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THE proposed legislation, to limit the height of all buildings within one thousand feet of the Boston State-house to the level of the main cornice of that venerated structure, is likely to fail, the Committee on Cities having reported the petition for such legislation unfavorably; but a substitute bill has been reported, limiting the height of all buildings within the State of Massachusetts to one hundred feet. Whether exception will be made in favor of church towers and grain elevators remains to be seen. The failure of the scheme for prohibiting high buildings around the State-house is undoubtedly due to the reluctance of the Legistature to face the heavy damages that would be demanded. Fortunately, the theory of Mayor Quincy, that "the people" have a "vested interest" in other people's real-estate, and can make them do with it what they choose, without paying any damages, is not yet accepted in Massachusetts, and is not likely to be, so that the prospect before the Committee was that the State would have to make up by a special law, at least the actual losses caused which would be considerable. The general restriction which has been substituted will be approved by almost everybody, — certainly by the architects, who have been foremost in their warnings against the inconveniences and dangers incident to lining streets with buildings much higher than the width of the street. [As we go to press we learn that the House has rejected this law.]

IN the discussions which have taken place in the newspapers, and before legislative committees, on the high-building question, it has been frequently asserted that the Paris police regulations limit the height of buildings to the width of the street on which they front, or less, and that to this fact is due the cheerful and regular appearance of the Parisian streets. Really, however, the regulations in Paris only indirectly limit the actual height of buildings, the rules applying primarily to the fronts, the allowable height of which is clearly and definitely specified. If the vertical walls of the front are kept within these limits, a considerable latitude is allowed in the height to which the roof, which, it need hardly be said, is usually of the double slope or "Mansard" pattern, can be carried above them, and a house on a deep lot may have a roof so lofty as to make the total height of the building much greater than the width of the street. Of course, the retreating planes of the roof do not cut off the sun as a vertical wall would, so that ample light and air may in this way be secured for a street, without unduly restricting the capacity of the houses fronting on it; but the regulations which answer well for Paris would be very unsuitable for our Northern cities, where snow and ice must be dealt with for six months of the year. A Paris street, transported, with the buildings lining it, to Boston or New York or Chicago, would be impassable to pedestrians nearly all winter, from the avalanches of snow, the dripping of water from gutters blocked with slush and overflowing, or the showers of heavy icicles, which would make travelling on the sidewalks dangerous; yet, if snow and ice are to be kept from falling upon the public, by sloping the roof back from the street line, as is required by law in New York, where the front wall of the building is directly on the street, sun and air must be kept out also. The high gables on the street, with which our Dutch and German ancestors met the difficulty, cannot be used with ordinary roofing, and a promising field is open to the young architect who will try to invent a method of combining the advantages of the New York and the Parisian systems.

THE *Iron Age* notes a fact which is of much significance. Every architect and builder knows that, during the past winter, plans have been made for a great number of new buildings, and that the increase of demand, and the prospect of a still greater increase to follow, have had the effect of advancing prices of many sorts of materials, particularly of iron manufactures. It happened, at the beginning of the year, that an unusual number of orders came into the market for plates and angles, and other materials for bridge and engineering work, and the mills, partly to make a profit while they could, and partly to avoid being overwhelmed by the flood of orders, advanced prices materially. The wire and beam mills, although they were in better condition to fill the demands on them, followed suit, the wire and nail manufacturers having advanced prices, it is said, to nearly double those of last year. At the same time, prices of copper, lead, zinc, brass and other metals were put up, and, following their example, large advances were demanded in nearly all other building-materials. So far as these are concerned, the movement seems to have been too rapid, and to have checked itself. It is reckoned, probably with approximate correctness, that the cost of building this season is, in general, about fifteen per cent higher than it was last year. While an advance of five per cent would probably not have interfered with carrying out most of the schemes which had been formed for building, a fifteen-per-cent rise seemed to many people unwarranted by the conditions. No such advance in rents could be maintained, and, as people do not build houses and stores for amusement, but for the purpose of getting an income on their investment, a great number of building-operations have been abandoned, or postponed until either rents rise, or the cost of building-operations falls. In addition to this, the great expansion of investments has absorbed so many hundreds of millions of dollars of loanable funds, that the capital still available is held at higher rates than those prevailing last year, and, as little flurries occur in the money-market, the disposition of financiers to lend funds for long terms, to be used in building-operations, diminishes. The effect of all these conditions is now beginning to be felt in the material-market. The demand for iron, as the *Iron Age* says, is much less active than it has been, and it seems likely to continue quiet for some time to come. The more sensible manufacturers, who know from experience how much better it is to be able to sell all their goods at reasonable prices than to be overwhelmed with orders for a time, and then to let their mills stand idle during months or years of reaction, are rather pleased at the new turn of affairs, and express the opinion that prices are now at the highest point, and will probably fall moderately hereafter. Whether the same can be said of the market for brass goods, earthenware, glass and so on remains to be seen; but glass is said to have already taken a downward turn, and there are indications that the manufacturers of plumbers' earthenware are finding that high prices encourage an uncomfortable competition. Fortunately, the workmen in the building-trades have, as a rule, been sensible enough to avoid trying to upset their own business this spring, and the prospect seems to be that there will be a moderate amount of building-work, for people who must have new houses, or new stores, but that the great speculative operations will mostly be postponed to another season.

THE question of what constitute fixtures in a house received consideration the other day in the Supreme Court in Washington, and a rather novel doctrine was evolved. A man mortgaged his house and land to the Philadelphia Mortgage and Trust Company. Several years after the mortgage was made, he put into the house a boiler, and a bath-tub, and the mantels were put in after the house was plastered and kalsomined. The mortgage was foreclosed, and the mortgagee claimed the mantels, the tub and the boiler as fixtures, and therefore a part of the realty, while the owner claimed that they were merely furniture, and not covered by the mortgage. The Court took the latter view, and gave an architectural explanation. "Anciently," said the judge, according to the *Evening Post's* report, "mantels were uniformly built as a "part of the house, and therefore became a fixture to the realty ". . . and could not have been removed without materially "affecting, not only the appearance, but the real usefulness, "of the house. But advancing mechanical science and taste "have evolved an altogether differently constructed mantel . . . "sold separately, and made adaptive to any kind of house. "They are, in fact, as much a separate article of merchandise "as a bedstead or a table." The Court applied the same principle to the bath-tub and boiler. Each of these was "in "no way attached to the building," the judge said, "except by "its plumbing connections. It could be detached without in "any way injuring the realty; and we see no reason why it "should be considered a fixture, any more than the ordinary "stove, which is connected by pipes to the boiler and to the "plumbing system generally." The evidence showed that the mantels were not secured to the walls until three years after the house was finished, screws being then put in to keep them from falling away; and the Court thought that this was an additional reason for considering them furniture.

WE do not question the doctrine of the Court, but it may be remarked that it might be extended in a way which would seriously affect mortgage security. For instance, the doors in a house are much less firmly attached to it than the bath-tub, and might be simply lifted off their hinges and carried away, reducing the value of the house in which they were hung very materially; yet it could not be said that the change would "injure the realty," any more than the removal of a bath-tub and boiler. So with many other details. We have known, in a house very elaborately finished, the dressings of the doors hung to the walls, so as to avoid nailing through their face. Such dressings can be lifted off and carried away as easily as a picture is removed, yet their disappearance would certainly diminish the value of the house to which they belonged, without involving any damage to its structure, which the Court seems to consider the important point. In fact, it would be easy for an ingenious builder to make half his wood-finish portable, so that he could transfer it, with the plumbing and heating-apparatus, and the mantels, from one mortgaged house to another, as long as he found any one to lend him money. How far the Courts would assist him in this process remains to be seen, but it is certain that in this, as in other cases of dishonesty, innocent parties would ultimately suffer the penalty, by finding lenders unwilling to trust them with money on mortgage to a greater amount than a certain percentage on the value of the portion of their houses which could not be removed without affecting the structure, and this is, in most houses, a comparatively small part of the whole.

NEW YORK is to suffer a severe loss, in the retirement of Mr. Bonner from the post which he has so long held as Chief Engineer of the City Fire Department. In this position, Chief Bonner has been one of the most useful men in the United States, and his interest in his profession, his courage in meeting danger, and his intelligence in drawing conclusions from his experience, have not only been worth millions of dollars to New York, but, through the readiness with which he shared his knowledge with others, have greatly assisted in the general adoption of measures by which unnumbered lives, and vast sums of money, have been saved throughout the country. It is understood that Mr. Bonner will, immediately on relinquishing his post in the Fire Department, devote himself to perfecting the plans, which have long been formed, for the establishment of a School of Fire-Engineering, of which he is to be the head, and we trust that, as the most conspicuous representative of the science which he has practised so long, he may for many years continue to lead his fellow-citizens, with more effective results than ever, in their struggles with the enemy which costs them every year, in life and money, as much as a destructive war.

THE National Board of Fire Underwriters has an Electrical Bureau devoted to gathering information in regard to the fire-risks attendant upon the use of electrical appliances, and it has made some curious observations. The dangers of the accidental crossing of arc-light wires with telephone, or telegraph or incandescent-light wires are well known, but the general burying of arc-light wires in cities has almost stopped accidents due to this cause. There are, however, occasional fires due to the introduction of high-potential currents into houses over wires not made for them. Not long ago the primary and secondary wires of an alternating-current system of incandescent lighting, supplying some thirty houses, became crossed, and the high-potential primary current was thrown into the house-circuits. Naturally enough, this powerful current burst the lamps, and set fire to the insulation on the wires. The burning insulating material set fire to the wooden partitions through which the wires passed, and all the houses were more or less damaged, four being totally destroyed. Another, comparatively new, source of danger is to be found in the appliances for electrical heating which are becoming common. An electric flat-iron was left to itself, with the current turned on, and soon became so hot as to set fire to the woodwork near it. There was an automatic fire-alarm in the building, and help was promptly summoned, but damage to the amount of twelve thousand dollars was done before the fire could be extinguished.

MANY fires are caused by incandescent lamps, through the mistaken idea that the bulbs do not get hot enough to set fire to anything. So long as the air circulates freely about them they remain comparatively cool, just as the open-work handle of the kitchen poker remains cool while the other end is red hot; but if the air is prevented from circulating about them they soon become hot. We heard once of a lady who hung a towel over an incandescent-light fixture, apparently with the idea of softening the light. Very soon the towel began to smoke, and was taken off with a hole burned through it. In a similar way, as the insurance inspectors tell us, where a thirty-two-candle incandescent lamp was allowed to touch a freshly-finished sheathing, the latter was found, a few hours after the current had been turned on, burned through, and if there had been a draught of air to fan the fire a great deal of damage might have been done. In another case, an illuminated sign was made by putting forty-nine sixteen-candle incandescent lamps in a frame, with wooden partitions between them. The space between the lamps and the partitions was well packed with asbestos, but the whole affair became so hot as to set fire to the partitions, and through them to other work, and considerable damage was done.

THE annual competition for the Rotch scholarship is now going on in Boston. The preliminary examination, held last month, resulted in eliminating all the candidates but three, Messrs. Pulsifer, Welton and Mowell, and these are now engaged in their work on the problem in design, the subject of which is a building for horticultural exhibitions.

THE Chicago Architectural Club, with the support of the Philadelphia T-Square Club, the St. Louis Architectural Club, and similar organizations in Boston and Cleveland, has called a convention of delegates from all architectural clubs in the United States, to meet at Cleveland, Ohio, on Friday and Saturday, June 2 and 3, next, at the rooms of the Cleveland Architectural Club. Each club is entitled to one voting delegate, but any other club members will be welcomed to the convention. The deliberations will be devoted to studying the best methods for acquiring and holding the interest of club members, and the management of exhibitions, and, if possible, an exhibition schedule and circuit is to be prepared for next year. Competitions, and other subjects of professional interest, are also to be discussed. Each club is requested to contribute ten dollars towards the expenses of the convention, and to take action as soon as possible in regard to the appointment of delegates, and the suggestion of matters to be laid before the convention.

