

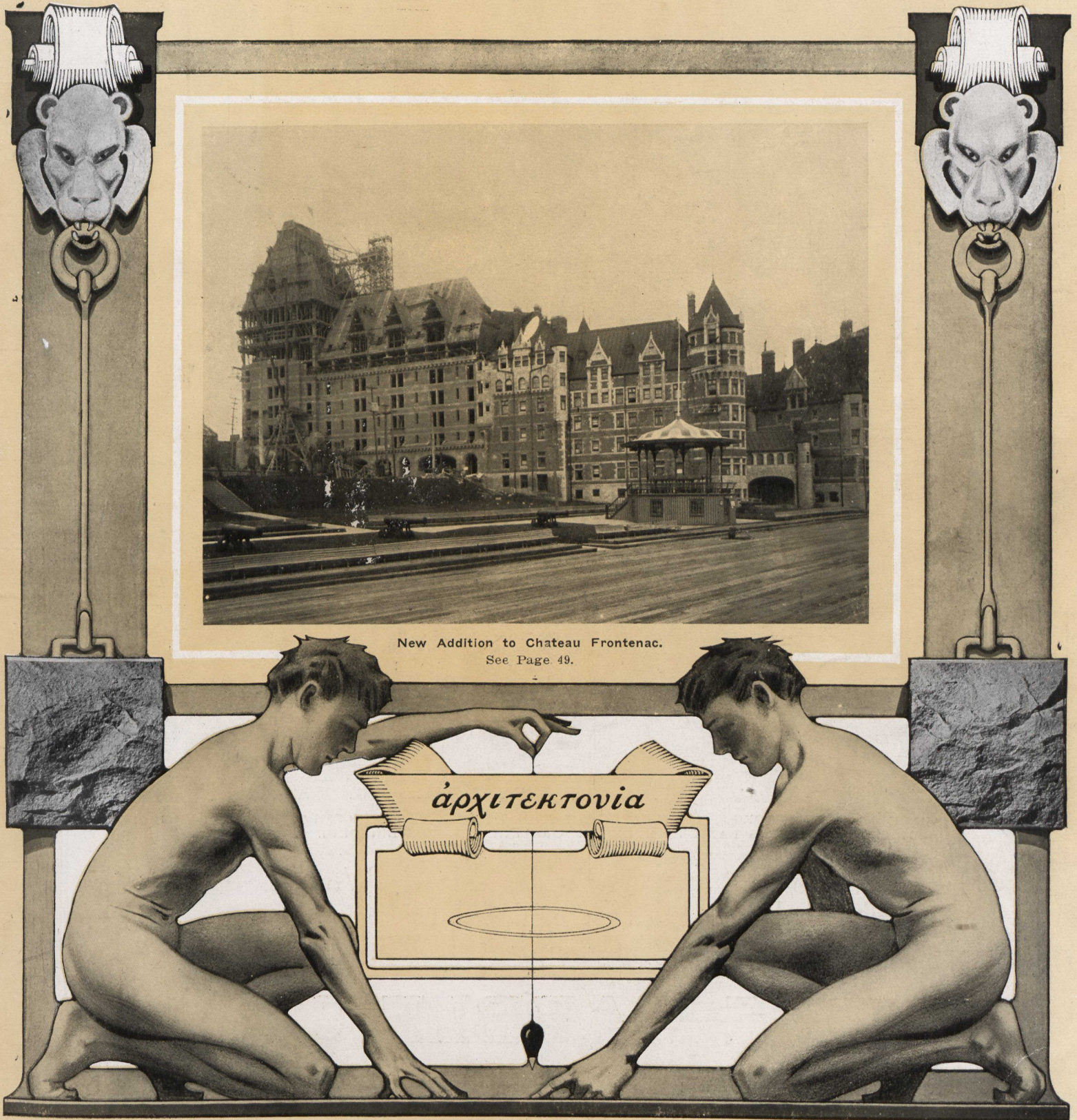
CONSTRUCTION

" A JOURNAL FOR THE ARCHITECTURAL ENGINEERING AND CONTRACTING INTERESTS OF CANADA "

Vol. 2, No. 4.

FEBRUARY, 1909

\$2.00 PER YEAR
25c. PER COPY



New Addition to Chateau Frontenac.
See Page 49.

