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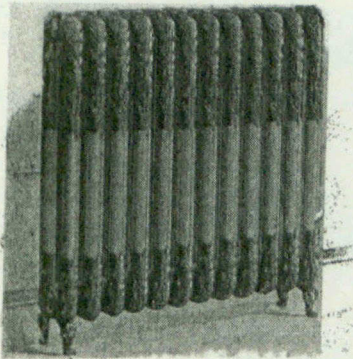
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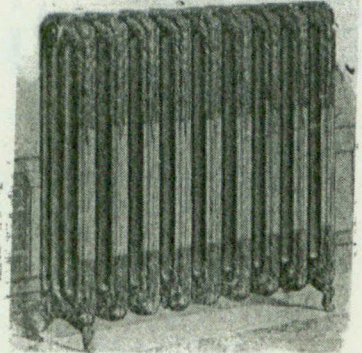
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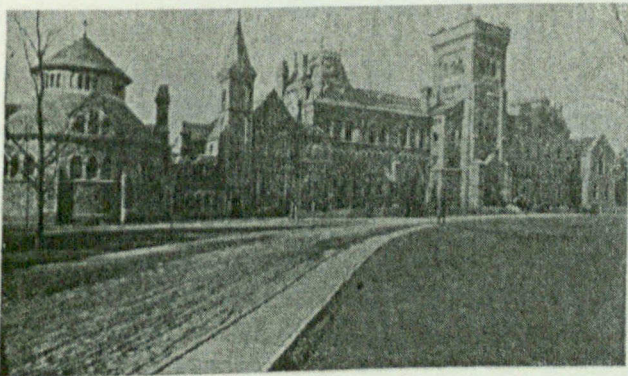
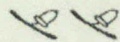
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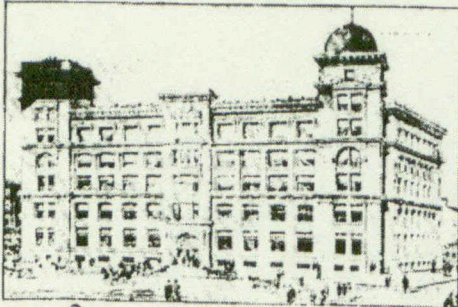
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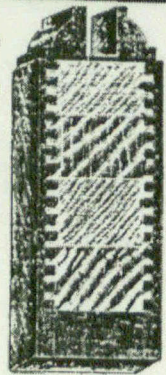
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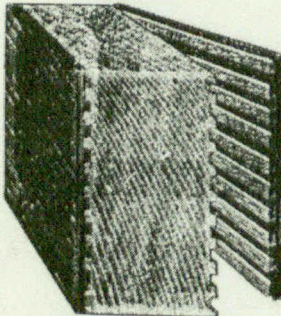


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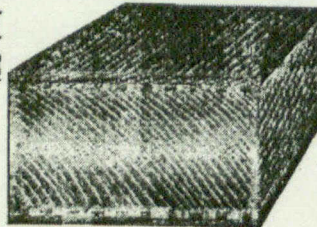


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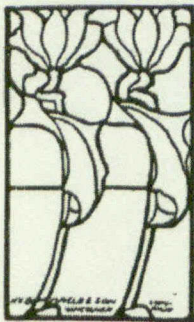
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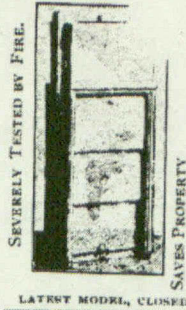


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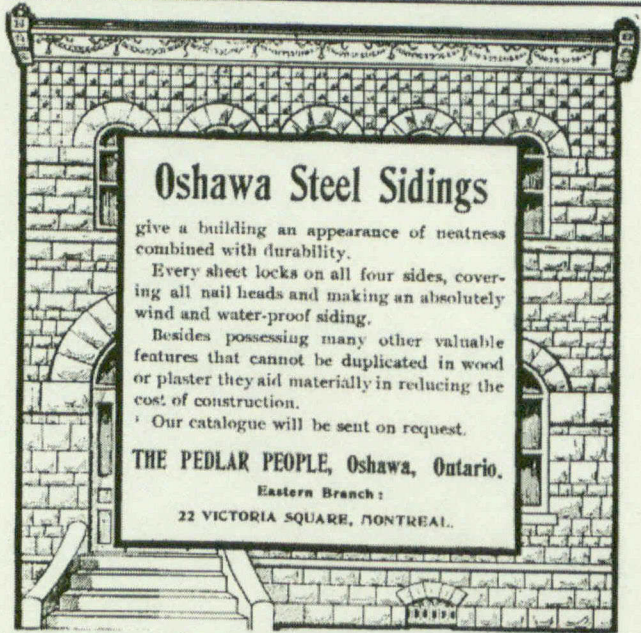
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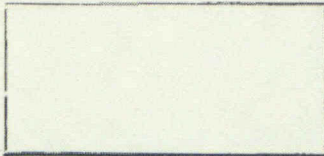
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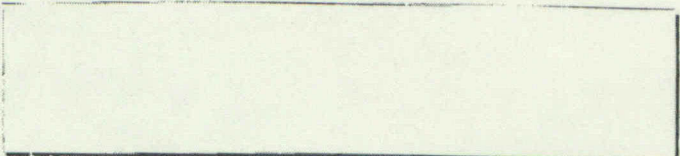
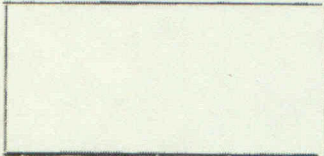
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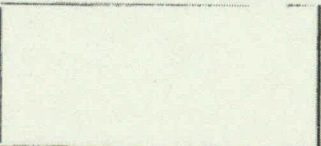
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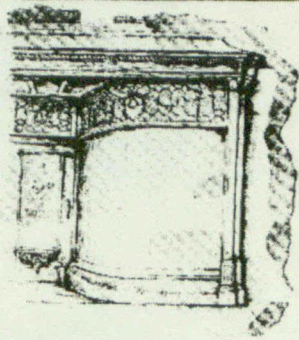
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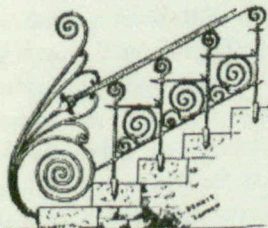
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 " A. F. DUNLOP, R.C.A., Architect, Montreal

Photographic Exhibition.

An exhibition of architectural photographs is a dull thing. The photograph is honourably matter of fact, no doubt, and tells no deliberate falsehoods; but it cannot be said, in the fullest sense, to tell the truth. In the first place, of course, the very important element of colour is left out; not only in the building, but in the surroundings which do so much to set it off. In the second place the point of view is limited and the effect from an imperfect point of view is less satisfactory seen through a limited lense than through an adjustable and reasoning eye. The complaint of painters, that people see things not as they appear to the eye but as they know them to be, is not on the whole a bad thing. We may be unperceiving sometimes of the pictorial effects of nature; but for practical purposes when a man is finding his way across the country, for instance, it is of less importance that he should enjoy the effect of a purple patch of shadow in the middle distance than that he should know it means a bridge. In the same way the eye is able to translate perspective back to the facts it represents, and see in an extremely sloping line the effect of a level cornice. But more than this the eye has a way, if it is an intelligent eye, of selecting the most interesting points and ignoring those which are unimportant. A man of taste before a well composed building sees it as it was meant to be seen, with his at-

tention fixed upon the essentials; and if he were to draw it would bring out these essentials. A photographic lense on the other hand is just as particular about the non-essentials; when confronted with a family group, as amateur photographers well know, it seems to devote its best efforts to the wall paper and picture wires. This cannot be called an artistic representation. For artistic representation we want a statement that is like a good story—the points all in, the twaddle all out; and the photograph is too much like an old woman's tale—laying equal emphasis on major and minor points—to satisfy this requirement. As a study in design, a drawing which brings out a little more favourably than can be done in nature the points of the design, is perhaps more profitable than a photograph which tends to overwhelm the points with minor details more than would be the case in nature. An exhibition of drawings is certainly more interesting.

Correspondence Schools.

It is somewhat surprising to hear that the Architectural League had anything to say in favor of the Correspondence Schools. They have the merit of marking down a course of reading for the solitary student and giving him a stimulus to carry it out—in great part the stimulus of feeling that his course is costing a good deal of money and he must not throw it away. On the other hand

they have the demerit of calling the course of reading a qualification, which it is not. They advertise in such a way that draughtsmen and builders' foremen think that this is the short road to become an architect. The result is an increase of the unskilled who do not know that they are unskilled, and a neglect of less attractive but more substantial means of training. Time will no doubt disprove the undue pretensions of these Schools, but at the cost of much loss and disappointment to students; and if any professional body speaks in praise of the system there should at the same time be strict recognition of its limitations. There can of course be no question of a Correspondence School as a substitute for the Scientific Schools of McGill and Toronto University, but students should be warned against thinking it a sufficient substitute for the course of study and examinations of the Associations of Architects.

Just how numerous and glaring are **Building Permits.** the defects of the so-called Toronto Building By-law, is known only to those who like architects and builders have intimate relations with the Building Department. Let us take as example the unnecessary and vexatious regulations governing the issue of a building permit. The Building Inspector's Department will refuse to grant an architect a permit until a receipt is produced from the waterworks department showing that payment has been made for the water which will be required by the contractor in erecting the building. This means that the architect must either take his plans to the water department and wait while the officials figure up from them the probable quantity of water required by the builder, or leave them behind and go or send for them the next day. There is no good reason why architects should be put to all this trouble and delay. If the plans when submitted by the architect are found to conform to the by-law as interpreted by the Building Inspector, the permit should issue forthwith. Arrangements for the supply of water should lie with the water department and the contractor. Advance payment for the water could easily be insured by the city refusing to turn on the water except on production by the contractor of a certificate of payment from the water department.

Architects and Landscape Architects.

Mr. Pentecost's paper, read before the Architectural League, points clearly to a conclusion, which he forbore to press, that, when the site of a building is sufficiently important to require the intervention of a landscape architect, he is the paramount designer. Repton, as quoted in the paper, is less modest. "Repton's position," Mr. Pentecost says "is, that while the landscape architect should have no official voice in the actual designing of the house, the style and general arrangement, location and disposition of the house and grounds should be officially determined by the necessities of the landscape architect's general plan; for, as Repton says further, 'to my profession belongs chiefly the external part of architecture, or a knowledge of the effect of buildings on the surrounding landscape.'" All this is quite true. The site prescribes the character of the building; the building aims to be as it were a part of the site; and if the architect is obliged to call in a landscape architect to enable him to understand the possibilities

of the site, it goes without saying that he must base his design upon the understanding thus received. This is all Mr. Pentecost spoke for—co-operation. But there is a dark hint lying in his statement that "the true solution of the problem rests with the progress and recognition of landscape architecture as a profession." He goes on to show that there has been hindrances to the development of of this profession—to its development that is to say, from landscape gardening, as it used to be called, to landscape architecture. When fully developed and recognized are we to expect that the landscape architect will rise from being employed by the architect to employing the architect? Will the co-operation, that Mr. Pentecost rests upon, change from an architect inviting the co-operation of a landscape gardener to the landscape architect inviting the co-operation of a house planner? It is the logical sequence. The major quantity fixes the condition for the minor. As the house (that is the architect) fixes the conditions for the supplementary arts of painting and sculpture, so the site (that is the landscape architect) should fix the conditions for the house. But logical consistency is an imperfect guide to life. The house is after all the principal thing. It is more impossible for the landscape architect to grasp the requirements of that problem than it is for the architect to seize upon the points of a site—and take advice from a landscape specialist.

