, and then to be obliged to return there to fetch it, although the end of my promenade may be at the Church of S. Germain l'Auxerrois. It is fatiguing enough to make the tour once; it is most irritating to be obliged to tramp back again the whole distance. S. Beale.

MUNICIPAL SOCIALISM.

THE State Department has published in advance-sheets of the Consular Reports a long report by James Boyle, United States Consul at Liverpool, on "Municipal Socialism in Great Britain." The Consul notes a quiet but gradually increasing development in Great Britain of that phase of socialism known as "municipal trading," or the ownership and operation of public utilities. In 1875, he says, the capital invested in municipal undertakings in Great Britain was $465,000,000, and in 1900 it was $1,500,000,000. He adds:

"There are now in Great Britain 931 municipalities owning waterworks, 99 owning the street-railroads, 240 owning the gasworks, and 181 supplying electricity. Most of these are in England. Municipalities were not allowed to work the tramways until 1896. It is estimated that half of the gas-users in England use municipal gas. In a number of places — Liverpool among them — the municipalities supply electricity for lighting and power, while the gas-supply is still in the hands of private corporations. In the case of Liverpool, the gas-company is quite willing to sell to the municipality, but the latter will not buy: first, because under the charter of the gas-company the municipality would be compelled to pay a perpetual dividend of 10 per cent to the stockholders, and, secondly, because it is believed that in the near future electricity will practically supersede gas as an illuminant.

"The municipalities of Leamington and Harrogate own Turkish-baths, two of the best at present existing in Great Britain, and Harrogate also gives fireworks-displays at municipal cost. Glasgow, like Liverpool, owns its waterworks and trams, and provides municipal lectures. Glasgow has recently reduced the fares on the tramcars, so that there are now not only halfpenny (1 cent) fares, but a distance of two and one-half miles can be travelled for 2 cents. Universal penny (2 cents) fares will probably shortly be introduced in Liverpool. The "transfer" system, as prevailing in America, is not used in Liverpool, nor in any other British municipality, so far as I know. Glasgow was the first city to establish a "municipal palace." Manchester owns shares in its ship-canal. Out of its municipal-tramway profits, Sheffield has appropriated $75,000 for the erection of shops and business-premises which it will rent. Quite recently the northern townships outside of London bought the well-known Alexandra Palace, where the municipal authorities maintain an auditorium and give

organ-recitals and theatrical, military-band, and variety entertainments of all sorts, and industrial exhibitions. Torquay owns a rabbit-warren; Colchester possesses an oyster-fishery; St. Helen's (a chemical centre in this consular district) supplies sterilized milk; Hull owns a crematorium: Doncaster and Chester own racecourses (the former actually managing the races); Bournemouth owns one of the finest golf-courses in Great Britain; West Ham, a borough of London, owns a stone-flag factory; and Bradford owns a hotel — as does also Liverpool (on its waterworks property in Wales). Bristol has municipalized its docks and harbor, at a cost of between $10,000,000 and $15,000,000.

"The docks of Liverpool are municipalized in a modified way. The system is peculiar to Liverpool. This vast estate, valued at several hundreds of millions of dollars, is administered by a public trust, nearly all the members of which are elected by those who pay dock-dues, and the profits, after deducting expenses and payment of interest on capital account, go to improvement, and not to the benefit of a private corporation. The probability is that the London docks will before many years be managed under either the Bristol or the Liverpool plan. Nottingham, in addition to owning parks, markets, artisan dwellings, baths and a hospital, has bought a castle and a forest, and has a natural-history museum and a school-of-art, and was the first municipality in Great Britain to have a university college. The last item gives occasion for the statement that several English cities have within the last year or so taken up the question of local universities. Birmingham has established one, and Liverpool will shortly follow suit.

"Liverpool is one of the foremost cities in municipal socialism. It owns the waterworks (one of the best systems in the world); it operates the street-cars; it supplies the electric light and power; it has one of the largest and best public-bath systems anywhere, and proposes to erect the finest Turkish-bath in Europe; it provides public laundries for the poor districts; it furnishes flowers and plants for the windows in the slums; it sells sterilized humanized milk for the children of the poor at cost price; it has a salaried organist to play its famous municipal organ; it gives municipal lectures — and all these in addition to the usual undertakings of municipalities, such as parks with concerts, technical schools, etc. But the greatest socialistic undertaking by the Liverpool municipality is that of providing dwellings for the very poor, the dispossessed tenants of demolished unsanitary dwellings of the slums.

"The one great predominating question in connection with municipal socialism is the 'housing question' — that is, the demolition of 'slums' and unsanitary dwellings and the erection by the municipality of suitable dwellings in place thereof. Americans who have never been here can have but little conception of the terrible conditions existing in many of the large cities of Great Britain as to the housing of the very poor. This condition is a heritage of former social and economic conditions, as well as of feudal land-laws, and of the past indifference both of the municipalities and of Parliament, as well as of the public generally — even, it may be said, of philanthropists. But heroic efforts are now being made in many of the large cities, and Liverpool is in the front rank in the efforts to remedy this deplorable state of affairs. Many difficulties have been confronted and overcome which at first were thought to be insurmountable — and these in addition to the perplexing moral and social questions involved. . . .

"The Liverpool municipal dwellings are mostly in the form of blocks of tenement-houses, or 'flats,' three or four stories high. The Local Government Board (a bureau directly under the control of Parliament) insists upon certain provisions to meet the necessity of dispossessed tenants before sanctioning demolition operations. Until 1899, there had been a conspicuous failure to meet this obligation, but since then the wants of dispossessed persons have been carefully foreseen and met. The present policy is to have blocks of dwellings ready within convenient distance, into which dispossessed tenants can go immediately they remove from the condemned property. Most of these tenants are dock-laborers or a like class. It is claimed that Liverpool alone among the municipalities of England and Scotland has been successful in supplying a type of building within the financial means of the poorest of the poor. A single room can be had for as low as 45 cents a week. The rent of two rooms ranges from 60 to 80 cents; that of three rooms, from $1 to $1.10; that of four rooms (the largest suites provided), from $1.25 to $1.50. The fixtures are simple, but superior to those supplied in like dwellings by private landlords. In a few dwellings, hot water is supplied. Others have gas, paid for on the 'slot' principle. Two cents' worth is sufficient for four or five hours' consumption by one burner. Since Liverpool went into this enterprise, it has paid $1,925,000 for demolished property, and, in addition, several pieces of land have been purchased, costing $335,825, for the erection of municipal dwellings. The cost up to date for construction alone has been $732,875. The total burden on the local taxation as the result of these combined operations amounts to 1¾*d.* in the pound sterling, or 3½ cents on every $4.86. The rents paid are insufficient by about 2 per cent to meet the cost of the dwellings, without counting anything for a sinking-fund, depreciation, etc. The present effort of Liverpool is to provide housing for the dispossessed tenants of condemned slums. It will probably take 12 years to complete this task. Then, the question of providing better accommodations for artisans and mechanics will possibly be faced. Liverpool, it is said, owns more revenue-producing real-estate than any other municipality in the world, its income from this source being about half a million dollars a year.

"The London County Council has within a recent period taken hold of this 'housing question' with a firm and comprehensive grip. There will not be as much compensation paid to owners of slum property as formerly. One scheme adopted by the London County Council provides cottages for 8,000 people; another (and this is on an estate outside of the London boundary-line) will accommodate 6,000 people; and a site has been bought where 42,000 are to be accommodated in pretty little cottages, with gardens. London undertakes to provide for the artisan class as well as for the 'casual,' and in that particular it is in advance of Liverpool. . . .