PAINT-FACTS AND PAINTING-SPECIFICATIONS.— I.

Dwelling-house, Rue Jeanne d'Arc, Lille, France. M. Bondin, Architect. From *L'Architecture et la Construction dans le Nord.*

WITHIN the past few years the subject of architects' specifications for painting-work has been discussed at many of the meetings of the different associations of master-painters and decorators, local, State and National, and the statement has repeatedly been made that the average painting-specification is either very indefinite in its terms, or else, having been based largely upon data furnished to the architect by representatives of manufacturers of materials used in painting, or by some one painter, to the exclusion of his competitors, necessarily is biased and very frequently does not call for the best or most economical method of producing the desired result. Very often the same materials would be used, by the painter who does the work, in a very different manner, if he were permitted to exercise his own judgment, for in every job there are certain local conditions which must be taken into account if the best results are to be obtained. The nature of the wood, the condition of its surface, the state of the atmosphere will all be considered by the experienced painter, who will vary his materials accordingly, if he is permitted to do so; but if he is compelled to follow a hard-and-fast formula in the application of his paint or varnish, it will only be at those times when all conditions are favorable that a satisfactory result can be secured. How to write a specification that will so bind a painter that a thoroughly good job can be demanded, and yet at the same time permit him to exercise his own judgment, is a difficult problem. Unfortunately, too, there is no business on the face of the earth that offers so many temptations to the dishonest man as the painting business. It is impossible for the architect to tell whether the painter carries out his specifications with exactness or not. It is even impossible for the master-painter to be sure that his journeymen do not add thinners surreptitiously to the paint to make it work easier and save themselves labor in spreading it. The writer knows of an instance where, lacking turpentine or other legitimate thinners, the journeymen at work on a ceiling added water to the paint, the disastrous effects of which were not discovered till months afterwards, when they were made known by the paint cracking and peeling in such a manner that the employer was compelled to do the entire job over again, at a very considerable cost.

At the Convention of the National Association of Master House Painters and Decorators, held at Cincinnati in February, 1899, it was suggested by Mr. Alexander G. White, an English painter who was present, that it might be possible to make the specifications for painting work more definite and binding by establishing certain standards and requiring that painters bid with the understanding that their work would be required to conform with the special standard mentioned in the specification, no matter how the painter obtained the result. This suggestion is an excellent one for interior work, and it might be well for every architect to have a standard set of samples of wood finished in various ways, both painted and with natural finish, to certain of which he should require his bidders to conform in submitting their estimates, the finished work to be judged by comparison with these samples; or the painters who bid upon the work might be required to submit panels finished in accordance with their understanding of the specifications, these sample panels as well as the price to be taken into account in awarding the contract. But while such a system might answer very well for interior work, not exposed to the weather, on outside work the architect should have a very decided voice in the choice of the materials to be used, since they play an important part in the durability of the paint.

To write a painting-specification that shall neither be indefinite nor absurd the architect should possess some knowledge of the different substances which enter into the composition of paint, and should understand why certain materials are best suited for some conditions and why others are required under different conditions. He should know too that there are natural processes and chemical disintegrations which cause paint to perish, and their action at times is so obscure that even the most experienced painter may be puzzled to explain why a certain job has not withstood the action of the elements. Under such circumstances, the uninformed property-owner is apt to blame the painter or the material which he used, though neither may have been at fault, the poor result having been due to weather conditions, over which the painter had no possible control.

Much depends on the painter. Given a good mechanic, he will obtain a fairly good result, even though the material may not be the best; but the inexperienced or careless workman will make a poor job, no matter how excellent the materials may be. The best result can be obtained only by a good mechanic and the best materials, hence the desirability of confining the estimates for painting-work to those painters who are known to be honest themselves and to employ only competent journeymen.

One of the most essential things in painting is that ample time should be allowed for each coat to thoroughly dry and harden before applying the subsequent coats. Especially is this necessary on the priming coat. Ninety out of every hundred failures in painting not directly due to poor materials or the use of the wrong materials may be attributed to the work being unduly hurried or to the paint being applied over a wet or damp surface. Paint does not dry by evaporation but by the oxidation of the oil to form a leather-like compound called "linoxyn." To hasten this oxidation the painter is compelled to add oxidizing agents known to the trade as "driers," and while these hasten the drying of the paint, they also hasten its ultimate decay. It is not to be understood from this, however, that no drier should be used. A very small proportion is almost always needed, depending upon the condition of the atmosphere and upon whether the wood is thoroughly seasoned or not. In general, it is safe to say that driers should be used only to the smallest possible extent, though this is a matter which cannot be determined in the specification, but must be left entirely to the judgment of the experienced painter. Only the best quality of liquid driers should be employed for outside painting.

Paint as the term is understood by the trade is a mixture of a solid pigment, ground to an impalpable fineness, with a vehicle or liquid, in which it is held in suspension, so proportioned that it shall be in condition for spreading upon the surface to which it is to be applied, whether that mixing be done at the work by the painter or whether it be done at a factory by machinery and sent to the work ready mixed. When a pigment is ground to the consistency of a stiff paste, so that it may be more conveniently broken up and incorporated with the oil or other vehicle than it could be when perfectly dry, it is not yet paint but merely pigment ground in oil, be it white-lead, zinc-white, ochre or what not.

It is one essential of a pigment that it shall be in a very finely divided state, but all materials capable of this fine state of division are not pigments. As self-interest has prompted many unscrupulous manufacturers — and writers who have been in their pay — to attempt to befog the whole question by raising doubts as to what constitutes a pigment, it is well to define the meaning of the term at the start, and to do this we quote from the encyclopædia, with some condensation: —

"Pigments are colored powders which, when mixed with oil, water or other fluids, form paints. All substances, colored or neutral, capable of being presented in the form of an impalpable powder, which at the same time are insoluble and unalterable under ordinary atmospheric influences, may be regarded as possible pigments.

"But there are many qualities, practically essential in a pigment, which limit the range of available substances. A consideration of the first importance is the 'body' or covering power of a pigment — that is, the property of fully covering and concealing with an opaque coating the surface over which it is spread. It should work well and be unaffected in appearance and constitution by the medium with which it is made into a paint, and it should spread in an even, uniform coat, which should dry well and quickly and adhere firmly to the surface to which it is applied. When dry it should resist change under the action of the weather and other influences to which paint is exposed. These are the principal qualities requisite in paints in their important functions as preservative coatings for the surfaces to which they are applied."

Certain unscrupulous manufacturers have not hesitated to introduce into their paints substances which will not stand the test of the foregoing definition, and which have no real pigment value, but

whose sole purpose is that of an extender or adulterant, whereby valuable pigments are replaced by worthless makeweights or substitutes. Until a few years ago the presence of these extenders was not even suspected by the purchasers of the paints, but an extensive campaign by the master-painters' associations against these fraudulent practices brought to light the fact that a large proportion of the paint-materials then on the market and sold for perfectly pure goods were adulterated from ten to ninety per cent with substances whose presence was in no wise indicated by the labels on the packages. Certain well-known manufacturers, however, proved an honorable exception to the almost universal rule. Since that time the general standard of excellence has materially improved, and now very few manufacturers of colors, and no corroders of white-lead brand as "strictly pure" any goods which bear their own name. In the case of mixed paints, their being no standard of purity, since each brand is made by the special private formula of the manufacturer, the use of materials which will not stand the encyclopædia's definition of a pigment still continues, and is defended by those paint-grinders who employ these extenders on the ground that they are inert pigments, but they have no real value, and their presence in a paint can only be regarded as a fraud.

Frauds of this kind are more easily guarded against by the architect who desires to obtain the best results for his client than those frauds which are perpetrated by the painter. It is no uncommon trick of the dishonest painter to "dope" or dilute his paint with soft-soap, lime-water or other cheap and useless materials to increase its spreading capacity, and thus make a small quantity of honest pigment cover a large surface. This, of course, results in rapid deterioration of the painted surface in the course of a few months, but the paint will retain its gloss until after the painter has received his pay; and many painters of this class never hope to secure a second job from the same owner, so they do not care for the permanence of their work. The architect's experience with the average house ceases with the occupancy of the owner, and he has no opportunity to study the wearing of the paint. But whether the owner complains to the architect or not, he nevertheless blames him for the poor workmanship of the painter, and seldom fails to speak of it to his friends. If architects would make it a point to follow up their work, and to watch the condition of the paint for a year or two, they would soon learn which painters were deserving of confidence, by the average excellence of their work, and would make it impossible for these dishonest tradesmen to bid in their offices. As we have already seen, such a course is more necessary in the painting-trade than in any other, because of the opportunities which it offers for fraudulent practices without the chance of immediate detection.

There is no general consensus of opinion as to what constitutes the best paint for ordinary purposes. During the past few months this question has been discussed at considerable length in the columns of the paint-trade press, and many interesting and valuable facts have been gathered from master-painters who have tested different materials or mixtures, by the editors of these publications, who have sent out series of questions to painters in all parts of the country. One very important thing to bear in mind in considering the economy of any paint is that not only must durability be taken into account but also the condition of the surface of the paint when repainting becomes necessary. This is a large factor in the cost of house-painting during a long series of years. It is poor economy to employ a paint lasting seven years before it needs renewal, if at the expiration of that time the surface must needs be burned off, requiring a large expenditure of labor before a reasonably good job can be done, where, on the other hand, a paint that will last but five years without requiring renewal, at the end of that time is in such condition that a mere dusting off puts it in shape to receive a new coat of paint at once. The ultimate economy is very greatly in favor of the shorter-lived paint.

If the average painter, who has been brought up in the old-fashioned way, and whose only desire is to do honest work, — and there are many painters of that class, — were asked what he believed to be the best paint, he would almost unhesitatingly reply: "Pure white-lead and linseed-oil." In doing so he would follow a strictly conservative course and would undoubtedly feel that he was making a safe general reply; yet probably the same painter, if left to his own judgment, would, under some conditions, employ different materials. Indeed, there are conditions under which such a paint would by no means be even a reasonably good one. Again, it must be remembered that painters are perhaps the most conservative and prejudiced class of mechanics in the building-trades, and few of them are willing to grant the possibility that any new material intended as a substitute for those they have been taught to regard as orthodox may have any merit whatever. The fact that it requires the experience of years to determine the actual value of a paint-material naturally tends to make them conservative and hesitating about trying new things, since they know that a failure will reflect upon themselves. For this reason the architect who calls for other than orthodox paint-materials in his specifications is apt to meet with opposition from the painters, who, perhaps, will substitute, without his knowledge, the time-tried goods for that which he has specified.

It is so nearly axiomatic that it has passed into a proverb among painters, that "the life of the paint is the oil"; but although this is true, it is not wholly so, except in the case of those earth and iron pigments which are absolutely inert in their action. Many of the pigments most commonly employed, among them being both white-lead and zinc-white, combine more or less with the oil to form what is chemically termed a soap, and it is the durability of this compound of oil and pigment that determines the life of the paint. In general it may be asserted that those paints which have the greatest affinity for oil or are the most oil-absorbent are the most durable. Without any question, the most durable of all pigments is lamp-black, which absorbs the greatest quantity of oil, in proportion to its weight, of any pigment known. But it must also be remembered that lamp-black, being nearly pure carbon, is of itself practically indestructible by any agency except extreme heat. Well-known instances are on record of sign-boards where the letters have been originally painted with lamp-black on a white ground. The letters have stood for years almost as perfect as the day they were painted, while not only has the white paint disappeared but the surrounding woodwork has been eaten away by the weather. Unfortunately the color of lamp-black prevents its use for house painting to any considerable extent, and for this reason its valuable property of oil-absorption cannot be fully utilized. But a certain proportion of lamp-black added to white-lead to produce a lead color makes it extremely valuable as a priming coat, since it will contain more oil than pure white-lead, and will consequently be more durable; and, again, the lead color will cover imperfections in the wood better than a pure white priming coat, and make it possible for the painter to bring up his subsequent coats better. The architect who specifies that his outside woodwork shall be primed with pure white-lead and pure raw linseed-oil tinted to a lead color with pure lamp-black will follow a safe and conservative course. Whether turpentine and driers shall be used should be left entirely to the judgment of the painter, as this is a matter that depends upon the location of the house and atmospheric conditions at the time of painting.

