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—THE—
Canadian Architect and Builder,
A JOURNAL OF MODERN CONSTRUCTIVE METHODS,

PUBLISHED MONTHLY IN THE INTEREST OF
ARCHITECTS, CIVIL AND SANITARY ENGINEERS, PLUMBERS,
DECORATORS, BUILDERS, CONTRACTORS, AND MANU-
FACTURERS OF AND DEALERS IN BUILDING
MATERIALS AND APPLIANCES.

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SUBSCRIPTIONS.

The CANADIAN ARCHITECT AND BUILDER will be mailed to any address in Canada or the United States for \$2.00 per year. The price to subscribers in foreign countries, is \$2.50. Subscriptions are payable in advance. The paper will be discontinued at expiration of term paid for, if so stipulated by the subscriber; but where no such understanding exists, it will be continued until instructions to discontinue are received and all arrearages are paid.

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ADVERTISEMENTS.

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EDITOR'S ANNOUNCEMENTS.

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

The Ontario Association of Architects has appointed the "Canadian Architect and Builder" its official paper.

AS we go to press we learn that the Committee having in hand the competition for the proposed new Public Library Building in Hamilton, have made certain concessions in terms in deference to the wishes of the architects.

WE understand that the completion of the late Mr. Lionel Yorke's contract in connection with the erection of the new Parliament Buildings in Toronto will be assumed by Messrs. Carrol, Gaylord & Vick, of Toronto.

WE find the demands of advertisers upon our space so great, that in justice to our readers we have been compelled to add four pages to the size of the present number. We have still abundance of room for enlargement, and therefore continue to invite contributions to both our reading and advertising pages.

THE value of industrial exhibitions as a means of education for mechanics, has so impressed itself on English people, that in London, Manchester and other cities, money is being publicly subscribed for the purpose of sending representative bodies of workmen to the Paris exhibition. The American labor organizations are being advised to follow English example.

THE authorities of the American Association for the Advancement of Science will convene in the city of Toronto, on the 27th August next, to remain in session one week. This gathering of probably a thousand prominent scientific men will prove an interesting event for all who desire the diffusion of systematized knowledge, and its outcome cannot fail to be of

benefit to the whole province. The discussion of scientific subjects, the interchange of experience, and the application of its results, must stimulate the material as well as the intellectual progress of the country.

THE Toronto City Council seeks to save the expense of an additional inspector of plumbing by transferring part of the duties of the present inspectors to the drain inspectors. This is at best but a temporary expedient. There was ample work for an additional plumbing inspector before the annexation of Parkdale to the city. With the recent addition of seven or eight thousand to the city's population, and the consequent extension of area, it is idle to hope that the inspection provided for under the Plumbing By-law, can be efficiently performed by two inspectors. The public health is so largely dependent upon the condition of the plumbing in city houses, that no attempt should be made to economize at the expense of the efficiency of the inspection service. We trust that the Toronto City Council will see the wisdom as well as the necessity of appointing at least one additional inspector of plumbing.

THE vote of the people on the 18th inst., will decide whether or not the erection of the new Toronto Municipal Buildings shall be proceeded with in accordance with the architect's design. We repeat what we have before stated on this subject. The city is sadly in need of a new city hall and court house. The present and future importance of the city demands that the buildings erected for the purpose should not be of the cheap and shabby variety, but of a durable and beautiful character. The County of York can compel the city to erect a new Court House, and great advantages may be obtained by erecting a combined building. The site has been purchased and considerable money expended in bringing the scheme to its present position. The only thing now lacking is the additional \$600,000 necessary to complete the buildings. We trust the people will vote the money, and that the undertaking will go on to successful completion without further delay.

WE are pleased to observe the liberality of the Toronto City Council in the direction of increasing the park area of the city, as well as improving the present parks. A respectable appropriation appears in the present year's estimates for this object. What Toronto in company with every large city requires, is a number of small parks scattered throughout the thickly populated districts. Toronto is very deficient in respects of such parks, and steps have been taken none too soon to provide them. The proposal to purchase the Knox College property, remove the building and utilize the site as a park, is one which we hope to see carried out. The Presbyterian authorities admit that the present college building and grounds are too small, and that it would be well to sell the property and rebuild elsewhere. It is apparent to every observant mind that Toronto is destined to be a city of great magnitude. It therefore becomes those who compose the municipal Government to take a comprehensive view of the future, and make wise provision for its requirements.

WE have frequently regarded with curiosity a house recently erected on one of the leading avenues of the city of Toronto, the total width of which we should judge does not exceed ten feet. If the value of real estate in Toronto, so early in its history, prompts the erection of such a narrow structure, there is good reason to fear that we shall ultimately reach a standard of economy equal to that of a wealthy New York contractor who, having a piece of land 120 feet in depth and only five feet in width, which he found impossible to sell, erected upon it a dwelling for himself. The actual width of the building is said to be four feet. It is described as being built of brick, four stories high. The sills and lintels are of white marble, and three bay windows run up from the first floor to the roof. Small, round windows, like port-holes, let light into the basement, and the doors are mere slits in the brick walls. Few, we fancy, will feel inclined to envy the dwellers in houses of such strikingly modern design.

WE have reason for believing that the advantages of organization are becoming more widely understood amongst builders and contractors of the better class throughout Ontario. The number of letters which have lately appeared in this journal in favor of the formation of a Provincial Association of Builders and Contractors, is alone sufficient indication of the feeling on the subject, and should warrant the taking of some definite steps to bring about the desired end. It is quite natural that those interested in the matter should look to the builders and contractors of Toronto to take the initiatory steps towards organization. So far, we regret to say, more interest appears to have been taken in the movement outside than in Toronto. We are aware, however, that a number of Toronto master builders are becoming more and more impressed with the need of such an Association, and we look for the introduction of the question to the Toronto Builders' Exchange at an early day. Meanwhile, we continue to invite expressions of opinion from our readers, in order that the subject may be as thoroughly ventilated as possible before action comes to be taken.

WE have ceased to wonder at the numerous failures amongst master builders since we learned how slipshod and unbusinesslike are the methods of estimating practised by many of them. So long as such methods are followed, success must be the exception rather than the rule. We know of instances in which the tenders on a contract varied as much as fifty per cent. The recklessness or want of knowledge which such a condition of things reveals is sufficient to account, not only for the frequent failures of incompetent contractors, but also for the difficulty which the honest, competent builder experiences in making anything like a decent profit on his work. We feel inclined to agree with one of our subscribers who, writing on this subject, expresses his belief that the failure of so many contractors to estimate correctly is due, in a majority of cases, to lack of arithmetical knowledge, care and time expended in exact calculation of details, and the use of systematic methods of arriving at conclusions. Realizing that the possession and application of such knowledge would save many contractors from engaging in ruinous undertakings, we have arranged with one of our contributors, whose experience as a builder and contractor entitles him to speak authoritatively on the subject, to write a series of articles on "How to Estimate." The first of these articles will be found printed in the CANADIAN ARCHITECT AND BUILDER for June, and will repay careful perusal.

THE astonishing improvement in the character of public buildings and private dwellings in Canadian cities during the last decade has on previous occasions formed the subject of comment in this journal. This improvement is due in a large measure to the use of more beautiful and costly finishing materials. In no class of material is improvement more noticeable than in hardware. There is at present sold in this country each year a very considerable quantity of the finer class of bronze hardware, and the demand is growing rapidly. There are two reasons for this. One is the accumulation of wealth in the

country, and the other, the cheapness of production which has recently been attained in the manufacture of fine hardware. By the use of improved machinery and appliances, it is now possible to sell fine bronze goods at a price little above what our forefathers had to pay for an article which, however useful, could certainly not be called ornamental. Thus far, all the finer kinds of hardware used in Canada, have been imported from the United States. We believe the time has arrived, however, when some of our Canadian hardware manufacturers might profitably turn their attention to the production of these goods. While their manufacture requires a large outlay for expensive machinery, and American manufacturers with a much wider market have been enabled to reduce the cost of manufacture to a minimum, these advantages would be offset by the protection of 35 per cent. afforded by the tariff to the Canadian manufacturer. Who will be the first to try the experiment of manufacturing a fine class of building hardware in Canada?

THE position of the retail lumber dealer in Toronto, if we have been correctly informed, is not an enviable one. The wholesale dealer is said to have been steadily encroaching upon the field of the retailer, until at last the latter finds in the former a direct competitor. Until recently the wholesale dealer would refuse to sell a less quantity than a car load of one kind of lumber. Now, we are informed, wholesale dealers will sell to a contractor as little as a wagon load. Some who make a pretence of selling nothing less than a car load will nevertheless mix in the car load as many varieties of lumber as the purchaser may desire and in the required quantities, which is equivalent to selling in retail quantities. Thus the dividing line between wholesaler and retailer, once broad and distinct, has become well-nigh obliterated, while the fierce competition for possession of the retail trade has resulted in seriously decreasing the profits of both classes. This matter is one which indirectly affects injuriously the interests of the *bona fide* contractor. The eagerness of the retail lumber dealers to hold their trade as against the wholesalers, has induced them to extend credit to persons styling themselves builders and contractors, but who are without experience or capital. Such persons, being as we have said without experience, and having nothing to lose, take contracts at prices which result in failure to themselves and a general lowering of the standards for work to an extent which leaves no profit in the business for the contractor who seeks to perform his work in a thorough and workmanlike manner. If there was a Provincial Association of Builders and Contractors, it might, by agreeing to purchase only from *bona fide* retail dealers, improve the position of such dealers, and compel them to cease selling on credit to incompetent and irresponsible parties.

A RECENT case before the Toronto Courts has led to strict enquiry on the part of the city authorities into the character of work and material in connection with the block paving of the streets. It has been found that both work and material are below the standard called for by the specifications. The contractors admit this, but in extenuation say that first-growth cedar, perfectly sound and free from pin-holes, such as the specifications demand, cannot be obtained in sufficient quantity. The correctness or otherwise of this plea is at present the subject of many newspaper articles. By some it is asserted that cedar of the quality required can be procured in abundance on Manitoulin Island, but Mr. J. C. Bailey, a civil engineer of large experience, denies that such is the case. Mr. Bailey concludes a letter on the subject by saying: "The whole trouble seems to me to be caused in allowing wooden block pavement of any kind to be used in cities. It is of such perishable material, hence expensive on account of frequent renewals, also unhealthy. Stone is altogether the best for large cities, and we have lots of first-class material within easy distance and access for this purpose. We have the traps—gneiss and granite near Gravenhurst; again the same just east of Peterboro on the Ontario & Quebec Railway. Stone may be noisy, but it is more lasting, healthier and cheaper in the end." We have more than once during the past year expressed the hope that something more lasting than cedar would soon be adopted for paving the business

thoroughfares of Toronto. It is hoped the public interest which has been excited in the subject will hasten the adoption of more substantial material. We cannot agree with Mr. Bailey in the belief that stone should be used on residential streets. Where the importance of the street will warrant it, asphalt should be used, while on streets of lesser importance, where there is no heavy traffic, cedar blocks give very good satisfaction.