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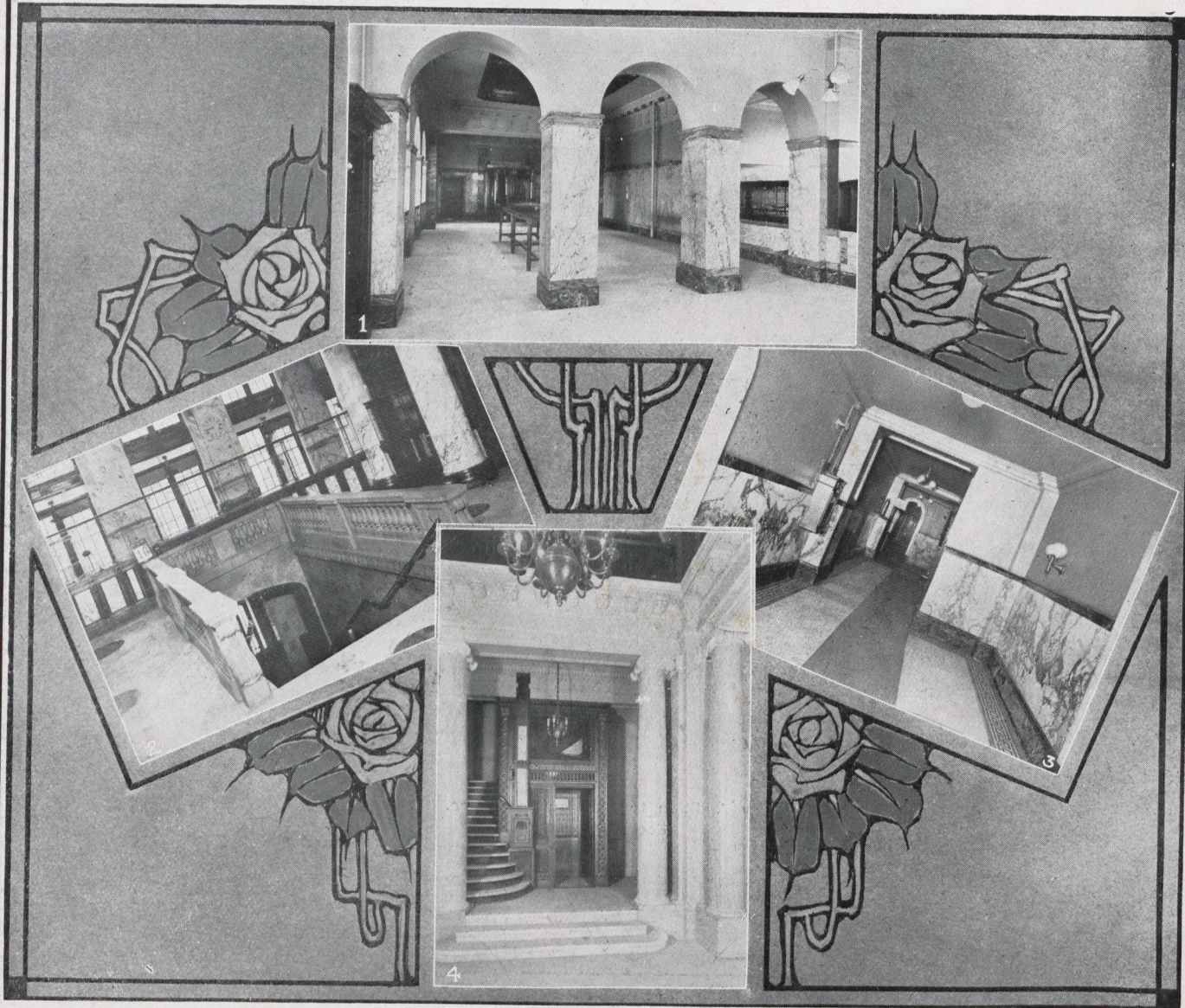
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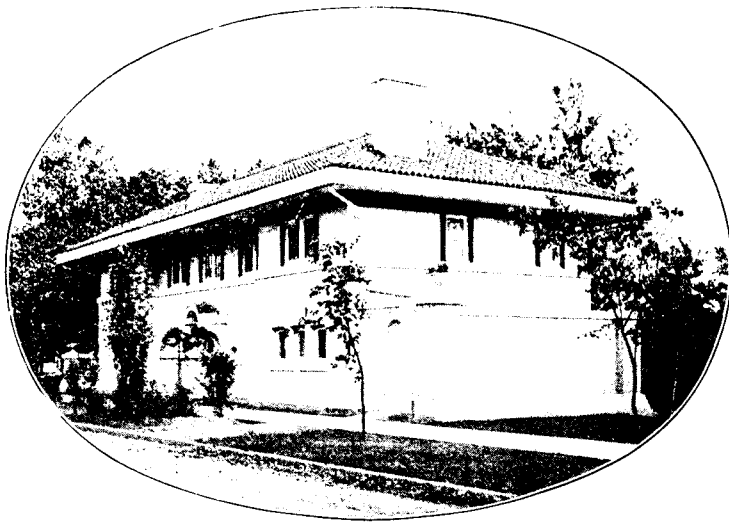
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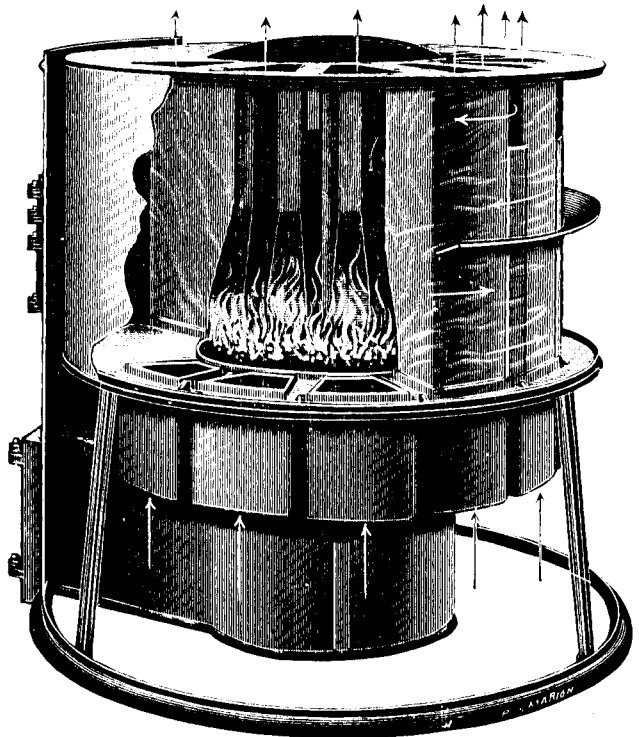
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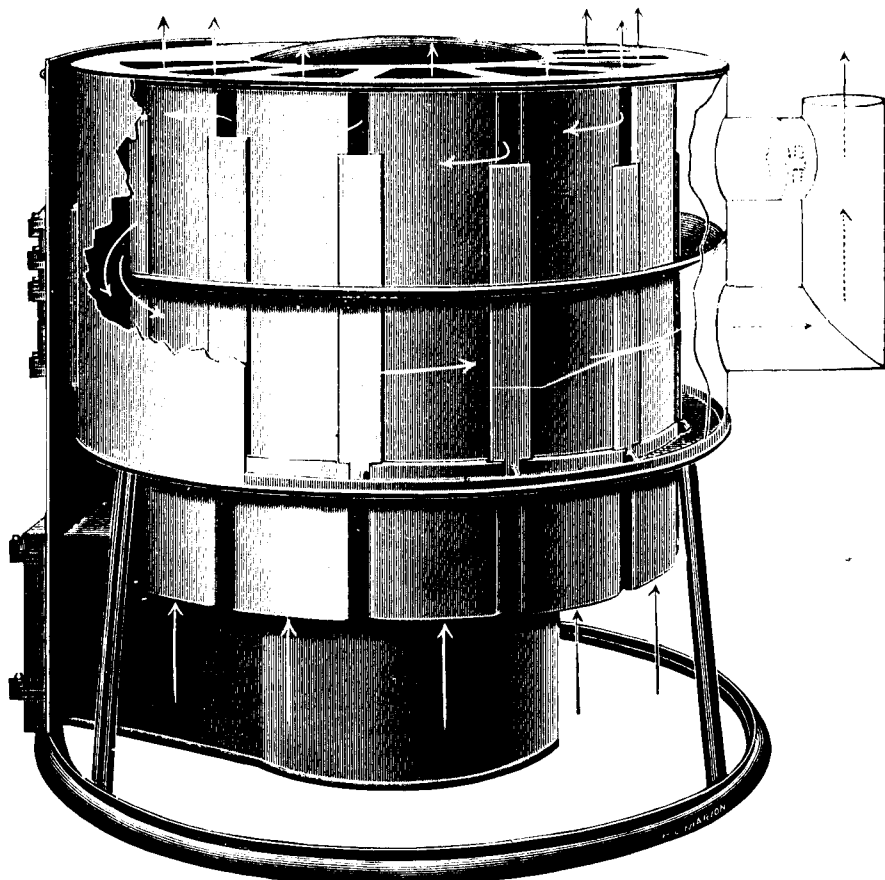