The Education of Architects.

There is something most praiseworthy in the continual discussion by architects of means for the better education of students, but there is surely something that can be done by architects to educate themselves and each other. The absence of this element from the discussions of architects gives a strange air of unreality to their talk about education. It is of course useless to the cobwebs, and a surprising amount of good feeling talk of set studies, or problems, or prizes for busy architects, but Mr. Bispham Page spoke a bottom truth when he pointed out that an architect learns the best things he knows after he has begun practising; and the question is whether architects would not materially hasten each others' development by a systematic exchange of ideas. Meeting to study problems in the abstract is too laborious and it is school boy work any way; but the study of current problems, which constitutes this post graduate course, which Mr. Page speaks of, which architects are taking all their lives, could be made more profitable and much quicker in operation by meeting other architects systematically for mutual criticism and discussion. The old fashioned jealousy of architects for one another has almost disappeared, under the influence of greater culture; if indeed, in the matter of design, it has not altogether disappeared. There is no reason why it should exist. There is so much individuality in art that however much a man may give of his ideas he will never find that they are taken up by others in the same way he has taken them up. If every one pours freely into the fund of common experience there will be a gain all round, without increase of conflict, for, though every man takes from it the same material, it will be found worked up into different products. He who contributes most to discussions of this kind will gain the most;

for, by the effort of explaining his ideas, he will clear them up as they never were before. Clear thinking is the fruit of expression, and one reason why it is so difficult to get contributors to professional paper reading and discussion is, that there is so little clear thinking and so much disinclination to the effort of thinking clearly. There ought therefore all the more be a prosperous career for a series of meetings to which members could bring, not their discoveries, but their doubts and difficulties. It is twice as easy to solve a problem in conversation as alone; and if there is no solution, if the designer is up a blind alley, as so often happens in design, a light from outside is the quickest way to show him where he is. Architects could improve one another incalculably by regular meetings for mutual criticism.

THE rumour that the pulling down of a twelve year old steel frame building in Chicago has shown its lower columns to be half eaten through with rust contradicts the evidence of the gridiron foundations of the old post office which after a longer term of years, if we recollect rightly, were found to be in good order inside their cement casing. But if this rumour is true, (and doubt is cast upon the preservation of iron in cement), it will be a serious addition to the uncertainty which is felt as to the life of a steel frame building. This discussion has been revived in the American papers and reports of experts are so contradictory that the question may be said to rest in doubt. In the meantime steel frame buildings are being rushed up more than ever and we may be sure that carefulness does not increase with familiarity. Representations have been made of the danger of efflorescent brickwork in contact with the steel frame. If the corrosive salt is as freely efflorescent on the inside as it is on the outside, the wall can hardly be called a protective casing. Is any brickwork in fact sufficient protection to a metal which must be kept from exposure, not to the weather merely, but to the carbonic acid conveyed in ordinary air. It is possible to blow a candle out through a brick wall, by placing the candle at the small end of a funnel held tightly against one side of a brick wall, while the mouth is applied to the small end of a funnel held tightly against the other side exactly opposite. There must therefore be a continual change of air between the inside and the outside of an ordinary brick wall. How much carbonic acid accompanies the change depends upon the amount detained by the mortar. The affinity of lime and cement for carbonic acid must be taxed by sudden changes of temperature or in a high wind when the change of air in the walls is rapid, and there must come a time of satiation when the mortar can no longer be relied upon to stop the passage of the gas. Brick and terra cotta surrounding a steel frame is supposed to be grouted so as to be impervious to air, but it is doubtful if it can be made so at the best, if we may trust the evidence of tests for the permeability of walls, and there is sure to be much laxity in practice.

On the whole there is not enough certainty about the protection of the steel frame buildings; but they are being built in greater and greater numbers. It is said that twenty-four millions worth of office buildings

have been begun in New York this season and steel frame construction is in progress for uptown buildings also. The centre of commerce has moved up a good deal; and above that apartment houses grow taller and taller, in the effort to accomplish the end of making the same limited area hold an increasing population. About the time New York is solid with steel frame buildings the catastrophe to the earlier buildings of the kind—if there is going to be a catastrophe—will be due. In view of this state of affairs insurance companies are interested and the question of durability is going to be thoroughly tested by an Experiment Station, established by the efforts of Mr. Edward Atkinson, under the direction of a member of the staff of the Massachusetts Institute of Technology.

THE SECOND ANNUAL EXHIBITION OF THE TORONTO ARCHITECTURAL EIGHTEEN CLUB.

The Toronto Architectural Eighteen Club is to be heartily congratulated on the very successful nature of its Second Annual Exhibition which was held during the last week of May in the Galleries of the Ontario Society of Artists.

The exhibits consisted mainly of photographs, a few pen and ink drawings and some pastels and water colors. The subjects were of remarkable range and variety, for the Architectural League of America was well represented and some fine European photographs were loaned; Montreal, Quebec and Vancouver all assisted to lend increased interest to the collection.

Some of the photos were chiefly remarkable as photographs, the subjects being scarcely entitled to such excellent reproduction; on the other hand, photography with its inherent defects of perspective, failed to do justice to many of the subjects.

As the exhibition was by no means confined to members of the Eighteen Club, it is to be regretted that so many of Toronto's architects were not represented. Such exhibitions can have none but a beneficial effect, by bringing architects together, brushing away and good fellowship is generated; if it is good for one to mix with one's fellow men surely it must be still better to associate with fellow workers, to exchange ideas and broaden our views. Every architect to whom the advancement of art is more than a mere phrase should endeavor to be represented at this exhibition in the future.

The real live interest shown by our United States friends in this and similar exhibitions is instructive; they send hundreds of beautifully framed and mounted photographs from many different points widely scattered over a continent to help out a numerically small Architectural Club in Canada; their genuine interest in the welfare of architecture and their belief in the good derivable from such hearty co-operation is quite clearly demonstrated, and it is to be hoped that every Architectural Society in the Dominion will emulate this friendly example.

If I may venture to offer a suggestion, I think the interest in the exhibition could be greatly enhanced if small scale sketch plans more frequently accompanied the photos, more particularly of interiors. The soul of a design lies in the plan and if the true value of the design is to be appreciated its plan must be shown or at least indicated.

I cannot make mention of every interesting work as the catalogue, which by the by was rather late in making its bow, contained so much that was admirable. I can only make reference to some of those numbers which appealed most strongly to me: Messrs. Bailey & Truscott, Philadelphia, sent a fine collection of photos of executed work, a quaint "Colonial" Exterior, No 11, and a quiet gabled house with half timbered upper stories, No. 22, being particularly attractive.

It is difficult to judge sculpture from rather small photographs in which both scale and technique are almost lost, but the "Stitch" (in clay?) of Commodore Bainbridge & Stewart, No. 124, seemed to give promise of much greater interest than the other work shown by H. K. Bush Brown (Newburg, N. Y.), though the group, "Indian Buffalo Hunt," No. 122, shows life and spirit.

Messrs. Cope & Stewartson, Philadelphia, contributed a round dozen of fine photos, every one representing work worthy of their reputation: No. 155, "Entrance to House at Edgehill," is simply exquisite, and No. 157, "Dormitories, University of Pennsylvania, from the Terrace," is a fine piece of transplanted English collegiate building.

Of Nicola D'Asanzo's decorative designs, No. 171, "Ball Room Decoration for W. W. Gibbs, Esq.," is a singularly fine composition. The remainder probably depend largely upon the scheme of color, which is of course lost in the photos. "Egypt Awakening," No. 190, F.F. Elwell, is in my opinion far ahead of all the other exhibits of sculpture.

No. 212, "Dining Room, Codmore, Hyland," (H. G. M. Gordon) and Nos. 55 and 56, "Dining Room" by A. H. Brokie, Philadelphia, are specially quiet and reserved.

Nos. 236 to 242 is a series of enlargements admirable in light and shade and peculiarly interesting as illustrative of the American Garden.

"Pantry Fittings," by Messrs. Kennedy & Kelsey, of Philadelphia, is a wonderful little bit of skillful contrivance, and the photo of a Mantel, probably in the same house as the Crystal Palace of a Pantry, is as refined as it is effective.

A good collection of photos of Port Sunlight, lent by Sproatt & Rolph, Toronto, indicate the happy result of several architects all working on similar lines and in sympathetic accord.

No. 295, "Bachelor Apartments," F.M. Mann, with an oak hall, kindly rendered by both architect and photographer.

Nos. 298 to 299, Mewman, Westman & Harris, Philadelphia, seemed to me to be the softest and most beautiful photos in the collection, the play of light and shade about the picturesque half timbered house in the trees being quite charming. For the furniture I can find little good to say. Nos. 317 to 320, C. Rhoffs, Buffalo, appears to me to confound subtle simplicity and direct carpentry with sheer affectation and then smothers the unfortunate result with surface ornament, which is not bad in itself but so shockingly ill applied. Some designs of furniture seem to abhor a plain surface even of very beautiful material.

H. W. Weller, Montreal, sends Nos. 405 and 406, "Some Typical English Beauty Spots."

Judging from the bronze work, Nos. 411 to 417,

by John Williams, New York, it would seem that funds are not doled out to the architect in the United States in the 10 cents at a time measure that is too commonly the case in Canada; but it is this very point which emphasizes the great difference between United States and Canadian Architecture. The Toronto architect has to exercise a degree of self restraint that his confrere across the border seems to wot not of. Rarely indeed can the Canadian architect let himself go because he has so commonly to solve problems involving the greatest possible return for the minimum outlay, and in Toronto the result is for the most part extremely gratifying, as may be seen by referring to the numerous exhibits of work by the President, which illustrates most aptly how a simple and dignified effect may be gained entirely by means of good lines, careful grouping and clever fenestration; all the detail being thought out and applied with a sparing and subtle hand.

This self command is evident in much of the work of other exhibitors, and the English influence is also very marked in Messrs. Burke & Horwood's lovely little Bible Training School. And the garden front to "Castle Frank" and the Stables by the same gentlemen are delightful.

No. 368 to 376, "House in Queen's Park," by Messrs. Sproatt & Rolph, further illustrates the growing grip that the English influence is taking on Toronto; Messrs. Lever Bros. premises by the same authors emphasizes this fact very successfully.

Nos. 378 to 381 are exceptionally good pen and ink perspectives of Symons & Rae's new University Buildings at Kingston.

No. 144 is perhaps the most pleasing example given of Chadwick & Beckett's work: E. J. Lennox is represented by some very fine enlargements of photos of his well-known work in the city.

No. 444, "An Artist's House," H. Payette, Montreal, is a pretty French villa such as one sees at Strasburg, for instance.