THERE are indications that the present year will witness a larger number of costly buildings under construction in Canada than ever before. In Montreal, work will shortly commence on the new Victoria Hospital, the cost of which will probably exceed a million dollars; a house for Mr. McIntyre which it is estimated will cost half a million dollars; the new Y. M. C. A. building, and several other notable structures. In Toronto, in addition to the new Parliament Buildings, there will be the new Board of Trade Building, cost \$300,000; Victoria University, cost \$200,000; a seven story office building on the site of the Molson's Bank, to cost \$150,000; Upper Canada College, cost \$120,000; a building for the Traders' Bank, cost \$100,000; Freehold Loan and Savings Co. building, cost \$150,000; Confederation Life Association building, cost \$300,000. In Hamilton, the Bank of Hamilton will erect a costly new building, and the Y. M. C. A. and Public Library Board will each put up structures costing upwards of \$20,000. The erection of so many costly structures will not only keep the architects busy, but also afford opportunity for the display of the best talent. We print elsewhere an advertisement of the manager of the Confederation Life Association asking for competitive designs for the proposed new buildings. We are pleased to observe that it is proposed to give the superintendence of the building into the hands of the architect who shall be adjudged the winner of the competition. The money prizes offered to the authors of second and third best designs may also be considered satisfactory. No mention is made, however, in the advertisement of the intention to obtain expert advice in deciding the merits of the designs offered. This will be necessary in order to induce our ablest architects to enter the competition. We are pleased to be informed that the management of the Confederation Life Association are desirous that this competition should be amongst Canadian architects only, and that the work should be carried out by a Canadian. We wish to point out, however, that should the work be given to a Canadian architect, it will not be possible to make a fair comparison of the ability displayed in his work, with that of the foreign architect who is at present engaged in putting up a building for a rival company. The Canadian architect will be required to erect a building nearly three times the size of the one now under construction, with not more than two-thirds of the money which is being expended on the latter. This will forbid the use by the Canadian architect of the imported stone and other costly materials which are a leading feature in the other building. Canadian architects would be glad of an opportunity, given a fair field and no favor, to demonstrate their ability to do work equal if not superior in quality to that which some of our people believe can only be obtained at the hands of foreigners.

IT has been said that competition is the life of trade. Such may be the case, but it is equally true that competition is the death of honorable dealing as between man and man. Who has not been made aware of the mean, contemptible tricks which are resorted to by men desirous of defeating their competitors? It is not limited to one industry, trade or profession, but permeates all of them, until the honest man is almost discouraged, and inclined to become a rogue like the majority. A man of average abilities has no chance to make an honorable living in these days of commissions for doing this and the other service. A man of superior ability may be able to succeed, notwithstanding the unfair competition to which he is subjected by the dishonorable men with whom he comes in contact. The architect who charges the regular professional rates and does not receive other remuneration, does not compete on an equal basis with the man who will undertake work at 2 per cent. on whatever he can get, and more than makes up the difference by levying on

the contractors. What the client looks at is the amount he pays his architect, which, if he is building a \$10,000 house, would be (if he has engaged the services of an honest and competent man) \$500. When another man offers to do, so far as he knows, the same work for \$200, he imagines he has saved \$300, when in fact he will lose that amount once, if not many times over. The \$200 man will not give him more than \$200 worth of work, even though he may do all the work necessary to the erection of his house. The plan and elevations will not receive the study that would be given to them by a conscientious man, nor will there be very much attention given to the details. The main object of the 2 per cent. man is to get the house finished and receive his money. But beyond the inferiority of the work done, there is almost the certainty that the architect will make good the deficiency in his remuneration, by accepting commissions from the contractors and those supplying materials.

It is one thing to give a commission to a man in payment for selling goods, but it is a very different thing to give a commission to a man who is buying goods for his employers. It simply means that if he does not favor the seller's interest he gets no commission, and if he receives a commission, he sacrifices his employer, who is paying him for looking after his interests. An architect who receives from a contractor or material dealer any sum of money or its equivalent, is in the power of the person from whom he has accepted such value. It should not be difficult to determine whose interests will suffer under such circumstances. Another practice which should be condemned is when architects share their commission with those who obtain them employment. This on the face of it may not appear a very serious matter, but it usually results in the architects who give such commissions accepting an equivalent whenever the opportunity offers. This form of gaining work has in many instances been carried to such an extent that it is asserted that companies are formed with the ostentatious object on the part of the promoters of securing work for an architect or firm of architects, the company or association receiving a definite share of all commissions. Such organizations are ruinous to men, no matter how talented they may be, if they are not prepared to share the result of their hard work with these parasites, who subsist by living on the abilities of others and their own stupendous effrontery. It may be taken for granted that the architect who will not work for less than his proper remuneration, is one who will serve his clients first and always. It would not be just to say that all who accept less than 5 per cent. are dishonest, but it can be safely said that nearly all the dishonest men are among that number.

ON ESTIMATING.

I HAVE found in my own practice, says D. W. King, in *Building*, ordinary country cottages of wood will cost from \$2 to \$5 per square foot of plan. Country cottages of the better class, from \$5 to \$10. Brick dwellings in blocks, from \$10 to \$20, and so on. This method of estimating was adopted by a celebrated French architect, Mons. Leonfouchre, who became so expert that he was able to estimate quite as accurately as the builders, and in consequence won a large patronage, especially in the designing of domestic buildings. It was his custom to keep a record of every building erected, with small sketch of the ground plan and a brief description of the materials, finish, etc. The best way is to keep a record of the cost of every building, giving the results by both the cubical contents and square feet of plan.

Small buildings of the same description are more expensive than the large ones, as the preliminary preparations, cartage, scaffolding, loss of time, etc., are about the same in each case, while the cost of materials in large quantities is much less, all of which must be considered.

The mason work, rough carpenter work, and roofing are the chief items of expense in factories, barns, sheds, outbuildings, etc.; the interior finish and decorative work in dwellings and other highly finished structures.

The Ontario Rolling Mill Company are making preparations to commence the manufacture of cut nails.

OUR ILLUSTRATIONS.

PHOTOGRAPHURE PLATE—NEW DEPARTMENTAL BUILDINGS,
OTTAWA, ONT.—THOS. FULLER, R.C.A., ARCHITECT,
PUBLIC WORKS DEPARTMENT, OTTAWA.

SKETCH FOR CITY FRONT—WM. MCCANDLISH RADFORD,
MONTREAL.

SKETCH FOR "GLEN TOWER," ROSEDALE, TORONTO.—R. W.
GAMBIER-BOUSFIELD, ARCHITECT, TORONTO.

QUERIES AND ANSWERS.

(No. 5).—Is it better to have ventilating shafts run from the ceiling, or the floor line of a room? I insert the following extract from Wightwick's "Hints to Young Architects," as bearing on the subject, and should like to find out the true method: "The extraction of foul air at the floor level, is objectionable and unsound in principle; as it is a law of Physics that a gas expands, and ascends when heated, the colder strata of air taking its place, therefore a system which follows this natural order is the best, and the ceiling level is for this reason, the place for the exit of vitiated air. The Carbonic Acid Gas, mixed with the air does not by its greater weight, separate and fall to the lower level, as imagined by many writers, but tends by the law of diffusion of gases, to diffuse itself throughout the room." Thinking that perhaps this may interest some others of your readers, besides myself, I hope to see an answer in your next issue.

A BROCKVILLE STUDENT.

THE VICTORIA HOSPITAL, MONTREAL.

MR. MAXON SNELL, architect of the new Victoria Hospital, Montreal, is at present in Canada, and in a recent interview is reported to have said: "I have had more difficulty in designing the plan for this hospital than any other I ever built. This is accounted for by the peculiarity of the Canadian climate, its intense heat and cold. For instance, hospital buildings in the south of France would in nowise do here. There they are built upon the hut plan, and of course that is the proper plan for all hospitals. But were that plan followed here, it would cost a fortune every winter for fuel alone; for in that system the hospital is scattered over a large tract of land and is only one storey high, and consists of a number of separate buildings. So it will be seen how difficult it would be to build such an hospital as that in Montreal, as each building has to have a separate heating apparatus. It is always difficult to prevent foul air from reaching the upper storeys in hospitals not built on the hut plan, as it always travels by the stairway. I have taken means in my plan of the present hospital to prevent this, by detaching the stair case, and putting on each floor short bridges, so that there will be no staircase for it to ascend. I intend to press for the erection of one or two detached buildings for the purely infectious cases. This of course will be costly, but I consider it worth the expense. When completed there will not be another hospital in the world built on the same design as the Victoria."

EDITOR CANADIAN ARCHITECT AND BUILDER.

DEAR SIR,—In the issue of the *Metal Worker* of March 23rd, is shown a set of plans and specifications for a system of hot water heating and ventilation by Richard Swallwell, of Winnipeg, Manitoba. This gentleman was awarded the first prize in the competition offered by that enterprising journal, which deserves the highest praise for its endeavors to advance the science of warming and ventilating.

Now, while I give Mr. Swallwell credit for his perseverance in preparing plans and specifications, and for having obtained first place in the competition, I must object to that part of his essay, where, in describing his system of indirect heating and ventilation, he says: "The idea is original." I claim that it is an exact copy of plans prepared by me, and fitted up in a residence at Calgary, N. W. T., last year. These plans and specifications were forwarded to Winnipeg, and two or more hot water engineers were invited to estimate on the work, and presumably this is where Mr. Swallwell obtained his "original ideas." There is

no difference in the plans as shown in the *Metal Worker* and those the writer made a year and a half ago, but the specifications may, in the construction of the heating chamber. Where the writer specified that it should be built of brick and lime with bright tin, Mr. Swallwell has constructed of wood and plaster, and takes occasion to say it is better than brick. Perhaps he thinks he scored a point against me in this simple alteration. The only other change is, that I show a damper to control the inflow of cold air to the heating chamber, in the same way as one for the smoke pipe and boiler draft.

Before attempting to reply to the *Metal Worker* in this matter, I have communicated with the proprietor of the house at Calgary for information as to the success of the system, and am to day in receipt of a letter from that gentleman, in which he speaks in the highest terms of the system after having had it in use all winter. He also says: "The Winnipeg men had never done such work before and were very skeptical as to its utility. And yet in the face of this, Mr. Swallwell tells us that it has been his practice to adopt this system."

This is another case in competitions where honor does not always fall where honor is due.

Yours truly,

W. J. BURROUGHS,
315 Queen street west, Toronto.

ONTARIO ASSOCIATION OF ARCHITECTS.

A MEETING of the Board of Directors of the Ontario Association of Architects has been called for the 19th of June, to discuss and arrange for the first annual meeting. It is proposed to have a number of papers on professional subjects read at the meeting, and the Directors intend to make the necessary arrangements in June. It would be of great assistance to the Board if each member of the Association would send in to the Secretary the name of any subject which they would like to have discussed at the annual meeting. The Board of Directors would also like to receive offers to prepare and read papers on matters of general interest to the profession. Every member can render assistance, be it much or little, and they certainly should do so. If they do not wish to prepare a paper, they can at least suggest the subject matter for one, and thus insure that the papers will all be on matters of common interest. The Board of Directors would also like to receive suggestions from the individual members as to any matter that should receive their attention.

