

# CANADIAN ARCHITECT AND BUILDER.

VOL. IV.—NO. X.

TORONTO AND MONTREAL, CANADA, OCTOBER, 1891.

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—THE—

## CANADIAN ARCHITECT AND BUILDER,

*A Monthly Journal of Modern Constructive Methods,  
(With a Weekly Intermediate Edition—The CANADIAN CONTRACT RECORD),*

PUBLISHED ON THE THIRD SATURDAY IN EACH MONTH IN THE INTEREST OF  
ARCHITECTS, CIVIL AND SANITARY ENGINEERS, PLUMBERS,  
DECORATORS, BUILDERS, CONTRACTORS, AND MANU-  
FACTURERS OF AND DEALERS IN BUILDING  
MATERIALS AND APPLIANCES.

**C. H. MORTIMER, Publisher,**

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64 TEMPLE BUILDING, MONTREAL.

### 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, will be continued until instructions to discontinue are received and all arrears paid.

### ADVERTISEMENTS.

Prices for advertising sent promptly on application. Orders for advertising should reach the office of publication not later than the 15th day of the month, and changes of advertisements not later than the 5th day of the month.

### 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 "Canadian Architect and Builder" is the official paper of the Architectural Associations of Ontario and Quebec.*

*The publisher desires to ensure the regular and prompt delivery of this Journal to every subscriber, and requests that any cause of complaint in this particular be reported at once to the office of publication. Subscribers who may change their address should also give prompt notice of same, and in doing so, should give both the old and new address.*

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THE Ontario Association of Architects have had two competitions with the object of securing a suitable design for an Association seal. The results in both cases have been unsatisfactory. Here was the opportunity for some of the younger men in the profession to distinguish themselves. It is to be regretted that no one with the necessary ambition and ability could be found to take advantage of it.

THE American Institute of Architects will hold its twenty-fifth annual convention in the city of Boston on the 28th, 29th and 30th of the present month. It is announced that a number of valuable papers have been prepared for the occasion. There will also be an interesting exhibition of architectural drawings under the direction of the Boston Chapter. The occasion will in all probability be marked by a large attendance.

It has been found for the present impossible to complete the tests of Canadian building stones recently undertaken at the School of Practical Science, Toronto, by the Ontario Association of Architects, owing to the incapacity of the testing machine. The authorities of the School have under construction a machine with double the capacity of the one at present in use. This machine, which will have a crushing capacity of 200 tons, is expected to be available within a month, when the series of tests will be completed, and the results in detail published.

ATTENTION is again directed to the CANADIAN ARCHITECT AND BUILDER'S competition for students of the Ontario and Province of Quebec Associations of Architects, which was announced in the September issue of this paper. It is earnestly hoped that a large number of students in the offices of members of both Associations will feel called upon to enter this competition and do their utmost to uphold the credit of their respective provinces. If this is done, the result will no doubt prove of much interest and value, and sufficiently encouraging to induce the holding of other competitions with a similar object.

A PERUSAL of the competitive advertisement columns of some of our contemporaries is occasionally refreshing (or depressing?). Here are two samples which are a little out of the ordinary type. Designs for a county jail in Wisconsin are wanted and the authorities "promise and agree to pay a reasonable price for plans and specifications which the committee may adopt." Possibly the ideas in regard to a reasonable price as entertained by the aforesaid committee will be very far from those of the poor deluded architects who may submit designs. A California school board offers a premium of \$100 for plans and specifications of a \$2,500 building. Truly, if a premium of 4 per cent. is offered for this amount of work the place must be an Eldorado for architects. But we hope no young Canadian will be tempted to go west on the strength of the offer.

THE City Improvement Board of Sydney, New South Wales, are of the opinion that "it should be compulsory for designs of buildings to be submitted to some competent body for approval, not only for æsthetic reasons and to secure some general harmony of character and design in contiguous edifices, but also to regulate the nature and class of buildings that should be permitted in particular localities." There is need for something to be done in this direction, not only in South Wales, but also in Canada. The practicability of carrying the proposal into effect may, however, be doubted. It would be difficult to secure

judges of design whose ability and fairness would not constantly be called in question, and equally difficult if such authorities did exist, to obtain their consent to occupy a position which would subject them to the ill-will of fellow citizens.

The *Inland Architect* is of the opinion that "the enforcement of safe building can only be done by making owners, architects, and contractors criminally liable for accidents which result from a violation of the principles of sound construction broadly laid down in a general building act. A few prosecutions of this nature vigorously carried out would do more for safe building than any number of inspectors it would be possible to employ, and would besides create a most healthy public sentiment on the subject." More than this, it would prove a strong incentive to architects and builders to possess themselves of the knowledge required to enable them to know when they were building safely. It is to be feared that under present conditions, guesswork too frequently takes the place of exact knowledge, and so long as no responsibility attaches to the results of ignorance, there will always be those who will refuse to take the trouble to gain the information which would fit them to properly fulfil their duties. The Ontario and Quebec Architects' Acts provide for the proper education of architectural students in future, but in the case of the builder, no such standard of proficiency seems likely to be required.

WITHOUT reflecting upon the faithfulness to duty of the Inspector of Buildings for the city of Toronto, it should be declared that the inspection is a farce. Under present conditions it could be nothing else. During the present year the building restrictions which formerly applied only to the central districts, have been extended so as to cover the whole city. Notwithstanding that the area covered by the by-law has thus been doubled, the Building Inspector is still expected single-handed to see that its provisions are complied with. Not only so, but he is saddled with other duties as well. The proper inspection of buildings in a large and rapidly growing city like Toronto, is in itself beyond the ability of a single individual to properly perform. As a result, the building by-law is being violated in all directions. There is great need for the placing of this important branch of the civic service on a more satisfactory footing. Owing to the resignation of the City Engineer, the organization scheme which it was that gentleman's intention shortly to submit for the consideration of the Board of Works will not be likely to see the light. It is desirable, however, that a substitute for it should be formulated before the opening of the building season of 1892.

THE architects of Toronto should take a firm and united stand in favor of an improvement in the quality of the brick manufactured for use in that city. The brick at present supplied is to a large extent lacking in hardness and evenness of quality. For work of any importance the brick must be selected, and some one detailed by the architect to examine every load as it is delivered to see that the standard is being maintained. In instances where this precaution was not observed, it was discovered that there had been sandwiched in between every two or three loads of brick of the required quality, a load of the soft variety. This lack of uniformity in quality is due to the fact that the brick are burned in temporary kilns, through the uncemented joints of which much of the heat evaporates. In New York, where the brick is uniformly hard, manufacturers erect permanent kilns, such as are used in this country by the makers of pressed brick. This method should be adopted by large manufacturers in the vicinity of Canadian cities. Their claim that they cannot afford the expense involved in the erection of permanent kilns is not well founded. The extra price they would receive for first-class material added to the expense of erecting and pulling down temporary kilns two or three times each season, would in a short time recoup them for the required outlay. It is not likely, however, that any improvement will be effected until architects absolutely refuse to accept any but the best material.

THE Department of Architecture in connection with the School of Practical Science, Toronto, under the direction of Prof. C. H. Wright, is entering under favorable auspices upon the work of the second year of its existence. There are nine students in

attendance as compared with five last year. Five of these are entering upon their course, three are in their second year, and Mr. C. E. Langley, of Toronto, having qualified himself by extra study, has passed into his third year. The results of the first year's work are regarded as being satisfactory, and the increased attendance gives encouragement for the future. The vacation work of the students bears evidence to the satisfactory character of the instruction imparted to them during their first year of study in this department. Mr. H. F. Ballantyne won the first year prize, presented by Mr. D. B. Dick for general proficiency in the first year in the Architectural Department. There are three good drawing rooms, capable of accommodating sixty students, and another is shortly to be added, together with private rooms for the professor, carpenter shop, model room, photographic studio and cement testing room. The lecture room will accommodate one hundred students. There is an excellent library containing many of the standard works on architecture, the sketches of the Boston Sketching Club, several useful volumes, remnants from the library of the Board of Architecture and Manufactures of Upper Canada, and the leading professional papers of Europe and America. The sum of \$500 was spent on the purchase of architectural books last year. The intention this year is to exceed this sum by some \$200. In addition to the library there is a department containing some 1,600 architectural photographs, ranging from ancient Egyptian to modern Gothic and ecclesiastical work. It is the intention by the aid of a stereopticon to enable the students to study these examples to the best advantage. The members of the architectural profession will watch the progress of the work in this department with the deepest interest and a desire to see its administration marked by the wisdom and liberality which will insure its continued prosperity, as well as the proper education of the succeeding generation of architects.