"The claim is made that the best-governed towns in Great Britain and the towns that have the least taxes are those where municipal socialism prevails. But this claim is strongly controverted, especially as to ultimate results; and the opponents of municipal socialism charge against that system a tendency to extravagance, jobbery, official indifference and lethargy, and the broader charge is made that the system contracts and paralyzes individual effort and enterprise. Yet it should be kept in mind, in connection with this criticism, that municipal socialism has in some cases been embarked upon almost out of necessity — as, for instance, in the case of the housing of the poor in Liverpool, where private enterprise has not only failed absolutely to solve the problem, but has not even alleviated its most crying evils."

ILLUSTRATIONS

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

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

PAN-AMERICAN EXPOSITION, BUFFALO, N. Y.: THE PROPYLÆA, FROM THE SUNKEN GARDEN. MESSRS. CARRÈRE & HASTINGS, ARCHITECTS, NEW YORK, N. Y.; — PERGOLA. MESSRS. CARRÈRE & HASTINGS, ARCHITECTS, NEW YORK, N. Y.

COMMUNICATIONS

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

THE REGISTRATION OF ARCHITECTS IN NEW JERSEY.

JERSEY CITY, N. J., May 22, 1902.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs: — I have been requested by the New Jersey State Board of Architects to send you a copy of the enclosed notice which has been published, requesting all architects to register under the law recently passed. Yours truly,

HUGH ROBERTS,
Secretary and Treasurer, State Board of Architects.

STATE OF NEW JERSEY. — STATE BOARD OF ARCHITECTS,
1 Exchange Place, Jersey City, N. J.

Charles P. Baldwin, *President;* Hugh Roberts, *Secretary and Treasurer;*
Arnold H. Moses, Charles Edwards, David B. Provoost.

JERSEY CITY, N. J., May 19, 1902.

NOTICE is hereby given to all architects practising the profession of architecture in the State of New Jersey as defined in "An Act to Regulate the Practice of Architecture" (approved March 24, 1902), and in effect July 1, 1902, that they should now apply for a certificate to practise architecture under Sections 9 and 10 of said law.

For the information of those who desire to secure certificates the Act has been printed in full by the State Board of Architects, and copies will be furnished on application, together with a form with affidavit attached that has been approved by the Board.

The privilege extended to practising architects by Sections 9 and 10 of said law will expire July 1, 1902, after which another form of application for examination under the provisions of the Act will be furnished when requested.

All certificates issued on the present form of application and affidavit will be forwarded to the applicant after the payment of the registration fee of $5.00, said amount being payable after notice of acceptance of application is received by the applicant from the Secretary. All certificates issued are subject to the powers of revocation vested in the Board by the above-mentioned Act. HUGH ROBERTS, *Secretary.*

NOTES AND CLIPPINGS

Repairing a Range-boiler. — A correspondent of the *Metal Worker* gives the following account of a method of repairing a range-boiler resorted to by a man who did not wish to incur the outlay for a new boiler when the old one had begun to leak. The boiler was made of galvanized-iron and the shell was too thin to permit of the use of a drift-punch to make an opening to be tapped so as to be stopped by means of a screw-plug. In the first place, as the owner was somewhat handy, he emptied the boiler and soldered up the hole, but this did not last more than a few days after the boiler became hot, and it began to leak again. He then employed a plumber to fix up the boiler so that it would stand until he could afford to have the old boiler replaced by a new one. The plumber removed the old solder and cleaned off the boiler, making a perfectly round hole, where it leaked, large enough to take a ¼-inch bolt with a soft-copper washer on the inside. The bolt and the washer were secured together and dropped into the boiler through the hot-water opening at the top, a piece of thread being tied to each end of the bolt. It was a simple matter to insert a wire through the hole and catch the thread upon the lower end of the bolt. The bolt was then drawn through the hole and another soft-copper washer placed on the outside. A cement composed of litharge and glycerine was worked into the hole between the inside of the boiler-shell and the washer. Some of the same cement was put on the outside of the boiler-shell under the washer. When enough cement was put on the washers were drawn up tight against the shell by the tightening of the nut. When the cement had hardened it not only made a perfectly tight job, but also one that has stood for a considerable time. This method has been found serviceable for stopping holes in iron tanks, pipes and other places, where replacing the material would have caused considerable expense. It has proved its efficiency where the material is not thick enough to be drilled and tapped to be filled with a plug. The same method can be adopted for stopping sand-holes in thin castings.

This is the man for whom it was planned,
And this is the scamp who put it in hand,
And filled-in the footings with stones and sand,
With no cement, and said, "It's grand!"
When building the house that Jerry built.

These are the bricks, as soft as cheese,
That broke in two if you chanced to sneeze;
Said Jerry: "The man what don't like these,
Lor', blow me! he *will* be 'ard to please;
They'll last for months — unless there's a breeze,"
In the beautiful house that Jerry built.

These are the windows of packing-case wood.
Said Jerry: "Of course it's understood
It'll be extra for windows of real wood;
These 'ere are special, and much too good"
To go in the house that Jerry built.

This is the rubbish that blocked up the drain.
Said Jerry: "Now don't you labor in vain;
Fill it in — it'll never be seen again,
It's ten to one he won't complain;
The cellar is meant to collect the rain"
That falls on the house that Jerry built.

This is the elegant panelled door,
With the natural finish left by the saw,
Which warped till its panels fell out on the floor.
He bought it for six shillings — but, "Lor'!"
Said Jerry, "it looks worth ten bob more" —
Too good for the house that Jerry built.

These are the slates — some small, some great,
Most were crooked, but a few were straight,
Each kept in place by the next one's weight;
Said Jerry, instructively, to his mate:
"I saves my nails and I trusts to Fate,"
When building the house that Jerry built.

These are the locks he bought for a song,
They work three times and then go wrong.
He said: "It's lucky they ain't too strong;
There'll be some repairs a-coming along"
To be done to the house that Jerry built.

This is the price the purchaser paid
(He'd made some cash in the grocery trade);
"Dirt cheap," said the man of trowel and spade,
As the cheque in his horny hand was laid;
"And a better house has never been made"
For the price of the house that Jerry built.

This is the band that came up the road;
The drummer drummed and the cornet blowed,
And as it passed, the house like a flash
Fell suddenly down with a fearful crash,
And all that remained was a heap of smash;
And the owner said words like "blow" and "dash,"
And he stared in amaze at the heap of dust,
While the more he stared the more he cussed
At the vanished house that Jerry built.

A. E. F. in "Property."

The Island of Philæ and the Assuan Dam. — As usual, a number of interesting facts are to be gleaned from Lord Cromer's annual report of Egyptian affairs. He devotes a considerable amount of space to a description of the precautions which have been taken to preserve the foundations of the ruined temples on the island of Philæ, which will be submerged annually when the reservoir at Assuan is completed. He says that the Egyptian Government has been attacked by the engineers for paying too much attention to the artists and archæologists, and by the latter for paying too much attention to the engineers. His own opinion is that to have deprived the people of Egypt on artistic and archæological grounds of the enormous benefits which they will derive from the construction of the Assuan dam would have been perfectly unjustifiable. On the other hand, he declares that everything possible has been done to meet the wishes of those who represent the archæological and artistic aspects of the question. — *N. Y. Evening Post.*