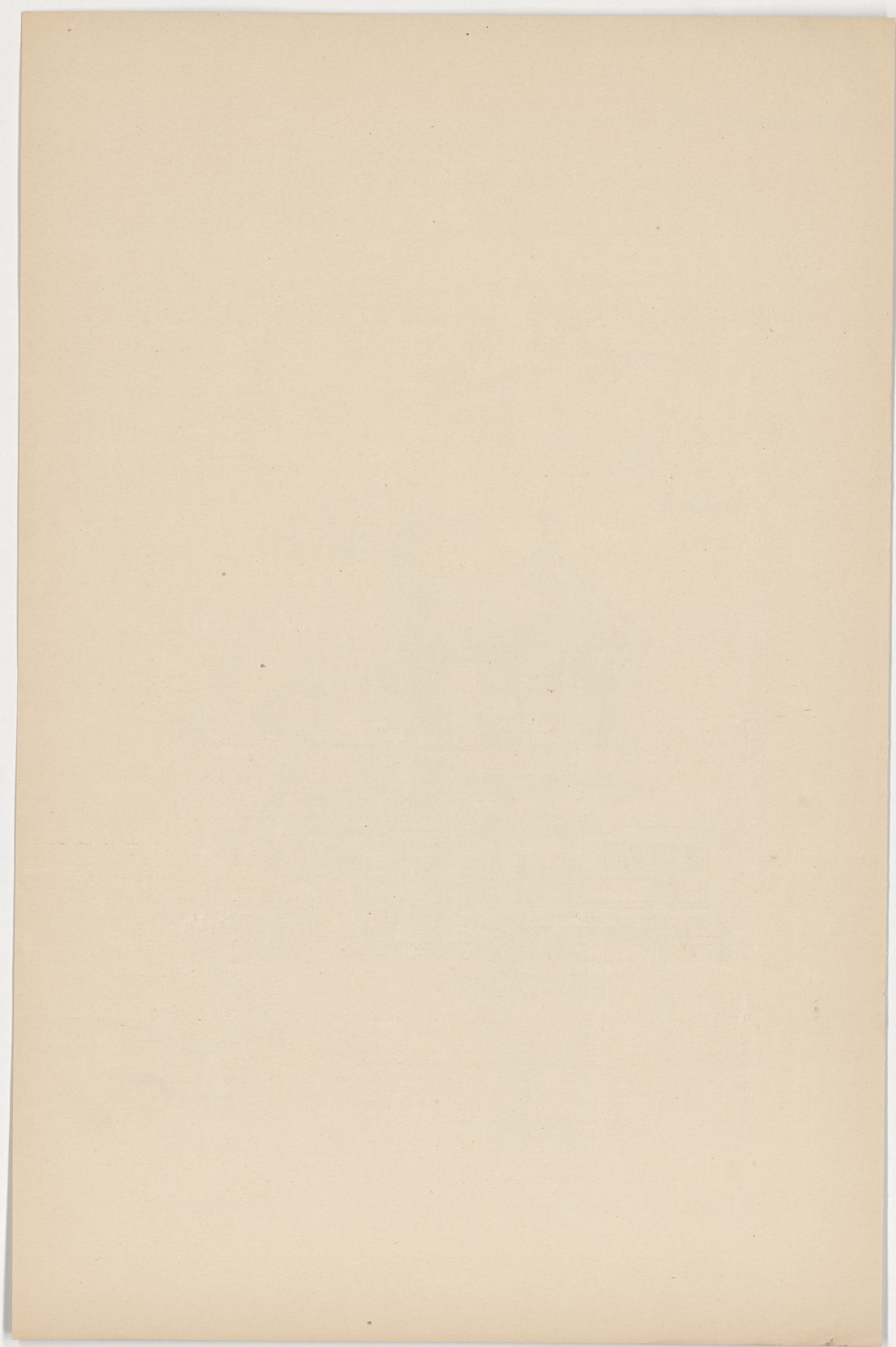
TORONTO ARCHITECTURAL GUILD.

THE meetings of the Architectural Guild of Toronto, have taken place regularly every month and have been very well attended. The interest of the members in the meetings is very great, and shows a continual growth. Now that the Ontario Association of Architects has been formed, the Guild can safely allow that Association to take charge of matters which it before was in duty bound to assume. The Guild, after paying all the expenses of the movement to establish the Ontario Association, has a large surplus which it hopes to use in the improvement of architectural design, etc. The membership is now twenty-six, but it is to be regretted that some four or five of them are what might be called "sleeping members."

At the last meeting new rules were adopted to govern the election of new members which it is hoped will prove satisfactory in all respects.

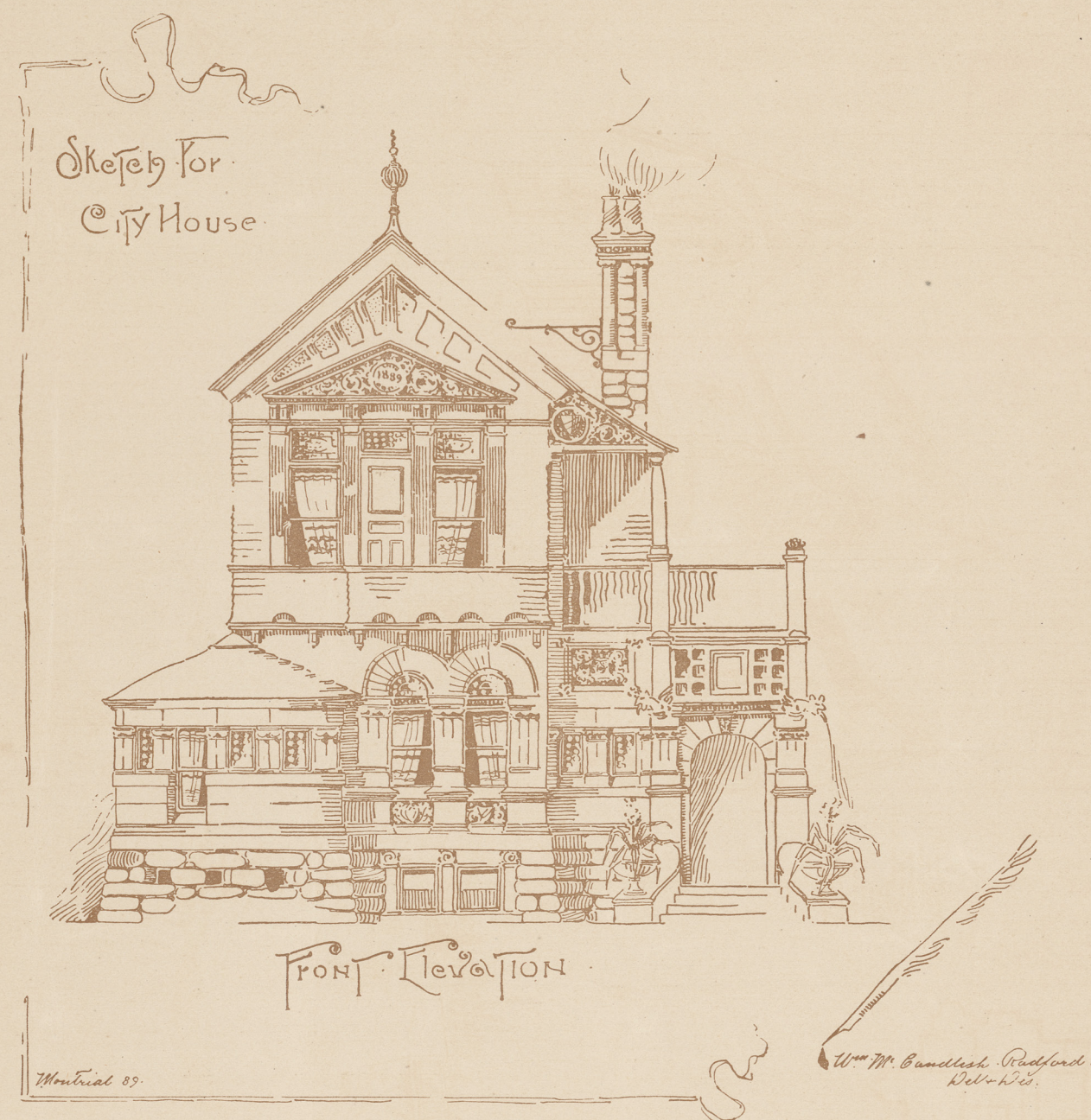
A committee of the Guild has under consideration the cause of the too prevalent efflorescence on brick work. An interesting report is expected, stating what are the local causes, and making suggestions for its amelioration, if not prevention. The committee was empowered to obtain such expert assistance as it might consider advisable.

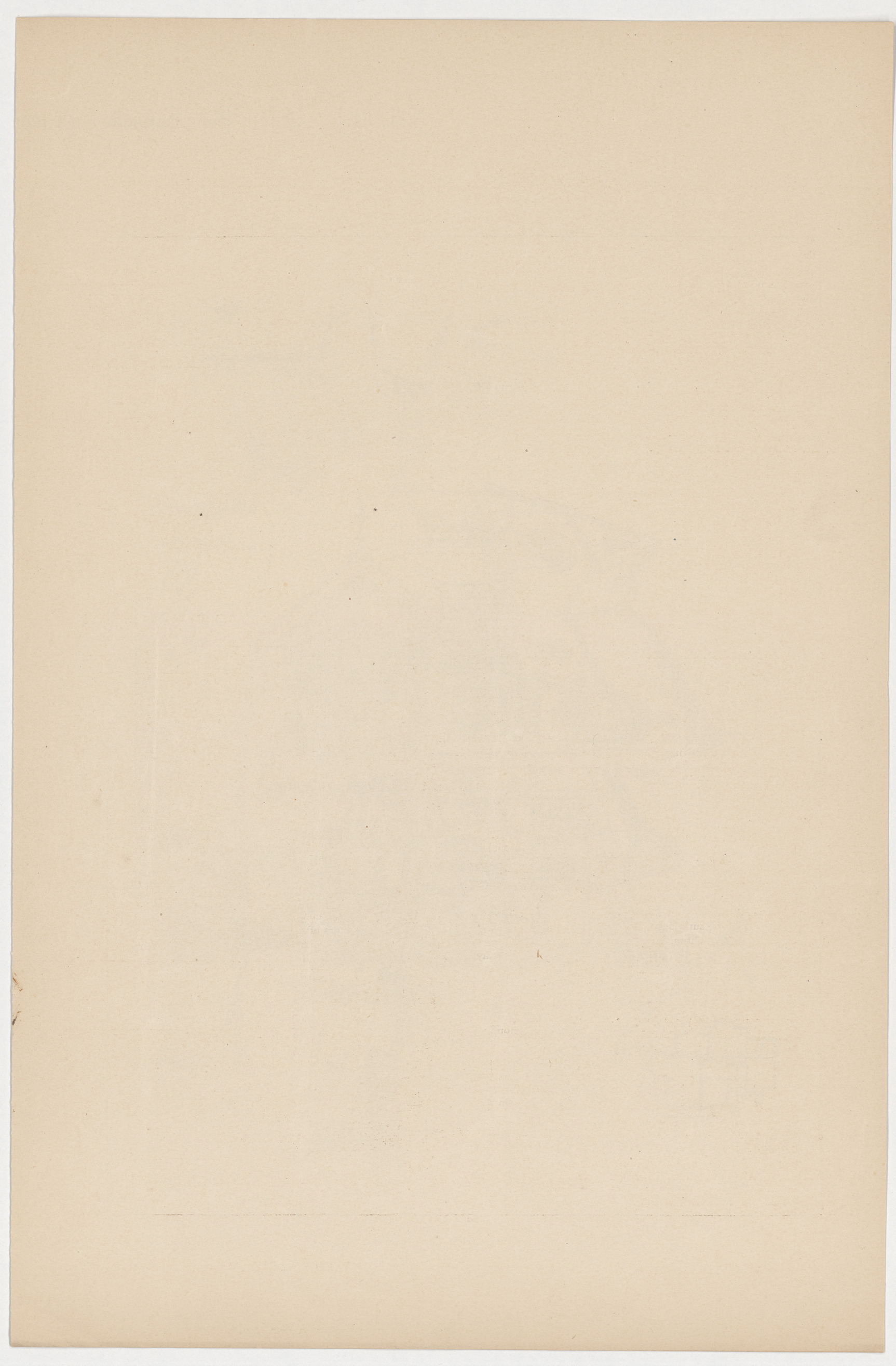
The meetings during the warmer months will be held in the afternoon at the different summer resorts in or about the city. Those meetings which were held at Lorne Park and Long Branch last summer, were so much enjoyed by the members, that there is no doubt but that there will be a very full attendance this season.





SKETCH FOR "GLEN TOWER," ROSEDALE, TORONTO.
R. W. GAMBIE-BOUSFIELD, ARCHITECT, TORONTO.





NOTES ON ARCHITECTURAL MATTERS.

HAMILTON, May 7th, 1889.

Editor CANADIAN ARCHITECT AND BUILDER.