THE system of constructing public works by day labor instead of by contract, introduced in Toronto about two years ago, caught the popular fancy. The daily press strongly supported the new departure, and congratulated the citizens upon their escape from the power of unscrupulous contractors to rob them of their hard-earned contributions to the civic treasury. The opinion was expressed in these columns that the system would not prove as satisfactory as its advocates anticipated. Letters were obtained and published from the city engineers of leading American cities showing that in all of them the system of constructing public works under contract prevailed, and was regarded as being most satisfactory. An experience of two years has demonstrated the correctness of this position. One of the daily papers which most strongly supported the day labor method when first introduced, remarked the other day: "It is not clear that the city gets better work, and it is certain that the day labor method is more expensive than the contract system. The work is now being submitted to the test of a financial comparison with the results of the contract system, and reports indicate that for material and workmanship, sewers and road-ways constructed by day labor do not compare too favorably with works done by contract under strict supervision." In support of this view, a jury a few days since awarded damages to the amount of \$1,800 to a workman who brought suit against the corporation for compensation for injuries sustained while in the city's employ owing to the attempt to do work too cheaply by omitting to provide necessary safeguards for the lives of workmen. While admitting that many contractors are not what they should be in the matter of honest dealing, it is unfair to include all, or even a majority of them, in this category, and a proper system of inspection should be sufficient in all cases to guarantee the fulfilment of the contract in accordance with the specifications. There can be no doubt that the experience gained by contractors who have been engaged for years on public works, coupled with the personal interests they have at stake, will enable them to perform such works at a minimum of cost which it is impossible for the city by the day labor method to achieve.

IT is to be regretted that a conflict of authority should have arisen between the City Council of Toronto and Mr. W. T. Jennings, City Engineer, resulting in the latter's resignation. It is admitted on all sides that Mr. Jennings has given the city good service. The point in dispute was whether the Council,

in the by-law under which Mr. Jennings assumed office, delegated to him the authority to control the salaries of the officials of his department. By-law No. 2534 fixing the duties and powers of the engineer provides that he shall have power to appoint such officers and clerks as he may from time to time consider necessary for the proper and efficient working of his department, and that he shall have power to suspend, dismiss and reinstate any officer, servant and employé of his department, and from time to time to prescribe their respective duties in lieu of or in addition to any duties prescribed by any statute or by-law. Sub-section 5 of the 26th clause gives him power "to appoint such foremen and inspectors and employ such labourers as in his opinion may be necessary to efficiently carry out any work under his control; and all such inspectors and foremen shall be paid such wages as shall be determined upon by him, subject to the approval of the Committee on Works." This clause is the only one in the by-law which gives the engineer authority to determine the salaries of his assistants, and this authority applies only to inspectors and foremen, and is to be exercised subject to the approval of the Committee on Works. Mr. Jennings seems therefore to have proceeded on a false assumption in claiming that the right to control salaries was conferred upon him at his appointment. On the other hand, the fact that the by-law does not confer upon him this authority, rendered unnecessary the passing by the Council of the amending by-law. It is unfortunate that Mr. Jennings should have written the letter he did to the Council, as it served to accentuate the difficulty. Had a friendly conference taken the place of that letter, no doubt the matter could have been satisfactorily adjusted. As it was, arrangements were proceeding satisfactorily for an amicable settlement when the Board of Trade held an indignation meeting on Mr. Jennings' behalf, which could have had no other effect than to confirm the attitude of those who had placed themselves in opposition to the stand which that gentleman had taken. One of the aldermen, who was also a member of the Board of Trade, was refused a courteous hearing when he essayed to make an explanation at that meeting of his course of action in the Council. In the light of these circumstances it cannot be surprising that the Council should have resented the action of the Board of Trade by voting down all proposals for a reconsideration of the matter. There was force in the remark of one of the aldermen, that while the members of the Board of Trade decline to serve the city in the capacity of aldermen, they have shown their willingness to dictate what the conduct should be of those whom the citizens elected to represent them. If the Board is not prepared to do more than find fault, it will best serve the public interest by confining its attention solely to commercial affairs. The important duty now devolves upon the Council of appointing a successor to Mr. Jennings. Matters of great moment require attention, and forbid that the appointment should be delayed longer than is absolutely necessary. On the other hand, the very importance of the matters to be entrusted to his hands demands that the person to be appointed should be possessed of the character, education and experience which are necessary to enable him to exercise wise administration. Prior to entering upon office, a clear and definite understanding should be arrived at touching his duties, authority and relations to the Council, such as will prevent the recurrence of misunderstandings like the present one.

#### TORONTO ARCHITECTURAL SKETCH CLUB.

ON Monday evening, October 5th, was held the annual meeting of this club in its new rooms, cor. Yonge and Gerrard streets. There was a fairly large attendance and much enthusiasm.

After the minutes of the last annual meeting had been read and confirmed, the treasurer, Mr. A. C. Barrett, presented his report, showing that the columns of the cash book were like two forces in equilibrium—pretty evenly balanced. This is very satisfactory, considering the many expenses the Club has had during the year.

The retiring President, Mr. S. G. Curry, made a few remarks, giving a short description of the work accomplished, and urging the necessity of the members putting forth a renewed energy. He drew attention to the fact that if members expected architects and others to continue preparing for them papers, they must make a point of keeping up the attendance, as it could not be expected

that busy men would give up valuable time if it were not appreciated.

After several proposed changes in the constitution had been adopted, the nomination and election of officers was proceeded with, the following being elected:—President, Mr. J. A. Pearson; Vice-President, A. C. Barrett; Secretary, C. H. Acton-Bond; Assistant Secretary, Murray A. White; Treasurer, T. R. Johnson; Directors, C. J. Gibson and E. B. Jarvis.

The Club has now very comfortable quarters, which, with a little judicious decorating, will be a credit to so artistic a body. Visitors will at all times be welcome, a hearty invitation being extended to all who are interested in the aims and objects of the Club.

#### OUR ILLUSTRATIONS.

PHOTOGRAVURE PLATE—ST. PAUL'S CHURCH, BLOOR STREET EAST, TORONTO.—MESSRS. EDWARD AND GEO. K. RADFORD, ARCHITECTS.

This church was erected about the year 1856. The Building Committee, which was composed of Messrs. W. A. Baldwin, J. O. Brown, Rev. Saltern Gibbons and Thos. Henry Ince, invited competitive designs from the local architects. In response to the invitation, four or five designs were submitted. The one now published, by Messrs. Edward and Geo. K. Radford, was accepted, and the building erected in accordance therewith. The Messrs. Radford, who came from England, resided but a short time in Toronto, and carried out no other work of importance in this country.

BROCK MEMORIAL CHURCH OF ST. SAVIOUR, QUEENSTON, ONT.—S. H. TOWNSEND, ARCHITECT, TORONTO.

ALTERATIONS TO WAREHOUSE ON ADELAIDE STREET WEST, TORONTO.—DENISON & KING, ARCHITECTS, TORONTO.

DETAILS OF CHOIR STALLS, SOUTH SIDE ST. PAUL'S CATHEDRAL, LONDON.

These details were drawn by Charles Wm. Baker, and were awarded the silver medal of the Royal Academy.

#### CHURCH ARCHITECTURE.

MR. JOHN WILLS, F. S. Sc., architect, of Derby, Eng., who is a delegate to the Methodist Ecumenical Conference at Washington, D. C., addressed a meeting of Methodist ministers in Toronto recently on the subject of "Methodist Church Architecture." He also exhibited a number of his own drawings from which churches have been erected in different parts of England. Mr. Wills recommends that there should be at least four means of egress for all large churches. He thinks the Gothic, properly and carefully adapted to modern forms of worship, the most appropriate style of church architecture. He is of the opinion that the situation of the organ and choir should be either behind the minister or in the same end in one of the transepts. Concerning methods of heating, his preference is for the hot water low pressure system.