It may be asked why raw linseed-oil should be employed in the priming coat instead of boiled. If genuine boiled oil is to be had, the character of the oil has been changed by the boiling and it has become a sort of varnish that dries with a gloss. Now the most essential thing about the priming coat is that it shall dry flat, since otherwise the subsequent coats will blister or wrinkle. Again, boiled oil has a tendency to dry from the top, so that the surface of the paint will be dry while it will be soft underneath and will expand and contract with the varying temperature of the air. This will cause the paint to assume a wrinkled appearance. Another important thing to be considered is that there is very little boiled linseed-oil on the market, most of that sold for boiled oil being "bung-hole boiled," or simply raw oil loaded with powerful driers to make it dry rapidly. These are very destructive of the life of the paint.

Having now considered briefly some of the most important general characteristics of paint we will next take up the most important pigments or groups of pigments, beginning with white-lead, the oldest and best-known of all paint-materials.

[To be continued.]

PARIS

THE NEW OPÉRA-COMIQUE.

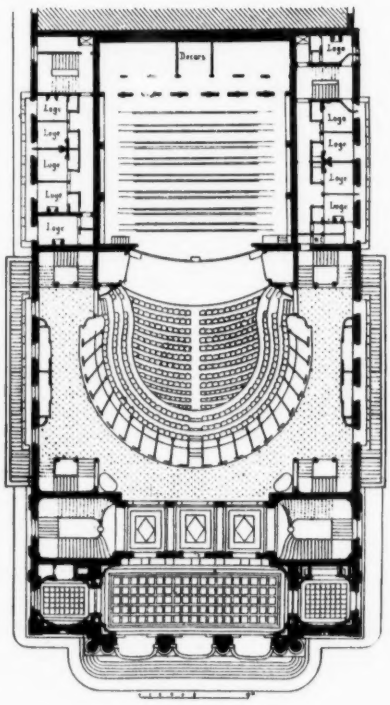
WHAT has come to pass in connection with the new Opéra-Comique justifies the theory which I have always maintained: that it is imprudent to speak of architectural works before they are completed, or to formulate criticisms before being sure that they are deserved. In fact, one runs the risk of being unjust in praise as well as in blame, and it is better worth while to wait than to be accused of exaggerated severity or excessive indulgence. What was not said against the Opéra-Comique before its completion and opening! A violent press campaign was waged against the architect, M. Bernier, and before the public had a chance to cross the threshold the journalists had informed everybody that the new theatre was a failure — ugly and unusable. Everything was too small, both auditorium and stage. Nothing was seriously studied, the *couloirs* were narrow, the means of intercommunication too restricted, decorations (which nobody knew anything about as yet) were in bad taste, and so on, and so on. Finally, the building would never be ready and the work was not making any progress. This is the sort of stuff which one could read in the daily papers for over a year. But for four months the Opéra-Comique has been open to the public and people are beginning to understand the truth about these unjust and ill-natured criticisms. It is not my purpose here confessedly to enter on a defence of a fellow-architect, but, playing the part of a mere echo of general public opinion, I cannot but give testimony to one thing, and that is that the new Opéra-Comique is found to be charming from the point-of-view of interior decoration and general effect. Does this mean that M. Bernier has known how to give his work a real note of personal art, as Garnier did in the case of the Opéra? No, assuredly not; and if no one could repeat Garnier's Opéra, surely many architects could make an Opéra-Comique of as much worth as this of M. Bernier's; but, if the latter

has not invented a style, he has at least known how to impress upon his work a feeling of elegance which is very artistic and really fine.

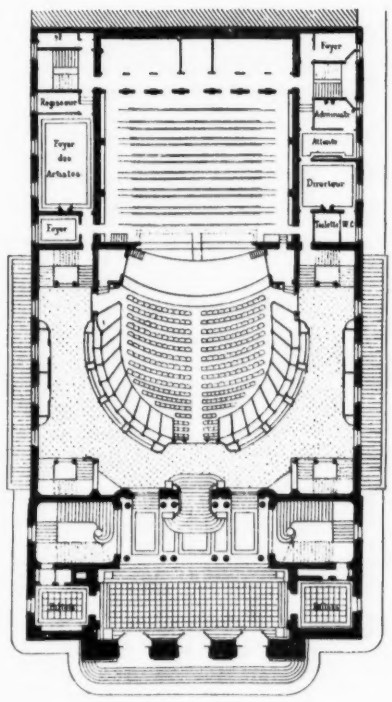
Before entering on any detailed description of the new building I must recall in a few lines the events which preceded its construction and which I mentioned as long ago as April, 1893. After the terrible conflagration of May 25, 1887, which completely destroyed the old Opéra-Comique and caused the death of more than 200 victims, the Government's first idea was to rebuild the theatre on the site of the Eden Theatre, near the Grand Opéra, or on the site of the old Salle Ventadour. But this notion was quickly abandoned, and they returned to the Place Boïeldieu to the site of the old theatre.

Two solutions were studied: the first was to preserve the old lines and rebuild the theatre with its façade on the Place Boïeldieu; this was the more restricted scheme. The second foresaw the purchase of buildings fronting on the boulevard and utilizing the site as a triangle, so as to bring the principal façade onto the boulevard. On February 4, 1888, a design in conformity with the more restricted programme was presented to the Chamber by M. Crépinet, the architect of the old Opéra-Comique; the cost of the proposed structure was 3,480,000 francs. A change in the ministry brought about the shelving of the first scheme; the second was studied by M. Dutert, with its façade on the boulevard, and foreseeing a cost of 6,500,000 francs. The Chamber of Deputies approved this scheme, but the Senate disliked it and returned to that of M. Crépinet in June, 1889. The commission in charge of the budget rejected this scheme and invited the Chamber to seek a less burdensome means of rebuilding the Opéra-Comique. Then it was that a public contractor, M. Guillotin, took upon himself the responsibility of carrying out the scheme of MM. Duvert and Charpentier, at a cost of 3,500,000 francs, reimbursable by a financial arrangement in the form of a first payment of 1,074,110 francs, followed by seventy-five annual payments. This arrangement was favorably received by the Chamber, but a campaign was opened in favor of a public competition, so as to preserve the artistic interests which, as was pretended, were sacrificed under the proposed arrangement. The Senate rejected the Guillotin scheme and a public competition was opened to all French architects in July, 1893. About that time I told in detail the romantic *odyssée* of the rebuilding of the Opéra-Comique, and for several months this was the talk of the day.

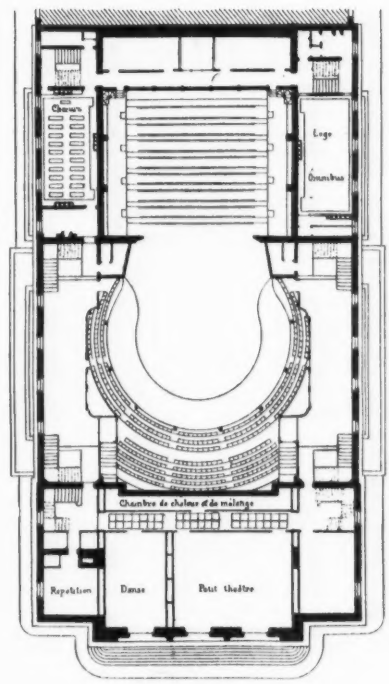
Eighty-four competitors took part in the competition of 1893, and M. Bernier was the winner, obtaining the prize of 10,000 francs and the execution of his scheme. This entailed much work and brought upon him many criticisms and attacks of all kinds, but it also won him the rosette of an officer of the Legion of Honor, and this is something which is held to amply repay an artist for all pain and injustice that he undergoes. Unjust people surely have been toward M. Bernier, and the injustice was of such an exaggerated kind that a reaction in his favor, equally exaggerated, is to-day easily recognizable and people are beginning to acknowledge that the defects of the Opéra-Comique are not all chargeable upon its architect. The gravest cause of complaint lies in the fact that the auditorium and the stage are so narrow. Now, the auditorium is as large as that in the old building, and figures prove it. The old hall measured 17.5 metres between the first boxes and the curtain, and 16.40 between the first boxes; the new hall measures 17.5 x 16.5 metres, the proscenium-arch is 10 metres wide, the height of the hall is 17 metres. It is not, then, as narrow as people would have us believe, and the Théâtre Francais measures 2 metres less in width between the boxes. This, then, disposes of one undeserved reproach. Now let us consider the depth of the stage: it measures exactly 17.5 metres in width by 17.95 metres in depth. Now these are the very dimensions of the old stage, but, nevertheless, composers, artists and machinists complain of its incommodiousness. How can it be explained that a stage formerly large enough has become too small? The explanation is very simple, but the architect does not count in it. The lack of space is felt now because they want to represent nowadays lyric dramas, while formerly they only played comic operas. Hence there is a necessity for grand decorations, and important settings require greater spaces. But if this programme was foreseen it was evidently necessary that the old site should have been enlarged or a new site procured. M. Bernier, restricted to the former site, has built a hall and stage as large as the old Opéra-Comique — and nobody could demand more of him. Within the same space, moreover, he has known how to arrange accommodations much more important and so arranged as to provide every security for the public. The plans themselves will show, better than the most minute description, that the staircases placed at the four angles of the passageway of the hall conduct the audience to two large vestibules on the ground-floor opening upon side-streets and absolutely independent one of the other, although connected by a grand gallery under the hall. Independently of these four staircases, the orchestra-chairs and the *baignoires* are served by steps opening into the centre of the vestibule of the main entrance from the Place Boïeldieu, a vestibule to the right and left of which are found the staircases of honor, leading to the level of the foyers. The question of actual usage by the audience is carefully studied; something, however, might be desired in the stage portion of the building, in spite of the thick walls which on each side isolate the stage from the dressing-rooms and foyers of the artists. Clearly, those who do not chance to be on the stage at the time of the breaking-out of a fire would have a very good chance of escape, but those who might be surprised between the two isolating walls would run the risk of being crushed in their endeavor to pass through the outlets at the rear.



Orchestra and *Baignoires*.



Foyer level.



Second Gallery.

The lighting of the new building is furnished by 2,845 electric incandescent lamps, of which 1,035 are used for the general purposes of the building and 1,810 for the stage and hall.

One of the peculiarities of the new hall is the arrangement of the musicians' orchestra, placed below the spectators on the ground-floor, who thus no longer see between themselves and the stage, going and coming, the fiddlesticks of the violins and cellos. The effect from the ground-floor is agreeable, but, seen from above, the hole where the musicians sit is rather disagreeable.

Much half-hearted praise has been given to the decoration of the hall, and M. Bernier has been accused of employing an exaggerated sobriety. This is a matter of taste. Many criticisms also have been aimed at the harlequin mantle, treated with sculptured draperies supported on either side by two winged figures, by M. Marqueste, as being a little too important. But the conception of treating supple stuffs in solid material, although illogical in principle, has been studied with much ability and very gracefully carried into execution. The same principle has been adopted for the drop-curtain, where heavy red draperies are replaced by tapestry in staff lightly tinted,

well connected with the lines of the architecture. This is new, and it is decorative. The ceiling of the dome has been treated by Benjamin Constant in cameo on a blue background with figures bathed in orange-colored and vaporous effects: the general impression created is admirable. The decorative painting is, moreover, one of the elements of the success of the new theatre, and M. Bernier has known enough to support his work with that of eminent artists. His theatre is a real museum of painting and sculpture. The staircase of honor on the left of the vestibule has been decorated by Luc-Oliver Merson, whose panel — "Music" — is composed and executed with an admirable regard for decorative feeling; facing it, the second panel symbolizes "Greek Poetry," the ceiling representing "Song," "Elegy" and "Hymn" — the offspring of "Music and Poetry." The right staircase was entrusted to M. François Flameng, who has in a rather unexpected manner made "Antique Tragedy" an associate with the "Modern Dance," while on the ceiling "Comedy" chases away the "Vices" with lashings of her whip, and "Truth" issues from her well.