The impression received from this exhibition is that the influence of the French school is but little felt in Toronto, and that the so-called "Colonial" of the United States which has been so absolutely boiled to rags by ardent caricaturists in Canada as well as in the United States, has little hold upon Toronto. The influence of the modern English school on the other hand has rooted deeply in a congenial soil, and in so many able hands will doubtless greatly thrive in the near future. Toronto has a great architectural future and if the members of the profession will but work together the Queen City will probably give the note to the character of Canadian Architecture.

ROBERT M. FRIPP.

The modelling and carving of an immense frieze on the Stanford University memorial arch, in California, marks the completion of a colossal undertaking in sculpture. The arch is over 100 ft. high and is built of Sau Jose limestone; running around it at a height of 80 ft. is the frieze, illustrating American civilization. The total length of the frieze on the four sides of the structure is 232 ft.; its height is 12 ft. It contains 150 heroic figures in high relief.

THE ARCHITECTURAL LEAGUE OF AMERICA.

For the first time the Architectural League of America met in annual convention on Canadian soil. The fourth convention opened in the Gallery of the Ontario Society of Artists, King St. West, Toronto, at 2 p. m. on May 29th., Mr. J. C. Llewellyn, the President, presiding. Among those in attendance were the following:

J. C. Lewellyn, Chicago Architectural Club; E. J. Russell, St. Louis Architectural Club; Charles Pfeil, St. Louis Architectural Club; A. C. Barrett, Eden Smith, William Rae, Charles E. Langley, J. C. B. Horwood, C. H. Acton Bond, Henry Sproatt, J. Francis Brown, A. C. Barrett, J. P. Hynes, Toronto; Dwight Herald Perkins, Robert Craik McLean, (editor Inland Architect), Chicago; Newton A. Wells, Champaign, Ill.; Francis S. Swales, Detroit Architectural Club; Cheri A. Mandelbaun, Detroit; Frederick G. Todd, Montreal; Frederick William Strabenger, Ira O. Hoffman, Albert E. Skeel, Cleveland, Ohio; Herman Kregelius, Cleveland Architectural Club; William Laurie Harris, Frederick S. Lamb, John Harder, Geo. Pentecost, Jr., H. K. Bush Brown, New York; Emil Lorch, Chicago Architectural Club, Cambridge, Mass.; A.C. Williams, Chicago Architectural Club; Henry D. Bates, Architectural Review, Arthur D. Rogers, Boston.

ing on these exhibitions according to schedule, and that some new arrangement would probably have to be made. The report of the Committee on Current Club Work stated that there had been an increase in membership in nearly all the Clubs during the year, and that much attention had been given to the subject of municipal improvement, many of the Clubs working in harmony with the municipal authorities. This was



MR. ALBERT KELSEY, Past President, Philadelphia.



MR. EMIL LORCH, Corresponding Secretary, Chicago.

The delegates from the United States were welcomed to Toronto by the President of the Toronto Architectural Eighteen Club, Mr. Eden Smith. The President in his reply referred to the small attendance as due to the Convention being held at a time of the year when architects were unusually busy.

Mr. E. J. Russell, of the St. Louis Architectural Club, was elected speaker of the Convention, Mr. Albert E. Skeele, of Cleveland, Ohio, Secretary, Mr. Julius F. Harder, New York and Mr. C. A. Mandelbaum, of Chicago, auditors.

The report of the Executive Board presented by Mr. Llewellyn stated that the past year had been an uneventful one, the work of the League having been largely carried forward by the Committees. The board recommended that adequate provision be made for the publication of the proceedings. Several applications to aid in securing legislation of interest to architects had been referred back to the Clubs for individual action. The report of the Committee on Circuit Exhibitions showed that difficulties had been encountered in carry-

particularly the case in Cleveland and St. Louis. The Cincinnati Club had set a good example to the other Clubs by making a collection of photographs and drawings of interesting old buildings. Reports were read showing in detail the work on which the various local Clubs have been engaged during the year. These reports showed that the expense of the exhibitions held under the auspices of the Clubs forming the League, had ranged from \$1,300 to \$8,000, and that the interest manifested by the public had been very disappointing. On this point, Mr. Pfeil, of St. Louis, stated that the Club which he represented, were finding it more difficult every year to raise the money for their exhibition. The admission fees received amounted to only \$30 or \$40, the balance of \$2,000 having to be raised by ad-



MR. HERBERT B. BRIGGS, Cleveland.

vertising. It was found that by joining the Artists' Guild a larger attendance and greater interest was secured.

For the Architectural Eighteen Club of Toronto, Mr. J. P. Hynes, the Secretary, reported as follows:

"We are not able to report any increase in our membership, but I think we have a reason that makes that excusable. We have had in Toronto for fourteen years an Association of Architects, but its aims and purposes are quite different from ours. So we have kept the membership of our Club small, thinking that in that way we could best do our work. We have carried out two exhibitions, both of which have proved to be financially successful. One direction in which the Club has worked has been in the matter of education. The building in which this Convention is meeting is really an Art School. Night classes were going on here without any architectural class, but architectural classes are now included and the members of the Toronto Architectural Eighteen Club give the instruction. There were eighteen students registered last year. Mr. Bond is chairman of the committee in charge of that work, and some of the problems worked by the students appear in drawings on these walls.

In the matter of municipal improvement we have not

but we hope you will appreciate our efforts in the matter."

Professor Newton A. Wells in reporting for the Toledo Club protested against the admission to the Circuit Exhibition of work which was below the proper standard. Mr. Bush-Brown intimated that undesirable exhibits could be weeded out by the individual Clubs. Mr. Llewelyn suggested that it might be a good thing to make the Circuit Exhibition of photographs only, leaving the local Club to supplement these with drawings. Mr. Swales, of Detroit, thought if the object of the exhibitions was to educate the public to appreciate better design, photographs or water color would be found to be better than line drawings. The following resolution was passed on motion by Mr. Harder: "That proper photographs of architectural, decorative painting, and sculpturesque subjects should not be generally excluded from exhibitions, but should be admitted and such photographic reproductions should in future form the nucleus of the Circuit Exhibition".

Mr. Frederick S. Lambe, of New York, urged that an effort be made to bring into the League allied or-



GROUP PHOTO OF PERSONS IN ATTENDANCE AT THE CONVENTION IN TORONTO OF THE ARCHITECTURAL LEAGUE OF AMERICA.

done much in Toronto so far but talk. We have had communications with the Ontario Government in regard to the faulty location of a large building now in course of construction for the School of Practical Science. We have also had communication with the municipal authorities in regard to having a proper plan for the Exhibition Park, but have been unsuccessful. Following that we joined with the Guild of Civic Art to protest against granting to a Baseball Club a piece of property which we thought would be detrimental to the city to grant for such a purpose. We had a conference with the Manufacturers' Association which has shown some interest in artistic improvement, and which on the occasion of the Duke of York's visit to Toronto erected an arch at their own expense. We have also had several conferences with the city authorities with the view of having a plan adopted for municipal development, and hope yet to succeed. Our principal work this year has been the making of plans for this Convention. We have held our present Exhibition in the effort to make your visit interesting. It is a very modest one, being composed chiefly of photographs,

organizations, having an interest in promoting the objects that the League has in view. Professor Wells moved that a committee be appointed to bring in a recommendation on the subject, and the following were appointed a committee for that purpose: Messrs Harris, Llewelyn and Bush-Brown.

At the evening session Mr. Bush-Brown presented the report of the committee on Municipal Improvement. This Committee reported in favor of the recommendation that had been made to broaden the scope of the League by endeavoring to secure the alliance and co-operation of other societies.

The report was adopted.

Mr. Llewelyn introduced a resolution that Mr. Bush-Brown be requested to write a lecture, illustrated by lantern slides, to be used as part of the Circuit Exhibition, and that accompanying this lecture should be a travelling library of civic improvement literature. The resolution was seconded by Mr. Lambe and carried.

Mr. Geo. F. Pentecost, Jr., of New York, presented an interesting paper on "Landscape Architecture," referring particularly to the relations between the architect

and the landscape architect. On motion by Mr. Hynes, a vote of thanks was tendered to Mr. Pentecost. This was followed by a paper by Mr. Charles Mulford Robinson, of Rochester, N.Y., read by Mr. W.L. Harris, of New York, on "Civic Art as Evolution, Not Revolution", for which a vote of thanks was tendered to the author. Mr. Julius F. Harder moved an amendment to the Constitution changing the date of holding the Annual Convention from Thursday to Monday. Mr. Hynes moved that section 25 of article 8 of the Constitution be amended to read: "The Annual Convention shall be held at 10 o'clock a.m. at such place and on such date as shall be designated by the previous Convention, and that paragraph "n" of section 28 be amended to read "Designation of time and place of next Annual Convention". The motion carried. After adjournment for luncheon, a group photograph of the gentlemen attending the Convention was taken by request of the publishers of the CANADIAN ARCHITECT AND BUILDER. The afternoon was spent on the lake and concluded with a dinner at the Royal Canadian Yacht Club.

At the morning session on the 30th the Committee re Exhibit of Model City at St. Louis Exposition submitted the following resolution:

"Whereas the improvement of towns and cities is a subject of widely recognized importance to the people of the United States, and whereas civic improvements of a permanent character must soon transform any community, "reflecting man in his full twentieth century developments," exhibiting not alone his material but his social advancement in a most conspicuous manner, and whereas science and art in modern city building have formed a subject of department exhibits at three international exhibitions abroad, therefore be it resolved that the Architectural League of America in Annual Convention assembled petition the commissioners of the Louisiana Purchase Exposition to make provision for an exhibit which shall have these characteristics." The resolution was adopted and a copy ordered to be sent to the commissioners. A number of short papers on various phases of the educational question were presented from Louis H. Sullivan, Chicago, William L. Harris, New York, Herbert H. Briggs, Cleveland, Percy Ash, Washington, Professor Newton A. Wells, of the University of Illinois, John W. Case, of Detroit. These papers all had a bearing on the subject of education in schools and universities and were supplemented by letters from gentlemen connected with various universities. The reading of the papers and letters was followed by a lengthy discussion of the following points:

- (1) Is a National American Art University a desirable or necessary Institution?
2. Should the National Government have connection with or jurisdiction over a National Art University, or should the organization and control be similar to that existing in American Universities?

The preponderance of opinion expressed was in favor of a National Art University founded on broad lines and subsidized by the Government. Professor Wells was of opinion that such a University should include the workshop. He did not believe it possible to teach the theoretical side of art or to make a designer without requiring the student to work in the material.

At the morning session on the 31st a paper was presented from Geo. D. Page, of Philadelphia, on "Club

and Inter-club Self Education". Mr. Llewelyn in discussing this paper expressed the opinion that the old method of educating the draughtsman by starting him in an architect's office has gone by. The new men coming into the offices are all products of the scientific schools, hence the necessity of the League placing itself in as close touch as possible with these schools. The Club should be made as attractive as possible and an effort put forth to get the graduates of the scientific schools as members. A paper on the same subject was read by Mr. Emil Lorch, of Cambridge, Mass. In the discussion following, several of the speakers gave testimony in favor of the value of the work done in behalf of architectural students by the Correspondence Schools. Mr. Dwight L. Perkins, of Chicago, read a paper on "Architecture and Citizenship".