#### PUBLICATIONS.

The Adamant Manufacturing Co., Toronto, have issued a neatly printed pamphlet explaining the nature and advantages of their new plastering material.

We are indebted to Mr. William Mueller, bookseller and importer of works of art, 695 Broadway, New York, for a copy of "Academy Architecture and Annual Architectural Review," for 1891, edited by Alex. Koch, architect, and containing a selection of the most prominent architectural drawings hung at the Royal Academy Exhibition, and a review of interesting architectural subjects carried out or designed during the last few years in England and abroad.

In the November number, the *Cosmopolitan* will publish a series of letters written by Gen. W. T. Sherman to one of his young daughters, between the years 1859 and 1865 and covering most of the events of the war of secession. These letters present graphic pictures of a great soldier amid some of the stirring scenes in which he was a giant figure, and in them the patriotic spirit of the Federal general is seen to have been most attractively tempered by a strong affection for the Southern people.

#### PERSONAL.

On behalf of a Canadian syndicate invited by the government of Russia to tender for the construction of the eastern part of the Siberian railway, Mr. Geo. A. Keefer, the well known civil engineer of Ottawa, lately set out for the land of Russian exile. Mr. Keefer's experience in connection with the construction of the C.P.R. through the Rocky Mountains, well qualifies him to serve the interests of his present employers.

### PROF. BOVEY.

PROF. Henry Taylor Bovey was educated at a private school in England, and at Cambridge University. On entering the University he competed for and obtained an open scholarship. On graduation he took a high place in the mathematical tripos, and shortly after was made a fellow of Queen's College. Having decided to adopt the profession of engineering, he joined the staff of the Mersey Docks and Harbour Works. He was shortly appointed one of the assistant engineers on this work, and in this capacity had charge of some of the important works then in progress.

In 1877 he was appointed Professor of Civil Engineering and Applied Mechanics in McGill University, Montreal. The engineering courses in the University were at that time managed as a department of the Faculty of Arts, and were without buildings or equipment. In 1878, however, a department of Applied Science was constituted, and Prof. Bovey was elected its Dean. The magnificent endowment of the late Mr. Thomas Workman and Mr. W. C. McDonald have afforded Dean Bovey an opportunity for the display of his great executive ability and untiring energy.

Much of the success of the Canadian Society of Civil Engineers is without doubt due to Prof. Bovey's labours as its Secretary, which position he occupied continuously from the foundation of the Society until within the past few months, when increasing college duties compelled him to resign the office. Prof. Bovey is a Fellow of the Royal Society of Canada, a member of the Institution of Civil Engineers, as well as of several other engineering societies.

### PASSING EVENTS.

"It is a singular fact," said a well-known Toronto plumber to me the other day, "that not one builder in twenty appears to know what the proper dimensions are for stationary wash tubs. It is still more singular that they are continually applying to me for the information. One would suppose a carpenter would know more about the matter than a plumber. In order to be in a position to answer my numerous enquirers on this subject, however, I have jotted the information down in my note book, and here it is: Inside measurements—15 inches across bottom, 23 inches across top, 15½ in. deep and 25 in. in length for each compartment." Thinking that possibly the information might be of service to many readers of the ARCHITECT AND BUILDER, I give it for publication, trusting also that by doing so I shall assist my friend, the plumber, to save a portion of his valuable time.

\* \* \*

Builders and others intent upon disregarding the law which compels a permit to be obtained previous to the erection of any new buildings, occasionally get an opportunity to laugh at the expense of the Building Inspector. Such an individual made application at the Inspector's office the other day for a permit to erect a dwelling, and having obtained it, turned round and coolly informed the official that he had just completed the house and moved his family into it.

\* \* \*

I wonder how many of our city architects are thoroughly familiar with the provisions of the local building ordinance? A member of a leading architectural firm learned for the first time the other day, of the existence of a provision in the local by-law prohibiting the use of certain materials in partition walls, notwithstanding that the by-law has been in operation for two years. Architects will save themselves and their clients time and expense by acquainting themselves with the details of the regulations governing the construction of buildings.

\* \* \*

*Appropos* of your editorial remarks on the growth of incandescent electric lighting in Toronto, a prominent official of the C.P.R. Telegraph Company directed my attention a few days ago to a new business building in course of erection on a leading thoroughfare. "Do you know," said he, "that there isn't a gas pipe to be found in that building? It is, as you see, wired throughout for electric lights. The intention is to depend entirely upon the incandescent light. I regard this as a striking illustration of the rapid

strides which the electric light is making. Two years ago, no architect or owner of a building would for a moment have considered the question of dispensing with gas."

\* \* \*

A Montreal architect remarked to me the other day that architectural students in Quebec are at a disadvantage as compared with students in Ontario. Being asked in what particular, he pointed to the use of the dead languages as being one serious drawback and also to the fact that well-equipped free public libraries, such as the one in Toronto, are not at the disposal of the students of Quebec. There is no doubt some foundation for this view of the case, and consequently the greater reason to hope that the Quebec Association of Architects will exert itself to the utmost during the approaching winter to provide such instruction for the students as shall, to a large extent at least, make up to them the loss sustained in the direction referred to. The students should scarcely need to be reminded that upon the extent of their own efforts will most depend their advancement.

PASSERBY.

### MONTREAL.

(Correspondence of the CANADIAN ARCHITECT AND BUILDER.)

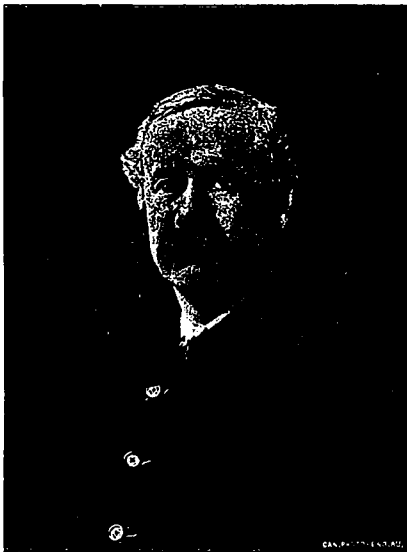
A MEETING of the Council of the Ontario Association of Architects and students of architecture was held in the rooms of the Association on the 9th inst. Mr. F. X. Berlinguet presided. The principal business before the meeting was to make arrangements for the instruction of the students during the coming winter. Messrs. Taylor, Raza, Hutchison and Dunlop were appointed a Committee to arrange a programme, which should include a series of lectures, and if possible, classes in architecture. The success of the undertaking will depend largely upon the students themselves. If they show their appreciation of the efforts which the Association is making for their benefit, by being present at the lectures and classes whenever it is possible for them to do so, satisfactory results are certain to follow.

A strong feeling seems to exist here in favor of a Dominion Association of Architects, and it is not improbable that at the next meeting of the Ontario Association a deputation from this province will be on hand to confer with the members concerning this most important subject.

Mr. Hadrill, the Secretary, reports that upwards of \$175,000 has been subscribed for the erection of the new Board of Trade building. It is expected that the full amount required will be secured shortly, and that construction will begin early in the spring.

The practice of proceeding with the erection of buildings without complying with the by-law which provides that a permit must first be obtained from the office of the Inspector of Buildings, prevails largely in this city, as in the cities of Toronto, Hamilton and elsewhere. During the past week this practice of violating the law led directly to the death of a workman named Theodore Pouliot, employed on a building in course of erection by a contractor named Elzear Chenet, at 116 Desrivieres street. Chenet drew the plans for the building himself, and went on with construction without a permit. One side was constructed of planks three inches thick, laid horizontally one above the other and tongued and grooved, supported only by a post at each end. Under the weight of the last storey this wall bulged out at the center near the foundations, and the structure collapsed, killing Pouliot as stated. Mr. Lacroix, the Inspector, testified at the inquest that owing to a defect in the by-law persons intending to build were not required to submit plans of the proposed building, but only a general description, and that while Chenet should have notified him three days before the foundations were commenced, he did not do so until two days after the roof was on. It was shown that the contractor had obtained a blank form which he should have filled in and returned to the Inspector's office before proceeding with the work, but which he did not so return. Because this form was not handed in, the Inspector concluded that work had not been commenced. The jury brought in the following verdict: "We find that the collapse of the house No 116 Desrivieres street on Friday evening was due to bad workmanship and the want of experience on the part of the contractor, Elzear Chenet; moreover, we censure the Building Inspector for having given permits without knowing if the building had been started or not." Is it not time that a severe example was made of those who wilfully disregard the city building ordinance? It is also clearly desirable that all persons proposing to build should be compelled to submit plans for the approval of the Inspector of Buildings.