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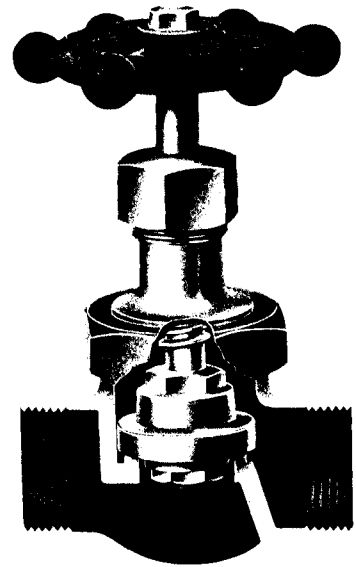
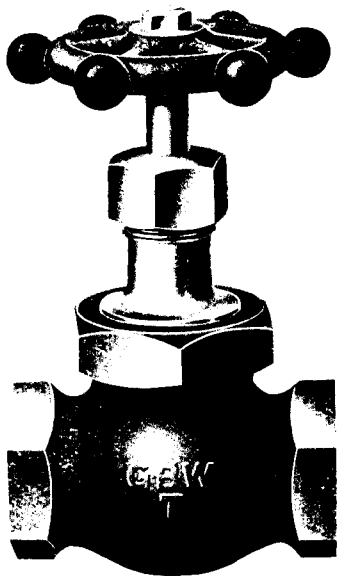
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Section of Granite Quarries at Stanstead, P.Q., Showing Depth of Seams From Which Were Taken the Granite for the Column Drums and Plinth Blocks, of the Bank of Commerce, Montreal.