The *avant foyer* contains decorative figures, on classic lines, of more commonplace character, signed by M. Joseph Blanc. The grand foyer itself is entirely decorated with paintings which surround the magnificent marble door and window frames emphasized with gilded bronze. M. Gervex has been entrusted with the two ends. At one end he shows us the "Ballet de la Reine," a Henri III scene; at the other, the "Foire St. Laurent." The ceiling is the work of M. Maignan, and represents the "La Ronde des Notes de Musique." The notes are represented by figures more or less draped, winding in and out in disorder, as in the serpentine dances of our days of carnival. Save for slight criticism on this point, the painting is fine and solidly done. At each end of the foyer opens a little oval *salon*. That at the left has been decorated by M. Raphael Collin with bewitching paintings: the "Inspiration," exhibited with success at the last *Salon*, and "Truth Inspiring Fiction," "Ode" and "Song." The *salon* on the right was entrusted to M. Gustave Toudouze, whose paintings represent "The Dance," "Music," "The Glorification of Music" and a thirteenth-century pastoral.

Sculpture is worthily represented by MM. G. Michel, Allar and Peynot, who have executed the caryatides which sustain the corners of the central motive of the façade, and by MM. Puech and Guilbert in the figures in the two niches situated on the right and left of the façade.

In the central vestibule we find "Lyric Drama," by M. Falguière, and "Comic Opera," by M. Mercié, also a monument to Bizet, by Falguière; in the central gallery, a very beautiful "Pensée," by M. Michel; and finally, in the hall itself, the flying figures of M. Marqueste, which support the figured draperies of Harlequin's mantle, and we can also note the caryatides by M. Coutan, which support the second balcony.

In short, the Opéra-Comique by M. Bernier, although the construction has been carried on somewhat slowly, is a graceful and elegant theatre, satisfactorily answering to the exigences of its repertoire. It can become too small only in case they undertake to bring out a modern lyric drama, and then in truth the composers cannot but regret the having to choose between a theatre which is altogether too large — the Opéra — or a theatre which is altogether too small — the Opéra-Comique. But, I repeat, it would be unjust to hold the architect responsible for this, since he had at his disposal only a very restricted site, and he succeeded in securing greater space for circulation without contracting the dimensions of the old stage and auditorium. It is only necessary to add that the acoustic qualities are found to be admirable.

THE PUBLIC AND BUILDING-LAWS. — THE ARCHITECT OF THE TORONTO COURT-HOUSE "SIGNS" HIS BUILDING. — COMPETITION FOR A MARKET-HOUSE AT TORONTO.

IT is strange, but very true, that it is a difficult matter to get the public to take any interest in some matters that vitally concern its welfare. Anything that is of a technical nature it either will not trouble to understand or else it concludes that such matters should be left for its representatives in Municipal Councils to attend to and it goes its way, satisfied to leave such matters alone. As members of Municipal Councils are but items of the general public, they are not much better than their constituents, the only point of difference, apparently, being, that, once they have breathed the air of the Council chamber, they become so puffed up with pride that, in imagination, they are endued with knowledge on all technical subjects to a degree that may well make experts hide their heads for shame. The public is a very-much-indulged body, the amount of time and energy that has been expended in its free education is astonishing, and yet the public, like a treacherous dog, only snaps at the hand that caresses it.

One of the subjects so important to its welfare is "Building By-laws." Every city or town that has any respect for itself has its building by-law. It matters very little what that by-law is, whether its enactments are wise or practical, if it has its by-law it is all right. Any professional man who dares to point out an improvement, or any body of, say, architects, which suggests a new one and takes the trouble to draft one up, either is practically told it had better go to school again.

What does the public care if fire-traps are erected in the centre of a city or if inadequate means of escape are provided in large stores, theatres or churches? Simply nothing. They will crowd these buildings just the same, and "run chances," and when a fearful accident occurs they will kick for nine days and then all goes on as before.

If a city has a set of respectable by-laws that it has borrowed from some other place, their effect is entirely nullified by the ignorance or wilful blindness of the "inspector"; but that does not affect the public a bit. Architects have to submit their drawings to some jack-in-office who knows so little that he does not see when plans contravene the by-laws, and then, having passed them, he dare not point out that certain things when carried out are not "according to Hoyle"; so everywhere we see the by-laws violated and nothing done to prevent it. In large cities, perhaps, where the architects have been felt to be worthy of notice by the esteemed aldermanic body some attention is paid to them, but the reception that has been accorded to the "suggested by-laws" drawn up by the Ontario Association of Architects, not only in Toronto but throughout the Province, only bears out my statement that the aldermen think they know better than the architects. I doubt if a single town has adopted these carefully prepared by-laws, whereas the majority of towns have not paid the slightest attention to them. The architects have certainly done their duty, and the results, being pigeon-holed, are a reproach to the want of intelligence of the municipal crews. The fire-departments are well equipped — in fact, most places in Canada seem to take an unusual interest in appliances for fighting fires; but the great expense incurred and the sacrifice of life among the firemen have no effect upon the public; fire-traps are permitted, and it really seems seldom that a building, once ignited, has any chance of being saved. If anything, fires seem to be fiercer than they used to be; despite the training of the brigades, the excellence of the equipment and the courage of the men, "total wreck in an hour" is the general result. It is a serious matter. Architects and insurance-companies should work together to bring about a change. The insurance-companies have the power to enforce their suggestions, which architects have not, and they would certainly derive assistance in technicalities by associating with the architects. Fireproof construction, slow-burning theories, these things are in their infancy, while the dangers, through heating-apparatus, electric appliances, and so on, are multiplying fast. There is no time to lose and architects would certainly be benefited by the results.

The design of the corbel-table of the chief cornice of the new City-hall and Court-house in Toronto, which has been finished over a year, I believe, has suddenly given rise to some excitement among the citizens. It has been discovered that the architect has "dared" to have his name placed there. In letters 3′ x 2′, at intervals all round the building, it is possible to spell out his name, profession and the date. Some are for having him cut out the letters, others suggest that he should pay a rental for the "sign." Sir Christopher Wren's famous *si monumentum* is outdone; the "cheek" of the architect is only equalled by the height of the just completed tower. And yet it took a year to discover the fact. But wise indeed is our brother architect; well indeed he knew that the Council would never allow him the customary inscription to which he certainly is entitled for his creation. The worthy public has no appreciation of genius or talent and can see no way of dealing with it except as a marketable commodity, therefore in an unobtrusive manner the architect, having taken French leave, provided his inscription to suit himself. He should have all other arcitects at his back if he has to defend his action.

It is many years since there was a competition for designs for a public building in Toronto, but there is one on just now, the designs being sent in early last month. The old City-hall site is to be combined with the present market-hall and is to form a magnificent market-building, in point of area, if not of design. There is nothing very specially worthy of notice about it, except that a somewhat unusual scheme has been adopted in giving instructions to would-be competitors. To gain information regarding markets a commission was appointed and made a tour of many of the United States cities. One of the commissioners was an architect as well as an alderman, and with his report he prepared and submitted a scheme for the new market which should include and exhibit all "the latest" in market-accommodation. The plan and perspective view of this scheme are incorporated in the instructions, and architects, in competing, are told that they "must follow the general scheme laid down," and "conform thereto as regards accommodation, etc.," at the same time they are "expected to present . . . original ideas as to the treatment of the subject."

THE LONGEVITY OF CEDAR-WOOD. — Some Egyptian boats made of cedar, probably in use 4,500 years ago, have been found buried near the banks of the Nile, and furnish an interesting proof of the power of that wood to withstand the ravages of time. — *N. Y. Evening Post.*

SIR W. RICHMOND AND ST. PAUL'S CATHEDRAL, LONDON.

LONDON, ENG.

A FEW weeks ago you pointed out some blemishes in the system upon which St. Paul's is being decorated. You, and, if I remember rightly, the *Builder* of this city objected to the work being done piecemeal, and you suggested that paint should be used first, in order to try the effect before putting the designs into mosaic. This seems so sensible an idea that one wonders any one should be found to object. In Paris statues and groups are nearly always put up in plaster (at great expense, too), that the effect may be seen before money is spent upon bronze, and for obvious reasons. For many years we gazed upon the chariot and horses designed by M. Falguière for the Arc de Triomphe; it was criticised and judged, found wanting, and consigned to limbo.

Now, however, the art public of London declines to accept these principles at St. Paul's. In the choir there has been no tentative painting; the mosaic was put up at once, and when uncovered the designs were found by most of us so minute, so full of detail, that all general effect of grandeur was lost. Also, the idea of decorating an Italian building with Byzantine designs seems like putting the cart before the horse. How could the Byzantine artists have decorated a seventeenth-century church? That is, to many, captious criticism. We have at Venice a Byzantine church full of seventeenth and eighteenth century designs: why should not Byzantine designs decorate a seventeenth-century church? Well, why not? Surely the answer is obvious, that a church must be built before it be decorated; and the only way for St. Paul's to be decorated in the Byzantine style is to follow the traditions of the Greek church, and to put the work into the hands of Greek architects and mural painters and mosaicists.

But, apart from this, the whole scheme wants more breadth; and had the designs been painted first, as you suggested, we should not have had such confused decorations as the creation of birds, fish, etc., in the saucer domes. But surely the gilding of capitals, the veneering of dirty stone pilasters with marble, and the rough surface of the mosaic cannot be a mistake; and yet people are now talking of Wren's "grand stonework," although a few years ago we were told that Wren had intended coloring the whole building! Why not? The old architects used color everywhere; and as to the "sham" of marble veneers, do people imagine that San Marco is built of solid marble? and do they think that other Italian churches of the Renaissance are one solid mass of marble from top to bottom — capitals, arches, pilasters, and what not?

A few years ago we were all exercised at the dirty, dingy effect of St. Paul's; designs by Sir Frederick Leighton, Sir E. Poynter and others were put up in the dome and all were found wanting in the "grand style." No one seems to be able to realize the distance of the dome from the gazer's eyes, nor the fog and smoke which are always up above our heads. Who has ever seen Thornhill's designs from below? Why, then, should not the dome be simply a mass of gold mosaic with a few Orcagna-like angels flitting about? What would be more suitable than these beings of six wings, as we see them in the Campo Santo, flying about over our heads?

And below: why not have a frieze of angels as Blake designed them, hand-in-hand, and clothed in feathery garments — or, rather, the bodies formed of feathers, which become wings and fins — if a fish-like appendage may be applied to the angelic host? In the chapel of St. Peter the Martyr, in St. Eustorgio, Milan, there is a dome, and round the lower part is a frieze of angels in relief. The work is attributed to Michelozzo Michelozzi; and possibly W. Blake's "Sons of God Shouting for Joy" were suggested to the painter by those older sculptures in Michelozzi's chapel. The conception of these feather-clothed beings is beautiful and all visitors to St. Peter Martyr's chapel must recall to mind the appropriateness of the design to the base of a dome.

The *Times* sums up the discussion thus: "It is, as we have said, the question whether the old St. Paul's of Wren is to remain, or whether the whole of it is to be overlaid with a new and foreign surface. The new surface has already crept down to the arches of the dome; it stops at present, this surface of dotted patches of stencilling and gilding, just above the beautiful Corinthian capitals of the columns. It will not permanently stop there. Something must be in preparation for the columns themselves, as well as for the transepts, nave and aisles. The least that this long-suffering English public can ask, this public which has no Minister of Fine-Arts, and whose cathedrals are in the hands of irresponsible deans and chapters, is that it should know the worst — or the best — that is in store. Then will be the moment to insist, with a force which even Dean Gregory cannot withstand, that St. Paul's shall not be sacrificed until a competent tribunal has declared that Sir William Richmond is a greater man than Sir Christopher Wren."