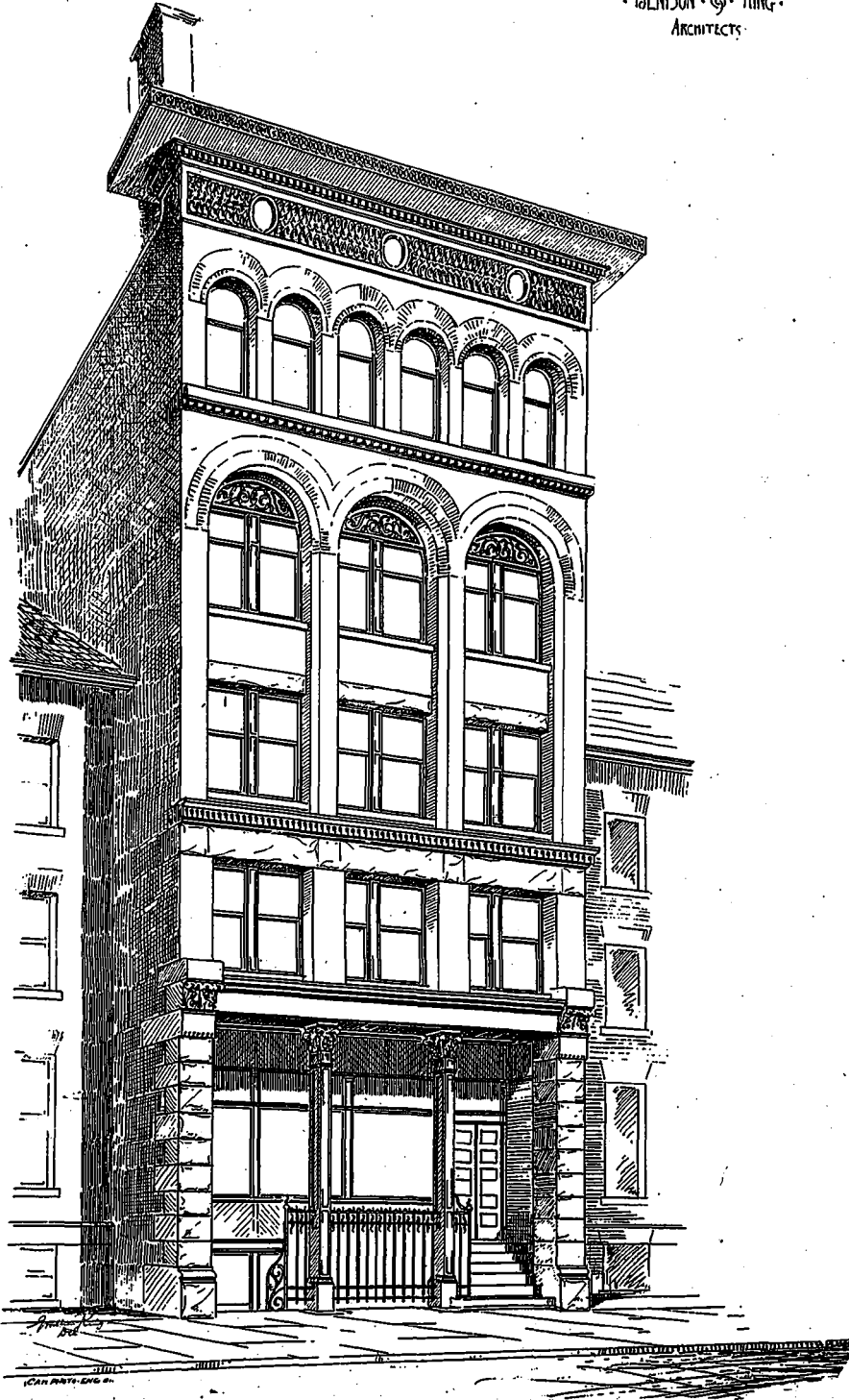
The Roads Department has expended thus far \$355,271. out of a total appropriation of \$406,642, leaving a balance in hand of \$51,371. In addition there have been large expenditures for permanent pavements, the funds for which have been secured by special loan.

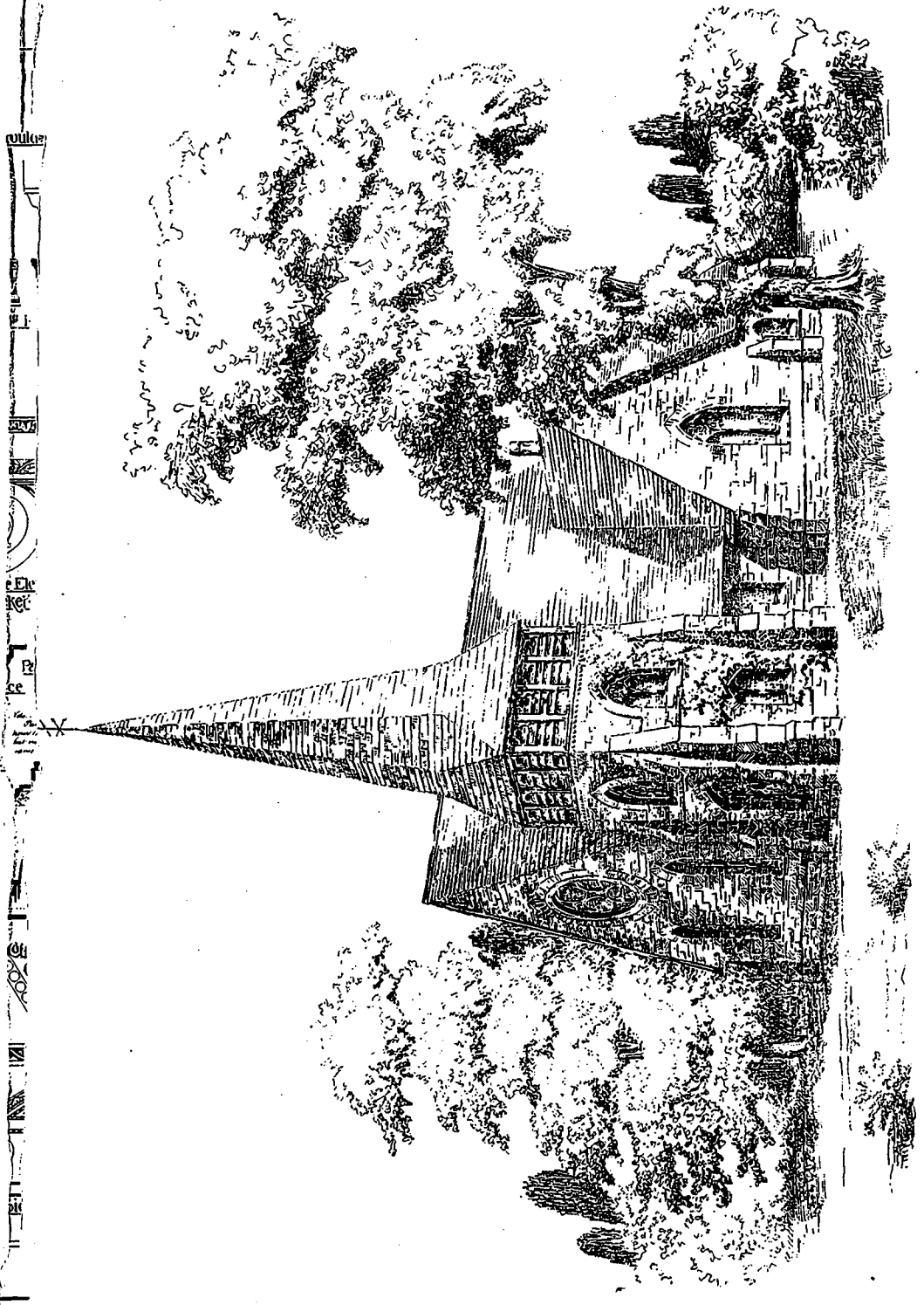


PROF. BOVEY.