I am commenting on the design which appeared in your number for March, no reflection was intended on the other designs, one of which you have now published in your April number. I may be permitted to say that the plans of Messrs. Darling & Curry show an amount of study which entitles their authors to much credit. I can see that Prof. Ware must have had doubts which was best in plan. The one he favored was in accordance with American requirements, (hence his decision) and would have biased him on that account. There is a difference in American and British planning. Messrs. Darling & Curry's plans are good, and more consistent with our British ideas, and I think would have suited the members of the Board of Trade better, and as a paying concern, would have been found in all respects more to their interest. The design as shown in the perspective is good, but "rather stilty." I think the point of view is too far extended, and in this respect the same fault is to be found as in the other design which appeared in your March number.

I commend your remarks anent the destruction and loss of life in the Hartford Hotel explosion, and the necessity that all persons who have the management of steam engines, boilers, etc., should be compelled to undergo a proper examination and not be permitted to be so employed unless they can produce a proper certificate of their competency. Very long practical experience teaches me that hot water is the best, easiest managed, and least costly, requiring little or no repairs for an indefinite number of years, being noiseless, if the work is properly fixed, and applicable to banks, insurance offices, Boards of Trade, hotels, and buildings where quiet and comfort are desirable.

I was fortunate in being present at the gathering of architects at the Queen's Hotel, Toronto, on the 21st April and afterwards at the banquet given by the Toronto Guild of Architects. I proposed a resolution anent the admission of students into the Association, at the general meeting which I regret met with no second. Seeing that it is from the younger members that the architects of the future must be drawn, I think it will be found that the refusal to provide for the admission into the Ontario Association of Architects, of students, will result in another society being formed. I recollect that it was the exclusiveness of the Royal Institute of British Architects that caused the foundation of the "Association of Architects" in Lincoln Inn, an organization which has produced much talent, and to whose premier members the R. I. B. A. are glad to offer honors to secure their attachment. My contention is that by extending the privilege of membership in the Ontario Association of Architects to the young men, we should exhibit less jealousy and more love for our noble profession, besides securing for the Association a better revenue. I would suggest that the younger members should be admitted at a less fee than older members who are in practice. These younger men, when once started in practice, should pay full fees. I have no doubt that experience will induce this to be one.

Now permit me to urge upon the elected Directors to go to work with a vim, and we will have an Association that will be an honor to those who took part in gathering together the disunited craft, and which will eventually receive proper recognition at the hands of the other professions.

F. J. RASTRICK.

BOARD OF TRADE BUILDING COMPETITION.

Editor CANADIAN ARCHITECT AND BUILDER.

MONTREAL, April 11th, 1889.

DEAR SIR,—Would you please publish the following correspondence in your valuable paper? Not having yet received a reply from the Board, I consider that the whole matter ought to be made public.

What I state is correct, and the plans of Messrs. James & James have therefore no claim to be accepted, without doing an injustice to the other competitors who kept within the carefully prepared and well considered conditions by Professor Ware.

Yours faithfully,

JAMES R. RHIND.

MONTREAL, Feb. 27th, 1889.

Edgar A. Wills, Secretary of Board of Trade, Toronto.

DEAR SIR,—I see the plan and design accepted for the Board of Trade building illustrated in the CANADIAN ARCHITECT AND BUILDER, and find that it does not comply with your instructions to architects, and ought not on that account to be even placed on the list of three, much less to be the design adopted.

The reading room is about 115 square feet less than the size given in the instructions. The space occupied by the rooms for the secretary, clerks, grain inspector and Board room is at the very outside not more than 982 square feet, instead of 1,220 square feet. The room for telephone is about 80 square feet and carried up two stories, where one is sufficient—in all 160 square feet, where 25 or 30 square feet is ample. There are

275 square feet lost at the external corner, the most important and valuable part of the building, and this space on six stories is equal to 1,650 square feet. A bank is no doubt very desirable in such a building, but there is no mention in the instructions for such a room to be provided. The entrances to the bank and the offices are the same, and on a busy day of the Board, these entrances would be uncomfortably crowded by those doing business in the bank, the offices and the Board. A separate entrance to the bank would therefore be an advantage. No windows are shown in the perspective, lighting the janitor's rooms. The parapet in front of the sloping roof is not desirable for the climate of Canada, and a sloping roof without a parapet would be dangerous in a street building, because of the large quantities of ice and snow that would fall from it. A flat roof is therefore the correct form for a street building in this climate. The corridors are all dark. Glass panels in the doors or fan-lights would not be sufficient to give light.

In my design "Utility" (there were two of that motto), I give in every case the full size called for. All the rooms for the use of the Board are on the same floor, and all the corridors are amply lighted direct from the area.

I consider it my duty to point out all the foregoing facts to the Board.

Yours faithfully,

JAMES R. RHIND.

TORONTO, March 1st, 1886.

James R. Rhind, Esq., Montreal.

DEAR SIR,—Replying to your favor of the 27th ult., I beg to inform you that the building committee are in no way responsible for the illustrations appearing in the CANADIAN ARCHITECT AND BUILDER.

Yours truly,

(Signed) EDGAR A. WILLS,

Secretary.

MONTREAL, March 2nd, 1889.

Edgar A. Wills, Esq.

DEAR SIR,—Re Board of Trade Building, your favor of yesterday's date just to hand, and in reply beg to state that the illustrations I refer to in the CANADIAN ARCHITECT AND BUILDER are photo lithographs, and therefore exact *fac similes* to a smaller scale of the original drawings, and the CANADIAN ARCHITECT AND BUILDER is not responsible for their correctness, but the architects, Messrs. James & James, who drew them.

Yours faithfully,

JAMES R. RHIND.

P.S.—I trust that you will lay this matter before the Board.

J. R. R.

I am still awaiting a reply to my second letter as above.

JAMES R. RHIND.

PUBLICATIONS.

WE have received from Mr. W. H. Sayward, Secretary of the National Association of Builders of the United States, a copy of the official report of the proceedings at the third annual convention held at Philadelphia February 12th, 13th and 14th last. It comprises a volume of 210 pages, and includes the names and addresses of the officers of the association, the delegates to the convention, and the Builders' Exchanges throughout the United States.

Light shades of paper make a room look more cheerful; large figures make a room look much smaller and occasion much waste in matching the figures. Low rooms should be papered with striped paper having the stripes run up and down, as it makes the room seem much lighter. Subdued tints take off the glare of too many windows. The best effect is produced by having a paper with pattern and colors of a quiet tone, such as does not at once strike the eye on coming into the room. The paper should relieve and set out the furniture that stands in front of it, not attract attention from it.

HAMILTON PUBLIC LIBRARY BUILDING COMPETITION.

WE have to record the advent of another set of conditions for a competition, which have been drawn up by persons having no knowledge of the principles which should govern a competition. We certainly did not expect that a Building Committee in a city of the size of Hamilton would distinguish itself by surpassing those of the smaller towns in the unreasonableness of the terms imposed upon any architects who might think fit to compete in the erection of the Free Library Building. We will state our objections to the terms of the competition as briefly as possible, but before doing so, we will attempt to explain why competitions are considered necessary in the erection of important structures.

The principal object of a competition as understood by architects of good standing is, that the best design, both as to plan and exterior composition, may be obtained. When a number of sets of drawings are submitted, the best one of them can be adopted, and thus there is an assurance that the building will be erected according to a reasonably good plan. As it is utterly impossible to prepare in competition a set of drawings on which tenders can be asked, it has become usual to ask for only such drawings as will explain the scheme of the competing architect. The number of changes which must always be made in a set of competition drawings, to meet with the entire approval of a building committee, will necessitate a new set of drawings. The architect will also desire to improve his plans when he has become better acquainted with the requirements through discussing them with members of the building committee. In fact, the man who would not under ordinary circumstances alter and improve his competition drawings, would not reflect much credit on himself or on his profession, even though he had won the competition.

Under the above circumstances it has become usual only to ask for such number of drawings as are absolutely necessary to interpret the author's scheme. The drawings are not expected to be elaborately finished nor absolutely accurate, so long as they faithfully explain a feasible scheme. The Hamilton Free Library Building Committee ask for no less than nine drawings, and a drawing showing the system of heating and ventilation—in all, ten sheets of drawings. The Committee also very kindly gives a competitor permission to furnish any number of $\frac{1}{2}$ inch scale drawings provided he is still anxious for more work. Now five or six sheets of drawings would have been ample and have served every purpose. The building can not be an intricate one in plan nor elaborate in finish, and can be easily illustrated by few drawings. An explanation of any points not shown on plans, and a description of the materials proposed to be used should always accompany a set of competition drawings, so we will not object to the same information being called for under the term "Descriptive Specifications." We do most decidedly object to the competitor being asked to furnish quantities. In the first place, they are of no service whatever, and even if they were, they are almost always so inaccurate that no reliance can be placed in them. The dishonest competitor makes his quantities agree with the sum to be expended. The Committee, if they wish such information, should employ an honest and competent man to take out the quantities of such plans as they may approve.

There is no object in asking that the system of heating and ventilation should be worked out. It is not at all likely that the Building Committee will select a bad design because the author has shown a very perfect system of heating and ventilation, or reject a good plan because the author has not troubled himself about the heating and ventilation, or has not shown a system which meets with the approval of the committee. A building after a good design can surely be as well heated and ventilated as one after a bad one. We do not underestimate the importance of good heating and ventilation, but no one with any common sense would for one instant think of erecting a building to serve as a screen or protection to an elaborate system of heating or ventilation. It would also appear from the conditions that the Building Committee have before them a plan which meets with their approval. The size of the building, inside dimensions are

given, as also the height of the stories. There is also something to the effect that, "The front 70 feet, to be two storeys: and the rear 45 feet, one storey." These details would not be given if the Committee had not before them some plan on which they are working. They certainly hamper a competitor most seriously, as he will be obliged to waste much time in trying to discover the key to the above arrangement. We should also like to have the Committee explain how they expect to secure 7,460 square feet of floor surface within a space of 7,475 square feet after deducting the area of all internal walls, lost space, and an allowance for corridors, stairs, etc., over and above what they have allowed. The value of building material and labor in Hamilton must be only one half what they are in other places, if the sum of \$20,000 is sufficient for the erection of the building. On the dimensions given, the building will cube about 400,000 cubic feet, which at 5 cents per cubic foot would give \$20,000, the proposed cost of the building. We believe that we are well within the mark when we state that 10 cents per cubic foot will no more than cover the cost of such a building, and then there will be nothing spent on ornamentation. We cannot understand why building committees will persist in asking architects to make designs for buildings which from their very size must cost from 50 to 200 per cent. more than the amount they state, and then abuse them because they are unable to accomplish the impossible task. The time for properly studying the problem, and making the drawings, is not sufficient. The allowance should have been at least one month, as no architect would care to devote his whole time to the preparation of a competition design without he had "the inside track and a sure thing."

Another, and possibly the most serious objection is, that there is no guarantee that an expert will be employed to advise the Committee in the selection of the best plan. The Committee may consider themselves capable of judging of the merits of the plans submitted, but no first-class architect will agree with them. The more capable the architect is, the more he is averse to have the merit of his work decided by men not possessed of the necessary knowledge. An inferior architect does not object to the decision of a committee, because his work is more readily understood by them, and consequently meets with their approval. His elevation will almost to a certainty take the committee's fancy, where a good design would receive from them nothing but ridicule. The inferior architect also has to fear the decision of the competent judge, as there is not nearly the same opportunities of a plan being approved because of some unimportant feature put in to catch the fancy of the ignorant.

It is to be hoped that all the members of the Ontario Association of Architects will decline to send in designs in this competition, without the Building Committee see fit to change them to meet the wishes of those most interested. One would think that if a building committee is really in earnest in their desire to receive the best plans obtainable for a building, they would make the terms of the competition such as would allow of the best men in the profession sending in designs, instead of drawing them up so that only the second and third rate men in the profession will compete.

The Board of Directors of the Ontario Association of Architects held a meeting on the 2nd inst., and discussed the terms of the proposed competition for the Hamilton Free Library Building.