Some further discussion took place with regard to the Circuit Exhibitions, Mr. Pfeil making the suggestion that a prize be offered for the best example of architecture exhibited in the photographs comprising the Exhibition. The various suggestions made on this subject were referred to the Committee on the Exhibition Circuit.

At the afternoon session the following Committee were appointed: "Publicity and Promotion"—Frederick S. Lambe, New York, Chairman, James P. Llewelyn, Chicago, and the new President. "Auxiliary Committee on Publication and Promotion"—D.C. Boyd, Philadelphia, Chairman, Mr. Blackhall, Boston, Mr. Perkins, Chicago, Mr. Hewett, Brooklyn, Mr. Skeel, Cleveland. "Code of Ethics and Competition"—Julius F. Harder, New York, Chairman, Messrs. Striebenger, Cleveland, Shean, New York. "Current Club Work"—E. J. Russell, St. Louis, Chairman, Messrs. Hayes, Philadelphia, Hynes, Toronto. "Education" Emil Lorch, Cambridge, Mass., Chairman, Messrs. Ash, Washington, Case, Detroit. "Publicity and Records", Emil Lorch, Cambridge Mass., Chairman, Messrs. Skeel and Kregelins.

On motion by Mr. Hynes, those scholars who win the travelling scholarships of the Clubs which send scholars to Europe were appointed a Committee on foreign exhibit of the League. This Committee will consist of Mr. J. H. Phillips, of the Chicago Club, and Mr. Morris Leisenring, of the Philadelphia Club.

The Convention next proceeded to the election of officers. Messrs Frederick S. Lambe, of New York, and Ernest J. Russell, of St. Louis, were nominated for the office of President. Mr. Russell withdrew in favor of Mr. Lambe, who was unanimously elected. It was decided to hold the next Convention at St. Louis on Monday and Tuesday, the 12th and 13th of October, 1902. The following gentleman were appointed as a Committee on Exhibition Circuits: Mr. Harris, New York, Chairman, Mr. Kleinpell, Chicago—the third member to be appointed by the President.

Votes of thanks were tendered to Mr. Skeel, the Secretary of the Convention, and to the Toronto Architectural Eighteen Club. Afterwards the Convention adjourned.

THE BANQUET.

Following the conclusion of the business sessions a banquet was tendered the visitors by the Toronto Architectural Eighteen Club at McCoukey's Restaurant.

Responding to the toast, "Our Guests," Professor Wells said: When I started from home to come over here, I will tell you what I thought, and I know the rest thought the same; "we are going over

to that Eighteen Club ; that is a small Club composed of energetic, good-hearted fellows, and we are going over here to give them a lift, and to pat them on the back." But, confound it, when we got over here it was just the other way—we are the little end of the horn. I have not been at any convention where we have been more handsomely treated or more profoundly impressed with the energy and seriousness of the work we have seen. We had prided ourselves on being Yankees, possessing the energy of the world; but we are going back home with the intention of trying to keep up to the band-waggon. (Applause).

On behalf of the Ontario Association of Architects, Mr. Edmund Burke responded in humorous vein as follows :

Mr. President, I did not expect to be called upon to say anything here this evening—I regret that the President of the Ontario Association is out of town, and neither our Vice-President nor our Second Vice-President are here.

I think the discussions of last night, particularly, must have affected me.

I did not remain as long at the closing ceremonies as Professor Wells. I understand I missed a good deal—I had but a cracker, some cheese and a glass of ginger ale, and left at a respectable hour. If I had remained later I might have had a more lurid experience, but even as it was, I had, that night, or rather in the early morning hours a curious dream—I do not know if it was caused by "The Information of Knowledge" (see programme of convention) or the cheese or the ginger ale, but it was somewhat like this, (and I do not know but that a Joseph or a Daniel will be needed for the interpretation thereof). A building took shape; it was orthodox in design—column, entablature, and cornice of correct proportions. On one side was an archway. The handsome wrot. iron gates swung suddenly open, and out dashed a well equipped hook and ladder waggon; the buckets dangling beneath were labelled O.A.A. and the crew had helmets with the same initials. But the curious part of the outfit of the crew was their coats. They were made of Whatman's double elephant paper with plans and elevations neatly drawn and titled. In place of buttons they were secured with thumb tacks which occasionally became unfastened. The nearest fireman to the man whose coat became unfastened would drive the pin into its place by a whack from a pike pole, causing a momentary wince on the part of the party of the first part, indicating that the pin had penetrated more than sufficient distance.

Another building took shape. It had a dado chin-high; upon this were set columns in groups; they were four diameters high, they each had fourteen flutes and a plain space which I found, on spacing off with a divider left room for four more. The volutes of the wide spreading caps were turned upside down; the frieze was six feet high and the cornice six inches with a projection of five feet, and half of the six inches was occupied by dentils, each six inches wide, at one quarter inch spaces. This building had, likewise, an archway, with real bronze gates. Instead of bars or panels each leaf was composed of the Roman numerals XVIII with horizontal top and bottom bars held together with a vertical rod thus \square .

In some positions, like the signs you sometimes see, you could scarcely make out the XVIII, but, open, shut or half shut the bars remained visible. Out of this archway dashed a little spick-and-span chemical engine with a thirteen inch gong on the dashboard. The buckets were labelled XVIII, and the helmets of the crew likewise. They were also dressed curiously. Their coats were black prints on a white ground, and

colored with aniline ink. The coats did not come unbuttoned—they had no buttons—they were made out of whole cloth, and fitted without a wrinkle.

I forgot to mention that the hook and ladder wagon was drawn by horses. The chemical engine was a gasoline locomobile, and one could not help knowing when it was around—within a block or two.

Well, just as the hook and ladder wagon was turning a corner the off horse slipped and fell bringing the wagon to a sudden halt. The chemical was close behind and before one could say "Jack Robinson", had dashed into the wagon. The chemical tank exploded with a loud report, and the fumes smothered both crews.

At this point my front gate clicked and I heard the milk-man clattering up with his bottles to the side door.

While I mused on the interpretation of this dream I dozed off again, and had another:

I saw in my vision a magnificent dog-cart. The wheels were about seven feet in diameter, and I counted thirteen spokes in each. The high seat was about twenty-four inches higher than the low seat—(remember this was a real dream). It was drawn by a tandem team of fourteen horses—hackneys I think, and the little shaft horse was a most restive colt—always nipping the haunches of the nag in front of him, in order to make him move ahead a little faster. I observed that there were four spare sets of harness stowed away under the seat—I presume for that many additional horses by and by.

The cart had red and white stripes painted around the box—thirteen, I think I counted, and one oblong panel had a lot of stars in it.

The driver was a fine young fellow, I should say about 6.333 ft. tall, and he looked well on the high seat. He remarked to me that he had a fine team—most of them thirty six hands high. I said he was talking nonsense. He said he had measured them and showed me the scale. I called his attention to the fact that he had used the $\frac{1}{8}$ inch instead of the $\frac{1}{4}$. He then said they were eighteen hands high, and proceeded to demonstrate the fact. I then showed him that he had included the dead ends of the scale and that they were just fourteen hands high, fair measurement. He then remarked that they were "goers, anyhow".

On the lower seat I noticed a smallish man, with sandy whiskers of Lord Dundreary type. He wore a stove-pipe hat about nine inches high, innocent of curve or entasis, and with a flat rim. Its color was faded and ancient—about the shade of the India ink seen on the drawings of the students in the exhibition. It was a pretty old hat, though still useful.

The old gentleman wore a fob, and a large seal graven with the letters O. A. A.

The young chap had a large white tag pinned to his coat, on which was printed A. L. A.

The old gentleman smilingly listened to my conversation with the young man, occasionally nodding his head, whether in approval of what I said or what the other chap said I could not discover.

The A. L. A. chap then tickled the shaft horse with his whip. The shaft horse thereupon nipped the rear elevation of his neighbor, and as they were vanishing in the distance the old gentleman shouted, "we are going to drive through the suburb of Hamilton, then on to Suspension Bridge and then on to the Great American Art University at Buffalo". I thought he emphasized the word "Suspension"—possible it had no connection with the University.

Just then my front gate clicked again, and the iceman tumbled a cake of ice on the side steps. I slept no more after that.

Gentlemen it has been an inspiration to me, and I feel sure to the other members of our Association who have heard the discussions at your Convention on art matters. I regret that we as an Association have not been able to show you much attention, but you have been so well entertained and your time has been so fully occupied that there has been no opportunity. We hope, some day, to meet you again and to have this opportunity.

FOUNDATIONS ON QUICKSAND.*

Meriden lies in a valley between high hills. In the valley, which is claimed by some to be the original bed of the Connecticut River, is a soil which consists of sandy loam, a little gravel and plenty of quicksand. Most of the buildings in this valley rest on the skin which is found at various depths below the surface, and here the Meriden Gas Light Company bought a 300 by 500-foot meadow lot adjoining its works on which to erect a new holder. Careful borings were made over a section 120 ft. wide by 250 ft. long to determine the thickness of the gravel, if any, and its distance below the surface. To the west of this section, and 25 feet distant, runs a shallow brook, 20 to 30 feet wide—shallow except in freshet time. About seventy-five tests were taken, and the result laid out and plotted into curves, so that the most desirable place for the site might be located. The top material was a sandy loam, evidently a silt deposited from the overflow of the brook when in past years it was not so confined; the next a good gravel, but very thin; below that a quicksand of unknown depth. At a few points the gravel was found as near as 2 feet from the surface and 2 feet thick, while at the others it was 8.5 deep and only 0.4 thick, shading off to nothing. The average depth, however, taken from the boring stations, was 5.5 ft. deep and 1.2 ft. thick. A boring of 50 feet taken in the centre of the site showed 42 feet of quicksand and still more below.

On such materials it was decided to construct the foundation and erect a steel tank-holder, to be 115 feet in diameter and 103 feet high; holding 700,000 feet of gas in three lifts. The weight of the holder to be 475 tons and the weight of the water to be 8,625 tons or a total of 9,100 tons.

As the work of excavating progressed and the gravel was exposed, there was found a clearly defined depression diagonally across the pit, as if at some time the brook had flowed that way; for logs and trunks of trees were found together with a quantity of brush. Through this depression the gravel was very thin, and in three places the quicksand was entirely exposed—the first, a space 10 by 15 feet; the second, a space 4 by 12 feet; the third, a space 3 by 15 feet.

Hardly had the whole of the loam been removed when a rain came, followed by a heavy freshet, overflowing the meadow and deluging the pit. When the water had subsided it was pumped out in 8 hours with a 4-inch centrifugal pump and a 7½ horse-power motor, though the water was ten feet deep in some places. The freshet convinced the company more than ever that in erecting a holder it would be advisable to make the top of the foundation above high-water mark, which in this case would mean a fill in some spots of 12 feet, with an average of 8 feet, and the steel tank would be 2.5 feet above the level of the meadow.

At this point a difficult problem was confronted. Meriden topographically is on high hills and in a sandy valley; good gravel is a very scarce article. Four miles away, on the line of the railroad, is a large, poor gravel bank, and two miles in another direction is a small, good bank; but with all the teams that could be procured it was not possible to haul the material as fast as it was needed; and it was expensive—one dollar per yard—delivered. It was evident that other and good material must be obtained in large quantities. On the

line of the railroad three miles away is a large trap-rock quarry. Refuse in the shape of iron-stone, soft rock and some dirt is accumulated in large quantities. It was believed this stone would mix well with the material which was on hand and could be purchased after it had been passed through the crusher to a 1½-inch size, at 60 cents per yard delivered, and in quantities up to 150 yards per day. About 50 yards of gravel and 50 yards of clean, sharp sand could also be procured each day, and as much ashes from the works as there were teams to put on it.