Alteration & Addition to 116 Adelaide St. W  
TORONTO.

DENISON & KING  
ARCHITECTS.

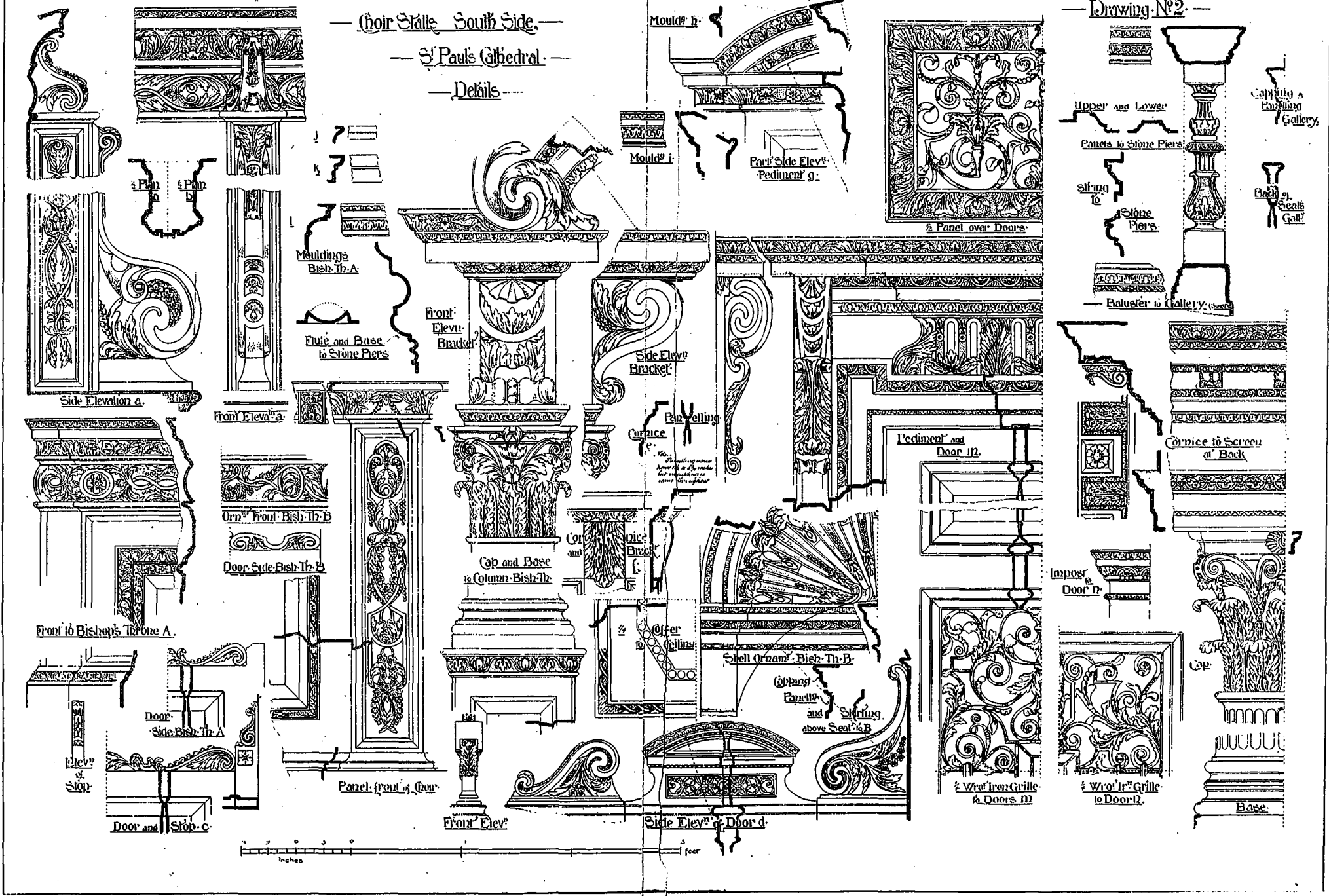




ROYAL ACADEMY SILVER MEDAL AWARDED CHARLES W. BAKER

Choir Stalls South Side.  
St Paul's Cathedral.  
Details

Drawing No. 2





ST. PAUL'S CHURCH, BLOOR ST. EAST, TORONTO, ONT.

SUPPLEMENT TO  
CANADIAN ARCHITECT AND BUILDER  
VOL. IV., No. X.

MESSRS. EDWARD AND GEO. K. RADFORD  
ARCHITECTS



### "CANADIAN ARCHITECT AND BUILDER" STUDENTS' COMPETITION.



WITH the object of promoting a feeling of friendly emulation on the part of students in the offices of members of the Province of Quebec and Ontario Associations of Architects which should result in improving the skill of the young men thus engaged, the publisher of the CANADIAN ARCHITECT AND BUILDER invites competitive designs for a suburban cottage to be occupied by a young man doing business daily in the city, owning the lot, possessing \$2,000 in cash and having an income of \$1,500 per annum.

The cottage is to be erected on an inside town lot having a frontage of 75 feet, a depth of 150 feet, and situated on the west side of the street.

There is required in the way of accommodation a parlor, small library, dining room and kitchen; cellar, suitable for heating apparatus and storage of fruit and vegetables.

On the first floor there are to be four bedrooms and bathroom. The attic is to contain a servant's bedroom and store room.

The materials to be used shall be brick on a stone foundation.

There is no sewerage or water supply systems in the town, and the owner will have to dispose of all waste in the most sanitary manner, avoiding contamination of the soil from which he has to draw his supply of water.

Competitors are required to submit plans of the various floors, two elevations, unless accompanied by a perspective, when one will do.

Drawings must be made on sheets of heavy white paper or bristol board, 14 x 20 inches in size, and must be drawn sufficiently coarse to allow of their being reduced to one-half the above size. Drawings must be made in *firm, strong lines*, with *pen and black ink*. No color or brush work will be allowed. Each drawing must be marked with the *nom de plume* of its author, and the author's name, *nom de plume* and full address must accompany each drawing sent in. Competitors must also give the names of the architects in whose offices they are employed.

Drawings must reach the office of the CANADIAN ARCHITECT AND BUILDER, 14 King St. west, Toronto, not later than the 5th day of November next.

The right is reserved of publishing any design sent in. All drawings will be returned to the authors within a reasonable time after the competition is decided.

The first premium will be \$15; second, \$5; third, one year's subscription to the CANADIAN ARCHITECT AND BUILDER. A premium of \$5 will be given for the best perspective sent in. The decision as to the respective merits of the designs submitted will be made by Mr. Thos. Fuller, chief architect, Department of Public Works, Ottawa, which decision will be final.

This competition is confined to students practising in the offices of members of the Province of Quebec and Ontario Associations of Architects.

### TO CORRESPONDENTS.

If the correspondent who sends us an enquiry signed "Subscriber" will comply with a well known journalistic rule by forwarding his name and address (not for publication), his question will receive attention.

A great deal of ingenuity is being expended upon machines and devices for sawing stone directly out of the quarry, and while thus far no positive success has been achieved, several machines are so near it as to suggest that the time is not far off when the result will be reached. Success would revolutionize and greatly reduce the expense of quarry working, and this in a time when there is so much competition in building materials, many of which are displacing stone, owing to superior cheapness in first cost, would be a boon to the quarry interests. The channeller, however, as yet stands as the only practical every-day quarry machine, but invention is after it with an energy that bids fair to be successful in no great time.

### SPECIAL NOTICE TO CONTRACTORS.

THE special attention of builders and contractors is directed to a series of articles to be published in the "CANADIAN ARCHITECT AND BUILDER," and which are being prepared by a properly qualified quantity surveyor, with the object of instructing master builders and contractors in the methods of taking off quantities and arriving at a true estimate of the cost of erecting various kinds of buildings.

Designs and specifications of a dwelling, church, store, public building, etc., will be published, and practical illustrations given of the method of arriving at the quantities of materials pertaining to each of the several trades.

The value of this information to every contractor will be at once apparent. It will serve to replace the hap-hazard methods of estimating at present largely practiced, and which are responsible for many of the failures in the building trades, by a system which can be relied upon as being accurate.

This series of articles will be commenced in the CANADIAN ARCHITECT AND BUILDER for November, and will probably extend over a period of from one to two years.