They unanimously decided to recommend the members of the Association to refrain from sending in designs, for the following reasons:—

- 1st. Sufficient time is not allowed for preparing designs.
- 2nd. Much more detail is required in the preparation of the drawings than is at all necessary to properly illustrate the proposed work.
- 3rd. Specifications and quantities are unnecessary.
- 4th. The conditions contain no statement that the Committee will secure professional advice to decide upon the respective merits of the designs.

"A circular has been sent from the office of the secretary of the Ontario Association of Architects which, practically, amounts to a mild boycott of the building committee of the Free Library Board. The circular recommends all members of the Association to refrain from sending designs for the library building. The reasons are these: Sufficient time is not allowed for preparing designs; much more detail is required in the preparation of the drawings than is at all necessary to pro-

perly illustrate the proposed work; specifications and quantities are unnecessary; and the conditions contain no statement that the Committee will secure professional advice to decide upon the respective merits of the designs."

The above is a clipping from the Hamilton *Spectator* relative to the Hamilton Free Library competition. We have inserted it that we may explain the position of the Ontario Association of Architects as we understand it. There is little to object to in the above with the exception of the word "boycott," which we think should not have been used. It has been and is the custom of building committees to institute competitions with the object of obtaining a design for unimportant buildings. Architects, or supposed architects, have been only too ready to enter these competitions, which were more often a lottery of the worst description, than fairly, honorably conducted competitions. The Ontario Association of Architects propose to stop all unnecessary or unfair competitions, and to that end the Board of Directors send out circulars asking the members to refrain from competitions of which they do not approve, and stating the reasons why they should so refrain. They at the same time try to induce the Building Committee to alter the conditions to meet their wishes, and when they do not, they allow the Committee to proceed without any further remonstrance or action. At present it is a matter of little or no consequence to the best men whether a competition is conducted fairly or not. They have sufficient work to keep them busy, without paying any attention to crude competitions under the management of men who are really unable to distinguish between a good and a bad design, and who almost invariably choose the one having the least intrinsic merit. The profession as a body have become disgusted with matters as they now are, and have determined to improve them if possible. And who have a better right than the men who are continually being asked to compete for the erection of a building, to say what the terms under which they will submit designs shall be? They are at the trouble and expense of preparing plans, and certainly have a right, under the circumstances, to make every effort to receive fair play in the decision. What right has any committee to ask a man to spend \$50 or \$500 in getting up a set of drawings, and then treat him with injustice? The injustice may be the result of ignorance, but it is an injustice nevertheless when the undeserving man secures a prize which should have gone to another. Architects contend that laymen are incompetent to judge of the merits of architectural design, and ask that professional advice be taken in making the award. There is nothing unreasonable in this. It is only a necessary measure to prevent injustice to the competitors, and secure for the committee the best design sent in. If building committees sought professional advice in all competitions, the condition of architects would be very much improved. We would have fewer buildings which the general public call "lovely", and which the educated architect abhors. Some people maintain that if you place a good and a bad building in respect of design alongside of each other, the most ignorant will prefer the good. We do not agree with them, but maintain that the tastes of the masses require cultivation before they can appreciate what is good in art. One might as well affirm that an uneducated man would prefer Milton or Shakespeare to a dime novel. We all know that the trashy novel is read by hundreds where one person reads Milton or Shakespeare, and yet no educated person would compare the best novel ever written with the writings of either Milton or Shakespeare. If the architects can bring about a better knowledge of architecture in this country, they deserve to be encouraged in whatever methods they may adopt. At this point we will take the opportunity of stating that the press in Canada have about as little knowledge of what constitutes good architectural work as has the average base ball player, and from it little or no help will be obtained. When committees are so penurious that they state that express charges must be prepaid on all designs, and refuse to return the rejected ones to their owners, it is about time that those who have to expend time and money, look after their own interests more closely. All they have determined to do is to refuse to take any notice of competitions when the terms are unreasonable. Architects are one of the parties concerned and have a right to see that their interests are conserved with the same care as the other parties. Where is the man who

would not consider that a person had a very large amount of assurance who would ask another to make him an article worth \$50 or \$100 on the understanding that if he liked it he would buy it from him at one half the cost. And yet that is exactly what these most intelligent (?) and liberal (?) building committees are doing continually. How often it is stated that the architect whose plans are selected will be paid the commission of 3 per cent., or possibly 4 per cent. Sometimes they actually auction the work off by asking the competitors to state the commission for which they will execute the work. This is certainly an advantage to the inferior men, as they have an opportunity of gaining a commission by a low bid, if they cannot do so through merit of design. Very often a building committee will select an architect to do their work, and then hold a competition to secure a number of designs from which to select what they may deem of value; and cases have occurred where they even refused to pay the expense of returning these designs to their respective owners, after having kept them for weeks while the favorite was making all the use he could of them. Is it any wonder that architects have determined to put a stop to these very ignoble and contemptible practices?

ART TRAINING.

Editor CANADIAN ARCHITECT AND BUILDER.

THE fact that 30 young men in Toronto have formed themselves into a society called the "Art League" is sufficient proof that if the means of art training were supplied in the city there would be a large number of ardent students. The Art League held an exhibition of the work of its members on Friday afternoon last. There was a very fine display of drawings, and much judgment was shown in the number selected and the method of hanging. It is not my purpose to criticize the work done, more than to say, that while the average was fair, many of the drawings could only be described as indifferently good or bad. There were a few drawings which were really good, and showed much ability in their authors. My main object is to draw attention to the fact, that there is in Toronto an Art League comprised of young men most anxious to study art in all its branches. These young men have not waited to be assisted, but have with a determination worthy of success, gone to work in an energetic manner to train themselves as best they can in the respective branches of a profession which they must love in no ordinary degree. This effort must be a heavy drain on their resources as a society and as individuals, and with the time they give, proves most conclusively that they are enthusiastic in their love of art and desire to improve.

That these young men find it necessary to work alone to improve themselves, must mean that there is no other means whereby they can gain the training they desire. There is an Art School under the control of the Ontario Government which should be able to give these men and boys the opportunities for advancement they desire. It cannot do so, or they would surely avail themselves of it to the fullest extent. It may be that the members of the Art League are really desirous of receiving an art training, and the Art School does not give that training. From what I know of the school, I should judge that to be the trouble. That it is only an Art School in name in the opinion of many, requires no proof; but when we inform the reader that the school is under the management of persons who have little or no conception of art, and that the teachers are equally ignorant, any one will be able to judge for themselves why young men with artistic longings prefer to join a society, and work together along fairly correct lines of study. The Art School at one time had a competent staff of teachers—now it has not; nor will it ever have so long as the management cannot judge as between a good and a bad teacher, except by depending on the candidate's ability to produce certificates of capability from Art Schools often without standing. Occasionally the certificates only state that the holder has attended the school giving the certificate, which is of no value whatever, as many of these schools give such certificates to every student when leaving the schools.

An effort has been made to boom the Toronto Art School, but it has failed and will always fail, so long as the attempt is made to maintain an Art School which does not instruct in art.

ART. STUDENT.

QUEBEC.

(Correspondence of the CANADIAN ARCHITECT AND BUILDER.)

THE new chapel for the Quebec Seminary (R. C.) is now fairly under way (to replace the chapel lately destroyed by fire). Including the Sanctuary, it will measure 110 feet in length, with a width over all of 62 feet exclusive of side chapels, of which there will be five on each side, having semi-circular ends to receive the altars. The walls are to be built of hammer dressed stone with fine cut jambs, string courses, etc. The basement is to be vaulted, upon which the tile flooring of the chapel will be laid. When fully completed, the cost will be about \$35,000. The contractor is Mr. Thomas Pampalon, the architect Mr. J. F. Peachy.

A new frame building now approaching completion for the Richelieu Navigation Co., on their wharf, is also in the hands of the same architect. It is built entirely of wood, and is of a very neat design. It is intended for ticket offices, stores, etc., and will cost about \$3,000. Mr. George Boiteau is the contractor.

The first building on the new line of St. John st. (now being widened), is now being erected for Mr. Dynes. The first story consists of a plate glass front with stone piers, the upper stories forming a dwelling, being built of white brick with stone trimmings. It will cost \$6,000. Contractor, A. Cummings; architect, H. Staveley.

WINNIPEG.

(Correspondence of the CANADIAN ARCHITECT AND BUILDER.)

THE competition plans for the Provincial Government buildings have all been sent in, and the architects are waiting now to hear the successful names.

The City council have at last resolved to return all the plans for their proposed new market. This last resolution arrived at by them is very unfair to those professional men whose time and talents have been expended apparently to educate the minds of the Council up to the requirements of their position. To return the immense quantity of work to the authors without any recompense after having culled therefrom all the information required, appears a very unjust and discouraging proceeding. The architects entered into this competition, adhering to the terms thereof as set out by the advertisement, believing of course that the most unusual reservation which the Council thought it wise to insert, of rejecting all the plans, would only be acted upon as a *dernier resort*, and not to be taken advantage of because they have now determined to build differently from the original idea. The Council have instructed Mr. Geo. Brown to prepare plans for the new market, to cost \$16,000.

Mr. Foulks is building two more stores on his block on Main street.

The School Board are having the Smead hot air heating and ventilating system put into the schools.

The look-out in the building trade is brighter, and there will no doubt be several buildings go up on Main street this season.

BRITISH COLUMBIA.

(Correspondence of the CANADIAN ARCHITECT AND BUILDER.)

THERE are many fine buildings even in the youthful city of Vancouver, of which any city in Canada would be proud. The C. P. R. Hotel is a magnificent brick structure. The New York block, in which Sir Geo. Stephen is interested, the Van Horne block, the Lord Elphinstone block, and several others on Grenville street, are three and four story brick buildings heavily faced with grey granite. Sir Donald Smith has one under way which will eclipse anything on the coast, while the Ferguson block on the corner of Hastings and Richmond streets is a noble edifice. There are a number of fine buildings and business blocks already on the way, and when to these are added the New Government buildings, Dominion and Provincial, the C. P. R. opera house, the new Bank of British Columbia and Bank of Montreal blocks, now under contemplation, Vancouver will have, in proportion to its population, more fine buildings than any city in the Dominion. Up to last Christmas the total value of buildings erected was \$2,000,000. The number of buildings erected last year was about 400 and their value about \$1,000,000. A very great increase has occurred since, and at the present time the building boom is just starting for the season, although it has continued more or less all winter, if one flurry of snow and a few nights of frost may be called winter. However, before touching upon some of these in a more detailed way, I should like in my next to give a chapter on the sewerage and water works systems, which will be found, I trust, most interesting.

It must be borne in mind that the enterprise of building a city such as Vancouver is at the present time, was incomparably greater, situated as it was, than if its site were in a prairie or in open, clear country. Where it now stands, three years ago was a dense forest of giant trees, which to cut down, clear away and stump, was a gigantic task. Their enormous roots extend in every direction, and will neither pull out nor rot. Every stump has to be dynamited at great expense and at much risk of life, costing \$500 per acre to do it. When I tell you that 1,000 acres of this land have been cleared, and put into lots, that 40 miles of street, have been graded, that 6 miles have been planked, that 47 miles of sidewalk have been laid down, that nine miles of park road have been made and most of it gravelled, that it cost the citizens \$60,000 to erect bridges, and that in the aggregate something like \$300,000 has been expended in public improvements, including fire halls and fire engines, etc., a city hall, market site, public schools, sewer-

age, and recreation grounds, readers will best appreciate the energy and enterprise that gave to it its being.

Nor is Vancouver the only city in British Columbia. Its older sisters, Victoria, Nanaimo and New Westminster are coming on apace and also showing wonderful development, each of which contains features of special interest in the lines on which the CANADIAN ARCHITECT AND BUILDER is conducted. Not only are these progressive, but all British Columbia, for many years in the Slough of Despond. Its architects and builders are the sons of England, Ireland and Scotland and of the Eastern Provinces, and no nation on earth can boast of better workmen.