The Invalidity of unsealed Corporate Contracts. — We have repeatedly pointed out the risks which architects, engineers and contractors accept when they make arrangements with corporations and other local bodies without taking the precaution to have the agreements stamped with the common seal in each case. There is so much confidence in a public authority that individual security is neglected. Recently another instance of what we may call the fatality came before the Courts. Mr. Lawford, a civil-engineer, who is known in connection with drainage work, sought to recover £169 14*s*., remuneration for preparing a report and plans for a scheme of sewerage which the Billericay Rural District Council were about to undertake. The Local Government Board held an inquiry and approved of the plans and estimates. Tenders were sent in, but one was not accepted. It was not denied by the defendants that Mr. Lawford's work was duly performed, or, in other words, there was no defence except the fact that as the common seal was not affixed to the agreement, it was therefore of no value. It is always a disagreeable duty for a judge to be compelled to give a decision when he knows that by it gross injustice must be done to a plaintiff. But so long as the judgment which was given by Lord Denman in Church *vs.* Imperial Gas Company is unreversed there is only one course open, and that is to say that an agreement is illegal which is without a common seal. Lord Denman's words should be remembered as a warning by all who have business with corporations of all kinds, for he said: "The general rule of law is that a corporation contracts under its common seal; as a general rule it is only in that way that a corporation can express its will or do any act. That general rule, however, has from the earliest traceable periods been subject to exceptions, the decisions as to which furnish the principle on which they have been established, and are instances illustrating its application, but are not to be taken as so prescribing in terms the exact limit that a merely circumstantial difference is to exclude from the exception. This principle appears to be convenience amounting almost to necessity. Wherever to hold the rule applicable would occasion very great inconvenience, or tend to defeat the very object for which the corporation was created, the exception has prevailed; hence the retainer by parole of an inferior servant, the doing of acts very frequently recurring or too insignificant to be worth the trouble of affixing the common seal, are established exceptions; on the same principle stands the power of accepting bills of exchange and issuing promissory notes by companies incorporated for the purposes of trade, with the rights and liabilities consequent thereon." In Hunt *vs.* Wimbledon Local Board the architect's plans were utilized, but although the Board had benefited by them the claim for payment was rejected on the ground of informality. How such a defence can be set up by an English authority is beyond comprehension, but the fact remains that payment can be successfully evaded by the absence of a seal. — *The Architect.*

The widest Streets. — In the *Clay Worker* Mr. W. C. Dodge says that Washington, D. C., has sixteen streets, or avenues, each 160 feet wide, and many others 120 and 130 feet in width. Fifty-four per cent of the entire area of the National Capital is occupied by its streets, avenues and alleys, a larger proportion than that of any other city in the world. The street-area of a few of the principal cities is given as follows: —

Washington, D. C.	54 per cent.
Vienna	35 per cent.
New York City	35 per cent.
Philadelphia, Pa.	29 per cent.
Boston, Mass.	26 per cent.
Berlin	26 per cent.
Paris	25 per cent.

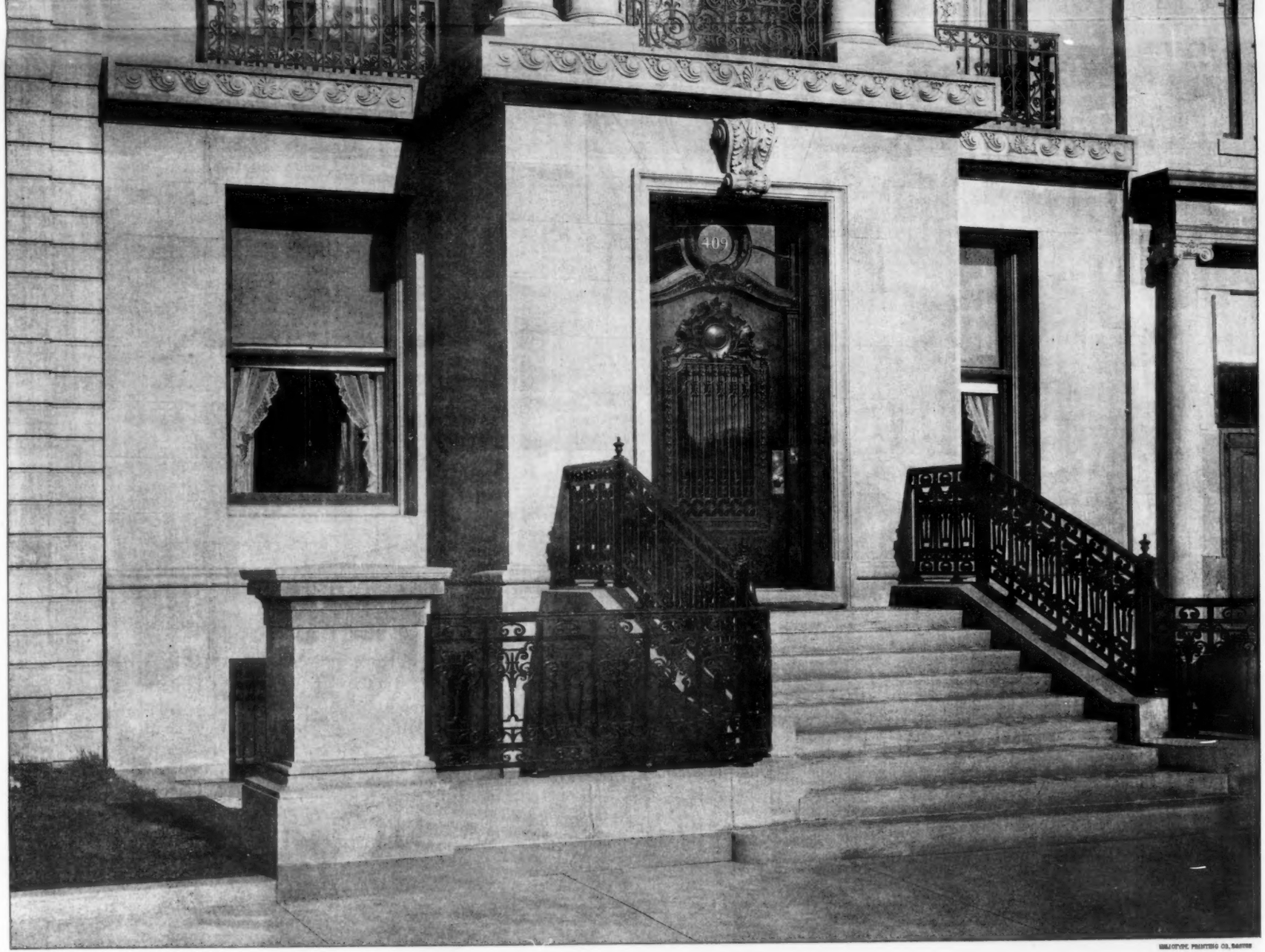
Puvis de Chavannes as a Caricaturist. — The lighter side of a great artist's genius is frequently disclosed only after his death. This was the case with the mural painter Puvis de Chavannes, who is remembered for the grave beauty of his decorations in various French cities and in Boston; it is only recently that his minor studies and caricatures have been exhibited in Paris. Apropos of this exhibition *Figaro* recalls an interesting anecdote. The art-critic Count Delaborde, shortly after his election to the Academy of Fine-Arts, took occasion to say of Puvis that "his talent represented the negation of all the essential principles of art." This comment Puvis remembered until Delaborde, now become Perpetual Secretary of the Academy, in a public address perpetrated the ineptitude of declaring that in the entire production of all the centuries he recognized only one work which really deserved the title of masterpiece — namely, the Parthenon. This dictum was the occasion of a caricature by Puvis, entitled "The Ruins of M. Delaborde, drawn from the life by M. Parthenon." Amid the ruins of the dome of the Institute sat the eminent Perpetual Secretary, as a mutilated statue. The face, however, was intact, the head highly polished, and — most notable trait of all — the eyes tightly closed. Below, one read the name of the artist: "To M. Delaborde, gratefully and respectfully, M. Parthenon." — *N. Y. Evening Post.*

S. J. Parkhill & Co., Printers, Boston, U. S. A.

No. 409 COMMONWEALTH AVE., BOSTON, MASS.