Now surely such criticism as this is irrelevant. Sir W. Richmond would be the first to say that Wren is the "greater man"; but that is no reason why the lesser man should not decorate the great architect's work. Formerly the architect and the painter worked together. There is scarcely a building of Greek, Roman, or Mediæval architects that was not painted — absolutely painted with common paint; and were it not for the climate, there is no reason why St. Paul's should not be covered with arabesques, as is St. Peter's at Rome. But here, in this smoke-choked city, paint would peal off, therefore mosaic seems the best medium for decoration. Would the *Times* and its followers have mosaic domes and spandrels riding above and upon dirty stone columns and pilasters? Of course, every one would prefer a Minister of Fine-Arts, if he were the right man, to settle these questions; but the fact remains that for years every one grumbled at "Wren's masterpiece" being gloomy, dismal, dirty and *incomplete;* every one echoed that Wren intended to color every inch of it, and yet, when the Dean and Chapter undertake to do it, every one grumbles at the methods and persons employed. Competitions, even carried out by great artists, failed — *vide* the ungainly attitudes of the Prophets and Evangelists in the spandrels of the dome — and, now that the work has been confided to one man, every one grumbles again! Surely this is unfair; for, if we survey the very greatest work of art, do we not find parts thereof quite inferior to others? Where is perfection? Is it at St. Mark's, or St. Peter's, or even at Chartres, or at Westminster? Cannot we pick holes in the work of every architect, sculptor, or painter, however great he may have been?

Meanwhile Sir W. Richmond is probably the most effectually abused artist of the day; but when jealousies have toned down and the decorations are completed he may live to find his work appreciated as a fit complement to Wren's lordly architecture. Let us all bear in mind our errors as regards Pre-Raphaelitism, impressionism and all other artistic isms, and their authors. Only the very few saw beyond their own noses when Millais's "Vale of Rest" was exhibited; and how many persons dreamt of the success of Manet and Le Page and Millet? Therefore critics, professional and amateur, should be humble — and cautious.

S. BEALE.

ILLUSTRATIONS

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

CLUB-HOUSE OF THE NEW YORK ATHLETIC CLUB, NEW YORK, N. Y. MR. W. A. CABLE, ARCHITECT, NEW YORK, N. Y.

[Gelatine Print, issued with the International and Imperial Editions only.]

BUILDING OF THE *St. Louis Republic*, ST. LOUIS, MO. MR. ISAAC S. TAYLOR, ARCHITECT, ST. LOUIS, MO.

MAIN DOORWAY: CHURCH OF ST. MARY THE VIRGIN, NEW YORK, N. Y. MESSRS. N. LE BRUN & SONS, ARCHITECTS, NEW YORK, N. Y.

THIS drawing exhibits in its final and intended form the doorway which was shown in a gelatine plate in our issue for March 25, last.

ENGLISH CHURCH, RAGATZ, SWITZERLAND. MESSRS. D'OENCH & SIMON, ARCHITECTS, NEW YORK, N. Y.

CHURCH OF S. PUDENZIANA, ROME, ITALY.

ALTHOUGH this is called the oldest church in Rome the façade here shown has been "restored" and altered at sundry dates, the porch and door — shown at larger scale in our issue for December 11, 1897 — being the oldest and least changed features of the façade. We note with regret that both in the title of the earlier plate as in that of the one printed to-day the last syllable of the saint's name has been omitted. The error reveals one of those cases of carelessness which every reader, we hope now and then, discovers in himself; thus, though we have read Scott assiduously for more than forty years, it was only this winter that we noticed that the word was "assoilzie," and not "assoilize," as we had read it a thousand times before.

CHURCH OF S. ANDREA, PISTOJA, ITALY.

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

HOUSE OF W. C. STUART, ESQ., PASADENA, CAL. MR. F. L. ROEHRIG, ARCHITECT, PASADENA, CAL.

HOUSE OF J. H. ADAMS, ESQ., PASADENA, CAL. MESSRS. ADAMS, PHILLIPS & CO., ARCHITECTS, PASADENA, CAL.

THIS house is said to have cost about $9,000.

[Additional Illustrations in the International Edition.]

REAR DOOR OF THE CHURCH OF ST. MARY THE VIRGIN, NEW YORK, N. Y. MESSRS. N. LE BRUN & SONS, ARCHITECTS, NEW YORK, N. Y.

[Gelatine Print.]

INTERIOR OF THE SAME CHURCH.

[Gelatine Print.]

DIE STADTWAAGE, BREMEN, GER.

[Gelatine Print.]

AMONG the works of Lüder von Bentheim that have come down to us, this building, next to the justly famous Bremen Town hall, of which we have some plates in preparation for a future issue, is the most important. It was erected in 1587. As in many other commercial cities of that period, the Public Scales established and administered by the municipality served to weigh the imported merchandise for the purpose of levying customs-duties. Furthermore, these scales formed an important source of revenue for the public exchequer, through fees being collected from the merchants for employing the scales for their private use. To house such an object of public usefulness in a building of monumental character and appearance was an idea quite in keeping with the intense civic pride of the burghers of the old Hanseatic town, provided that a certain degree of simplicity was observed in its erection.

The interior of the Stadtwaage Building contains nothing that is especially noteworthy in an architectural sense. The hall of the ground-floor, spanned by a massive wooden ceiling, formerly contained the scales, of which there were several in use. The story above formerly contained offices and assembly-rooms. Now it serves for the storage of merchandise, as do the three upper floors built into the spacious roof.

The architecture of the main façade clearly expresses the inner arrangement by distinct horizontal division of the whole. Its principal attractiveness consists in the well-balanced proportion of the several stories to one another and of the dominating gable to the whole. This stepped gable is remarkable for the repetition of the same decorative feature, viz, coupled Ionic pilasters over corbels, with adjacent volutes and pointed obelisks, topping-off the various steps, a repetition giving this façade a monumental repose such as we encounter in few other gables of this or later periods. The only variety introduced by the architect is to be found in the bands, or friezes, which are decorated with daintily sculptured angels' heads and kindred devices. The framework of the plain window-openings is of sandstone, the lintels being surmounted by arches and sculptured shell-ornament. Narrow bands of sandstone enliven the spaces of brick wall, while the corners of the building are accentuated by embossed blocks with peculiar rustic carving, which are also employed to decorate the two round-arched main entrance-doorways, whose keystones bear the coat-of-arms of the Bishopric of Bremen, with the historical key as its principal feature.

Soon after the completion of the building the foundations were discovered to be insufficient, bad cracks having formed in the structure, and it was found necessary to re-enforce the right-hand corner by the construction of an unsightly buttress which to some degree mars the fine effect of the façade. The appearance of the latter was formerly enhanced by the coloring and gilding of certain ornamental portions. Recently a similar polychrome treatment of the friezes has been undertaken, whether with the same happy effect as the original scheme it would be difficult to decide.

"FERNLEIGH," NOTTINGHAM, ENG. MR. ARTHUR MARSHALL, ARCHITECT.

INTERIOR OF WEIGH HOUSE CHAPEL, DUKE ST., GROSVENOR SQUARE, LONDON, ENG. MR. ALFRED WATERHOUSE, ARCHITECT.

The exterior view of this building may be found in our issue for April 15, last.

Correction: — Speaking of mistakes, we must ask our subscribers to correct one which we made in our issue for March 11, 1899, which was brought about by a mistake in marking the negatives of two buildings not personally known to us. Immediately on the publication of the two interior views under the title "Genesee Valley Club-house" Mr. Du Fais at once wrote to disclaim their authorship; but to publish a disclaimer without making the proper correction seemed undesirable, and because of delays on the part of those we wrote to for the facts, it has taken an unusual length of time to verify our suspicion that the mistitled views actually show interiors in the Eureka Club-house, also at Rochester, the work of Messrs. Nolan, Nolan & Stern. We ask our subscribers, and particularly all librarians, to make the needed correction on the prints in question.

NOTES & CLIPPINGS

The Elephant of Catania. — The diligence of Professor Holm has brought to light one or two scraps both of Byzantine and of Saracenic work lurking in the streets and lanes of Catania. But no Byzantine or Saracenic building remains. There is however one work of art which, if we can believe the local legend, belongs to the days of Byzantine rule, but which by no means comes within the standard of Byzantine orthodoxy. The elephant wrought in lava, with tusks of white marble, which in later times has been set to carry an Egyptian obelisk in the place before the cathedral, is held in local belief to be the work of a certain Diotro, Diodoros, Liodorus, or Heliodoros, who in the eighth century turned Jew, practised magic and became a manufacturer of idols. The Jews of Catania were a numerous and a proselytizing body in the days of Gregory the Great; but, whatever may have been their misdeeds, it is hard to charge either them or the Saracens with being makers or worshippers of idols. But this Sicilian forerunner of Lord George Gordon was a mighty necromancer indeed. He turned men into beasts, and, when he was carried to Constantinople to die for his crimes, he escaped the vigilance of the Imperial police by flying through the air back to his own city. But there he met with his match in the Bishop Leo of Ravenna, who, as himself a worker of wonders through holier influences, bore the surname of Thaumatourgos. Heliodoros, once, it is said, a candidate for the bishopric, was burned, not indeed in Ætna, but in some lowlier furnace of fire. The modern historian of the Sicilian Mussulmans sees in this tale a legendary account of the last destruction of heathen monuments by Christian hands. But the elephant, whatever may be his date, is there to speak for himself, not only in his own person but in the place which he bears in the arms of the city. The obelisk which he has borne for the last 150 years has no natural connection with its bearer, nor is it obvious why an Egyptian work should find itself among the ornaments of the Sicilian city. An explanation has been found in the fact that Agathokles had an Egyptian wife, Theoxena, who, it has been guessed, was the stepdaughter of the first Ptolemy. Agathokles may have received an obelisk as part of her dowry, and he may have set it up at Catania. At any rate, the work of the Egyptian is there, mounted on what passes for the work of the convert to the creed of the Hebrew. — *The Architect.*

What Trade-unions have done for England. — The diversion of engineering business, such as the building of locomotives and steel bridges, from Great Britain to the United States is provoking an animated discussion in the English press. One of the most significant letters published comes from Mr. Thomas H. Robinson, editor of *Fair-play*, who declares that the loss of trade is due chiefly to the logical effect of trade-unionism. He says: "When our leading engineering firms are full of work for the next two years, as is the case with most of them, they cannot be accused of want of enterprise, for they have already undertaken more than they can do. When the men can earn in four days as much as will keep them for a week I do not see why they should be blamed for not doing more; they are not philanthropists, and it is only in poetry that manual labor is a joy; while as to commercial travellers, what is the use of their hunting up orders which they know cannot be executed? The real cause of the trouble lies in another direction, namely, in the restriction of apprentices imposed by the trade-unions. Some ten years ago a prominent shipbuilder and engineer on the Clyde told me that in consequence of these restrictions we were approaching the time when there would not be a sufficient number of skilled hands to meet the requirements of trade. That time has come. If our engineers were to double their works to-morrow, they could not find suitable men to fill them, because such men do not exist, and under trade-union rules can never be brought into existence. The object of trade-unions is not to increase trade, but to limit the number of men employed in any particular industry, and this object they have attained with the result we see."