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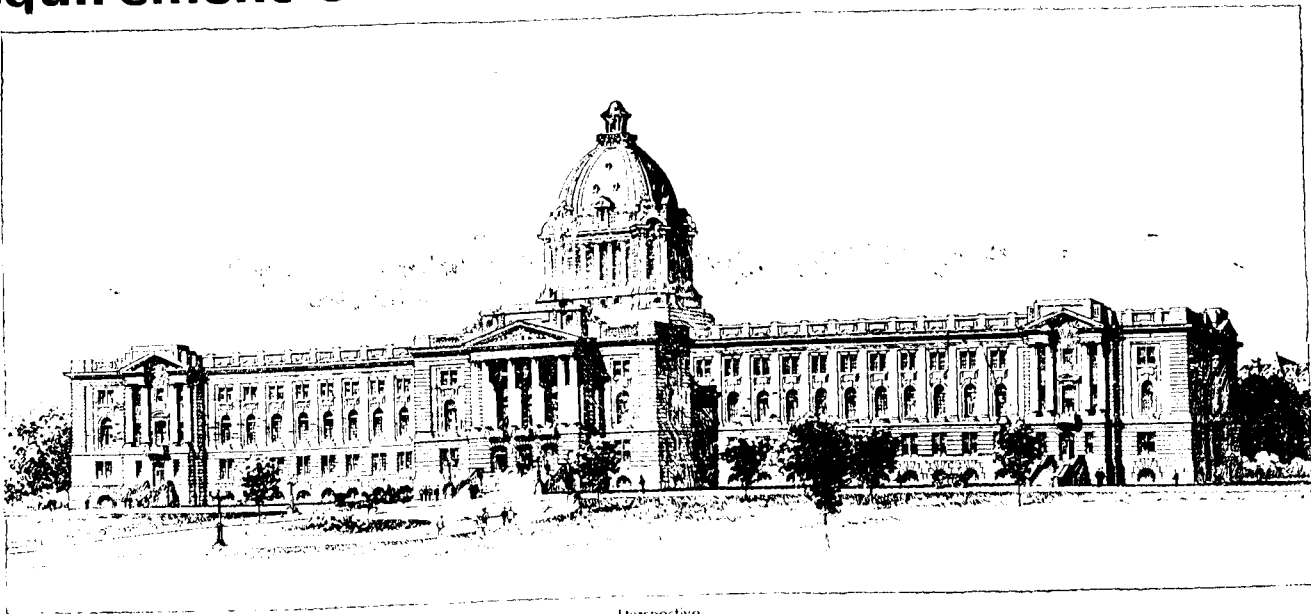
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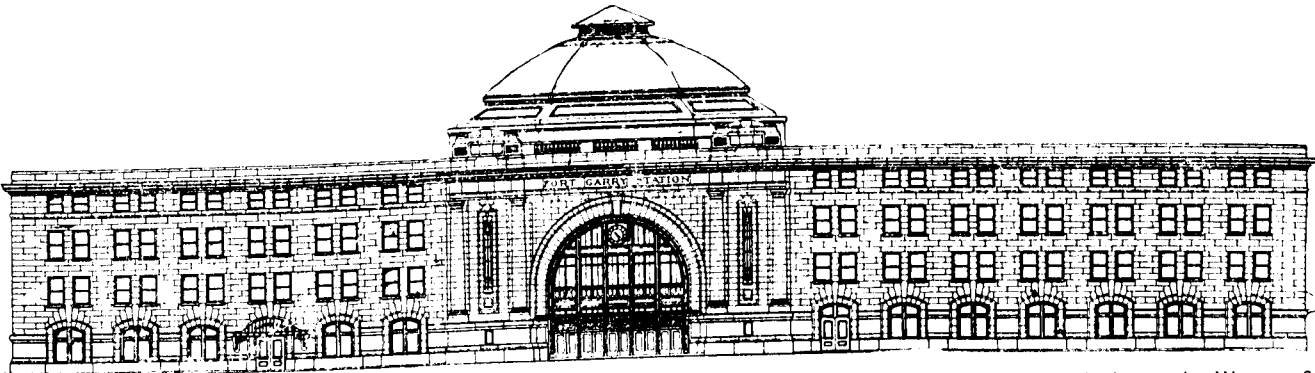
SYSTEM