PEABODY & STEARNS, ARCHITECTS.

The American Architect
May 31, 1902.
No. 1379.



ENTRANCE PORCH: No. 409 COMMONWEALTH AVE., BOSTON, MASS.

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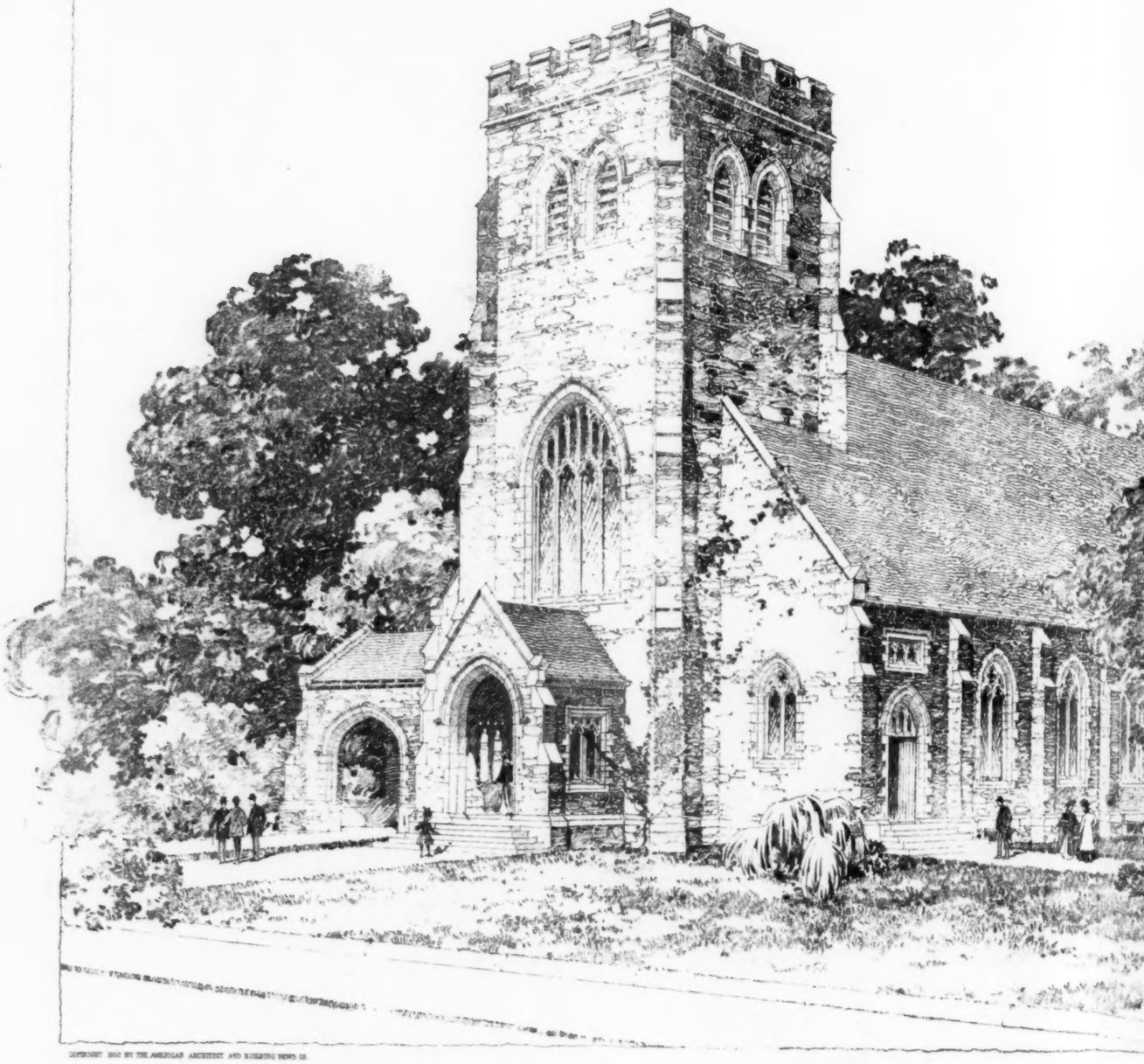
·CHARLES·B·DUNHAM·ARCHITECT·
·1 SOMERSET ST·BOSTON·MASS·



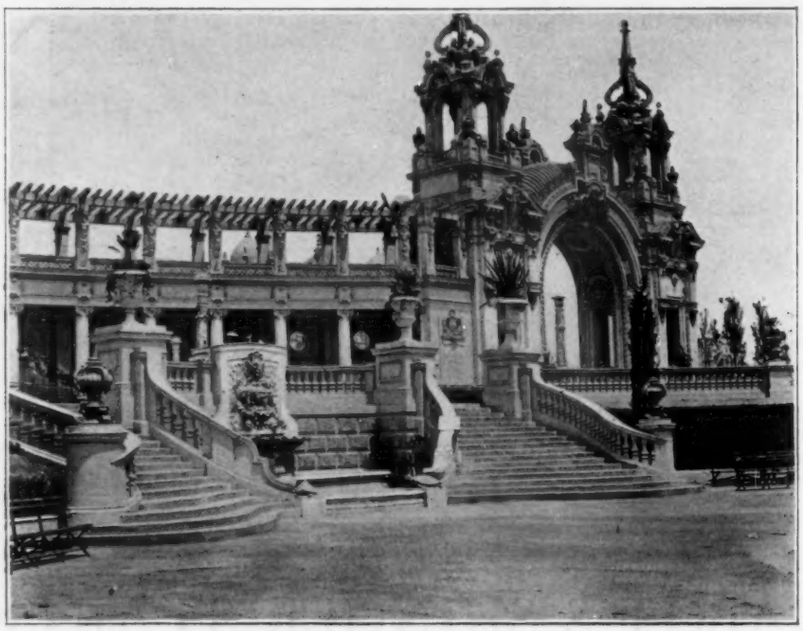
The American Architect and Building News

A WEEKLY JOURNAL OF CONSTRUCTIVE AND DECORATIVE ART

VOL. LXXVI. — No. 1379.] SATURDAY, MAY 31, 1902. PRICE, { INTERNATIONAL ISSUE, 50 CTS / REGULAR " , 15 "

Topographical Index of Advertisers.

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



THE PROPYLÆA, FROM THE SUNKEN GARDEN.

PERGOLA.
Carrère & Hastings, Architects.

PAN-AMERICAN EXPOSITION, BUFFALO, N. Y.

The American Architect and Building News

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Advertising Rates: For "wants" and "proposals," 15 cents per line [8 words to the line], each insertion. 50 cents the least charge. Other rates on application.

ARCHITECTS' REMOVALS, Etc.

CLARENCE R. WARD, architect, has succeeded to the practice of the late Edward R. Swain, architect, of San Francisco, and will continue same at his former offices, 227 Crocker Building, San Francisco.

JAMES METCALFE REDFIELD, architect, has removed his office from 34 Winston Building, Utica, N. Y., and will open an office in Los Angeles, Cal., in the fall.

WANTED.

DRAUGHTSMEN. — Wanted, draughtsmen. Apply in person. J. P. Rinn, 7 Water St., Boston. t.f.

WANTED.

POSITION. — Draughtsman would like position in good Boston or New York office from June to October inclusive. Graduate Boston Tech. Five years' office experience. Work on competitive drawings preferred. Address "Temporary," care *American Architect*. 1380

WANTED.