The question of piling was considered, and by some might seem the only wise plan under the circumstances, but after consulting the leading local builder who had worked on this quicksand for thirty years and had erected some very heavy factory buildings on it, it was thought best to put in a combination filling of the above-named materials.

The quicksand is found hard packed and not easily dug, unless water is allowed to mix freely with it. Although the excavation was in places much below the level of the brook, little water was encountered, and quite as much came from the land as from the brook side. By keeping the bare spots well drained the men could work on the quicksand with a degree of ease without sinking in very deep; the less it was disturbed, however, the better off they were. Over these bare spots it was decided to lay plank close together lengthways of the holes, and upon these 8 by 10-inch timbers, 8 inches apart, crossways of the holes. The filling between the timbers was of pieces of bricks and old retorts broken up fine, that being the best material at hand just then. One of the bare spots being narrow and long, the surface was covered with large flat stones, the smaller spaces being filled in with fire-bricks and coarse ashes.

While working at this low level a pump was run night and day; also from these quicksand spots a 4-inch tile drain was laid to a central point to facilitate drainage and keep the mass from becoming spongy while the tamping was going on and each course of filling was laid.

Until the whole surface approached a level no roller could be used, but everything put in was thoroughly rammed and sprinkled. The layers were about 3 inches thick over the whole surface. When the valleys were evened up a two-horse 4,000 lbs. roller was put on, and as the thickness became greater this roller was increased in weight to 6,500 lbs., requiring four horses. When the level of filling had been raised above the natural water level the pumping was dispensed with over night, allowing the foundation to be saturated, but it was pumped out again in the morning.

Near the centre of the foundation a loose brick well was built up, into which the water ran as the foundation was successively wetted, and from which it was pumped to the brook. There were some high knolls of gravel not over 3 feet under the surface. It was thought at first that the 5-foot concrete side wall foundation might rest on these, but further consideration convinced the company that this was not advisable, as part of the foundation would rest on natural gravel, while most of it would be on filled ground, so the whole level was raised 1 foot to allow of the same kind of cushion underneath the whole structure before the 5-foot circle was started.

* From a paper by Mr. C. A. Learned, read before the New England Association of Gas Engineers.

The layers spread each day over a diameter of 125 feet were about as follows:—125 yards of quarry refuse, 40 yards of good gravel, 50 yards of works' ashes. Towards the end of the work the ashes were exhausted. Near by was a bank of 500 yards of sand, and from this was taken what was needed to make the top dressing under the concrete, spreading on the stone, washing it in and carefully rolling. Toward the end the roller worked night and day.

Near the edge where the wall of concrete was laid, there was a space that could not be rolled, but had to be filled and tamped to a depth of 4 feet. In order to make sure that this portion was as solid as the centre, a round tapering bar 5 feet long was driven into the

cement, $2\frac{1}{2}$ of sand and 5 of stone. The size of stone was $1\frac{1}{4}$ inch and smaller. A great circle of concrete 4 feet wide and 1 foot thick was laid 5 feet below the finished top. On this circle was laid a ring 3 feet wide at the bottom, tapering to 2 feet 9 inches wide at the top, and 3 feet high; resting on the ring was laid, over the whole diameter of 118 feet, a layer 1 foot thick, trued to perfect level and plastered smooth. This work was accomplished in eighteen days, and in a most satisfactory manner, a local engineer taking the job at 4.90 dols. per cubic yard laid. As soon as the foundation was ready the iron men were on the ground, and the holder was erected complete in a week less than the specified time of four months.



PAIR OF SEMI-DETACHED HOUSES ON A NARROW SITE, TORONTO.
F. F. SAUNDERS, ARCHITECT.

main foundation several times. Seventy blows on the average were required to drive it 4.5 feet, and the outside ring was tamped until it equalled the above test.

The amount of material removed approximated 2,900 yards. The work of excavating and filling ready to begin concreting took twenty-two days, and six days more were required to fill in around the great circle after the concrete wall was 4 feet high. This, however, did not delay the concreters in their work. The filling was as per the following amounts:—Quarry stone refuse, 1,780 yards; gravel, 680 yards; sand, 310 yards; ashes, 1,100 yards; total, 3,870 yards.

On this foundation was laid 630 yards of Portland ment concrete, in the following proportions:—1 of

In order to prevent the action of the brook eating away the bank near the holder, a stone wall 7 feet high was built to the level of the holder foundation and 400 feet long, protecting also a new purifier building near the brook. City water was used to fill the tank, as the brook water contained acids. It took three and a half days to fill the tank, which holds a little over 2,000,000 gallons. Before the water was put in careful levels were taken on eight points of the foundations. After filling levels were again taken, and there was not the slightest settlement.

The Montreal Silicate Brick Company, has been incorporated, with a capital of \$100,000.

BY THE WAY.

The present popularity of all kinds of athletic sports calls for the erection of tiers of seats for the accommodation of the enormous crowds of on-lookers. That great case should be exercised in their construction is evidenced by the accident which took place in Glasgow recently, when 21 persons were killed and 250 injured by the collapse of the "Grand Stand" during a foot-ball match.

x x x

The Chinese have been demolishing walls outside the Summer Palace at Peking, and selling the bricks to the various Legations where building is going on, the Ministers being in ignorance of where they were obtained from. But Nemesis sometimes overtakes even the "wily Chinese," says the British Clayworker, and investigation has led to the arrest and punishment of six of the offenders. The Legations ought now to be invulnerable, since sacred bricks have been employed in their fortification. When we come to reflect on the matter, however, the Ministers must be an extremely ignorant body not to know a new brick from an old one—perhaps they winked at Master John whilst the transference to their own abodes was taking place, bricks being particularly scarce in Peking just now.

x x x

A verdict for £150 was recently given by an English jury against the proprietor of Her Majesty's Theatre in London in favor of a person named Davies who was injured by slipping from a 6 inch step while hurriedly making his exit from the building. The Builder points out that this should serve as a warning to architects not to plant a door on the top of a 6 inch step so that the fact of the existence of a step is only visible from one side of the door.

x x x

Some twenty five years ago a friend of Mr. Aston Webb's wrote a little ditty which described the progress of a young man who started as office boy with a builder and passed through the various ranks until he became an architect. When he reached the position of clerk of works the ditty described him thus:—

When builder's work he found it tame,
So clerk of works he next became;
The work was less, the wages more,
And he liked to boss the contractor.
He wore a two-foot rule and suit of grey,
And now he is a F. R. I. B. A.

x x x

The Monetary Times contributes the following to the

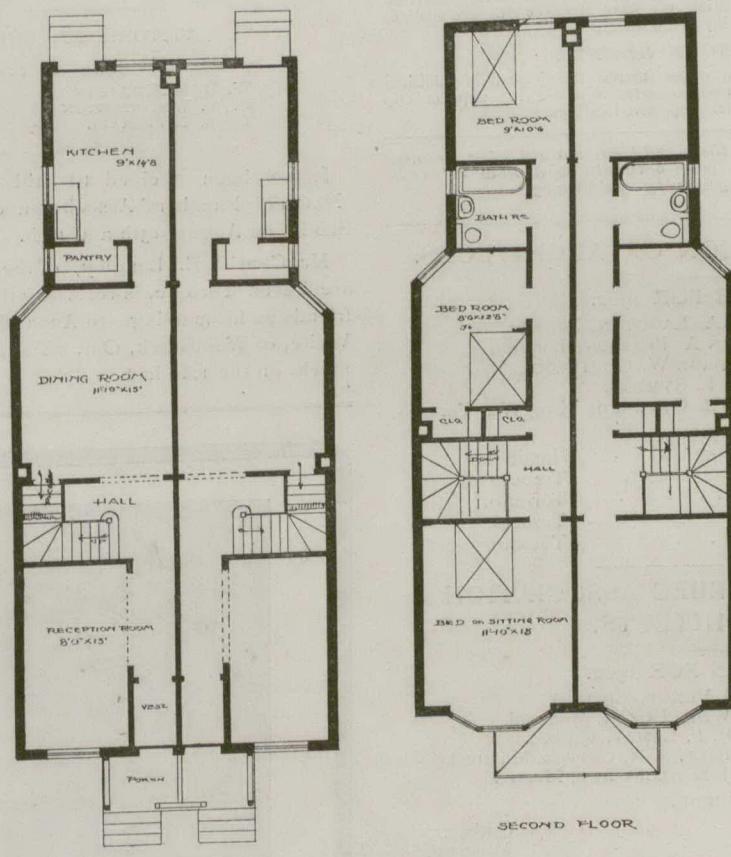
long catalogue of unreasonable demands of the labor unions:—"We know of a case in an Ontario city last autumn where a block of brick buildings was in process of erection, and some bricks of peculiar wedge-shaped form had been ordered from a brick works to be ground to pattern by machinery. The architect was on the structure one day, and a delegate from a labor union came to inform him that these tapering bricks must be ground down by hand—the Union said so. "But," said the architect, "there are not enough bricklayers in the city to construct before the snow comes the buildings already under contract; why do you want to delay by putting hand-work on these bricks?" There was no answer but the irrational one, that it was the Union's ultimatum. The architect, who is not a patient man, ordered the walking delegate off the works, using a Shakespearean phrase, and declining to be bullied. But, next day, not a man was at work on the block, bricklayer, carpenter, or plumber. The architect, consistent even in his wrath, went to look for non-union

men to complete the walls and other work, when the owner of the building, himself a large employer of labor, interposed and accepted the Union's terms rather than have a strike in his own works.

x x x

Much of the architectural terra-cotta of the day in the opinion of a writer in the British Clayworker, is decidedly over-finished. Apart from slovenly and careless work says the writer, two grades only of "finish" are possible—right finish, or the full rendering of the intended expression; high finish, or the rendering of vivid expression. These, and indeed all the best

effects, are oftener got by rough than fine handling. Excellence in architectural terra-cotta, particularly in ornament, is not attained so much by the cutting of the form, it is rather in the ultimate effect of the mass. The correct finish is about that of a modelled piece, made in the same material employed in bulk on the building, after leaving the architectural modeller's hands, the presser or mould-maker's shop. After the mould is made, the presser or finisher, by the excessive use of sponge, leather, knife and busk, destroys all the life and spirit formerly existing in the work, to say nothing of the false surfaces, which readily flake, on the faces of the wares, worked up by excessive finishing. Look at a piece of direct work; work straight from the architectural modeller's hands, without the intervention of mould, presser, or finisher. Note this in a building, side by side with pressed-up wares; if the modeller is worth his salt there will be life and spirit in the work, attributes too often lacking in the doubtless more highly-finished samples of the moulder's art!



PLANS OF PAIR OF SEMI-DETACHED HOUSES ON A NARROW SITE, TORONTO.—F. F. SAUNDERS, ARCHITECT.