OTTAWA.

(Correspondence of the CANADIAN ARCHITECT AND BUILDER.)

BUILDING operations are well under way, a large number of buildings have been commenced, principally dwellings. Very few business blocks and public buildings are as yet spoken of. It may fairly be estimated that the amount to be expended this season will fall far short of last year. The principal work let out by the different architects since last report is: F. J. Alexander, architect, residence for Rev. Mr. Moore, \$5,000; residence for Mr. Wild, \$6,000. J. R. Bowes, architect, residence for O. R. Smith, \$4,500; improvements to By Ward market building \$3,500; fittings for new police station, \$1,200; store for R. Sholdis \$4,500; store for R. Steckel, \$3,000; warehouse for J. Martin, \$4,200; Buckingham public school, \$3,000. G. F. Stalker, architect, residence for J. Gibson, \$3,400. The architects report plenty of work in the offices, but not ready to let out. A large number of small dwellings are under way on which architects are not employed, and as no account of them is kept in the city hall, it is impossible to give a report of them.

The Ottawa Institute of Architects seem to be pleased with the result of the late convention of architects in Toronto, and individually they hope for a Provincial charter at the next session of the Ontario Legislature.

The contractors here have done nothing yet towards forming a contractor's union, although individually they all favor the scheme, but no one seems inclined to take the initiative. I have no doubt you will be able to bring about a Provincial Association of contractors as you have done with the Architects' Association.

The Architect's Institute have now a room leased for holding their meetings which is open at all times to the members of the Institute. I understand from members that there are a few members of the profession practising in the city who have not yet joined, but it is expected they will join before the Ontario Association is chartered. The Ottawa Institute feel highly honored in having one of their members vice-president of the Ontario Association.

The new Departmental buildings erected by the Government will be ready for occupation on the 1st May, and judging from remarks recently made by the Minister of Public Works in the House of Commons, they will cost when completed close on one million dollars.

AN ASSOCIATION OF ONTARIO BUILDERS AND CONTRACTORS.

TRENTON, May 10th, 1889.

Editor CANADIAN ARCHITECT AND BUILDER.

DEAR SIR,—Regarding the formation of a Provincial Association of Contractors and Builders, I desire to say that I am heartily in accord with the movement, and hope it may be the means of doing much good, as I am fully satisfied there is much room for improvement in the present condition of affairs. I don't complain of the short step between journeyman and contractor referred to by one of your esteemed correspondents, but I do complain of the competition of those who never were good journeymen, who don't know what a good job is like, and in consequence of whose operations the trade in many branches of building is becoming so demoralized that it is next to impossible for a builder of any taste and ability as a mechanic, to live and pay 100 cents in the \$, especially in our smaller towns. Another great evil that I see is the attempt to do without the services of the competent architect in supervising the work of construction. We are called upon to figure on the cost of buildings according to certain plans and specifications, and sometimes are disappointed on being told, after putting in as reasonable an offer as we possibly could, that our tender is far too high. On seeing the proposed building erected, however, one is inclined to suppose that the fine specification must surely have evaporated long before the first cobble stone of the miserable pile now before us had been thrown into the trench and called a foundation.

Now, sir, if the Association could in any way cope with such evils as these, it would not only benefit those engaged in the business, but also the public. There are also many other existing evils which in my opinion, such an Association might help to remedy, besides forwarding the interests of the trade generally; but having trespassed already too much on your valuable space, I must leave the matter to be developed by abler men than myself. Promising to assist as far as my ability will warrant, I remain,

Yours truly,

ONE WHO WOULD LIKE TO BE A GOOD BUILDER.

Messrs. Aikenhead & Crombie, of Toronto, have secured the contract to supply all the hardware required for the new Toronto Board of Trade Building. The contract price is understood to be in the neighborhood of \$6,000, making the largest single order ever supplied by a Canadian dealer.

PROTECTION TO ALL.

Editor CANADIAN ARCHITECT AND BUILDER.

DEAR SIR,—The policy of this country is to build up its industries, and to that end high duties are imposed on all materials which are or might be produced at home. I will not offer an opinion as to whether this policy is a good or bad one. In the eyes of some it is bad, but there are others (and they are certainly the majority at the ballot box) who believe it to be the best method of building up the country. If such is the case, then the further the principle is extended the better; in fact in justice to all it should be carried out to the fullest extent. We find that while all manner of manufactured goods have to pay large duties, and the manufacturers are thus enabled to carry on their business to their own profit and to the benefit of the country as a whole—still to the loss of the individual who has to pay the increased values—there are those who have pay this increased value on every article they consume, while they are not protected in the slightest degree from foreign competition in their pursuits, and are thus placed in an unfair position. Such treatment of the individual is not just or honorable, and may be detrimental to the best interests of the country as well.

One of these branches to which I refer is that of architecture. An architect in this country must pay his proportion of customs duties on what he consumes, and also on all architectural works which he may require for advancement in his profession, while he is not protected from the competition of architects living under another Government. It is true that duty has been exacted on plans, etc., at various times, but there is no fixed charge, nor is any definite line of action followed. There should be a duty on all plans prepared by foreigners for buildings erected in this country equal to, if not greater than that imposed on manufactured goods. The duty should also be placed at so much per cent. on the total cost of the building, which would save all trouble in arriving at the value of the plans. For instance, if it were decided that the duty on plans should be 30 per cent. on the value, it could be raised by requiring a payment of $1\frac{1}{2}$ per cent. on the total cost of the building.

It may be asked, why should a duty be placed upon plans for the benefit of Canadian architects? First, that they may be placed in equal position with those who are now benefited by protective duties; 2nd, that they may be encouraged to study their profession that they may be enabled to carry out important work; 3rd, that art may be encouraged and fostered in Canada through her own citizens; 4th, that men who are unable to judge as between good and bad architecture, and who are under the impression that they can not secure outside an American city an architect of sufficient capacity to execute their work, may be obliged to entrust their work to home talent or pay to the Government duties on the plans they thus obtain outside the country in which they have been enabled to make a fortune, largely through their not having to compete with foreigners; 5th, to prevent our ablest men leaving their native land for another, which will thus receive the benefit of their energy and ability.

There is no truer proverb than that "A prophet is not without honor save in his own country." Largely, all the architectural work that has been done in this country by outside men is inferior to the work of Canadian architects. Much of this work has cost very much more than any work done by a Canadian architect, but excessive cost does not constitute good work. A man with plenty of money can build a solid building, but what about the design? and that is where nearly all the work by outside talent is defective. Some of it is exceedingly bad—worse it could not very well be—but it is saved in the eyes of the public because it has the appearance of great solidity and cost. A good design has merit no matter of what material it may be constructed—even though of the cheapest—and a bad one is meretricious, even though carried out in the most expensive materials. I may also mention that size does not constitute artistic excellence, as the vast majority of people seem to imagine. If such were the case, the pyramids would be the most perfect piece of architecture in the world. Excellence of design may be found in small unpretentious structures, and inferiority in large structures built of the most expensive material.

The reason given by those who have patronized outside talent is, that Canadians have not had the necessary experience, and that in giving the work to others they are entrusting it to capable men in whom they have confidence, because they have erected work of a similar character to that which they contemplate. In many cases the reason is not based on facts, for often these parties have gone to incapable men who are not Canadians; but the fact that they live far enough away to allow of their being credited with qualities they do not possess, is sufficient to transform an incompetent man into a most capable one. But if Canadian architects have not the necessary experience to erect their buildings, when will they have seeing that they are not afforded any opportunities? So far, they have been expected to put up as substantial and expensive looking a building for \$50,000 as an architect from the States has been enabled to do with twice or three times that amount. That they have erected more artistic buildings does not count, so long as they have not been erected in costly materials—the refuge of inferior designers. It is only fair that Canadians should be given the opportunities requisite to allow of their perfecting themselves in their art. Advancement in art will benefit this country just as much as the increase in the commercial and manufacturing interests. The people have shown that they believe that such increase benefits the country, or they would not pay the protective duties. Then why should not those who have benefited by their business interests being protected, be made to assist in the cultiva-

tion of the much more desirable thing than mere material progress.

If something is not done to encourage literature and art in this country, we will have all our most capable young men seeking other fields. The man who feels he is capable of great efforts will not be satisfied to fulfil small duties. He will seek wider fields for his talent; and is he to be blamed for doing so when he is not only refused the opportunities which are justly his, but is practically insulted as well in the land of his nativity? For myself, I intend to recommend all young men of ability with whom I come in contact, to go to the States in preference to remaining in Canada. When a Provincial government goes to a foreign architect and accepts at his hands a design for the Provincial Parliament Buildings so very inferior to the Canadian design, little can be expected. It is unpatriotic and worthy of highest condemnation to throw our country over for money, but it is equally if not much more worthy of condemnation, when a country will not cherish its own children, but instead, gives assistance to those of a foreign state.

PROTECTION OF ALL INTERESTS.

PRECAUTIONS IN BUILDING.

BY OWEN B. MAGINNIS.

BUILDERS having cellars and foundations built, on which to erect frame structures, should carefully watch the work of the stone mason or bricklayer, to make sure that they are correctly measured from the cellar plan, and all breaks, as bay windows, etc., should be built from wood templates. The tops of the cellar walls must also be finished perfectly level from corner to corner, and level across all bays, in order that the sills may lie solid and level on the stone or brickwork. After the lot lines have been determined, and the ground is ready to be staked out, it should be measured exactly off the plan, and wooden pegs driven at the extremities of all the interior and exterior angles of the intended building. From these pegs lines are stretched, so that the digger may be able to cut the sod to a line, and dig out the foundation to the shape and depth required. It would be well if the house be set on a level or slight hollow, to keep the cellar up higher than stated in the specification, to permit the owner, if he so desire it, to grade the ground surrounding the house on a slight pitch, to carry the rain dripping from the walls away from the foundation, making the cellar much dryer.

In regard to footings, they ought to be of large area, especially under piers supporting girders. A broad stone, well bedded into sound, well rammed clay, or on cement concrete, makes a good footing.

Some builders do not build their piers until the house is framed and raised, but it is better building to put them in with the rest of the underpinning. Posts under cellar girders, should also have a good footing of stone, not likely to crack. These too are often omitted, and the girders temporarily sustained till the frame is complete, as it is claimed they can be more solidly placed when the weight is on the girders, by raising the girders to a slight camber with a jack, and setting in the posts to suit, and retain the camber. Chimneys likewise require wide, sound footings, and all footings should be laid in good cement.

Framed houses, which are situated on very much exposed sites, and likely to be subjected to extreme wind pressure, should be anchored to the foundations. The anchors can be made of flat wrought iron, having a round shank which passes vertically through the sill, holding it firmly to the top of the foundation wall, by having a nut and washer on the upper end. In ordinary frame work, anchors are rarely used, as the weight of the superstructure is sufficient of itself to resist the pressure. Rough or under-flooring in dwellings of this class is better laid diagonally than in the usual manner, reversed on each story, to brace the buildings horizontally, also sheathing and roof boarding.

Corner boards, outside window and door casings, and vertical bands, generally have their edges against which the clapboarding abuts, wrought square. It is a better method, however, to see they are jointed a little off the square, or, mechanically speaking, a trifle standing from the back, for the reason that this edge throws off the rain water, and in putting on the clapboards or siding, if they be marked to the length on the outer arrises when they are driven or pushed back against the sheathing, the joints are bound to close tightly, which is very essential where there is sure to be shrinkage, as in this case.

All tin flashings on top of door and window caps, if shingled in with each course of shingles, need to be given plenty of overlap. Valleys in roofs can be constructed in this way, but it is preferable to make the valley gutter in one entire piece, of sheets of tin soldered together, to diminish the chance of leakage, and all nails should be kept as far back from the intersection of the valley as possible.