For the usual subscription price, \$2, the CANADIAN ARCHITECT AND BUILDER will be sent to new subscribers from November of the present year to the close of 1892.

Every contractor who desires to profit by the information given in this series of articles should at once become a subscriber.

### THE BUILDING TRADES IN MODERN PRACTICE.

BY GEORGE H. BLAGROVE.

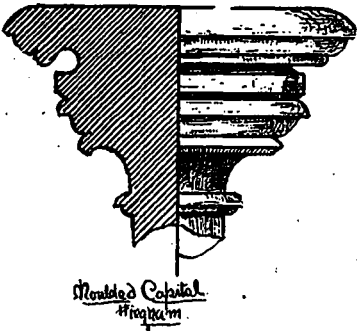
THE different densities of building materials have been studied with reference to the weight of their materials, their resistance to crushing, and their power of absorbing water. We frequently employ a harder and denser species of bricks in foundations than elsewhere, but beyond this there are few attempts made to dispose of the materials of a building according to their density, for structural reasons. If materials of different densities are found in various parts of a building, it is usually with regard to their external appearance that they are so arranged. Yet it would not be difficult to design a large building in such a manner that the weight of its materials should be diminished towards the top, not so much by reducing the thickness of its walls as by the employment of lighter materials in their construction, thus combining the advantages of diminished weight with those of stational stability. In damp situations, the denser materials are generally preferred on account of their non-absorbent character, but the reason for this preference disappears when the outer surface is vitrified or otherwise rendered impervious.

Hollow walls, for the exclusion of damp, allow us to vary our materials on the interior and exterior, while the air-space serves for protection against changes of temperature. If we build one section of our hollow wall of substantial thickness, the other being only a half-brick or thin stone casing, and the two being connected by means of galvanized iron bonding cramps, the question arises whether the greater or lesser thickness should be placed outside.

It has been maintained by some that the greater thickness should certainly be placed on the outside, because it allows less damp to find its way into the cavity, such damp being quickly evaporated by the warmth of the dwelling. On the other hand, it has been pointed out that under such an arrangement the greater section of the wall must be permanently charged with damp, with disastrous results to any woodwork connected with it, and that if the cavity is to be dried by the warmth of the dwelling this can only have the effect of drawing the damp inwards, to the detriment of health and the destruction of wall paper. It is contended that these evils are avoided by placing the smaller section outwards, where, if it is the sooner penetrated by damp, it is the sooner dried in warm weather. Some are in favor of ventilating the cavity, for the purpose of keeping it dry, while others contend that this at once destroys the advantage of protection against rapid changes of temperature. It has often been found, however, that the cavity in a hollow wall, when it has no outlet, contains an accumulation of moisture, which gradually soaks through the inner section to the interior of the building. The cavity, if not ventilated at top and bottom, should have outlets for moisture at the bottom; and some persons go so far as to require that a cement splay be formed at the bottom of the cavity to throw the accumulated moisture outwards. It is certainly a good plan, where doors and windows occur, to introduce sheet lead at the head of the opening, the lead being turned up on the inside and down on the outside, so as to afford protection to plates and linings.

As to the difference in cost between solid and hollow walls in brickwork, it has been calculated that where the inner and outer sections and the intermediate cavity are each of the same width, there is a saving of one-third in the number of bricks and one-half in mortar. The cost of cramps, or any other special means of bonding, must be added, and as the resistance to thrusts, the resistance being augmented by 20 per cent. in weight over brickwork. We have a substance which precludes damp more effectually than most kinds of stone, and which enables us to cope most satisfactorily with the modern increasing demand for rapid execution in building. We cannot urge much in favor of the external appearance of concrete walls, but with *beck and terra cotta* quoins, copings, window dressings and other accessories, there should be ample opportunity for the production of artistic effects. One of the objections raised against concrete buildings has been that they are difficult to pull down. This objection may commend it to the attention of those who will regard it rather as an advantage than otherwise. —Specialties.

## PROPORTION.



THE whole secret of design in architecture may be summed up in the terms Proportion and Expression, for the differences which mark off one style from another are those mainly derived from the form and

proportion of the openings, says *The Building News*. Professor Banister Fletcher, in his opening address to students of architecture at King's College, very appropriately alluded to the subject of proportion, which he illustrated by taking the openings of Somerset House, and by showing by model the effect of first a doorway of half its width in height, next making it a square opening, then adding one-third of the width to the height, and lastly, making the height twice the width.

Though the low opening may be really high enough for a doorway, the mind naturally reverting to the human figure as a standard of proportion, or, to the "fitness" of things, at once condemns the proportion as bad for a doorway. We sometimes, it is true, see wide entrances to the pits of theatres, drill halls and warehouses; but they invariably look out of proportion—that is, they appear awkward and offensive to our sense of fitness. Even in some Queen Anne houses we have seen doors of about a square, which looks contrary to our standard, because we naturally recall to the mind the human proportions, though, as a matter of actual use, the wide opening may be an advantage in getting in or out large pieces of furniture. The manner of teaching proportion which the professor adopted, has the merit of ocularily demonstrating one of the essential principles of design, for there are many people who imagine that a few inches more or less in the width of a door or window make no difference whatever. The same disregard, or ignorance, of a pleasing proportion is seen in the planning or selection of rooms, as if it made no difference whether the room was square or oblong, and that furniture of a certain size and shape could be made to look equally as well in a square room as in an oblong room. The window, like the door, has its own pleasing proportion. We can widen a window, as Prof. Bannister Fletcher says, but we can easily spoil it by the operation unless we take care to preserve the unit of proportion by sub-dividing the width by mullions, as in a gothic window, or by bringing the eye to rest on proportion of one of the panes. But it is absolutely essential to preserve some unit or individual part in a wide window, or it would be quite as offensive as a wide doorway.

The lesson of proportion need not stop at windows and doorways, it can be applied not merely to plans of apartments and their heights, but to the art of composition itself. For example, Prof. Fletcher might have shown that into his first illustration of breaking up a plain building front into parts proportion enters. If, for example, we take a long, straight facade, perfectly flat of blank wall, or with windows in it, equally distributed, we may have a proportion that offends by its length and monotony. But break it up by projecting or recessing certain parts, say the two extreme ends and a wide centre, and the proportion of the whole is greatly improved, for although not an inch of height has been added the eye is arrested by the three individual parts into which the whole facade has been divided, and the extreme length, being broken by oblongs of the contrary direction, is rendered less fatiguing to the eye. By further dividing, or by making vertical lines, the proportions may be still more altered. The effect mainly due to the fact that the eye attends to the smaller individual parts instead of the whole. To take a concrete case, a continuous barrack front looks much longer than an equal length of houses forming a street of the same height, because each separate house being an upright oblong, arrests the eye, and the number of stories forms a scale to its real height. In design,

then, the value of proportion is in composing the individual parts or subdivisions by giving them the proper ratio of height to width, and so drawing the eye from the proportion of the whole mass to that of the individual parts. What better illustration of this can be found than in towers? We constantly hear people talk of the proportion; it is either said to be squat or too tall, referring unconsciously to a standard in their mind's eye, from which they cannot get away. Thus, for example, St. Paul's dome would look very squat after looking at a tower and spire like that of Salisbury, and many towers would look too short after seeing the Boston Example. The proper proportion of any particular tower can only be judged by the individual parts or stories of which it is composed. It may look exceedingly tall and disproportioned if the belfry windows are small, and a mere repetition in every stage, but by subdividing the height into stories of unequal height, and by making the openings small here, and large there, the proportions will be pronounced excellent. Therefore, proportion is not a matter of mass only, though, of course, we have to see our buildings through dense fogs sometimes, when they ought to look pleasing, but is chiefly to be studied in the smaller parts of design. Bad proportion in a window, a door or a fire-place, will always be an eye-sore in a room, however well proportioned it may be, the same want of pleasing ratio will spoil a wall paper, the panelling of a door or dado, or any ornament, though the eye in the latter cases would have to be more educated. The ordinary sense of fitness in proportion is, however, pretty general; and, roughly speaking, we may say, that it exists amongst people almost as strong as the sense of harmony or music. As a discordant note jars on the faculty of hearing so we find a glaring disproportion, or want of fitness, produces an unpleasant sensation on the mind.