The Empress Elizabeth's Garden at Lainz. — When the late Empress Elizabeth was staying at Nauheim the Empress Frederick, on a visit to her, gave her a vivid description of her garden at Friedrichshof, near Cronberg, which had been laid out according to her own ideas. It is longer than it is broad, and is enclosed by a high wall, in which there is a sculptured niche and fountain, like these we see in the Old World gardens of Central Italy. On either side of the garden an immense pergola runs from the house to the wall, lofty and light, and overgrown entirely with roses — Malmaison, Marshal Niel, Noisette and others. The garden is laid out in terraces, and, with the exception of a broad middle avenue and a lawn before the house, is planted with rose-trees of all kinds and all colors. The Empress Frederick gave the Empress photographs of this garden, which she sent to the Emperor, asking him whether he did not think the idea charming, and whether he had any objection to her having a similar garden laid out at Lainz. She never had a definite answer to that letter, and now the Emperor has given orders that the garden at Lainz is to be laid out exactly like that of Friedrichshof without delay, as the realization of perhaps the last wish the Empress ever expressed. By next spring the gardens of Lainz will be as the Empress would have wished to see them. — *London News.*

To save the Plains of Abraham. — The Plains of Abraham, the scene of the epoch-making victory of Wolfe over Montcalm, are to be subdivided into building-lots and converted into a suburb of the city unless the authorities intervene and pay a large price for the property. It transpires that the Government has held it from year to year under a lease made with a religious corporation, a nunnery, a nominal rental of $100 a year being exacted. The last lease, made in 1802 for a period of ninety-nine years, expires within the next two years, and as the land has now become valuable the owners propose to resume possession. Strenuous efforts will be made to preserve from desecration a spot the most historic in Canada. The various literary and historical societies throughout Canada and many commercial bodies have petitioned the Government to buy the land and convert it into a national park, but as yet there is nothing to show that these petitions will be listened to. It would take a large sum of money to secure the land, as it is admirably suited for suburban residential purposes. — *Boston Transcript.*

Find of Marble in South Africa. — Valuable marble, said to be equal to Carrara marble, has been found in German Southwest Africa. It is asserted that the beds are most valuable, owing to their size and thickness. The Government has sent a committee of experts to report on the find, believing that the discovery will enhance the commercial value of the colony tenfold. — *N. Y. Tribune.*

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

The American Architect and Building News

ADVERTISERS' TRADE SUPPLEMENT.

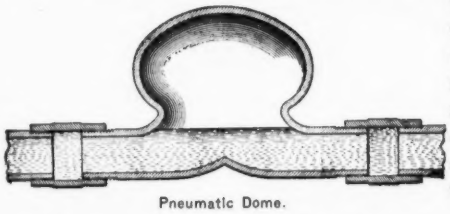
No. 204. SATURDAY, MAY 6, 1899. VOLUME LXIV. No. 1219.

PNEUMATIC DOME.

THE system recently introduced by the Pneumatic Dome Mfg. Co., of Washington, D. C., embodies a novel and ingenious application of pneumatics to hydraulics, for the prevention of the bursting of water-pipes through freezing.

The principle of the new system consists in the provision, at regular intervals in the supply-pipes, of air-domes, or spaces which remain filled with air, slightly compressed by the water-pressure, in which the ice, 10 per cent greater in volume than the same water in a liquid state, can store its excessive bulk.

For horizontal pipes these air-domes are



Pneumatic Dome.

provided with a double inclined-plane, or deflecting slope, as shown in the cut, which causes the ice to slide into the air-filled chamber, simply compressing the air, instead of bursting the pipes.

For vertical pipes the principle is the same, although the slopes are not necessary, since the vertical expansion causes the ice column to be thrust into a vertical chamber without the necessity of being deflected.

An automatic air-inspirator is permanently placed in the basement of a protected building, which supplies air to the domes every time a spigot is opened or closed, the air being carried along the pipe by the flowing water, and caught wherever there is a dome, thus cushioning the pipes with air just at the points where dangerous expansion takes place.

This system has been highly endorsed by many of the leading engineers and architects of the country, and has been tested by an eminent scientist.

The several simple devices and fittings which are comprised in the system, as well as their application and combination, constitute a series of United States and foreign patents.

THE PNEUMATIC DOME CO.,
WASHINGTON, D. C.

SCHOOL-ROOM WALLS.

A SPECIALIST who has made the eyes of school-children a study advocates the use of tinted walls in school-rooms. He says, "Clear white walls are a menace to the eyesight, that ought not to be tolerated in any school-room." In this connection the attention of architects is called to Muresco, which has been used extensively on the walls and ceilings in Brooklyn, Chicago, Baltimore, Boston and other cities, as well as many private schools and colleges. Muresco is made in white and fourteen standard tints, also in special tints adopted by the public-school officials of Brooklyn and Chicago. Muresco has many practical points of merit: It is easily prepared and applied, covers well, will not rub off, crack or peel, is fireproof and non-poisonous. Considerable labor is saved by using Muresco, as much of the preliminary work, such as washing off and sizing, which is necessary when kalsomine is used, is not required. Muresco works equally well on new or old plaster, and will cover cracks, stains and patches better than any wall-coating made. It can also be used on brick, stone, wood or metal. After the original coat of Muresco has been applied successive coats may be put one upon another, at any time, without washing off the surface or sizing it, and with no possibility of the previous coat rubbing up.

The finish produced by Muresco is soft, smooth and dead flat, being particularly pleasant and restful to the eyes.

We would be pleased to mail our tint book, descriptive booklet and color card to any person requesting them.

BENJAMIN MOORE & CO.,
BROOKLYN, N. Y.

A CARD TO ARCHITECTS OF BOSTON AND VICINITY.

I WOULD respectfully request those who visit the coming exhibition of the Boston Architectural Club during the evening to particularly notice the lighting of the gallery of the St. Botolph Club. I was recently called upon to replace the old system of lighting with my patented reflectors for art-galleries, and I desire Boston architects to decide for themselves whether or not these reflectors are satisfactory. The St. Botolph Gallery is comparatively a small one, and presents essentially the same conditions I have found in many of the private galleries I have lighted. But the larger galleries of the Metropolitan Museum of Art in New York, the Carnegie Library in Pittsburgh, or the Corcoran Gallery in Washington, for instance, will convince any one that my system adapts itself perfectly to all conditions and dimensions.

Gallery lighting, as well as the lighting of churches, theatres, and all kinds of audience-rooms, is a science, founded upon the theory of reflection, but successfully developed only by practical experience. The reflecting and diffusing powers of various materials and surfaces, the proper angles for each particular set of conditions, and all the minor details of producing fixtures, have been my study for forty years, and each year has been rich in practical experience. I have never tried to do "cheap" work, and never will. The only policy that is consistent with such a business as mine is to produce nothing but the best. The whole object of reflection of light is to divert rays that would naturally be wasted into the direction where they will be utilized. Reflection of light is therefore economy of light. The *best* reflecting surface, the *most effective* angles of reflection, are the *greatest economy*. The slightly extra cost of fixtures that are made right is soon made up by their greater economy.

I am always ready to make estimates and suggest the most effective and economical lighting of any special apartment, and correspondence from architects who have any problems that my experience will help to a better solution will receive most careful attention.

I. P. FRINK,
551 PEARL ST., NEW YORK.

ZINC-WHITE.

THE natural drying properties of white-lead constitute a defect, since they are due to progressive saponification and oxidation of the linseed-oil; and this effect proceeds until the oil is destroyed.

Zinc-white, on the other hand, is free from this and other faults. The only practical defect from which it suffers is its great oil-carrying capacity, which renders it slightly less opaque than lead when mixed ready for use. This so-called defect really enhances its value as a paint, since it increases its durability; but in the hands of ordinary workmen, and for cheap two-coat work (one coat over a priming coat), a combination paint composed of zinc and some pigment with a larger "grain" yields more satisfactory results. When pure zinc-white in pure linseed-oil is applied by a competent painter to properly seasoned dry wood in clear, dry weather it forms the most durable and satisfactory white paint known. Instances are plentiful where such work has stood exposed to the weather for ten, fifteen and twenty years intact and in perfect condition for repainting. Especially is this the case where the zinc has been tinted with earth-colors, such as ochre, etc.

In ordinary cases of hurried work under adverse conditions the combination paints based on zinc-white will be found more satisfactory for outside use than pure zinc in oil.

No matter what may be the original beauty of any paint, or what its cost, permanence is the most important consideration both for the architect and the property-owner. Snow is more dazzlingly white than any paint, but it

is not available for coating structures. The aniline lakes furnish a bewildering profusion of rich and delicate colors, but in the sunlight they vanish almost as quickly as snow, hence they have no place in the *matériel* of the architect who works intelligently and conscientiously.

White-lead, though useful when properly combined with more stable pigments, has inherent defects which have caused paint experts to condemn its use without such correctives. No matter what the beauty of a color-scheme executed with paints based on pure white-lead, in a very brief time the original brilliancy is gone, the light tints have darkened, many of the darker shades have faded or altered, and the entire scheme of shading has changed, while the surface has lost its gloss and begun to crumble away.

With the better class of combination paints based on zinc-white the result is entirely different. White remains white, tints and shades, purer and brighter to begin with, retain their value and their brilliancy, and the original gloss remains almost indefinitely.

A striking and interesting experiment to demonstrate these contrasting qualities of lead and zinc can be made by matching tints of Prussian blue, Ultramarine blue, Venetian red, etc., in zinc-white and in white-lead, and painting one-half of a board with the zinc tint and the other half with the lead tint, then allowing them to dry, and exposing them to the weather. After drying, the board should be exposed for two weeks to the summer sun: the tint made with zinc remains unaltered, while that made with white-lead fades to a dirty greenish yellow. One experiment of this kind will furnish a more convincing argument than volumes of talk.

Unfortunately for the purposes of the architect who wishes to use a combination paint, many of these are branded and sold as "white-lead." The custom is very old and was originally practised universally by all white-lead manufacturers themselves. In this country it was abandoned by them some years since, but it is still followed in England and Europe generally.

The practice of mislabelling may prove embarrassing to those who, knowing the superiority of combination paints, wish to obtain them. There is no difficulty in obtaining pure lead, if desired, but in selecting a combination paint it is necessary to know that it is a combination containing zinc, and not what it often purports to be — white-lead. However, the leading brands of combination paints are generally known, and in case of doubt the manufacturer will always furnish assurances on this point.

Some combination paints contain lead and some none, but practically all of them contain zinc-white, and upon this pigment the paint manufacturers rely to insure the superiority of their products. In such a combination containing lead, the lead being diluted by the other pigments, the proportion of the oil being increased and the unstable pigment being protected by the zinc, the chemical action that produces darkening of white-lead will be greatly retarded, the effect on the contained tinting colors will be much reduced and the paint will not become "chalky," like pure lead.

Some combination paints are composed exclusively of zinc-white, linseed-oil and inert pigment. If the relative proportions of these materials be correct and the grinding be thorough, the combination will have most of the qualities of pure zinc, will form a thicker coating and will be very little susceptible to cracking when applied to unseasoned wood or in moist weather.

Every manufacturer of combination paints has his own preference as to formulas, but all have satisfied themselves by experiment and by the results of experience that any combination paint containing a goodly proportion of zinc-white and only pure linseed-oil is better than straight lead, and all of them are willing to guarantee such superiority.

There can be no dispute over the assertion that paints ready mixed for use are a natural and logical development from the needs of paint consumers.

There are in the market certain lines of ready-mixed paint compounded with strictly pure linseed-oil. These are almost universally based on zinc-white, in combination with colors and inert pigments, some with and some without white-lead. Such paints are the most economical and the most satisfactory to be found. Unfortunately the user has no means of identifying them; but when a brand of ready-mixed paint bears the name of a reputable manufacturer, coupled with his guaranty that the paint is free from alkali, water, and petroleum products, and that it contains a fair proportion of zinc, it may be taken for granted that the paint is safe to use.