Requirement of REINFORCED CONCRETE Construction



Perspective.

Parliament Buildings, Regina, Sask., now in course of erection, KAHN SYSTEM of concrete reinforcement to be used. E. & W. S. Maxwell, Montreal, architects; Peter Lyle & Sons, Montreal, contractors.



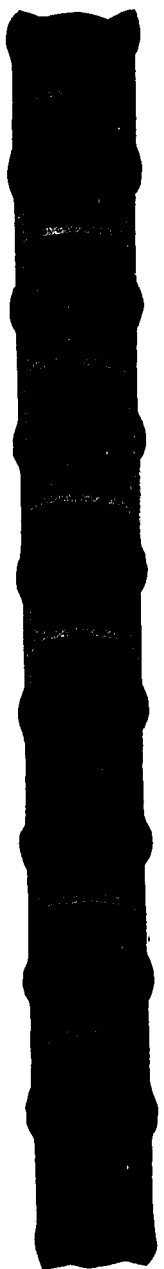
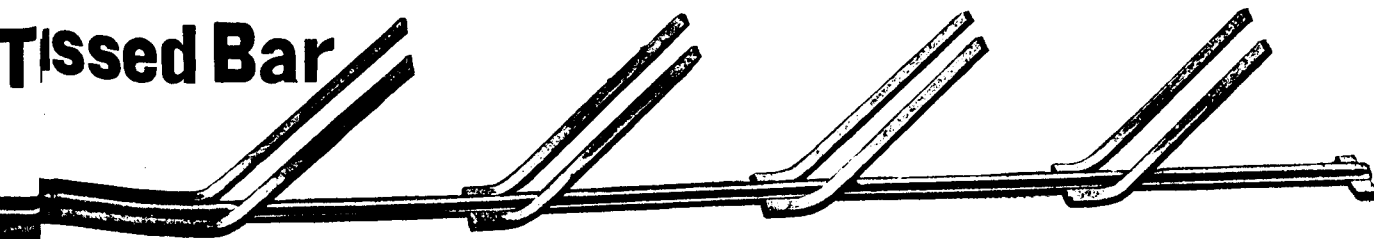
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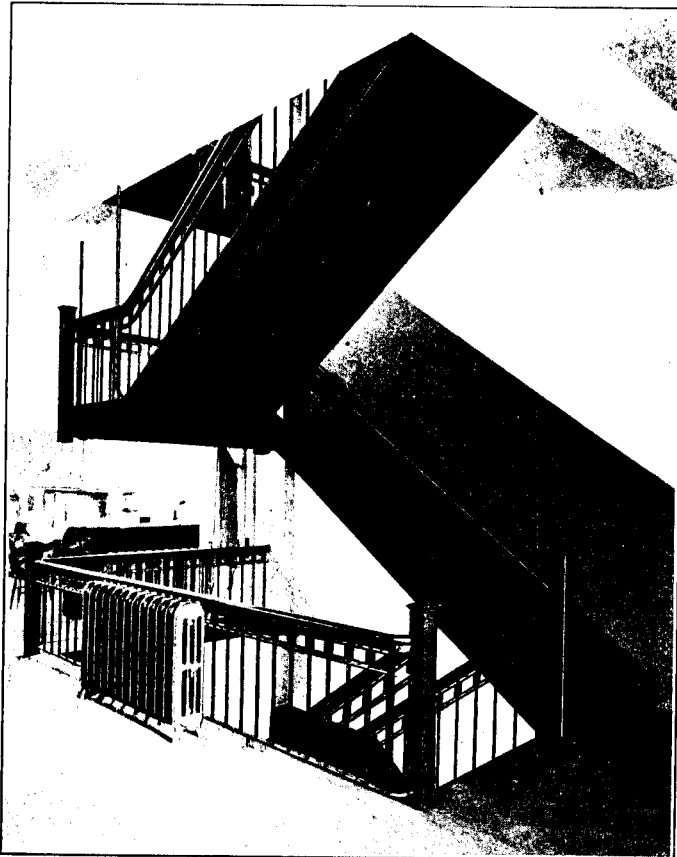
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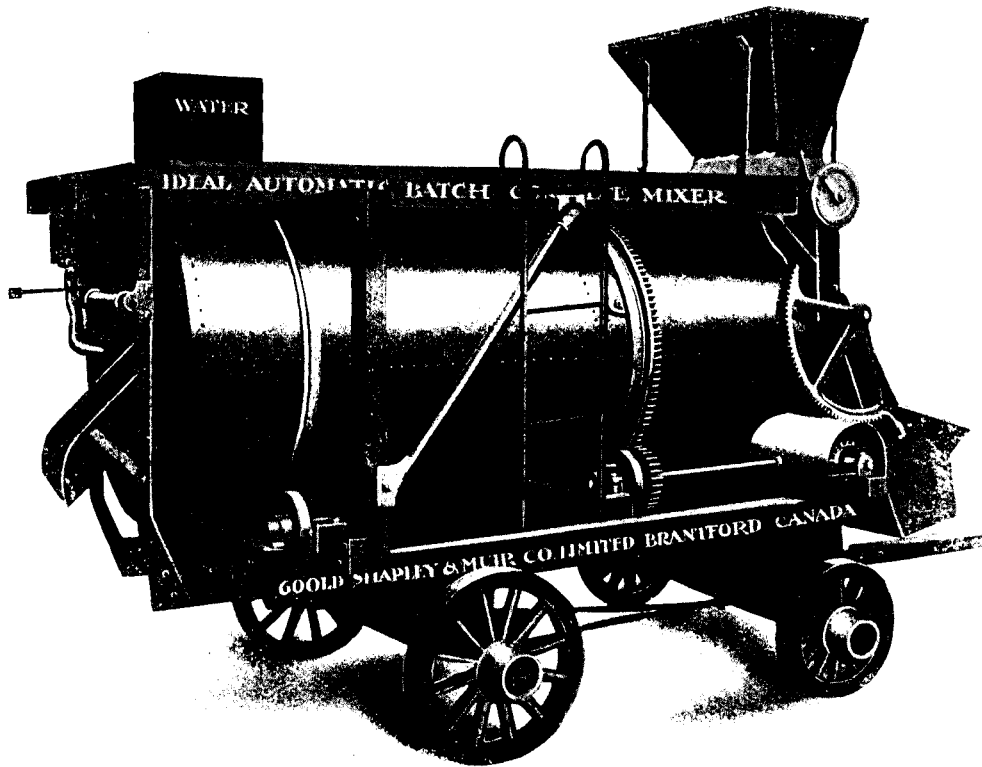