DRAUGHTSMAN. — Wanted, experienced draughtsman and specification writer. Personal interview desired before engaging. Ernest Flagg, architect, 35 Wall St., N. Y. City. t.f.

WANTED.

DRAUGHTSMAN. — Wanted, first-class architectural draughtsman and specification writer. Call, if possible, at office of Ernest Flagg, architect, 35 Wall St., N. Y. City. t.f.

BUILDING INTELLIGENCE.

(Reported for the American Architect and Building News.)

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

ADVANCE RUMORS.

Aiken, S. C.—This city is to have a $300,000 tourists hotel before another season. It is to be built by Mrs. H. G. Beckwith, of Colorado.

BUILDING INTELLIGENCE.

(*Advance Rumors Continued.*)

Albany, Ga. — A new court-house is to be erected here to cost $40,000. The plans of Lockwood Bros., of Columbus, have been accepted.

Albany, N. Y.—Andrew Carnegie's proffer of a $150,000 library building to this city, provided the city guarantee an annual expenditure for its maintenance of $10,000, has been rejected by the Board of Aldermen.

Allegheny, Pa. — R. Maurice Trimble, 707 Ferguson Block, Pittsburgh, has completed plans for a three-story business building, 40′ x 200′, to be erected on Preble Ave., near Kerr St., for the Ohio Valley Savings Bank.

Amesbury, Mass. — The Omnibus Public Building Bill, which passed the Senate on May 21st, provides $45,000 for a public building here.

Anderson, Ind.—The Omnibus Public Building Bill, which passed the Senate on May 21st, provides $80,000 for a public building here.

Ashburnham, Mass. — By the terms of the will of Jacob H. Fairbanks, who died recently at Fitchburg, Cushing Academy will receive a legacy variously estimated at from $200,000 to $400,000, while this town, his native place, is to receive $40,000 for the erection of a memorial town-hall.

Asheville, N. C. — Sorgius Monkiewinez, a German with a fortune of $2,000,000, will build a palace at this place.

Augusta, Me. — The Omnibus Public Building Bill adds $25,000 to appropriation for public building here.

Aurora, Ill. — Plans have been completed by J. F. & J. P. Doerr, Chamber of Commerce Building, Chicago, for a pressed brick and stone hospital building to be erected here for the Sisters of St. Francis. It will be three stories high, have copper and slate roof, cement work, etc., and cost $70,000.

Bakersfield, Cal.—Plans are being made by Havens & Toepke, Flood Building, San Francisco, for a theatre building for the Bakersfield Eagles' Hall & Opera House Co., to cost $55,000.

Baltimore, Md. — The Eastern Female High School to be built here will cost $175,000.

Bath, Me. — Charles W. Morse, of New York, formerly of this city, and prominent in steamboat interests on this coast, and in banking, will give the city a $50,000 high-school building, on a lot recently purchased on High St.

Bay City, Mich. — The Board of Directors of the German-American sugar factory propose expending $100,000 in rebuilding its factory.

Beaumont, Tex.—Plans for a $40,000 Baptist Church have been adopted.

Bennettsville, S. C. — Mr. W. S. Mowry is preparing for the erection of a $20,000 residence on Main St.

Boston, Mass. — At a recent meeting of the Boston Society of Natural History, President Minot outlined the future policy of the organization. The present building is too small, he said, and if the Legislature would remove the restrictions the society would like to sell the present site to the Institute of Technology and erect a building that would better meet the requirements.

BUILDING INTELLIGENCE.

(*Advance Rumors Continued.*)

Bridgeport, Conn. — The East Washington Ave. Baptist Society has appointed a committee, of which W. R. Miller is chairman, to secure plans for a new church to be erected on the corner of Kossuth and Arctic Sts. The structure will cost about $20,000.

Architect Guy Carleton Hunt will have plans ready to figure in two or three weeks for a stone rectory, to cost $16,000, to be erected on Park Ave. for St. John's Episcopal parish. Rev. W. H. Lewis, pastor.

Brooklyn, N. Y. — The Board of Managers of the Norwegian Lutheran Deaconesses' Home and Hospital, 46th St. and 4th Ave., will erect a new hospital building, to cost $70,000.

J. Rogers Maxwell has decided to give a new building to the Long Island College Hospital in memory of his brother, Henry W. Maxwell, who died recently, leaving his brother the bulk of his estate. It is said that Mr. Maxwell will devote $400,000 to a new home for the hospital. D. Everett Ward is to prepare plans. They will be completed as soon as possible, so that work on the buildings can be begun without delay. Mr. Ward says it is the intention to tear down the central hospital building at once.

Burlington, Vt.—The following committee has been appointed to secure plans for the proposed new library building, to be erected at the corner of College and Winooski Aves., as a gift of Andrew Carnegie. C. C. Hawley, president; F. O. Sinclare, secretary; E. B. Taft, G. O. Stiles and C. E. Beach. The structure is to cost $50,000.

Cambridge, Mass. — Architect James Purdon, 8 Beacon St., Boston, has been selected to prepare plans for a society building to be erected on Linden St. for Delta Phi Society, care architect. Will be brick, two and one-half stories, and contain assembly hall, library, reception-room and dormitory, and cost $20,000.

Chicago, Ill. — E. Stanford Hall, Association Building, is taking figures on remodelling the structure, 1673 Congress St., formerly used by the Board of Education, into an apartment building.

Officials of the University of Chicago announce that plans have been prepared for the immediate erection of an additional heating plant that will involve an expenditure of $150,000.

David Zemansky, 3123 Wabash Ave., has leased to Isaac D. Zeman, of New York, the property at 140 Pacific Ave., 22′ x 105′, and the lot, 606 Canal St., 25′ x 100′. By the terms of the leases Mr. Zeman is to erect a six-story building, to cost not less than $30,000 on the first-named site, and he is to construct another six-story building on the Canal St. property, to cost not less than $20,000. Both of these structures are to be started within a period of three years.

Cincinnati, O. — The Baldwin Piano Co. will erect a brick and stone factory building to cost $100,000, at Deer Creek Road and Des Moines St. Work will be commenced at once.

The Brighton German Bank will erect a new building at Colerain and Harrison Aves., at a cost of $25,000.

Council Bluffs, Ia. — Temporary buildings, to cost $35,000, will be built at the Iowa School for the Deaf and Dumb, which was destroyed by fire on May 9, causing a loss of $300,000.

Crookston, Minn. — The Omnibus Public Building Bill, which passed the Senate on May 21st, provides $75,000 for a public building here.

Dallas, Tex. — The erection of an addition, costing $40,000, to Ursuline Convent, is contemplated.

Elkins, W. Va. — Architect Charles E. Cassell, Law Building, Baltimore, Md., has completed plans and is ready for estimates on the new hospital to be erected here from the funds donated by ex-Senator Henry G. Davis, Cumberland, Md. There will be a main building three stories high, of brick and stone, and two wings two stories high. Buildings will cost about $40,000, and will be called the Davis Memorial Hospital.

Fort Riley, Kan.—Congress will be asked to appropriate $100,000 for the erection of a hospital at this place.

Gainesville, Tex. — The Omnibus Public Building Bill, which passed the Senate on May 21st, provides $80,000 for a public building here.

Green Bay, Wis. — The Sisters of Misericordia, in charge of St. Mary's Mothers and Infants Home, will erect a new building here.

BUILDING INTELLIGENCE.

(*Advance Rumors Continued.*)

Greensboro, N. C.—A new students' hall is to be erected for the State Normal and Industrial College at a cost of $20,000.