Shingles in valleys and on hips last longer when laid with their grain running in the same direction as that of the hip or valley. When they are cut on the angle, the end wood absorbs water and hastens rot, whereas the straight, close running grain of the wood rejects the moisture, and leaves the shingles more durable. Few carpenters can now be found, except among the older hands, who are familiar with this mode of shingling, as it is really a very old, yet excellent one, and comparatively simple, involving little more time than the later and inferior method. All that is necessary, is to taper the shingles so that they radiate as it were from the angle of the hip or valley to straight joint square to the eave. Combs on ridges are scarcely to be recommended, but if they must be employed for the sake of economy, are best run up on that side on which the angle of the rain in that latitude usually falls. Tongued and grooved ridge boards are an improvement on the comb, that is, if the joint is well bedded with white lead. Wooden ridge rolls are better still, and the best of all is the galvanized iron cresting. Rolls and ridge boards should be well nailed through the shingles and into rafters, and not to the shingles only. Hip shingles should be cut with the saw to make a straight job and not hewn with the hatchet, and properly overlapped.

SANITATION NEATNESS

THE MONTREAL PLUMBING CLASSES.

THE plumbing class in connection with the Council of Arts and Manufactures has just completed its studies for the season, and the committee appointed by the Master Plumbers' section of the Montreal Contractors' Association to examine their work and award the prizes, reports the progress made as in every way satisfactory. The Master Plumbers have given book prizes, valued at twenty-five dollars, for those who won out of twenty-four competitors. The full class comprised thirty-two members, and the winners were as follows:

Attendance—1, A. Clelland; 2, E. H. Sharpe.
 Best joint wiping—1, F. Force; 2, H. Belanger.
 Best lead working—1, W. Skead; 2, H. Legaux.
 Best lead bending—1, H. Sharpe; 2, J. Williams.
 Best fixed work—1, W. Brown; 2, H. Hillman.
 Neatness of work—1, W. Skead; 2, J. Williams.
 General proficiency—1, W. Skead; 2, G. Wooding.
 Best assortment—G. Wooding.

There were 125 samples of work shown, and the examination was oral as well as mechanical. Messrs. Bellevance, Galaneau, Peard, Briggs and J. W. Hughes were examiners, and they congratulated the teachers, Messrs. Horton and Brittan, on their success. They also show the necessity for an increase in accommodation for the class, which is expected to double its members for the next course, and urge, too, that arrangements be made for a second and a third course—the second to be lessons in mechanical and freehand drawing, and lectures on the science of the business; the third course to be lectures, instruction in arithmetic and elements of bookkeeping, etc.

The Minister of Education for Ontario has decided that Hygiene may be one of the subjects taken at the examination for entrance to High Schools.

Analysis of natural gas shows the proportion of each constituent in 100 parts of the gas to be as follows: Carbonic acid and carbonic oxide, 6.10 each; oxygen, 8.10; olefiant gas, 1; ethylic hydride, 5; marsh gas, 67; hydrogen, 22; nitrogen, 3.

In reporting upon the sanitary condition of the Toronto public schools, the Medical Health officer suggests that in the construction, or reconstruction, of school buildings, adequate ventilation should be supplied by means other than windows.

An investigation has been made into the sanitary condition of the city hall of Montreal. A number of leakages were found in the pipes through which sewer-gas escaped. An estimate was ordered to be made of the costs to put the place in good order, the tile sewer to be replaced by iron pipes; a new system of water-closets and a better heating system to be put in.

Attention is called in the report of the Labor Commission recently presented to Parliament, to the defective sanitary condition of many working men's dwellings. The report recommends that the letting of a dwelling of a house in a bad sanitary condition should be forbidden by law, that frequent inspection should be made, and alterations or repairs necessary to health ordered.

The Master Carpenters Association at its annual meeting recently elected the following officers: Messrs. J. J. Withrow, president (re-elected); A. Weller, vice-president; J. C. Scott, treasurer; and Wm. Simpson, secretary-treasurer. Committee, Messrs. G. Moir, Wm. Clark, Wm. Forbes, R. Dinnis, and C. R. S. Dinnick. A resolution of sympathy was passed with the bereaved family of Lionel Yorke, late President of the Board of Federated Builders.

Recent experiments of English chemists are said to have shown that lead pipes are rapidly corroded by water containing quicklime or blue clay, or by water and air mixed or alternated, while sand and carbonate of lime afford considerable protection by forming an insoluble lining. The best protection of all is afforded by a mixture of limestone and sand. It is, hence, recommended that when water is circulated through lead pipes, protection from lead poisoning may be secured by allowing the water first to pass through a mixture of limestone and broken flints.

DECORATION AND FURNITURE

A FEW POINTS ON HOUSE PAINTING.

IN all outside work be sure the surface you are to paint is dry. If it is a new job and is to have three coats of paint, your priming should consist of two-thirds ochre and one-third lead mixed with raw oil. If you do not procure ochre ground, have it mixed up three or four days before the job is ready.* Strain this thoroughly through a wire strainer, and thin down just as thin as it will flow out and not run. But before you apply the paint see that your work is well dusted and is clean. Be sure and cover all the under edges, and spread your paint out evenly, not leaving any place untouched. When this is dry, putty up all nail holes, split places, bad joints, etc. Putty with a knife, and do not leave any surplus putty on the outside. In second coating, if you can procure a good ready-mixed paint that is composed of lead, zinc and oil, always use it in preference to your own mixture. It will stand longer without spotting or fading, and will cost you less in the end and give much better satisfaction all round. Good reliable house paints are now manufactured by several firms. Select harmonious colors, and always take in the size of the house, the architecture and surroundings. A green house among a lot of green foliage would be out of place; it would hardly be seen. White is always objectionable save as on a schoolhouse upon the prairie—as a mark of prominence. Remember in trimming that the law of light and shade requires that sunken places and indentations should be the darkest. Follow this out as nearly as possible, and you will add beauty and artistic taste to your work. Keep your paint, your work and your tools always clean. Never put on a pot of paint that has stood open a day or so without straining. It is better to strain every pot of paint before you commence to work; it will mix it more thoroughly. I never found a can of ready-mixed paint just opened that I could not get some skins out of. See that every part of your work is nicely and smoothly covered. I always trim cornice before painting siding. I run my siding color along edge of cornice, then trim, and then finish siding. I then have done, and no ladder or staging marks or paint spots to touch up. Be careful of your porch floors; don't get them all spotted; it dries, and looks bad when you come to finish up. Paint the under edges of all sash; they will not then rot quickly.

The inside may be finished as the owner or architect may direct. If a natural-wood finish, see article on that subject. Oil the inside frames that are put into the plaster with raw oil.

When you come to painting inside, see that the work is cleaned off perfectly, and that the rooms are all free from dirt of any kind. Have one place to keep and mix your paints, and put down boards or a piece of canvas. Do not dirty up the whole house with daubs of paint. If you use tobacco, have a box or keg or other receptacle to spit in. Do not spit tobacco juice all over the house. When the work is to be painted, use zinc paints as much as possible; they are not so poisonous as lead. Always prime as nearly the color of your finish as possible. Turpentine may be used more freely inside, but oil will look better, last better and go farther.—*House Painting and Decorating*

* Ochre unground should never be used, as it is so coarse that the work is not only marred, but becomes a receptacle for dust and moisture and invites mildew.—Eds.

A very handsome memorial window to the late Hon. James Ferrier, will shortly be placed in the St. James St. Methodist Church, Montreal. The subject is "Christ on the way to Emmaus." The figures of Christ and disciples are marked by strength and vigor of drawing, while the drapery has a rich silken sheen secured by a new and ingenious method. The work as a whole is executed in a highly artistic manner, and is a further evidence of the ability of our native designers to meet all the requirements of the market. To Messrs. Castle & Son, of Montreal, belongs the credit of having executed this beautiful piece of work.

DECORATION AND FURNITURE.

UPON entering a room, anyone in the habit of thinking about repose, order or design, can see at a glance whether fastidious taste has presided over the selection of its furniture and choice of decorations, or mere reliance placed upon the recommendation of the decorator, upholsterer, or commission-agent.

One of the most important features in the proper adornment of the interior of our houses, and one certainly the least considered, says the *Plumber and Decorator*, is the curves of the various articles of furniture, and of matters of decoration generally. The correct arrangement of outline gives a peculiar character to all the finest furniture. It has been urged that the "composition of curves will be most agreeable when the mechanical means of describing them shall be least apparent." We know that at the best period of art the curves used in mouldings and ornaments were those of the higher order, such as conic sections; whilst in the period of declining art, circles and compass work prevailed. In the choice, therefore, of your cabriole chairs, tables, and pier-glasses, look to their curves, and to the relation they bear to the other furniture of the room, and to the room itself. This necessity equally applies to all the minor articles where undulatory lines are in use; and, as the laws of beauty are much more arbitrary than is generally supposed, an investigation into the causes which make one article beautiful and another the reverse is a very useful and a very agreeable recreation.

We object to the bulge in a jug because it is too sudden, or we delight in the outline of a vase, or we greatly prefer the oval frame of a particular picture to the other square ones, probably not remembering that our taste has been guided by the most subtle and delicate laws of geometry, plain and solid. Arabesque designs owe their beauty to the highest principles of this science, showing the close relationship between art and science—so close, indeed, that in some cases it is almost difficult to say where the one begins and the other ends; and so wonderfully formed is the human mind, that it arrives at results and produces wondrous effects before the causes and principles which have led to them are discovered.

The next important matter for consideration is *arrangement*, so that one piece of furniture may not unduly obtrude on the observation of the beholder to the detriment of its neighbor, nor its adjacent articles. The eye loves the contemplation of harmony, and no harmony can exist in a chamber, however magnificently furnished, unless proportion is observed. How often the entire beauty of an otherwise well-furnished room is utterly ruined by a gaudy wall-paper or floor carpet, the ill-assorted colors of which dissipate the vision, and do not permit the eye a moment's rest on worthier objects. Repose is so necessary for the visual faculties that they enjoy nothing without it, and as the eye naturally first seeks the floor, it is best fitted for the enjoyment of surrounding objects of beauty if it does not rest on a pattern which might suggest the idea of an iris distorted into madness by the agonies of the loom! The same remarks apply, of course, to the papering of the room. There, again, patterns of all kinds are destructive to the effect of decorative furniture, although, when there are neither pictures on the wall nor ornamental objects around, paper of delicate and appropriate design is an excellent substitute—and comparatively a cheap one—for more expensive means of pleasing the eye and satisfying the taste; but do not indulge in both, for each will be neutralised by the other. In short, a room furnished with incongruous objects, without regard to harmony and arrangement, however admirable they may singly be, is like a room full of people talking at once, making the whole mere jargon and din, even though each individual speaker may be an impersonation of wisdom itself.

George B. Pelham, a prominent New York architect who superintended the erection of the Government buildings at Ottawa, is dead.

Mr. Sanford Fleming, of Ottawa, the well-known Civil Engineer, has generously donated \$5,000 to the Canadian Institute at Toronto.

Mr. H. Saxon Snell, of London, England, architect of the new Victoria Hospital, Montreal, spent a day or two in visiting the General Hospital and other important structures in Toronto, recently.

MANUFACTURES AND MATERIALS

MANUFACTURE OF PLAIN AND ORNAMENTAL PRESSED BRICK, HOLLOW BUILDING BLOCKS, ETC.

By R. C. PENFIELD.*

THIS subject to which we have been assigned, comprises more than can be properly treated in a paper suitable to be read before this Association. We will therefore drop out the ornamental pressed brick portion and so much of the hollow building block part, as should be treated from the stand point of hand made terra cotta, and confine our remarks exclusively to such blocks as can be made on a dry moulding, stiff clay machine or press. Hollow building blocks is certainly a dry subject, and it is doubtful whether we will be able to demonstrate that it has merit either from an economic or an artistic stand point, to give merit to our effort.