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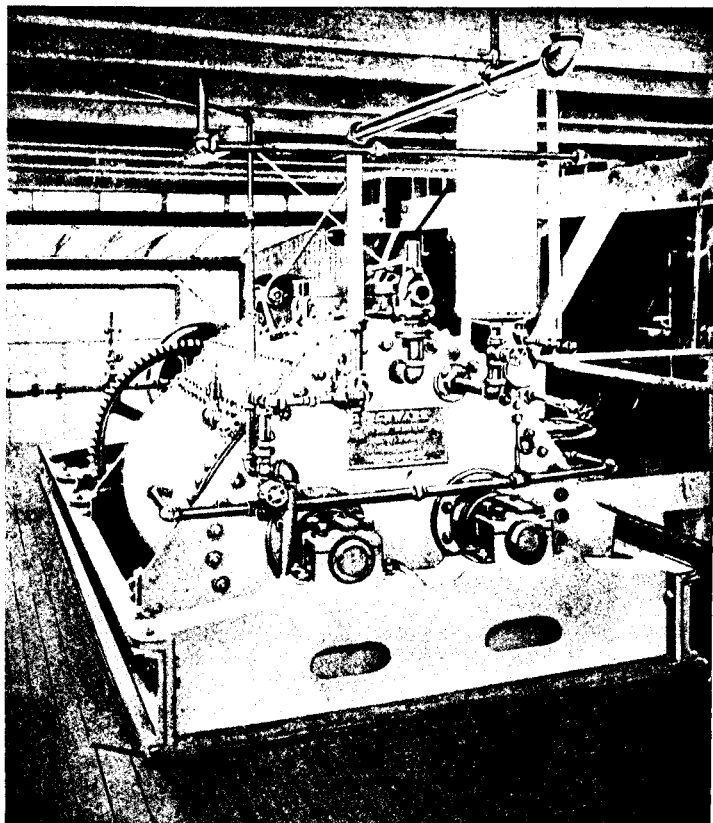
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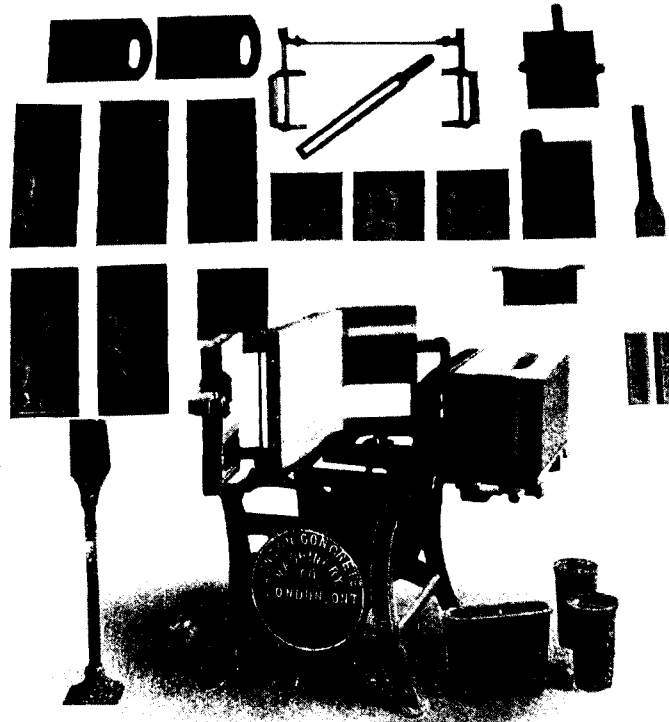
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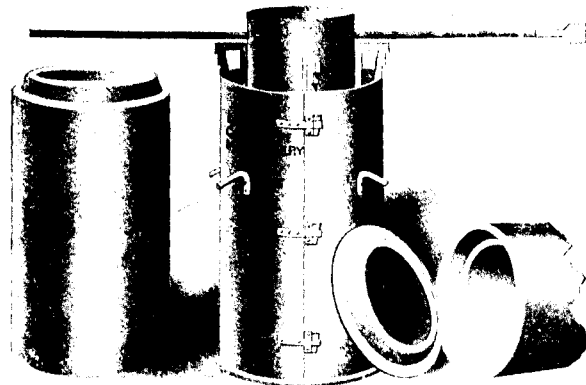
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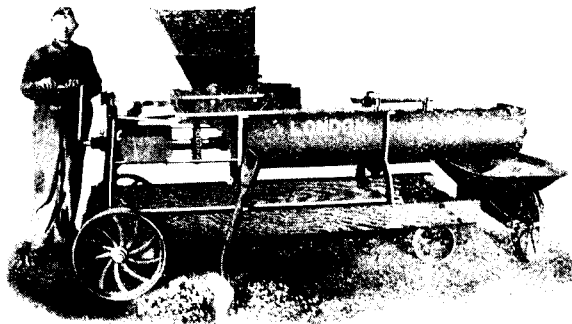
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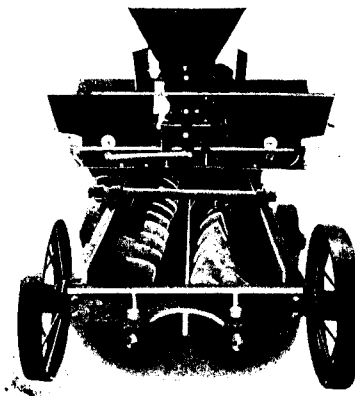