Holyoke, Mass.—The Omnibus Public Building Bill, which passed the Senate on May 21st, provides $135,000 for a public building here.

Houston, Tex.—The erection of a new church is contemplated by the Baptist congregation. It will cost $25,000.

Indianapolis, Ind.—C. A. Wallingford, 152 Market St., has drawn plans for a three-story modern hotel building to be erected on New York St., between Delaware and Alabama, by Henry Coburn, at a cost of $50,000.

Jersey City, N. J.—This city will erect a high-school building that will cost $500,000. The present structure is badly overcrowded. It has a seating capacity of about 400 and has about 800 pupils.

Kalamazoo, Mich.—The Omnibus Public Building Bill increases the limit for the Custom-house from $72,000 to $132,000.

Lake Charles, La.—A library building is to be erected here to cost $50,000. It will be two-story, brick, 60′ x 60′, and Architect Whitney has prepared the plans.

Laramie, Wyo.—The Omnibus Public Building Bill, which passed the Senate on May 21st, provides $100,000 for a public building here.

Little Rock, Ark.—Orders have been given the architect to prepare plans for the Capital Theatre building at once. It will cost $20,000.

The Christian Church congregation, 10th and Louisiana Sts., contemplates the erection of an annex at a cost of $20,000.

Logansport, Ind.—Andrew Carnegie has donated $25,000 for a public library building under the usual conditions.

Los Angeles, Cal.—John Parkinson, 606 Laughlin Building, has completed plans for a three-story brick business block, 50′ x 140′, to be erected at 3d and 4th Sts., by R. A. Rowan at a cost of $40,000.

Lynchburg, Va.—The architects, Frye & Chesterman, are preparing plans for the new theatre which is being considered by Jake Wells and his Lynchburg friends. The cost will be about $45,000.

Manchester, N. H.—J. H. Mendell has been awarded the contract for the erection of the new convent for St. Augustine's parish; cost, $38,000.

Manlius, N. Y.—St. John's Military School will be rebuilt. The announcement is made by the Head Master, Col. William Verbeck. A new building, to cost $28,000, will be erected at once, and other buildings will be added later.

Marblehead, Mass.—The Omnibus Public Building Bill, which passed the Senate on May 21st, provides $40,000 for a public building here.

BUILDING INTELLIGENCE.

(*Advance Rumors Continued.*)

Marshalltown, Ia.—The State Board of Control, Des Moines, has made an appropriation of $50,000 for a hospital building, ice-house, cold-storage plant and boiler-house at the Soldiers' Home.

Meriden, Conn.—The Omnibus Public Building Bill adds $100,000 to appropriation for public building here.

Middletown, O.—Andrew Carnegie will donate $20,000 for a public library building here, under the usual conditions.

Milwaukee, Wis.—Otto Strack, New York, has drawn plans for a $40,000 residence to be erected for Mrs. E. S. Val Blatz, on Prospect Ave. and Brady St. It will be three stories high and of pressed brick, with Bedford stone and terra-cotta trimmings.

Architects H. C. Koch & Son, Wells Building, are receiving bids for a $25,000 four-story factory building to be erected for Millmann Brothers. It will be of mill construction, have composition roof, steam heat and gas light.

The Children's Free Hospital Association, 100 Farwell Ave., contemplate erecting a new building, to cost $25,000.

A new bowling alley and billiard hall will be erected in the vicinity of Grand Ave. and 3d St., at a cost of $150,000. William Terry and John Koerner interested.

Minneapolis, Minn.—The Real Estate Board, made up of the leading real estate and rental men of the city, will erect a model building to serve as a real estate exchange, so arranged that the man looking for a house or lot to buy or rent can be accommodated with the least possible effort on his part. The building will be large enough to accommodate all members.

Nashua, N. H.—The Omnibus Public Building Bill adds $10,000 to appropriation for public building here.

New York, N. Y.—B. W. Levitan, 489 Fifth Ave., has plans for a six-story tenement building, 50′ x 86′, for E. Califano, 115 Hamilton Pl. It will be erected on 149th St., near 8th Ave., and will cost $40,000.

M. Loeb, 118 W. 72d St., will erect a four-story brick dwelling, 24′ x 94′, at 273 Madison Ave., after plans by A. W. Brunner, 33 Union Sq.; cost, $60,000.

Plans for a five-story residence, 40′ x 59′, to be erected at 36 and 38 E. 62d St., by J. W. Porter, 5th Ave. and 59th St., at a cost of $60,000, have been prepared by Trowbridge & Livingston, 424 Fifth Ave.

The Picken & Lilly Construction Co., 1961 Seventh Ave., has had plans prepared by John Hauser, 1961 Seventh Ave., for 7 three-story dwellings, to be erected at a cost of $154,000.

Hunt & Hunt, 28 E. 21st St., have filed plans for the reconstruction of George W. Vanderbilt's city residence, at 640 Fifth Ave. The interior is to be rearranged and fitted with an art gallery, a library and Japanese room, and an automobile room. New marble staircases are to be built, and a passenger elevator installed.

Ground has been broken for a new school-building for St. Christopher's Home, Dobbs Ferry. The institution is for the care of destitute children of the Methodist Episcopal Church, and is managed by a Board consisting of well known women of this city, assisted by an Advisory Board of men. Cost of new buildings, $20,000.

The Alliance Realty Co. has lent to the Old Colony Co. $315,000 on the property at 17 to 21 W. 32d St. A twelve-story apartment hotel is to be built on the premises, and is to be ready for occupancy by October 1, 1903.

Plans have been filed at the Bureau of Buildings, Manhattan, for alterations to 5 W. 52d St., of which Adolphe De Bary is the owner. The entire front is to be taken down and rebuilt with limestone and brick and a copper cornice; a bay window is to be put in the dining-room, the staircases in basement and first floor are to be rebuilt, doors changed and partitions rebuilt. The cost is placed at $25,000. C. W. Romeyer, of 55 Broadway, is the architect.

G. F. Pelham, 503 Fifth Ave., has completed plans for the $25,000 seven-story brick loft building, 25′ x 98′, on Goerck St., for A. Ronowitz, 60 Pike St.

A five-story brick storage building, 50′ x 95′, to cost $25,000, will be built at 227 E. 44th St. for W. Baumgarten, 294 Riverside Drive. E. Baumgarten, 15 E. 81st St., architect.

H. Anderson, 1183 Broadway, has completed drawings for 15 five-story brick dwellings, 18′ x 50′, to be erected on 137th St., near 8th Ave., for G. Broadbelt, 604 W. 115th St., at a cost of $335,000.

John Hauser, 1961 Seventh Ave., has drawn plans for a nine-story hotel, to be erected at Lexington Ave. and 49th St., for Gundlach & Koch, 204 E. 64th St., at a cost of $200,000.

Friedman & Feinberg, 329 E. 116th St., have had plans drawn by M. Bernstein, 111 Broadway, for a six-story brick tenement and store building, 44′ x 67′, to be erected at Rivington and Allen Sts., at a cost of $45,000.

Horenburger & Straub, 122 Bowery, have drawn plans for a six-story brick tenement with store, 50′ x 90′, to be erected at 745 and 747 E. 6th St., for J. Margovitz, 163 Henry St., at a cost of $40,000.

Roberts n & Potter, 160 Fifth Ave., have drawn plans for a five-story dwelling to be erected at 31-33 E. 67th St., for H. D. Auchincloss, Tuxedo Park, at a cost of $62,000.

Norfolk, Va.—The contract for the new Hotel Neddo, which is to be erected in Plum St. has been awarded to Mr. E. Tatterson, of this city. The building is to cost $20,000.