Proportion is, however, not confined to ratios and dimensions; we experience its influence in the right proportion of mass to detail, of plainness to ornament, and these are quite as necessary to learn by those who are studying artistic kinds of expression. The value of models or illustrations in the designs of carpets, wall papers, decoration applied to furniture and metal work is apparent. We often see patterns offensively obtrusive and distracting, owing to the want of quiet surfaces or a due intermixture of ground and pattern; furniture full of unrestful twists and turns and carvings that distract rather than please; because the artist has not realized a sense of proportion between the plain parts and the ornament. These are things that can be taught by showing how much ornament can be placed on one part without overloading it, what surfaces or members should be plain, and which may be enriched. The whole question of ornament is one of "more or less." The amount of ornament on a surface must indeed be in inverse ratio to the height of relief. Thus every square quarter inch on a Benares brass bowl may be occupied with incised ornament without offence to the eye, for the lines are narrow and the relief exceedingly low; but in repousse work of massive relief in the same metal, anything beyond a simple device broadly treated is felt instinctively to be intolerably coarse. To teach applied design on rational principles, the student is in need not merely of examples in the art he is studying, but of demonstrations or models that will show him the most agreeable combinations. He should not be taught to copy furniture and decoration of various masters and styles, but be taught to realize for himself the due proportion between structures and forms of the plainest and most direct kind and the ornament that should accompany them. It is in these more extended ways we may learn the values of proportion in the arts of design, and not merely in regard to the heights and widths and openings, the proportions of columns and entablatures, and of apartments, which appear to be the only kinds of proportions that are recognized by the Classic revivalists.

## MAKING BLUE PRINTS.

According to the *Brickmaker*, the following formula can be used for preparing a quantity of blue print paper at once, and which can be laid aside to be used as wanted: Mix in one bottle a solution of two and one-quarter ounces of water to each ounce of citrate of iron and ammonia, and in another one ounce of red prussiate of potash to each eight ounces of water; these solutions if well corked will keep indefinitely. To use, mix one part of the iron solution with two parts of the potash just before using, and with a soft sponge flow over the surface of the paper a heavy coat and remove the superfluous liquid, stroking in one direction, dry the paper quickly and hang it in the dark. When dry it will keep well in a dark box, and will make clear, bright prints.



## PUBLIC WATER SUPPLIES IN THE PROVINCE OF ONTARIO.\*

BY WILLIS CHIPMAN, C. E.

It is now an acknowledged fact that in cities and towns without a public water supply and without a sewerage system, the death rate is higher than in the rural districts or in those cities and towns that have availed themselves of these evidences of civilization.

From the standpoint of the economist no town of a population of 1,000 people can afford to be without a public water supply for fire protection, as the interest on the first cost will be met by the decrease in insurance premiums, while from the standpoint of the philanthropist, the humanitarian and the medical health officer, no town should be without an ample supply of pure water for domestic purposes, and a system of sewers to carry away the water used and the wastes with which it will be burdened, to such point that no danger can arise from its disposal.

In Canada we find that the first public water supply of any importance was introduced into the City of Montreal by a private company in 1807. These works were sold to another company in 1816, to a third company in 1832, and eventually to the city in 1845. New works were constructed by the city in 1853-56.

The next city to introduce a water supply was St. John's, N. B., where in 1856 a company constructed works which were abandoned in 1849-50, when new works were built. In 1855 the city purchased the works.

In Toronto, water works were constructed in 1841 by a company which operated them until 1873, when the city purchased the works.

Halifax purchased her water works in 1861 from a company which constructed them in 1845-48.

These were the only works in Canada in 1850. In 1860 we had nine works, in 1870 ten, in 1880 twenty-nine, in 1891 the number of cities and towns supplied with water works is nearly one hundred, but in about twenty of these the supply is for fire purposes only.

We will now consider the water works of Ontario only.

In this Province about 30 per cent. of the water works are owned and operated by private companies, while the population served is probably not 15 per cent. of the total supplied. The average total family rate in Ontario is about \$20 per annum in works owned by municipal corporations and \$25 per annum where owned by a company. The cost of works in Ontario is about 35 per cent. less per family in private works and the charge 20 per cent. more than where works are owned by the municipal corporation.

There are 44 cities, towns and villages in which the water works are now owned and operated by the municipal corporation, 13 of these being for fire protection only. Private companies own and operate 14 water works, in one of which (Napawanee) the water is of such exceedingly bad quality that we will classify it as for fire purposes only.

In the majority of these 14 towns and villages the expenditure of a comparatively small additional amount would have secured an ample supply of pure water for domestic purposes as well as a fire supply, would have decreased the death rate and disease, and would probably bring in a revenue after paying operating expenses.

In many of these towns engineering advice was not sought, and in a few it was not followed.

In some of these towns the water is used for lawn sprinkling, for cattle and horses, for baths, for water closets, for all purposes except drinking and cooking, and the temptation may often induce people to use it for these purposes as well. Herein is a great danger. Water once drawn from a tap and used for drinking and cooking will probably continue to be so used until sickness occurs. To those towns supplied with elevated tanks, reservoirs or stand pipes in which to store the fire service water, the foregoing remarks especially apply.

These results are convincing that the private companies in the Province of Ontario now supplying water to cities and towns on the franchise plan are not giving these towns as good water as other cities, towns and villages are supplied with. In only one place is subterranean water being supplied, and in this place it was forced upon the company.

\* "Quantity" rather than "quality" is their motto.

The short-sighted municipal finance minister who, only considering water works from the standpoint of dollars and cents, revenue, interest and running expenses, and the silver-tongued (fingered?) franchise agent, are often (separately or jointly) directly responsible for the selection of so many inferior water supplies throughout the Province.

Where water works are contemplated, the local boards of health should investigate intelligently and thoroughly before adopting for a public supply a water that is of a suspicious quality or one liable to future pollution.

Analysis of water as now generally conducted are a humbug and a delusion, the honest scientist being no match for the wily manipulator. The color, taste, smell and temperature of the water supplied, and a study of the conditions surrounding the drainage area from which the water is drawn are of greater weight than any analysis in determining the purity of water. The problem of possible pollution from sewage or from farm drainage in the future should also be carefully considered.

In all cases the problem of selecting a source of supply should be carefully

\* Abstract of a paper read before the Association of Medical Health Officers of Ontario.

considered and reported on by some disinterested authority before the works are designed, and the schemes and machinations of the disciples of "quantity rather than quality" should be met by the remonstrances of all sanitarians.

## PLUMBING PRACTICE.

It is not expected that every plumber is possessed of knowledge requisite to thoroughly distribute water in all parts of a building, with equal facility to each floor upon which is placed plumbing apparatus, says *Fire and Water*. Where high pressures exist little difficulty is experienced, provided frictional resistances and cross section of area of pipe and branch supplies are considered in their relations to each other. It is often said by way of excuse for bad judgment in the plan of local distribution that there is a lack of pressure, when it is found to be a lack of volume of water—(pipe not large enough). It is a common practice in local distribution for plumbers to run one size of pipe throughout the entire building, with branch connections of same size on each floor, apparently forgetting or ignoring the fact that each added length, whether vertical or horizontal, increases friction, diminishes pressure and reduces flow.

In order to overcome these difficulties, a little study upon the subject will be a great help to the progressive plumber. A study also upon the question of "taking out branch supplies" from "the main supply," as to the angle of connection, will be found to be profitable. A great deal of pains is taken with water-pipe connections; as to angle of connections, the same rule applies with more force with respect to branch supply from main supply. Right-angle connections are very pretty as lines of harmony, but in water-pipe practice they should never be allowed. The rule of following parabolic paths or curvatures in connections will largely lessen friction and preserve the continuity of a water column passing from one line of delivery to another.