—THE—
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Contributions of value to the persons in whose interest this journal is published are cordially invited. Subscribers are also requested to forward newspaper clippings or written items of interest from their respective localities.

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It has been decided to hold the annual convention of the National Plumbers' Association of Canada at Halifax, Nova Scotia, on August 13th and 14th.

Mr. Charles E. Langley, of the firm of Langley & Langley, architects, Toronto, is receiving the congratulations of numerous friends on his marriage to Anna M., second daughter of James White, of Woodstock, Ont. The ceremony took place at Woodstock, on the 12th inst.



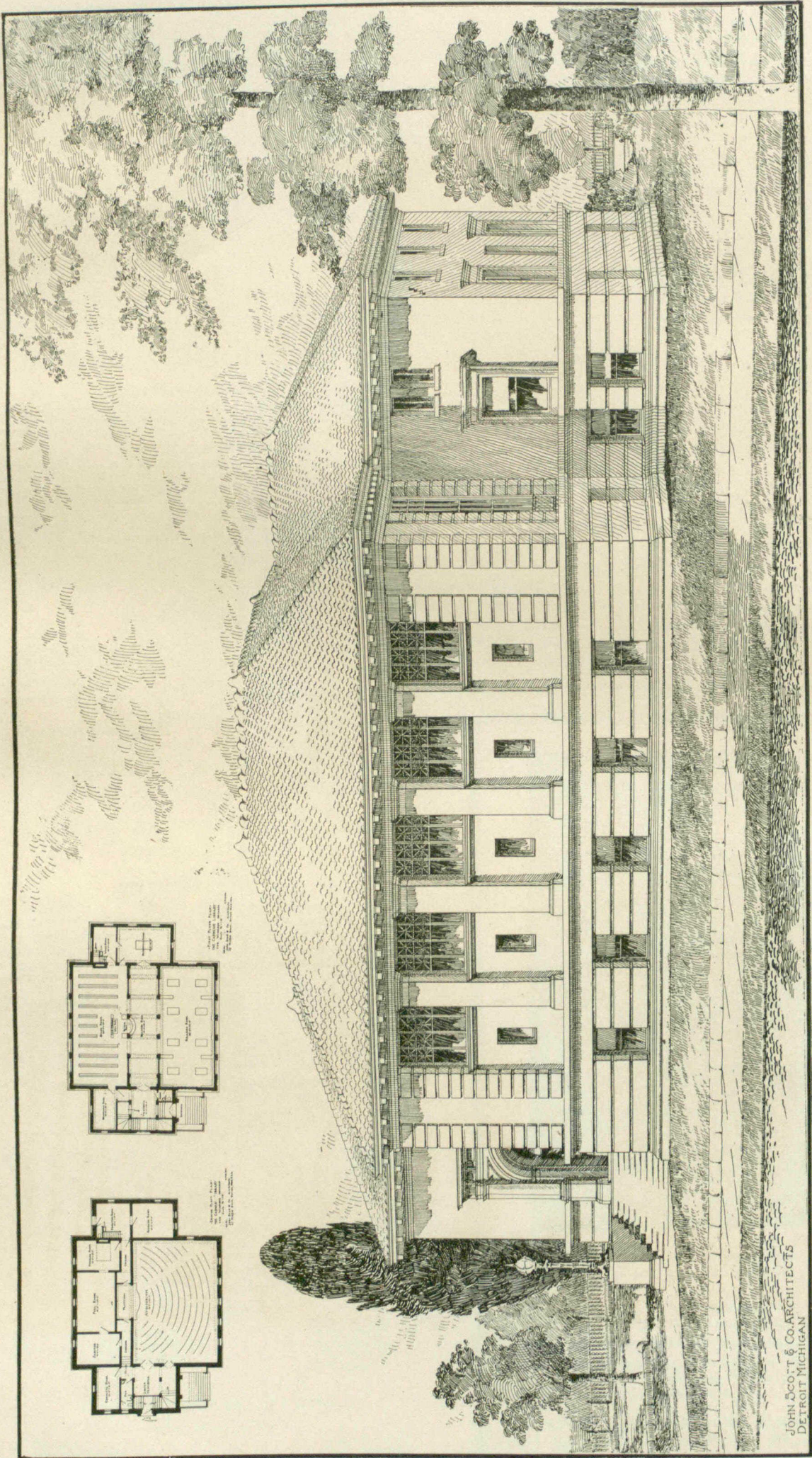
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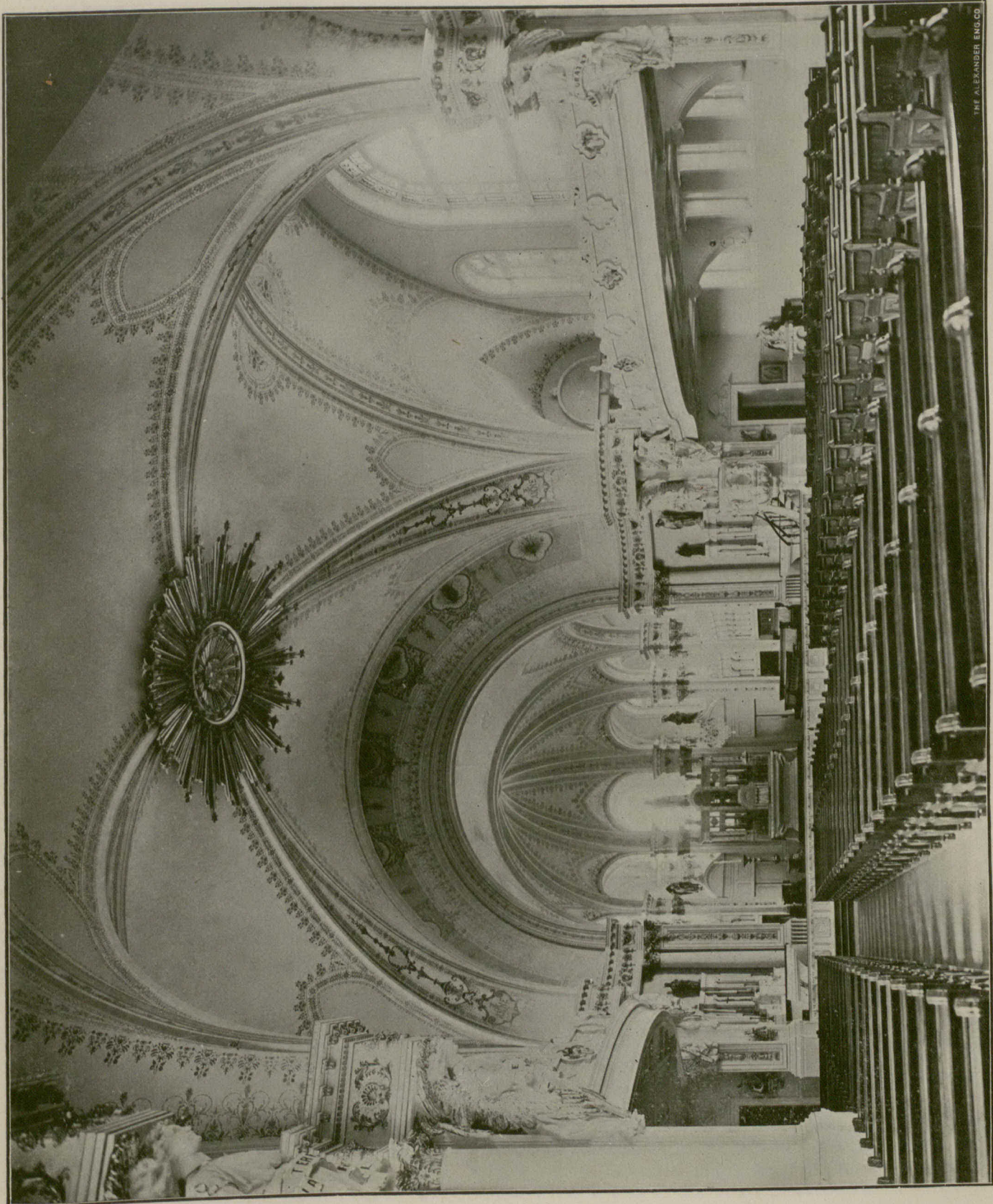
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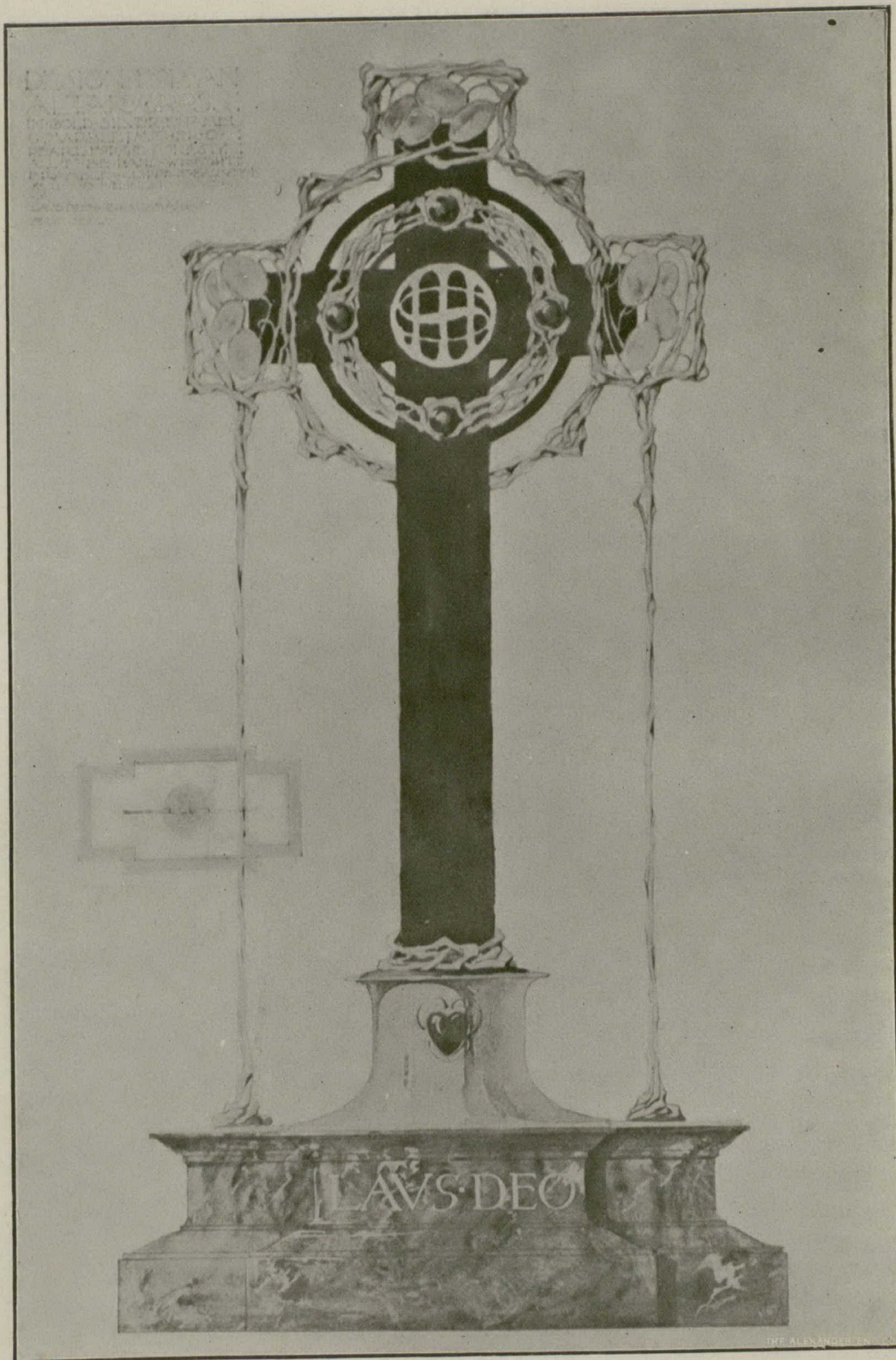
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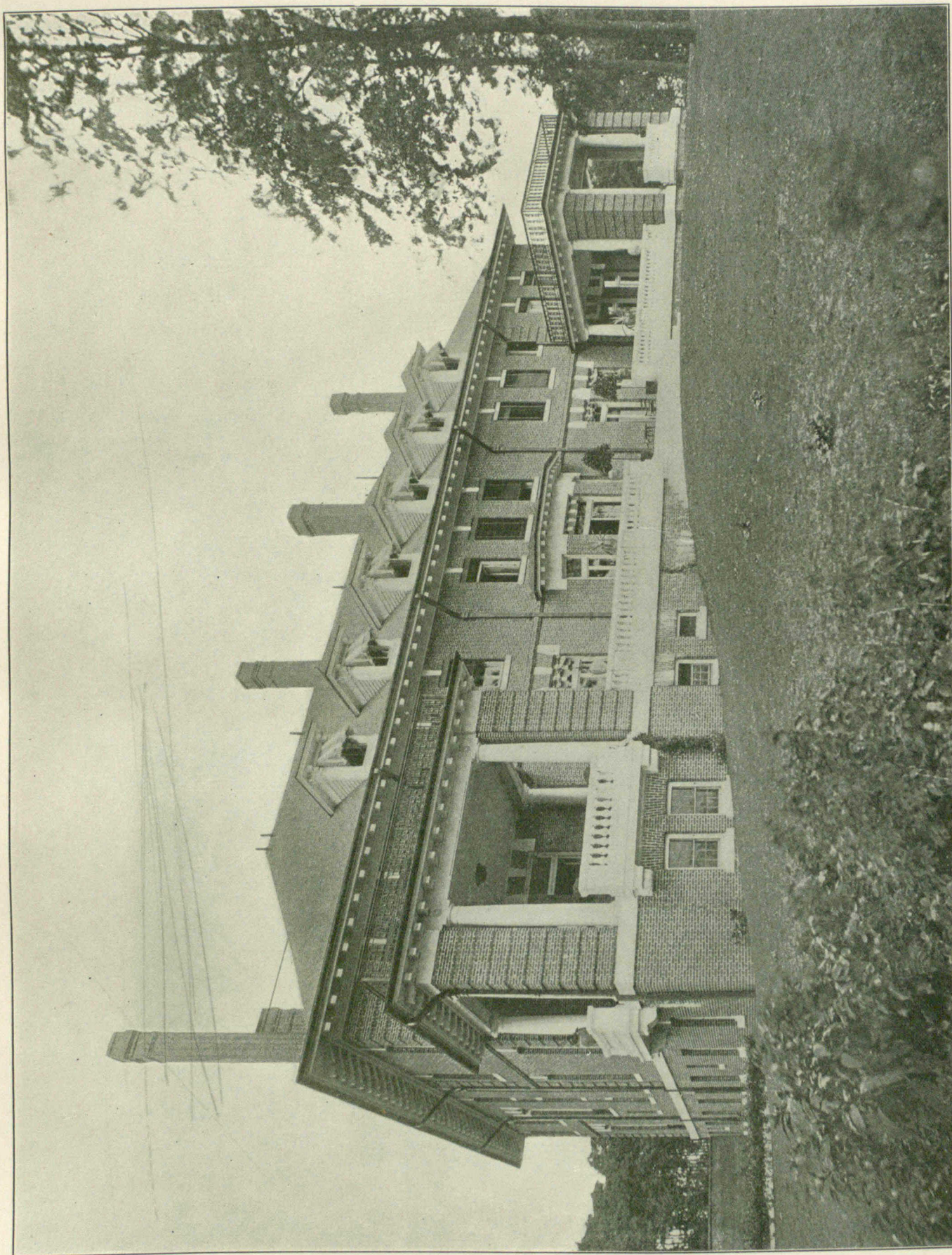