Northampton, Mass.—The Omnibus Public Building Bill, which passed the Senate on May 21st, provides $70,000 for a public building here.

Norwalk, Conn.—The Norwalk Improvement Association is preparing for the erection of a $60,000 mill here to be occupied when completed by Jos. Loth & Co., 65 Green St., New York, for the manufacture of silk ribbons.

Orange, N. J.—Effort is being made to raise $30,000 for a new edifice for the Methodist Episcopal Society. While the church and site will cost considerably more than this, it has been decided to have plans prepared as soon as this amount is assured.

Orange, Tex.—The Florida Paper Co. will erect a $100,000 plant at this place.

Parkersburg, W. Va.—The Elks will erect a $50,000 building during the summer.

Pawtucket, R. I.—Five architects have been invited to prepare plans in competition for the new school-buildings to be erected in Darlington and S. Woodlawn, the plans to be in by June 8th. Each building will cost about $36,000 and the furnishings $4,000.

Philadelphia, Pa.—Samuel Brown & Co., builders, will erect 57 two-story brick houses, 16′ x 60′, on Beechwood Ave. and Church Lane, after plans by Charles J. Brooke; cost, $125,000.

Preliminary plans have been made by William C. Prichett, Jr., 420 Walnut St., for an eight-story publishing building, 100′ x 135′, at 1006 Arch St., for the John C. Winston Co., 718 Arch St. It will have slag roof, steam heat, power plant, elevators, sprinklers, cement floors, etc., and will cost $100,000.

Lemuel White will shortly begin a large building operation on Percy St., above Venango. Sixty-four two-story dwellings and four combined stores and dwellings will be erected, costing a total of $106,000.

Pittsburgh, Pa.—The Century Architectural Co., Real Estate Trust Building, is receiving bids for the erection of a brick and terra-cotta residence at Lang Ave. and Thomas St., for Dr. W. A. Stewart. It will cost $25,000.

Portland, Ore.—The Omnibus Public Building Bill increases the limit for the Custom-house from $150,000 to $250,000.

Providence, R. I.—The new post-office building is now assured as a result of the favorable report of the Senate committee on the Omnibus Public Buildings Bill and its passage by the Senate on May 21st. By the terms of the bill the sum of $1,300,000 is appropriated for the Providence building, including the proceeds from the sale of the old building.

Architect George Leach, Butler Exchange, has drawn plans for a one-story brick mill construction factory, 50′ x 90′, for John T. Slocum & Co., manufacturers of small machinists' tools, 227 Eddy St. The building will be so constructed that 3 additional stories may be added later.

Plans have been completed by Engr. Otis F. Clapp, City-hall, and bids will soon be received for the proposed new one-story brick pumping-station, 24′ x 50′, at the Pettacon Settlement for the City. Natural or slow sand filtration system will be installed; cost, $225,000. Rob't E. Smith, Supt. Public Works.

Pueblo, Col.—Plans are being prepared by J. F. Bishop, Central Block, for a $40,000 brewery for the A. Koors Brewing Co., of Denver.

Rock Island, Ill.—Drack & Kerns are drawing plans for a three-story flat-building at 19th and 4th Ave., for Dr. E. M. Sala, to cost $30,000.

Rockland, Me.—A special city election was held recently to act upon the offer of Andrew Carnegie

BUILDING INTELLIGENCE.

(*Advance Rumors Continued.*)

to give this city $20,000 for a library. It resulted in a vote of 450 yeas to 30 nays.

San Francisco, Cal. — The William Ede Estate Co. will erect a fireproof theatre building at Market and 9th Sts. It will be seven stories high, 70′ x 125′, and cost $400,000.

A four-story and basement warehouse, to cost $30,000, will be built on Mission St. by R. E. Dickinson, after plans by Frank S. Van Trees.

The Omnibus Public Building Bill increases the limit for the Custom-house from $700,000 to $1,000,000.

Somersworth, N. H.—Andrew Carnegie has offered to make a gift of a public library to this city, to cost $15,000, provided the city will appropriate $15,000 annually to pay the expenses of conducting it. A committee has been appointed to select a site, and the offer will undoubtedly be accepted.

South Omaha, Neb.—Plans of Thos. R. Kimball, 506 McCague Building, Omaha, have been accepted for the $50,000 Carnegie library building.

St. Louis, Mo.—Plans have been completed by Cass Gilbert, 111 Fifth Ave., New York, for the Art Building at the World's Fair. It will be 300′ x 900′, with two pavilions, each 200′ x 300′, and will cost $1,000,000.

The A. Leschen & Sons Rope Co. will build a two-story factory building, 80′ x 365′, and a two-story warehouse, 75′ x 150′, at Morin and Bulwer Aves., to cost $80,000, after plans by Mauran, Russell & Garden, Chemical Building.

Bartlow & Kennedy, First National Bank Building, have completed plans for a five-story brick and stone building, 100′ x 118′, to be erected at 5th St. and Missouri Ave., by W. P. Launtz, at a cost of $80,000.

St. Paul, Minn.—E. J. Donohue, 28 Gilfillan Block, has made plans for a four-story wing, 56′ x 68′, to the Grand Opera-house Block, for Jacob Litt, to cost $40,000.

Plans have been drawn by E. J. Donohue, Gilfillan Block, for a new church, 85′ x 160′, to be erected at Western and Dayton Aves., for St. Joseph's Catholic congregation at a cost of $125,000. Rev. J. T. Harrison, pastor.

COMPETITIONS.

BUILDING. [At Fall River, Mass.]

The County Commissioners will receive competitive plans **until June 16** for a building for the registry of deeds for the Northern Dist. GEO. T. DURFEE, Chmn. 1380

SCHOOL-BUILDING. [At Brockton, Mass.]

Plans will be received in competition by the Public Property Committee **until June 10** for a three-story brick and stone high-school building to be erected on Belmont St The building will contain beside schoolrooms, laboratories, lecture-rooms, commercial-room, manual-training room, assembly-room, gymnasium, bath-room, offices and library, and cost about $180,000. 1379

PROPOSALS.

STEEL PLATES, FORGINGS, ETC. [At Washington, D. C.]

Proposals will be received at the Bureau of Supplies and Accounts, Navy Department, Washington, D. C., **until June 10, 1902**, and publicly opened immediately thereafter, to furnish a quantity of steel plates, rivet steel, forgings and billets. Blank proposals will be furnished upon application to the navy pay offices, New York and San Francisco, Cal., or to the bureau. A. S. KENNY, paymaster general, U. S. Navy. 1379

BUILDING. [At Fort Riley, Kan.]

Fort Riley, Kan. Sealed proposals, in triplicate, will be received at this office **until June 10th, 1902**, for the construction of and alterations to the following buildings, including plumbing, heating and electric wiring: Construction of one artillery stable, two cavalry stables, two gun sheds, one bachelor officers' quarters and two double officers' quarters. Alterations in four cavalry barracks. Additions and alterations to three artillery barracks and two cavalry barracks at Fort Riley, Kan. Full information and blank forms of proposals will be furnished upon application to this office. CAPTAIN G. O. CRESS, constructing quartermaster. 1379

ASPHALT PAVING. [At Glens Falls, N. Y.]

Sealed proposals will be received by the Board of Trustees of the Village of Glens Falls, N. Y., at the office of the Village Clerk, Glens Falls, N. Y., **up to and including June 9, 1902**, for the furnishing of all labor and materials and constructing about 3,000 yards of vitrified block, sheet asphalt or block asphalt on concrete foundation, according to plans on file in the clerk's office. Geo. P. Slade, engineer. H. L. PALMER, Clerk. 1379

BANK BUILDING. [At Oakland, Md.]