Architects entrusted with important work are usually expected to specify the materials to be used. From a very natural lack of special interest in this department of their calling, it has become almost a matter of course with them to specify a priming coat either of lead or of ochre and oil, succeeded by one or two coats of pure white-lead and oil. A few architects, however, whose attention has been more especially directed to the question of paint-materials, are accustomed to order the addition of a certain proportion of zinc-white to the finishing coat, "to hold the lead in place." There is no doubt that the last-mentioned practice will retard deterioration to an appreciable extent; but as in these cases the zinc will probably be added by hand in the paint-shop, with the certainty of imperfect incorporation, it is preferable to select a brand of prepared paint conforming to the required formula. Still more satisfactory results can be obtained by using the combination formula throughout.

It would also be very advantageous to specify that the materials shall be mixed and ground by machinery. This method will greatly mitigate the defects of lead and will avoid all the so-called faults of zinc. In connection with this it might also be well to forbid specifically the use of driers and japans made chiefly with lead salts, and the best way to insure this omission is to specify the incorporation of the necessary manganese driers, made with a very small proportion of litharge, in the process of grinding.

Any architect who has in hand a contract requiring a large quantity of paint will be surprised to find how readily manufacturers will comply with intelligent requirements.

For interior work, it is generally admitted that straight zinc or paints based on zinc should be specified to the exclusion of lead. The result will be more satisfactory in beauty, durability, economy and healthfulness. It is very well known that no paint containing an appreciable proportion of lead will endure or hold its color in an atmosphere where gas or coal is burned, or where there is any trace of effluvium from closets, etc.

Finally, if the architect wishes good honest work from competent painters, he will place his contracts for painting directly with the painter, and not with the carpenter or any other third party.

NEW JERSEY ZINC CO.,
52 Wall St., New York, N. Y.

MAIL-CHUTING.

The Cutler Patent Mailing System or United States Mail-Chute has long been in general use in the commercial buildings of all the principal cities of the United States. More recently it has come to be recognized that it is equally desirable in public buildings, and we have lately completed its installation in the Philadelphia Municipal Buildings, where there are seven mail-chutes and special mail-boxes in use.

Among other public buildings equipped we mention the City-hall and Court-house, Boston, Mass.; City-hall, Milwaukee, Wis.; City-hall, Lowell, Mass.; City-hall, Brooklyn, N. Y.; Court-house, Rochester, N. Y.; City-hall, Paterson, N. J.; City-hall, Portland, Ore.; Massachusetts State-house, four chutes, and many others.

Architects and managing office-assistants should have at hand for reference our detail sheets and specifications, which are to be had at any time for the asking. We also print an estimating blank and descriptive circular, for the information of those writing for estimates, which will be found convenient and useful.

Inviting correspondence — we have a mail-chute in our building and thus find it an easy matter to transact business by mail — we are

THE CUTLER MANUFACTURING CO.,
Cutler Building, Rochester, N. Y.

NOTES.

Merchant & Co., Inc., of Philadelphia, with branch offices in New York, Brooklyn and Chicago, it is reported, have considerable demand for the Interlocking Metal Spanish Tiles, and among the recent important contracts received by them is the Union Depot of the Texas & Pacific Ry., now being erected at Fort Worth, Tex. Also the new Chelsea Hotel in Atlantic City in course of construction. These two contracts will require about 40,000 square feet of roof-surface.

Numerous export shipments have been made recently by this firm, and their products are gaining much favor in foreign countries. Their Metal Tiles have the endorsement of leading architects and engineers, and the reputation of the firm as "leaders" in Metal Specialties is well known throughout the entire civilized world. Facilities for manufacturing Metal Tiles and Star Ventilators are exceptional, and no better evidence of this fact can be given than has been demonstrated in connection with a recent Government contract, where 822 ventilators, principally 24-inch diameter, requiring delivery in three weeks' time, which is beyond question the largest single contract of ventilators that has ever been awarded in this country.

The Berlin Iron Bridge Co., of East Berlin, Conn., have the contract for furnishing and erecting the structural steel-work, consisting of beams, girders, roof-trusses, and other material, for the New Britain Institute, New Britain, Conn.

The Adams Patent Sewage Lift Co. (formerly of 623 Drexel Building) begs to inform you that increasing business has necessitated its removal to more convenient offices at the above address.

The company will at all times be pleased to furnish information to those who from time to time are called upon to deal with low-level sewage.

Blue prints can be seen (and references furnished) of a variety of cases where the Adams Automatic System has been applied in this country and in Europe, for the purpose of avoiding the pollution of rivers and streams, for the efficient drainage of flat districts, and for raising to sewer level drainage from underground restaurants and toilet-rooms.

Approved by all Boards of Health.

ADAMS PATENT SEWAGE LIFT CO.,
PHILADELPHIA, PA.

ALL of our readers will be interested in the advertisement of Keuffel & Esser Co., because this company furnishes everything required for drawing and measuring. They are probably known to most of our readers, as they are the recognized leaders in their line of business, their goods are the standard of quality, and their generously distributed catalogue is in the hands of every professional. They make most of their goods and absolutely control nearly all goods which they import, and they warrant all of their goods to be exactly as represented, or better. They carry an immense assortment, and probably the largest stock of any house in the world in their line.

Their lavishly illustrated catalogue of over 400 pages is a model of terse but efficient description and is sent free of charge to professional people applying for it.

THE Berlin Iron Bridge Co., of East Berlin, Conn., have taken the contract for the new roof on the East Armory of the Colts' Fire Arms Mfg. Co., at Hartford. This roof is 60 feet wide and 500 feet long, and is to be entirely re-covered. The new roofing is to be the Berlin Iron Bridge Co.'s Patent Anti-condensation Fireproof Roof Lining, consisting of anti-condensation lining underneath the corrugated-iron outside covering.

MERCHANT & CO., INC., of Philadelphia, New York and Chicago, report a heavy increase in Tin and Babbitt Metal business. They have recently taken, among numerous others, a car-load order for Babbitt Metal from a large western machinery mfg. co., the shipment consisting of an assortment of grades.

This order was placed after an exhaustive list of samples from a number of manufacturers.

This Company has been manufacturing all grades of this Metal for a quarter of a century, and their present large business in this line is a fitting tribute to their thorough experience and reliability in its manufacture.

AT the Electric Light Works, Burlington, N. J., there was recently twenty inches of water in the cellar, and a man pumping steadily all night could only lower the water about six inches.

The following day a local plumber put in a Braender cellar-drainer and within an hour and a half it had all the water pumped out.

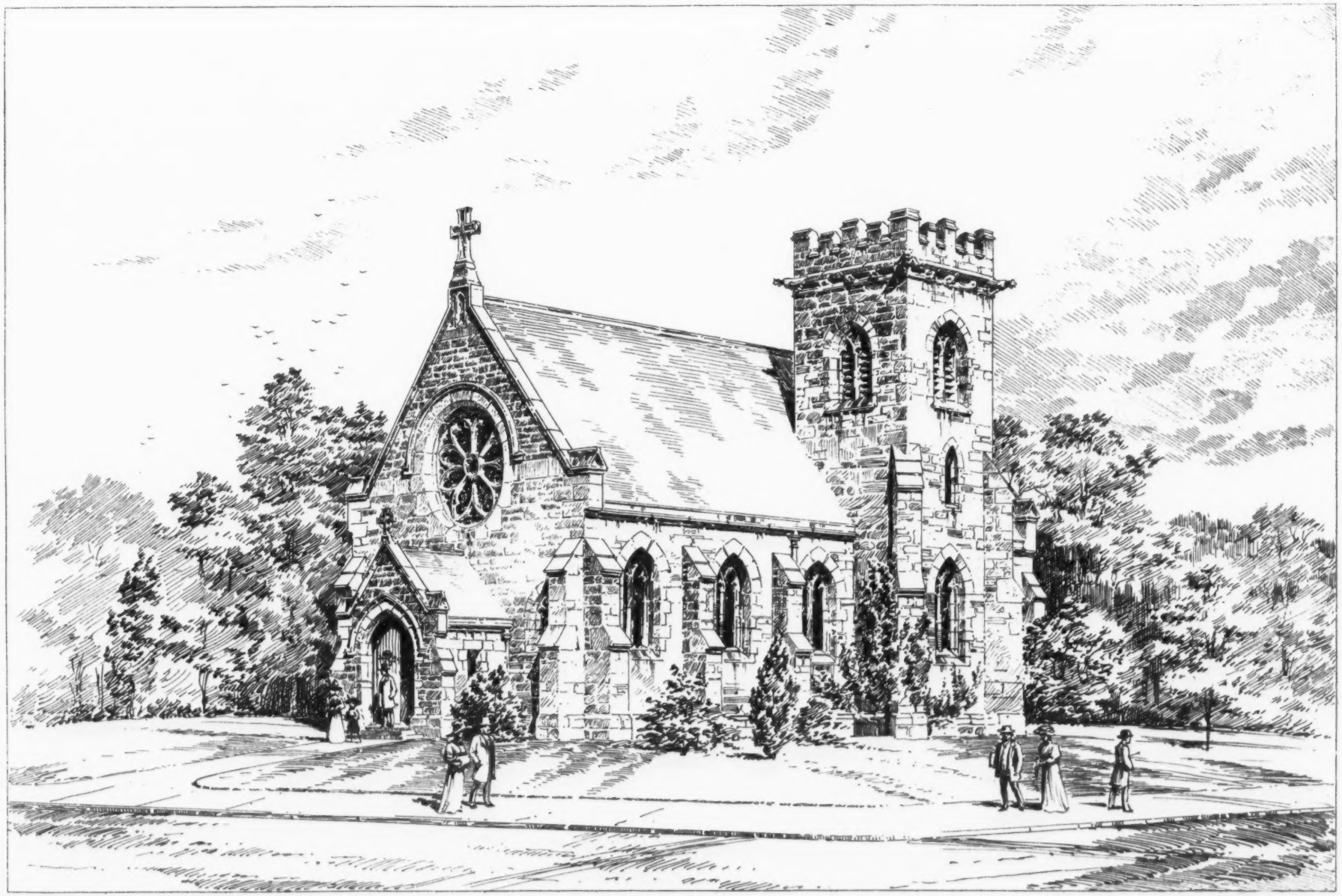
THE Berlin Iron Bridge Co., of East Berlin, Conn., are furnishing for the United States Government, at Port Caswell, N. C., a steel roof for the new Torpedo Storehouse. This storehouse is of fireproof construction throughout and substantially built. The walls are of brick, and the roof consists of steel trusses with purlins, and the covering is of corrugated-iron.

TRADE-MARK.

A TRADE-MARK is a very good thing to have, and our old friends, the N. G. Taylor Company, manufacturers of tin, of Philadelphia, have a very good trade-mark, which, as a rule, they generally know how to display, but in the little pamphlet which they are now distributing, which explains the method by which they produce their brand of roofing-tin, it seems to us that they have not taken full advantage of the opportunities which their own ingenuity has provided for.