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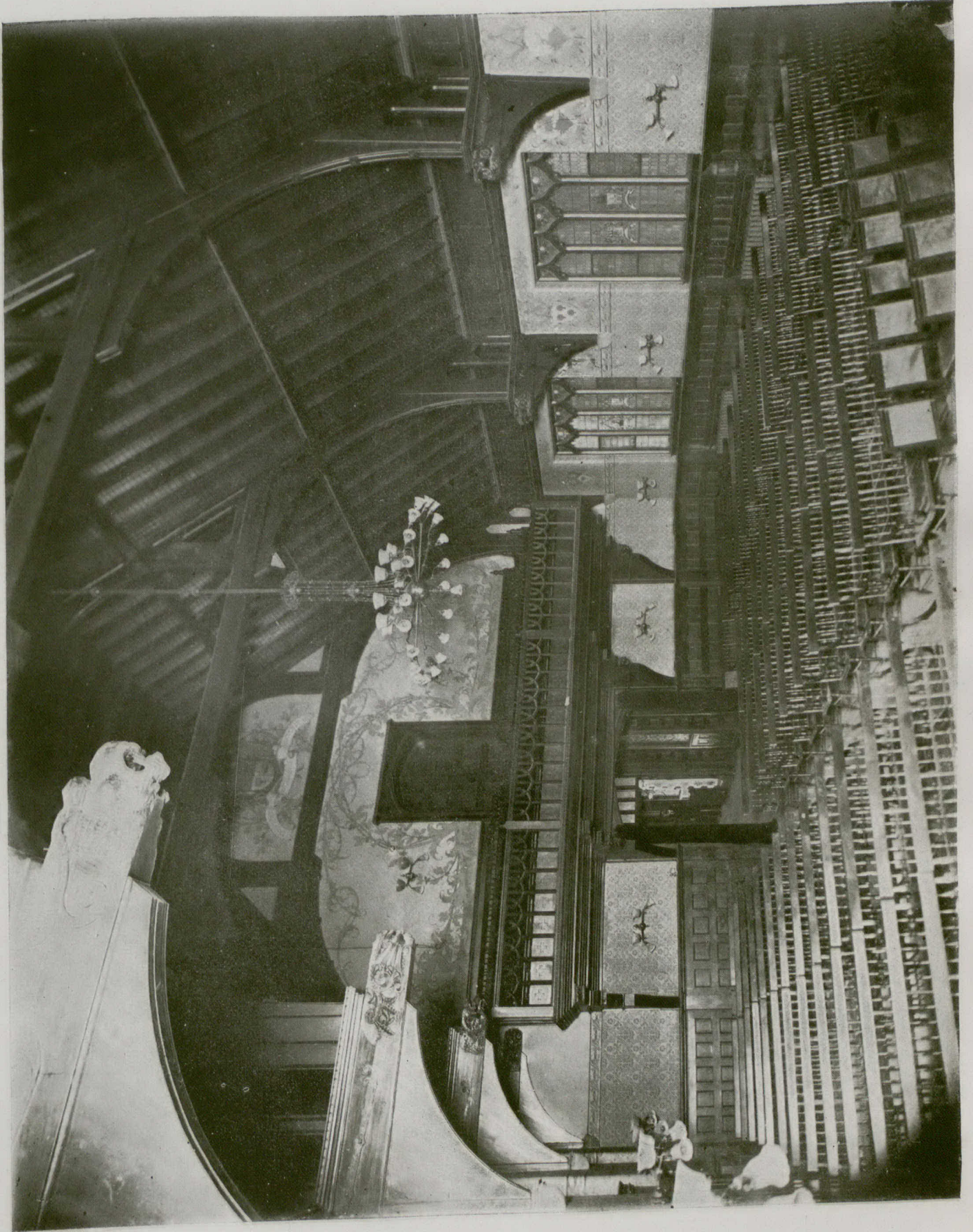
INTERIOR OF ST. ANNE DES PLAINES CHURCH, QUE.
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DESIGN FOR LECTERN.—By G. S. LEMASNIE.



HOUSE AT COLD SPRINGS HARBOR, LONG ISLAND.
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INTERIOR OF ST. GEORGE'S HALL, TORONTO.
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EXHIBITION OF ARCHITECTURAL PHOTOGRAPHS.

By the courtesy of the Toronto Architectural Eighteen Club, the Toronto Chapter of the Ontario Association of Architects has the Toronto photographs, which formed a portion of the A. L. A. Exhibition, now on exhibition in the rooms of the Association, 94 King St. West, where they will be hung for the next ten days. The Eighteen Club has also loaned the Interesting Catalogues of the Philadelphia T Square Club covering the past twelve years, which will also be on exhibition at the O.A.A. rooms.

NOTES.

Robert McCausland Limited, the well known manufacturers of stained glass have recently removed to new premises specially designed for their use, at No. 86 Wellington street, West, Toronto.

Frosting upon glass may easily be accomplished by mixing magnesium sulphate (Epsom salts) with beer. Apply by means of a sponge. Bind it upon the glass by running over it a wash made of gum arabic and water.

Putty may readily be softened by rubbing over it a strong solution of caustic soda, which should be applied by means of an old paint brush. Moistening the putty with spirits of salts will also rapidly turn it soft, when it may readily be removed.

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An excellent hard drying putty for exposed situations, as skylights and roofing work, may be prepared by mixing whiting with boiled linseed oil, adding about 1/6 of its weight of powdered

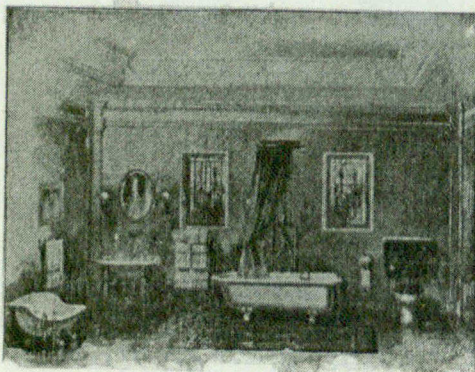
litharge. Mix only sufficient for immediate use as it rapidly hardens.

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A MASONRY SPECIFICATION.

The Committee on Masonry of the American Railway Engineering and Maintenance of Way Association, in a recent report to that body, submit the following general definition of masonry :

"Masonry, in its widest sense, includes all constructions of stone or kindred substitute materials, in which the separate pieces are either carefully placed together, with or without cementing material to join them, or, if the pieces are not separately placed with care, are encased in a matrix of firmly cementing material."

The committee also submit the following form of specification :

DESCRIPTION OF STONE MASONRY.

All stones used for masonry shall be sound, durable, well seasoned from sources approved of by the engineer, and shall be laid on their natural beds.