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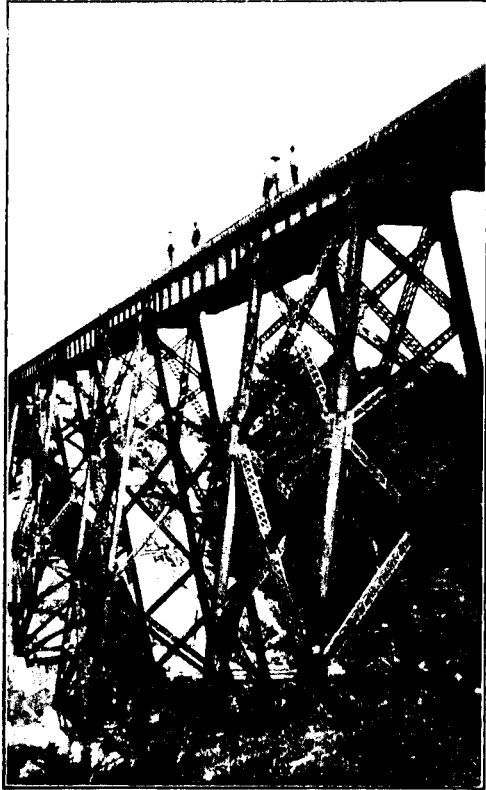
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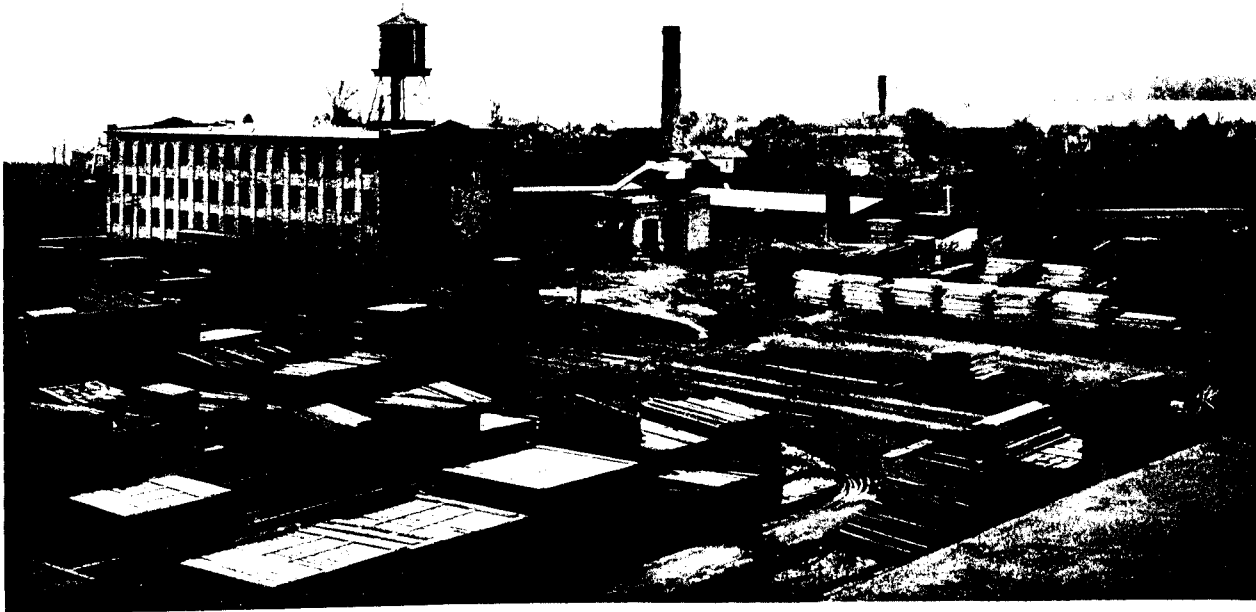