Is it not passing strange, if there is anything in it, that it has gone so long undeveloped, or is it one of the lost arts or useless arts? So far as we know, the use of hollow building blocks for general building purposes has never been fully developed in this country. It is true at Cuyahoga Falls, buildings and foundations have been constructed of vitrified hollow blocks of a dark brown or stone ware glaze appearance, that gives one the impression at once of an old jail, and is a failure from an artistic stand point. The Pioneer Fire Proof Construction Company of Chicago, have an office built of that kind of material, that is a good effort in that direction and has more artistic merit. There may be other buildings in different portions of our country, but the journals devoted to this art do not, and have not shown how hollow blocks of burned clay can be utilized for general building purposes. Our experience in their manufacture and in the construction of buildings connected with our manufacturing establishment, has demonstrated the fact that blocks do not want to be made too large. The first building we constructed was made of blocks 8x8x12 inches, with only one partition through the centre of the block.

One difficulty with the size of this block is to make them long enough to give the proportion. A block ought to be made three times as long as it is thick to be any where near the relative proportion of a brick. This would require an eight inch block to be 24 inches long. Any one conversant with the manufacture of tile will readily concede the difficulty in making blocks that long, and have them straight. The loss in the manufacture of blocks that size and length, would be much more than smaller ones and more inconvenient to handle, both for the masons as well as for the manufacturers. For general building purposes, the blocks ought not to be more than 12 inches long on account of the openings, and then the architects should space the openings with reference to the length of blocks as nearly as possible. We have established as a proper thickness for a standard block, 5 inches. This is equal to two courses of brick, and makes it convenient to make a bond where brick are required as in chimney breast, etc. Having established the thickness, the relative length naturally follows. For proper proportion, the most pleasing effect will be had if this block is 15 inches long, and it might be well for first-class jobs to make the front blocks that length. This involves another difficulty, and that is making the corner blocks. In every instance the corner blocks are made with what we call a side cut die and cutter, and as the ends of the blocks must be one half the length, this would require a block 7½ wide by 15 in length. This is a large block to make, but it can be done with no particular trouble. The difficulty is in loss by the ordinary accidents of manufacture, and the loss of one large block is greater than a small one, and the liability to loss is greater with the large than with the small. The rule should be not to make blocks longer than 12 inches, and then the corner block will have to be only six inches wide to make the bond correct. About three grades of blocks as to width will accommodate any building from a cheap cottage to a mansion. To commence with a cottage, we would make a block 5x8x12, corners 6x5x12, holes running vertical, side cut. A wall constructed of one course of these blocks would be equal in strength to an 8-inch brick wall, and the plaster can be placed on the hollow wall direct, and save cost of lathing it, etc. Now the next combination for heavy or thicker walls, can be made by using in connection with these blocks, a block 4x5, and if it should be desirable to make an air space, these blocks can be made one or two inches apart, using the 4x5 for the inside courses, and alternating every six courses, putting the 8-inch block on the inside and the face block 4x5 for the front. This will make a 13 or 14 inch wall with an air space of 2 inches if desired, or a 12-inch wall without the air space, and in either case, a wall bound thoroughly and very strong. With these two sizes of blocks for stretchers, a number of combinations can be made. Should it be desirable to make a 16-inch wall, two courses of 8-inch blocks can be used and occasionally a 4 inch-block used to tie courses. Four dies are all that are required to make any of these combinations. One for corners 6x12, this is a side cut die, with shell 1½ or 2 inches thick, one for the window and door jamb, 6x6, cut 5 inches long, same as corner blocks to correspond with the thickness of the stretcher. The walls of these blocks or shell should be 1-inch thick, more or less according to the quality and strength of the clay. The corners are side cut blocks, and should have a shell as remarked above, not less than an

*Read before the Ohio Tile, Brick and Drainage Association.

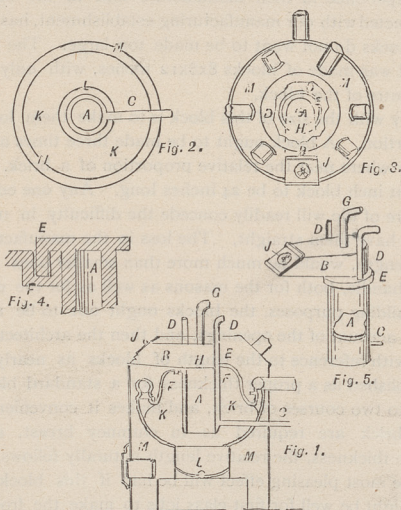
inch and a half in thickness because it is important to have a bed for mortar in raising the corners.

Now, gentlemen of the convention, you have a short but concise description of the coming building material of the country. If the details are followed, and the mason work well done with the blocks as above described, a cheap, durable, dry wall can be made that will far excel in beauty and cost an ordinary brick wall, but our theme is just begun. We have the subject only just blocked out. I have described only a plain smooth wall with no ornamentation, not even a round corner. When it comes to a question of art, the field before us is limitless. Varieties of mouldings that can be made on the face of blocks for special use as water tables, belting courses, cornices, trimmings around the windows, etc., etc., are too extensive for more than mere mention in a paper of this kind. Also beaded work, either coarse or fine or the two combined in the same block, or what is called in stone work Crandall finish. These and numberless other kinds of finish, furnish opportunities for the student of art to expend his best inventive skill in planning combinations for beautifying and ornamenting to a degree far beyond our present conception, and will at the same time add but a trifle to the cost of constructing, beyond the use of just such a plain, smooth, simple block. The cost of a mould is small for the manufacture of either plain or ornamental blocks, so that the manufacturer can afford, if he has to, almost any design at a trifling expense over a plain block. We have made no mention yet of the possibility of producing beautiful varieties for artistic effect, of the various combinations that can be made with brick or terra cotta work mixed in with the different varieties of building blocks.

RECENT CANADIAN PATENTS.

Combined Hot Water and Hot Air Furnace.

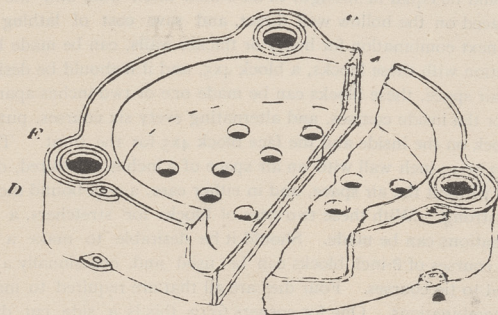
No. 30,670. William St. Croix, Toronto, Ont., dated 29th January, 1889.



Claim.—1st. The cylindrical coal feeder and water heater letter A, Fig. 5, combined in one arrangement, substantially as described above, and shown on the several figures of the drawings accompanying this specification. 2nd. The coal shute or feed box letter B, Fig. 5, arranged with the ventilator in the door thereof, letter J, with the slide H at the bottom thereof, and the gas escape G at the top thereof, all shown on figure. 3rd. The gas tight joint or attachment of the cylinder to the furnace, as above described and shown in the drawings, letters E and F, Fig. 4, also the mode of placing the coal feeder, and water heater A into the furnace without fastenings, so that the same may be lifted out of the furnace and replaced again at pleasure without difficulty or injury to the furnace. 4th. The combination of hot water and hot air generators in one furnace, as shown, and described in this specification and in the accompanying drawings, all substantially as set forth.

Sectional Hot Water Boiler.

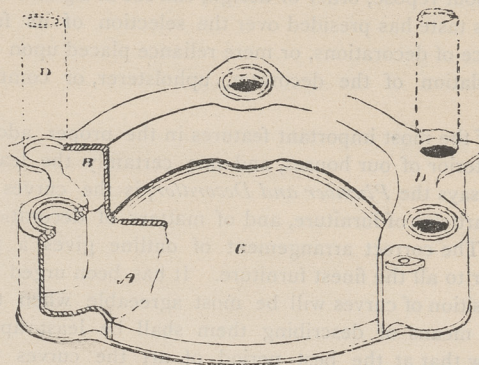
No. 30,781. Edward Gurney, Toronto, Ont., dated 14th Feb. 1889.



Claim.—1st. A section having its top and bottom plates arched inwardly, the vertical portion connecting the top and bottom plates being curved on a large easy sweep, substantially as and for the purpose specified. 2nd. A section having its top and bottom plates arched inwardly, the vertical portion connecting the top and bottom plates being curved on a large easy sweep, and a bead cast on the outer edge of the bottom of each section to overlap the section on which it rests, substantially as and for the purpose specified.

Sectional Hot Water Boiler.

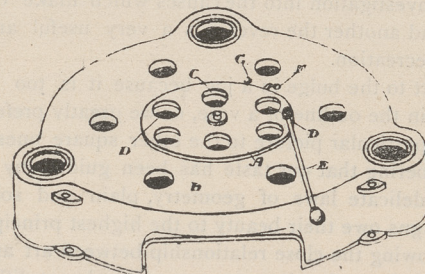
No. 30,782. Edward Gurney, Toronto, Ont., dated 14th February, 1889.



Claim.—1st. A hollow ash-pit section having a water-space formed in its bottom, and communicating directly with all the other water spaces in the boiler, and with the return pipe or pipes, substantially as and for the purpose specified. 2nd. A hollow ash-pit section having a water-space formed in its bottom, and communicating directly with all the water-space in the boiler, and with an extension chamber or chambers formed in the section, and having a hole or holes pierced in its or their crown to receive the return pipe or pipes, substantially as and for the purpose specified.

Sectional Hot Water Boiler.

No. 30,822. Edward Gurney, Toronto, Ont., dated 19th, February, 1889.



Claim.—1st. In a sectional hot water boiler, having a series of vertical smoke flues made in its centre, in combination with a disc-shaped damper pivoted in the centre of the section, and having holes pierced through it to correspond with the smoke-flues in the section, the whole being arranged substantially as and for the purpose specified. 2nd. In a sectional hot water boiler, having a series of vertical smoke flues D made in its centre, in combination with a disc-shaped damper A pivoted in the centre of the section, and having holes C pierced through it to correspond with the smoke-flues D in the section B, stops F and G extend above the section B, and a handle E attached to the damper A and extending to the outside of the section B, substantially as and for the purpose specified.

Hiram Walker & Sons, of Walkerville, intend starting a large brick industry near Kingsville, Ont.

The Imperial Portland Cement Company has been incorporated with headquarters at Montreal, and a capital of \$100,000.

A manager has been appointed to run the Bennett Furnishing Works at London, Ont., until a satisfactory sale can be effected.

The owners of the Madoc black marble quarry are to give their property a critical inspection with the view of resuming operations.

Messrs. Clare Bros., manufacturers of heating apparatus, etc., Preston, Ont., have recently been making important additions to their works.

The Toronto Radiator Company have lately purchased the large manufacture of the Toronto Stove Mfg. Co., and are adding thereto an extension of 66 feet.

It is said a company of French and Belgian capitalists has decided to establish an iron pipe factory in Three Rivers, Que., which will employ 700 or 800 men.

A new Asbestos company is issued in England with a capital of £40,000, to acquire and work four properties in South Garthby and Coleraine, Quebec. Alfred White of Quebec, is the vendor.

A company of Syracuse capitalists, with a capital of \$100,000, has purchased an inexhaustible granite quarry on Grindstone Island in the St. Lawrence. The granite is said to be of the finest quality.

The waste cuttings of cork are said to be used in England for the manufacture of bricks impervious to heat and dampness. The cuttings are reduced to powder and mixed with lime or clay and then pressed into bricks in the usual manner.

A simple way of approximately ascertaining the cost of a building is to "cube it out." This consists of first finding the number of cubic feet in the building—measuring from half way down the footing to half way up the roof—and multiplying by a figure which represents the cost of a single cubic foot. By figuring on buildings of which the cost is known, it is an easy matter to obtain the prices of the unit foot in different descriptions of buildings.