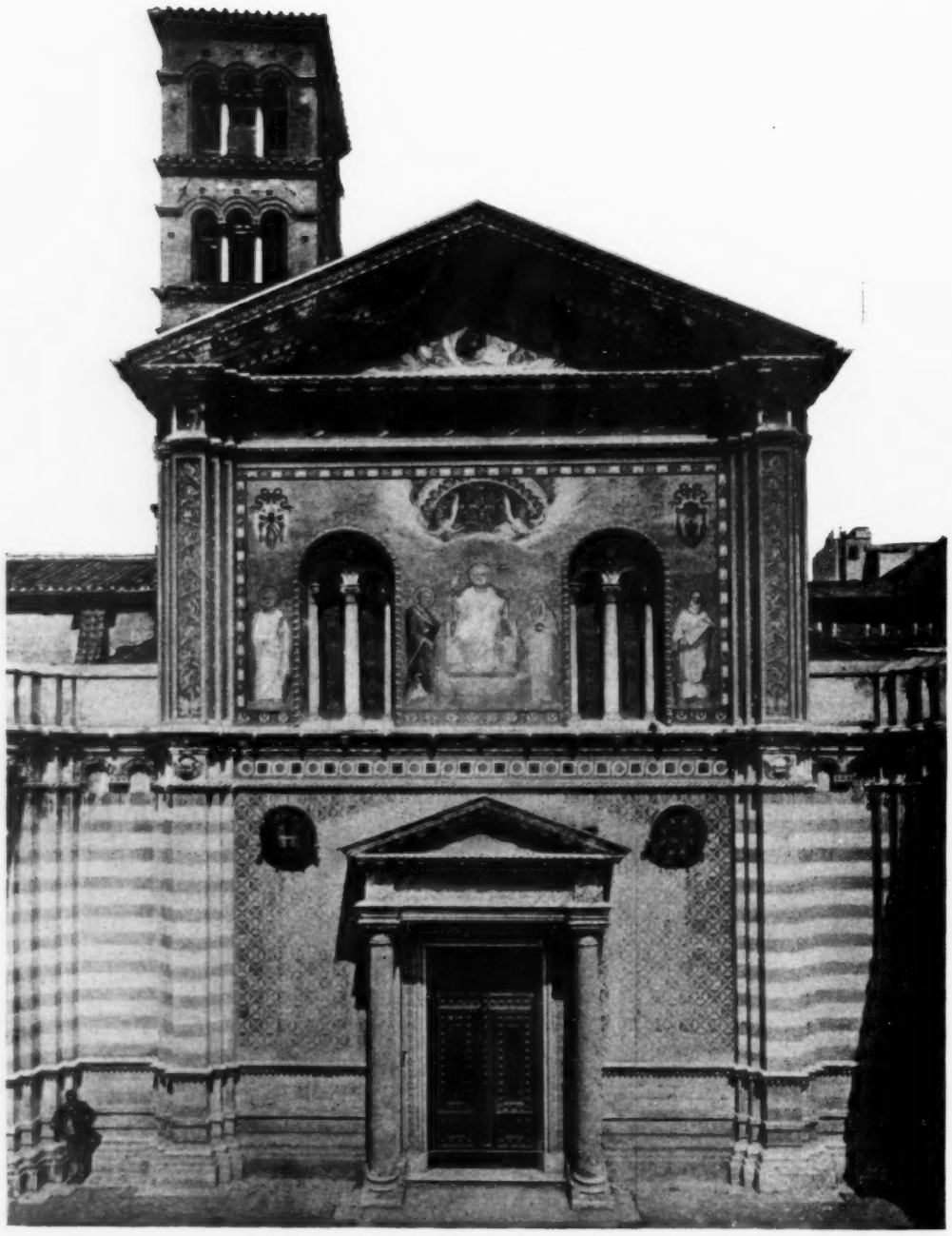
The first illustration of their little pamphlet shows what their trade-mark is — a target with an arrow in flight proceeding direct to the bull's-eye. Then, on the succeeding pages, they have been content to exhibit a series of cuts very well adapted for attracting notice, but instead of working their trade-mark into the design of the cuts they have placed it baldly in the top margin of the page. It seems to us that a little more thought might have secured as effective and a somewhat more interesting result. If, for instance, on the cut showing how the plate is "dipped by hand," the trade-mark had been worked in as a tattoo brand on the naked arm, it would not have been out of place. On Uncle Sam's shirt-front, in the guise of a shirt-pin, the same trade-mark might have appeared. On the silhouette of the Quaker, which might easily have taken the guise of a Philadelphia policeman, the brand might have appeared as his official star, and on the front of Independence Hall one of the clock-faces of the tower might easily have been made to exhibit the trade-mark. And so one might proceed through all of the cuts included in their little pamphlet.

But the N. G. Taylor Company might protest that, useful as their trade-mark may be to them, it is not their only end and aim to parade it in every possible guise and under every possible circumstance, while it is, on the other hand, their object to produce a good roofing-tin, and that they are in a position to prove that they do so produce it they can exhibit vouchers and testimonials of unquestionable authenticity from a large number of former customers.



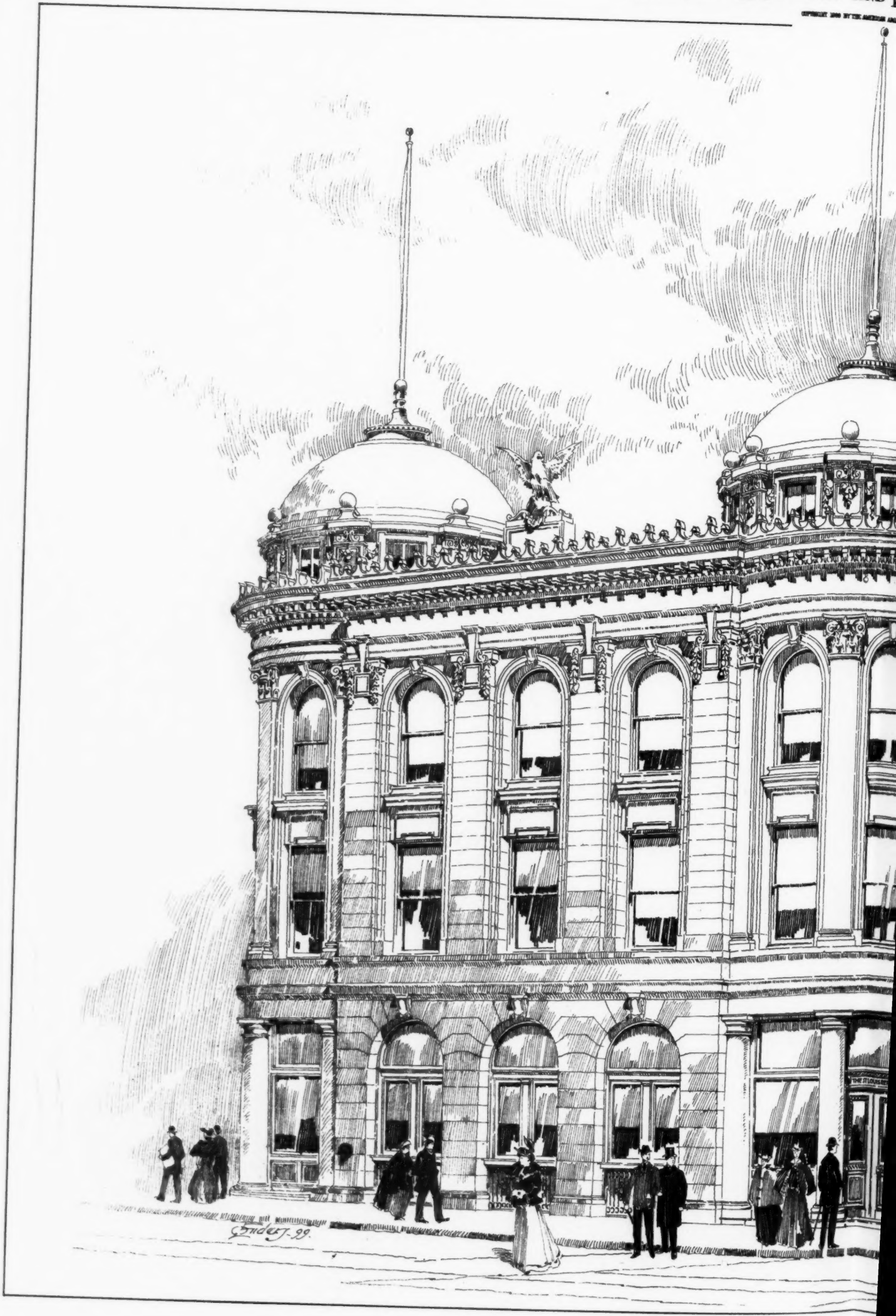
ENGLISH CHURCH, RAGATZ, SWITZERLAND.

D'Oench and Simon, Architects.



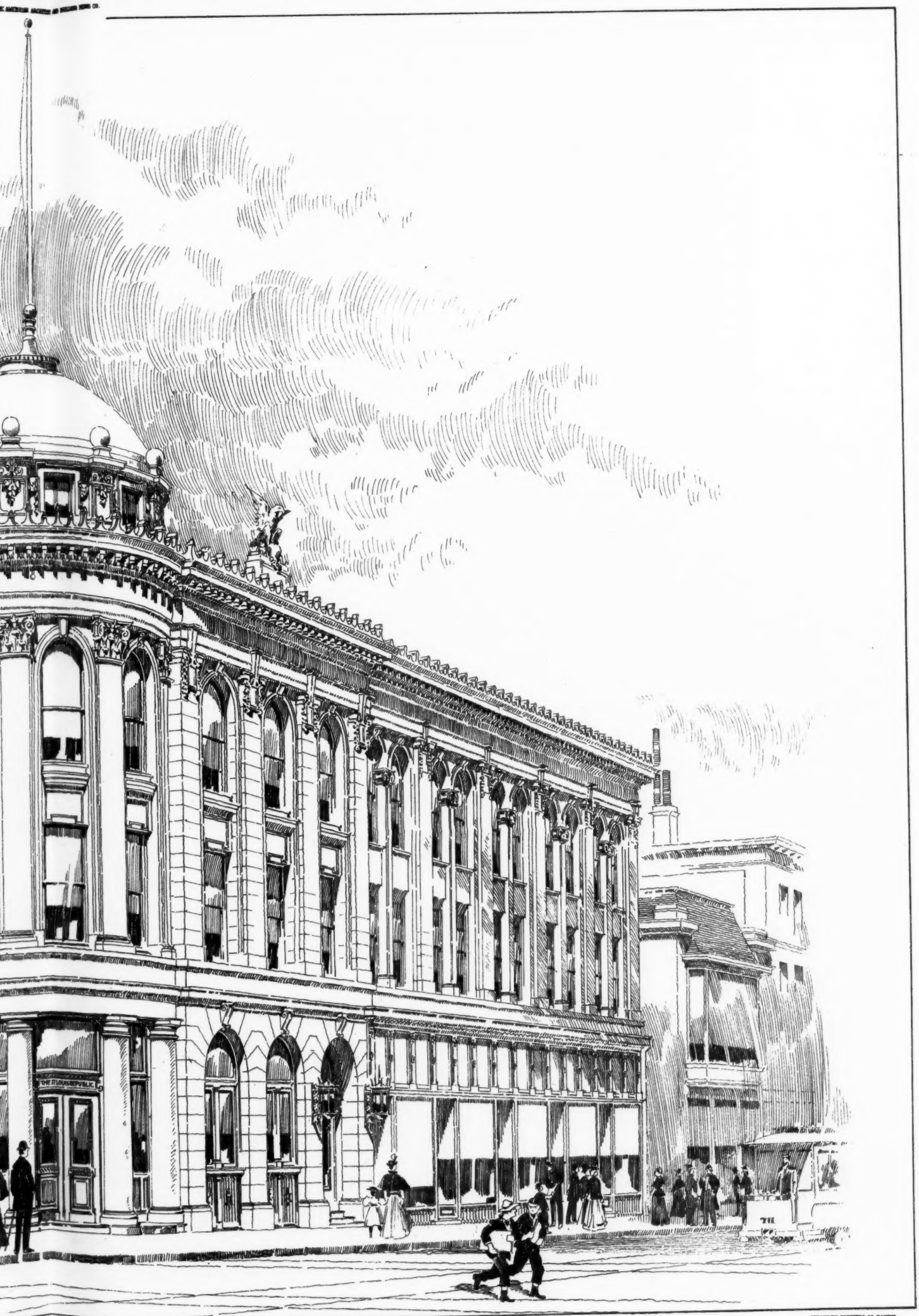
CHURCH OF S. PUDENZIA, ROME, ITALY.

CHURCH OF S. ANDREA, PISTOJA, ITALY.



BUILDING OF THE "ST. LOU

ISAAC S. TAY



HELIOTYPE PRINTING CO., BOSTON.

E "ST. LOUIS REPUBLIC," ST. LOUIS, MO.

ISAAC S. TAYLOR, ARCHITECT