## HOUSE HEATING IN THE FUTURE.

OBERLIN SMITH in a lecture before the Franklin Institute, at Philadelphia, spoke as follows of the possibilities of the displacement of coal in favor of gas or electricity for heating purposes:

"In the matter of warmth there is certainly an inviting field for our future inventors. That our present methods of heating by the burning of coal and the non-burning of smoke, and of cooling by carrying in lumps of ice, are crude and wasteful, as well as extremely irregular and uncomfortable, it is not necessary to argue about. It seems probable that in the near future, at any rate for our cities, some system of gas heating will displace coal and wood to a large extent, and this is the more likely from the fact that our streets and houses are already supplied with the necessary pipes, which may perhaps be gradually thrown out of use, as conveyors of illuminating gas, by the improvement and development of electric lighting. There also seems a tendency among inventors in recent years to attempt some kind of artificial cooling by the distribution through pipes of cold air or freezing mixtures of varying kinds; also to contrive cheap ice-making or other cooling machines, which can be economically used in individual buildings. All this is in a direct line of progress, but it seems probable that at some time in the future we shall depend upon the electric current brought into each building through a single wire, not only for our lighting and power, but for our heating and cooling also. Just how the latter process is to be accomplished we do not yet know, but reasoning by analogy, it would not seem outside the range of possibility when we consider the fact that the burning of coal in a furnace can be made to produce heat or cold at will. It is true that while electric heating in itself has been proved to be perfectly practicable, yet at present it is not economical. This is owing to the fact that our best and largest steam engines by which we run our dynamos utilize only from 10 to 15 per cent. of the energy stored in the coal, lavishly wasting the remainder. Fortunately, our dynamos have reached an efficiency of about 90 per cent., so that there is not much waste in using the electric current after the power to produce it is once generated. It is probable, therefore, that the use of electric heating will for the present be somewhat limited, and confined to special places where its convenience will offset its extra cost. For an extension of its employment thus, as for certain other important uses of electricity, and upon a scale far beyond anything we can now imagine, we must wait until we learn how to produce this current of pure energy from the coal or other fuel direct. Than the accomplishment of this feat, there is to-day no more fascinating problem in the realms of science. Many are working at it, with as yet but small success. We need not despair, however, as it seems to be a logical possibility, and the only thing required is to find out how to do it."



### GLASS PAINTING.\*

THE art of stained glass is not yet fully fortunate in speaking a language understood of the people. Indeed, "I don't understand stained glass," is the remark one most frequently hears made about it, and this even from people of considerable appreciation for other forms of art. This comes home to one when one sees what pitiful stuff people of taste are content to have in the doors and windows of their own houses. The purplish birds on the yellow leaves within a circle of harsh red, the whole backed up by alternate oblongs of bad pink and green; how frequently one notices that work of art standing where it ought not! The builder inserts this and the like of it in the first instance, but the occupants suffer them to remain, not perhaps confident that they could find anything else so much more agreeable to their feelings as to warrant the expense of a change. It means, perhaps, that about even the highest development of the art, as usually practised, there still clings conventionalities of the parasitic or stifling sort; traditions that have arisen, that could only arise, in a period of bad art, and that have survived into a time of better things.

Wholesome conventionality, the acknowledgment of limits, and the determination to pull up well within them, is of the nature of a backbone to decorative art. Excellent, too, is healthy tradition. A man, or a school of men who have practiced a craft right well, bequeath to their successors, not a series of cast-iron rules and regulations, but a common-sense recommendation: "On such and such lines our art can be successfully carried out; adhere to them, we advise you, and see your way very clearly before you try to disturb them. If new possibilities arise, they must be dealt with! but do not change the old order for less than sufficient cause." Without some such tradition, a craft may become experimental and amateurish, and its productions perplexing.

Let us, before going further, try and understand stained glass.

The germ of it lies, not in the wooden-framed sash-windows with which we are most familiar, but in lead lattice, or, as it is perhaps most often called, casement. The simplest form of lattice consists of square or diamond shaped panes of white glass of the same size, connected by "leads"—that is, by strips of that metal, with a groove on each side, into which the glass fits, the leads being joined by soldering at the corners, and the interstices filled in with cement corresponding to the putty in our sash windows. From this simplest form of a lead-latticed window, the next step is the introduction of coloured glass. By this we get square or diamond-shaped panes alternately of white and colour, or of several tints in succession—a series of arrangements being possible whilst we still cut our glass in panes of straight-lined shapes all of one size. More variety comes with the half-step from this to panes still rectilinear, but of different sizes and shapes; and we have made a stride when we have found out how to cut our glass into pieces with curved outlines. Our framing line of ductile lead is as ready to go round a circle as along a straight line, and now with curve-contoured forms of varied colour arranged in groups, we have already a handsome stained glass window of pattern.

The next move is a momentous one, and may have a word of preface. The best ornamentist of the present time<sup>†</sup> has acutely noticed that some simple pattern shapes, that have been assumed to imitate natural forms, are in reality dictated by the tool or material employed. When their resemblance to nature struck the primitive artist, he did what he could to make it closer, but they arose at first independently. A single stroke of a full brush on paper, beginning with a point, spreading from that, and then ending with a sudden and more rounded diminution as the brush quits the paper, resembles the form of a leaf; the simplest combination of such touches suggest a leaf-cluster. Surround a large circle with a series of little ones, and you get a broad hint of a frequent flower type. So our window maker, having advanced thus far, could not fail to be struck with hints of natural form in his pattern, and suddenly his brain took fire

longing to complete the resemblance. This led to an application to transparent glass of the long-practised process of enameling; lines and shadows were drawn on it with a material that, when fired at a sufficient heat, unites with the glass and becomes permanently fixed. The imitation of form seldom goes far in any art before the designer tries to imitate the most interesting of all forms: to take on him the God-like function of making man in his own image.

### FRIEZES.

WE must refer to the differences in mural ceiling designs, to the circumstance that there are friezes that look well in lighter tints than the wall color; but the general practice is to have the coloring stronger than the latter. One rule applies to either mode, and that is, that the forms should be distinct, however vague the general wall design. Where the general hue of the frieze is lighter than the former, a few touches of bright color will often restore a balance. It was a true burst of artistic taste that led to the present depth of friezes instead of scrumping bands. It is here worth noting that the proportions followed by the Romans and illustrated at Pompeii allotted one part of the height of wall to dado, three parts to the field and one and a half to the frieze, proportions adapted to the heavy Roman architecture. Where the mouldings of a room are unusually heavy, we have known decorators to introduce grey and light-some friezes of a more than ordinary depth, to lessen the too heavy effect. The fault of dull and dark friezes is being steadily corrected. It is usually better that the field and frieze should not wholly correspond in color, but the ground of frieze may be the same if of a deeper color than the field.—*Beck's Journal of Decorative Art.*

A new effect in color in wall decoration was devised by Whistler in the painting of a small room. The walls were first painted a pure black, which was afterwards overlaid with a coat of semi-transparent yellow. The effect was the apparent annihilation of the walls and the production of the impression of living in a petrified nocturne, an endless London fog, but the small room no longer looked small.—*Plumber and Decorator.*

The tendency toward light colors in house painting and decorating, both inside and out, is very marked, showing a complete revulsion of feeling against the dark and rich colors which were so popular a short time since. Even in city houses, where the trimmings and sash were almost altogether red, green or brown, these colors are now rarely seen, and the more common effects are obtained from combinations of buff, ivory or cream white, and the various delicate gray tints. These changes have affected the demand for paper-hangings and curtain stuffs, which now tend altogether to light backgrounds and delicate treatment, very generally floral in pattern, or perhaps plain tints not darker than a gendarme blue or an old gold as an extreme limit.

Mr. William Kennedy, Newmarket, Ont., has been granted a patent for a hot water heater.

The wickedness of plumbers is always a favorite theme and is likewise a very suggestive subject, as witness the latest information that when a plumber was pitched out of a fifth floor window by his employer he charged double time from the moment he left the window till he struck the pavement.—*British Architect.*

We learn from the *Brickmaker* that Boston architects are beginning to think that it is desirable to break the monotony which steady rows of red brick buildings have, by introducing brick of other colors. It is surprising to see how many of Boston's newer buildings are of tinted brick. It is somewhat more expensive, since the clay pits about Boston all produce a red brick; but with cheapening rates of transportation the city is likely to use more brick from a distance. Instead of freighting the brick from the place of their manufacture, the clay itself is now being shipped to some kilns near the city, and there baked. A striking edifice in yellow brick will be the new building at Tufts College. The yellow brick will not turn, and the mortar will not whitewash, and the yellow brick is believed to harmonize better with the landscape than the standard red.

\* H. Arthur Kennedy in the *Journal of the Society of Arts.*  
 † "Every-day Art," by Lewis F. Day.