Mortar, for laying up stone masonry, unless otherwise expressly stated, shall consist as follows: Either one part by volume measured loose of approved Portland cement to three parts of good, sharp sand, or one part of approved natural cement to two parts good, sharp sand, all to be very carefully measured and mixed, and to be used within one hour after mixing, and always before it shall have commenced to set.

Mortar, for pointing, shall consist of one part Portland cement to one or two parts of sand.

(Space for additions.)

Finished copings, parapets, bridge-seats and other finely dressed special stones—Work that comes under this head shall be of selected stone, of the best quality, free from defects, shall be very accurately cut, being finely bush-hammered where called for, and as per plan and dimensions given. To be laid to $\frac{3}{16}$ -inch joints.

(Space for additions.)

FIRST-CLASS MASONRY.

First-class masonry will be laid in Portland cement mortar, in regular courses, each stone being carefully cleaned and dampened, if desirable, before setting. The face stones shall be rock faced, with edges pitched to a straight line, and no projections exceeding 3 inches. A draft line, 2 inches wide, shall be cut at each angle in the masonry. The beds throughout and the joints for 12 inches back from the face shall be dressed to lay to $\frac{1}{8}$ -inch joints. No course shall be less than 12 or more than 30 inches in thickness except the coping, and the thickness of any course shall not exceed the course below it. Stretchers shall not be less than 3 feet long, and not less than 18 inches wide, nor in average width than $1\frac{1}{2}$ times their height, and at no single place less in width than height.

Headers must not be less than 4 feet long, where the wall is of sufficient thickness, and the majority shall exceed that length. Where the wall is not over 5 feet thick, they shall extend entirely through the wall. Headers will extend at least 20 inches beyond the width of the adjacent stretchers. The usual arrangement shall consist of headers and stretchers, alternately arranged, so as to thoroughly bond together the face stones and the backing; for rare exceptions, two stretchers will be allowed to one header, by special permission, to cover each such case. The stones of each course of the face must break joints at least one foot with those of the course below. No hammering will be allowed on any stone after it is set. Each stone must be set upon a full bed of fresh mortar, the broadest bed down, and brought to a firm and level bearing without spalls or pinners.

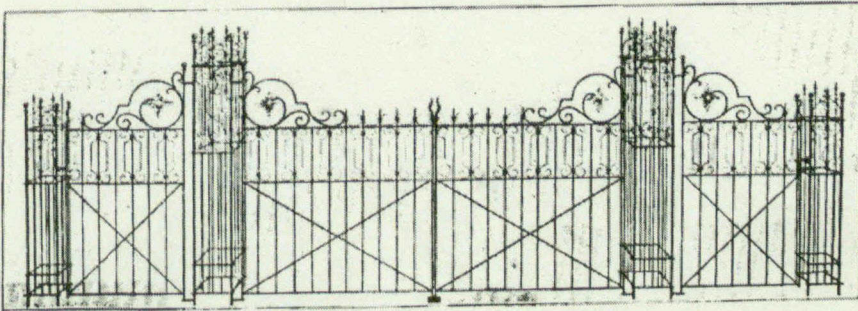
BACKING.

The backing shall consist of large-size, well-shaped stones laid in full mortar beds and breaking joints so as to thoroughly bond the work together. The spaces between the larger stones shall not be over 6 inches in width and shall be thoroughly filled with small stones and spalls laid flat, and all spaces flushed with mortar or good cement grout. The courses shall correspond with the face stone, but may be

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made up in part by two thicknesses, providing no stone less than 8 inches thick be used. In cases approved by the engineer, satisfactory Portland cement concrete with large stones embedded in the concrete may be used for backing.

SECOND-CLASS MASONRY.—Second-class masonry shall be laid in cement mortar. The face stones shall be rock faced, no projections over 3 inches, edges pitched to a straight line, shall have parallel beds and rectangular joints. The beds and joints for 8 inches back from face shall be dressed to lay not over 3/4-inch joint. The stones need not be laid up in regular course, but shall be laid level on their natural beds, shall be well bonded, having at least one header 3 feet 6 inches long to every three stretchers with joints well broken; no stone shall be less than 8 inches thick, and no stone shall measure in its least horizontal dimensions less than 12 inches nor less than its thickness.

BACKING.—The backing shall consist of well-shaped stones, not less than 6 inches thick, and of which at least one-half shall measure 3 cubic feet, to be laid in full mortar beds, with joints well broken, well bonded together and with the face stone. All spaces to be thoroughly filled with small stones and cement mortar.

THIRD-CLASS MASONRY.—Third-class masonry shall be laid dry or in mortar, according to the direction of the engineer. It shall consist of good quarry stone, laid upon the natural beds, and roughly squared on joints, beds and faces, the stones breaking joints at least 6 inches; the wall shall be bound together by headers, occupying one-fifth of the area of the face of the wall front and rear, and extending through walls 3 feet or less in thickness; no stone shall be used in the face of the wall less than 6 inches thick or less than 12 inches on the least horizontal dimensions.

Messrs. Darling Bros., of Montreal, manufacturers for Canada of the Webster feed water heater and Webster system of steam heating, have just issued a new catalogue, a copy of which they will be pleased to furnish on request to anyone interested.

MISTAKES IN HIS NEW HOUSE.

O. M. Weand, a railroad contractor, of Reading, Pa., has just finished building a house for himself and to commemorate the event, has published an illustrated pamphlet of fifty or more pages containing the criticisms of leading citizens. The title of the book is "The Mistakes I Made in Building a House." Following are some of the criticisms of his friends:

"Of course, you are building the house, but if it were mine, I would run an open porch around the corner so as to connect the two porches."

"I would prefer one large window in the second-story front, instead of the double window."

"You'll make a mistake if you don't pebble dash the exterior." "You better run the 13-inch walls all the way up. It gets pretty windy out here sometimes."

"I think the ceilings are too low."

"My! How small the rooms are."

"You ought to be on the other side of the street."

"If it were my house, I would prefer to have the cornice several inches higher."

"By all means put a double line of boards on the first floor. It keeps the cellar dust from coming through."

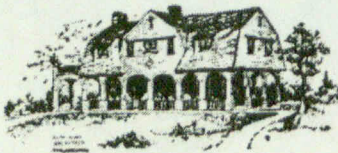
"Those chimney tops look like tomb-stones."

"The lawn steps should have been immediately in front of the main entrance."

"Why didn't you set the house in the middle of the lot?"

"Personally, I prefer steam heat to the hot water system."

The Toronto Master Painters' Association recently elected the following officers: —President, J. J. O'Hearn (re-elected); First Vice-President, J. W. Knott; Second Vice-President, Charles Davies; Secretary-Treasurer, Stewart N. Hughes; Executive Committee, J. M. Faircloth, John Alexander, E. J. Livingston, James Casey and Charles Reeve.



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STONE AT THE ROYAL EXCHANGE, COLONIAL EXHIBITION.

The visitor interested in stone is struck by the fine display of Canadian building stones, says The Quarry, in an article referring to the above Exhibition, and then goes on to say:—"In New Brunswick freestone and sandstones suitable for grindstones are found in abundance in the carboniferous rocks. Grindstones and building stone are now quarried at Woodpoint Quarry, near Sackville, and at Cobourg Quarry, near Bay Verte, and work has been done in the parish of Dorchester. The industry has also attained considerable importance in the north, about Newcastle, in Northumberland County, and Stonehaven and Clifton, in the Bay of Chaleurs. From the French Fort Quarry, near Newcastle, much sandstone of a superior and durable quality has been taken. It has been used in the construction of the Langevin Block, at Ottawa, and in other works of importance. Some grades of it are admirably suited for the manufacture of stone for wood pulp grinding.

The freestones of Clifton and Stonehaven are said to be less suited for building.

Granite from Hampstead, Queen's County, known as Spoon Island granite, attracted early notice, although the quarrying industry has not become very extensive there. The red granites of St. George, Charlotte County, are better known, and the latter town has become the seat of somewhat important works. The stone has been used in many buildings, both public and private, and in bridge work. It is also excellently adapted to monumental work, and a considerable industry is carried on in cutting and polishing monuments, columns, &c., by water power.

Limestones are abundant throughout the province, but the remarkable purity of the deposits near St. John, with the facilities afforded for working them, have produced an important industry. Lime is sent to many adjacent ports.

Of building stones there is in Quebec a great variety. Fine granite, both of red and grey colors, is found at many places in the Eastern Townships, and is extensively worked in Stanstead county. Marbles occur in the crystalline series of the same district, especially about Stukely, in the Sutton mountain range, and also as a part of the Archæan of the Ottawa area; while the limestones of the

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Extensive slate quarries are found in Eastern Quebec, at Melbourne and Danville.

Ontario abounds in building stones of many kinds and often of excellent quality. The old crystalline rocks of the Laurentian country yields granites and gneisses, generally red or reddish colors, as well as marbles like those of Armprior and Barrie. Limestones and Sandstones are quarried in a great number of places in the southern and thickly inhabited parts of the province, chiefly for local use, but also for the supply of the larger cities and to a small extent for export. Clays and shales of different kinds largely employed in making bricks, drain-tiles, terracotta, &c. The manufacture of lime and hydraulic cement also constitute important industries, deposits of shell-marl are being utilized to a considerable

extent for the last named purpose, It will be observed that, taken together, materials applicable to purposes of construction represent a large proportion of the total mineral output of Ontario.

In concluding this article we cannot avoid commenting upon the somewhat unsatisfactory nature of the official catalogue of this exhibition, at least so far as the stone exhibits are concerned. Even the fine display of Canadian building stones, particulars of which have been given above, is dismissed in the catalogue in a few lines, and many of the other specimens are not even mentioned. As this is one of the few things for which a charge is made, it seems a pity that it should not form a more complete record of this most interesting exhibition.

An agreement has been reached with the structural iron workers by which the strike in Toronto is at an end. The new rate of wages is from 27½ cents per hour for first-class to 22½ cents per hour for inferior grades of workmen.

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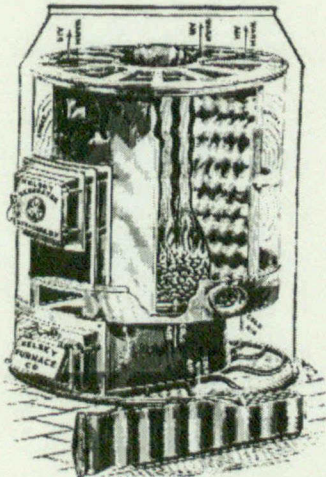
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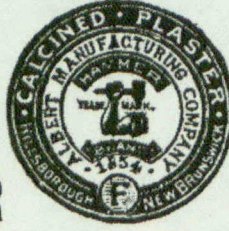
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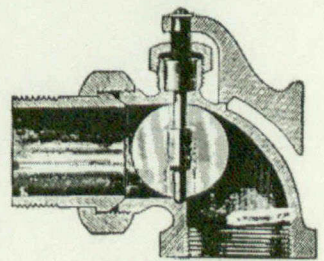
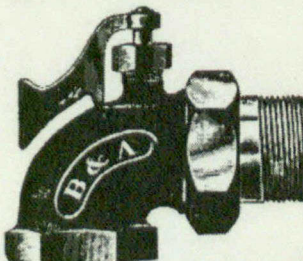
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