Sealed proposals will be received by Mr. F. A. Thayer, President, First National Bank at Oakland, Md., **on or before the fourteenth day of June**, for the construction of a brick business and banking building to be erected for the First National Bank at Oakland, Md. Bids are invited for the building complete as well as for the following separate parts: Excavation and foundation, brickwork, and stone and terra-cotta trimmings, carpenter work, plastering, galvanized-iron trimmings, metal ceilings, painting, glazing and hardware, heating, plumbing, acetylene gas illuminating plant and electric-light wiring, roofing, and bank fixtures and furniture. All to be in accordance with plans and specifications on file at the office of the President and the office of John C. Tibbets, architect, Grafton, W. Va. 1380

PROPOSALS.

Treasury Department, Office of the Supervising Architect, Washington, D. C., May 26, 1902. Sealed proposals will be received at this office until 2 o'clock P. M. on the 2d day of July, 1902, and then opened, for the construction (except heating apparatus, electric wiring and conduits) of 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 the office of the Postmaster at Tampa, Florida, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1380

Treasury Department, Office Supervising Architect, Washington, D. C., May 24th, 1902. Sealed proposals will be received at this office until 2 o'clock P. M., on the 30th day of June, 1902, and then opened, for the extension and changes incidental thereto, of the low-pressure and exhaust steam heating and mechanical ventilating apparatus, etc., in the U. S. Court-house, Custom-house and Post-office at Omaha, Nebraska, in accordance with the drawings and specification, which will be furnished at the discretion of the Supervising Architect on application at this office or at the office of the Superintendent, Omaha, Nebraska. JAMES KNOX TAYLOR, Supervising Architect. 1380

Treasury Department, Office Supervising Architect, Washington, D. C., May 22, 1902. Sealed proposals will be received at this office until 2 o'clock P. M. on the 10th day of July, 1902, and then opened, for the construction (including plumbing, heating apparatus, electric wiring and conduits) of the U. S. Post-office at New Iberia, La., in accordance with the drawings and specification, copies of which may be had at this office or at the office of the Postmaster at New Iberia, La., at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1380

WATERWORKS. [At Carthage, Mo.]

The Council of the City of Carthage, Jasper County, Missouri, will receive proposals for a complete waterworks system, for said city, **up to June 23d, 1902.** The most liberal and best contract offered will be accepted by the city and a franchise granted, subject to ratification by a vote of the legal voters of said city. R. LUNDY, City Clerk. 1381

WATERWORKS. [At California, O.]

Sealed proposals will be received at the office of the Board of Trustees, Commissioners of Waterworks, of the City of Cincinnati, O., **until June 24**, for the construction of the buildings, foundations and drains for the eastern pumping-station on the waterworks grounds near the village of California in Hamilton County, O., in accordance with plans, specifications and detail drawings on file in the office of the chief engineer of the Board of Trustees, Commissioners of Waterworks. Plans and detail drawings of the work can be seen and copies of the specifications, form of proposal, forms of bonds and form of contract can be

PROPOSALS.

secured at the office of the chief engineer of the Board of Trustees, Commissioners of Waterworks. 1381

BUILDING.

[At Mare Island, Cal.]

Sealed proposals will be received at the bureau of yards and docks, Navy Department, Washington, **until June 7, 1902**, for constructing a brick and steel building at the navy yard, Mare Island, Cal. Appropriation, $62,000. Plans and specifications can be seen at the bureau, or at the navy yard named, or will be furnished by the Commandant of the navy yard upon deposit of $10 to secure their return. MORDECAI T. ENDICOTT, chief of bureau. 1379

CONSTRUCTION, PLUMBING AND HEATING.

[At Fort Baker and Fort Miley, Cal.]

San Francisco, Cal. Sealed proposals will be received here **until June 6, 1902**, for construction (including plumbing and electric wiring) at Fort Baker, Cal., of officers' quarters, barracks, administration building, and for construction (including plumbing, heating and electric wiring) at Fort Miley, Cal., of hospital, hospital stewards' quarters, bakehouse and fuel shed. Information furnished on application to D. D. WHEELER, D. Q. M. general, C. Q. M. 1379

PROPOSALS.

HEATING. [At League Island, Pa.]

Sealed proposals will be received at the bureau of yards and docks, Navy Department, Washington, **until June 7, 1902,** for furnishing and installing a vacuum steam-heating system for a workshop and storehouse, Navy Yard, League Island, Pa. Appropriation, $6,000. Plans and specifications can be seen at the bureau, or at the navy yard named, or will be furnished by the commandant of the navy yard named. MORDECAI T. ENDICOTT, chief of bureau. 1379

CITY-HALL. [At Newark, N. J.]

Office of the commissioners for the erection of a new city-hall, No. 934 Broad St., Newark, N. J. Sealed proposals will be received by the commissioners for the erection of a new city-hall in this city during a public meeting to be held at the council chamber in the present city-hall **from 3.15 to 3.30 P. M. on Wednesday, the 18th day of June, 1902,** for the construction of a new city-hall building and boiler-house at Newark, N. J., in accordance with the drawings and specifications, copies of which may be seen or obtained at the office of John H. & Wilson C. Ely, architects, No. 890 Broad St., Newark, N. J., where blank forms of the proposals and any additional information may be had upon application. Andrew Kirkpatrick, Gottfried Krueger, James E. Howell, Commissioners. JAMES T. NEARY, clerk. 1379

Treasury Department, Office of the Supervising Architect, Washington, D. C., May 19, 1902. Sealed proposals will be received at this office until 2 o'clock P. M. on the 26th day of June, 1902, and then opened, for the installation of a conduit and wiring system for the U. S. Post-office building at St. Cloud, Minn., in accordance with the drawings and specification, copies of which may be obtained at this office or at the office of the Superintendent of Construction at St. Cloud, Minn., at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1379

Treasury Department, Office of the Supervising Architect, Washington, D. C., May 19, 1902. Sealed proposals will be received at this office until 2 o'clock P. M. on the 27th day of June, 1902, and then opened for furnishing the steam heating apparatus complete in place for the U. S. Post-office at St. Cloud, Minn., in accordance with drawings and specification, copies of which may be had at this office or at the office of the Superintendent at St. Cloud, Minn., at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1379

Treasury Department, Office Supervising Architect, Washington, D. C., May 19, 1902. Sealed proposals will be received at this office until 2 o'clock P. M. on the 7th day of July, 1902, and then opened, for the mechanical equipment (except engines and generators) including plumbing, water supply, steam power plant, etc., heating apparatus, mechanical ventilation, electric wiring and conduits, switchboard, elevators and non-conducting coverings for the U. S. Mint, Denver, Colorado, in accordance with drawings and the specification, copies of which may be obtained at this office, or at the office of the Superintendent of Construction at Denver, Colorado, at the discretion of the Supervising Architect upon deposit of a certified check payable to the Treasurer of the U. S. for $100 which, upon return of the complete set of drawings and specification, will be returned. JAMES KNOX TAYLOR, Supervising Architect. 1379

PIPE SPECIALS. [At Washington, D. C.]

Office of the Commissioners, D. C., Washington, D. C. Sealed proposals will be received at this office **until June 7th,** for furnishing 30″, 36″, 42″ and 48″ cast-iron flanged pipe specials. Specifications and blank forms of proposals may be obtained at this office. HENRY B. F. MACFARLAND, JOHN W. ROSS, JOHN BIDDLE, Commissioners, D. C. 1379

Professional Ethics.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

[See Alphabetical Index on Cover 2 for Pagination.]

CLASSIFIED ADVERTISEMENTS.

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