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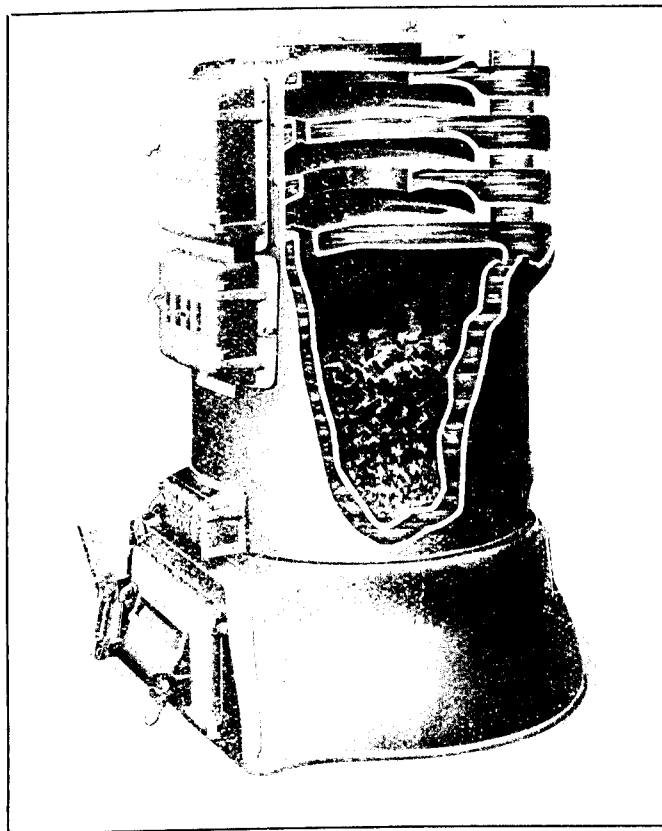
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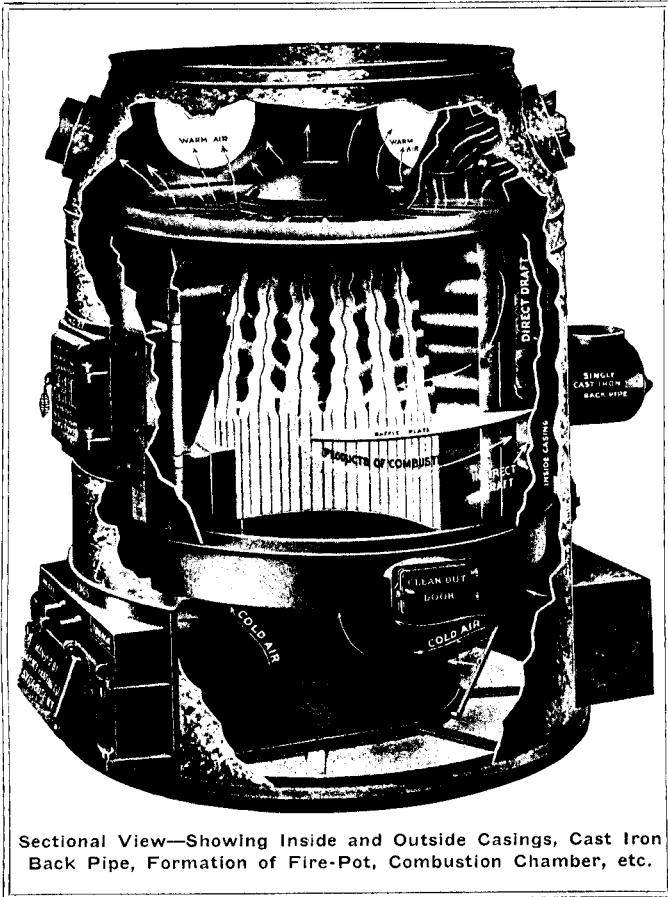
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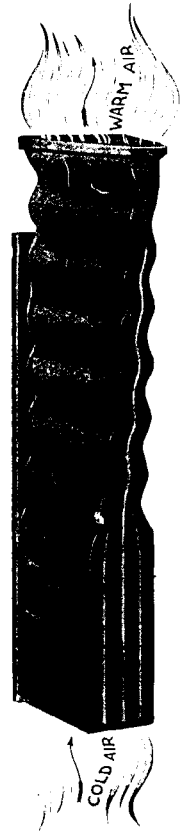
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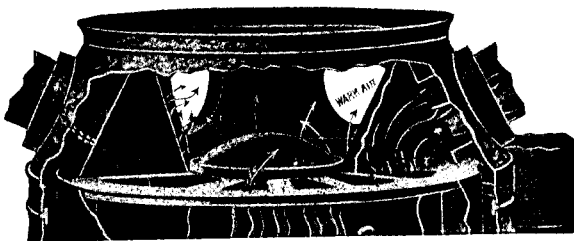
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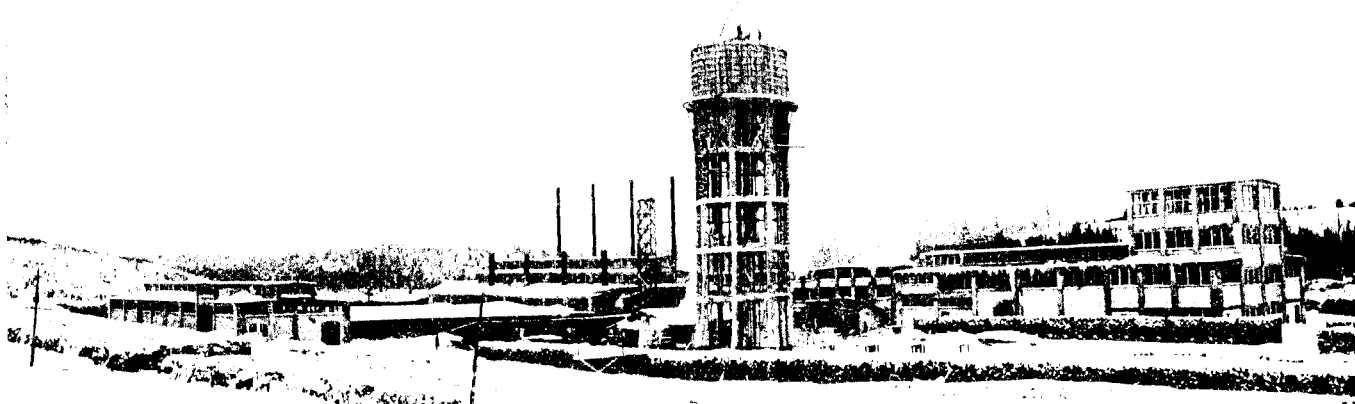
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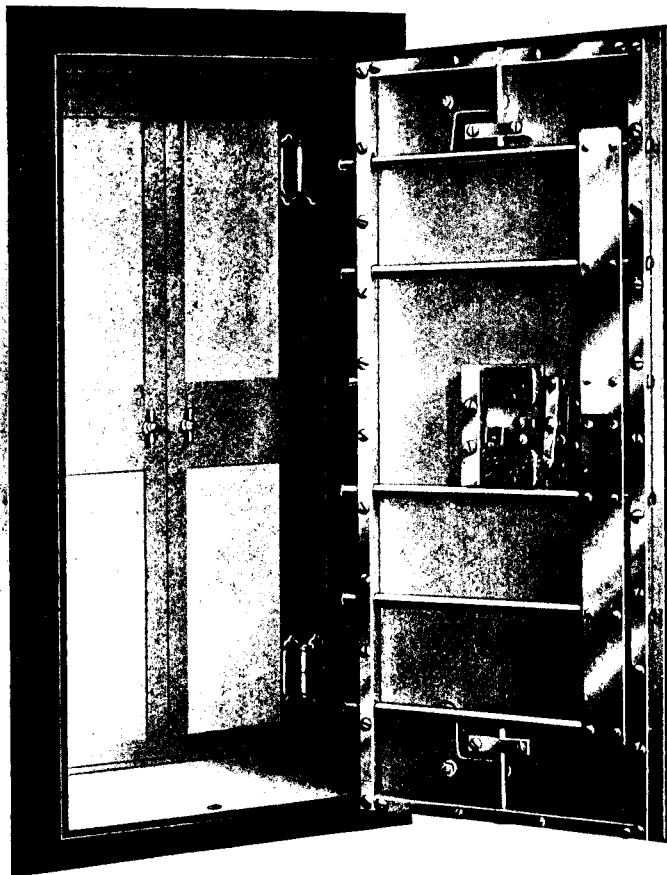


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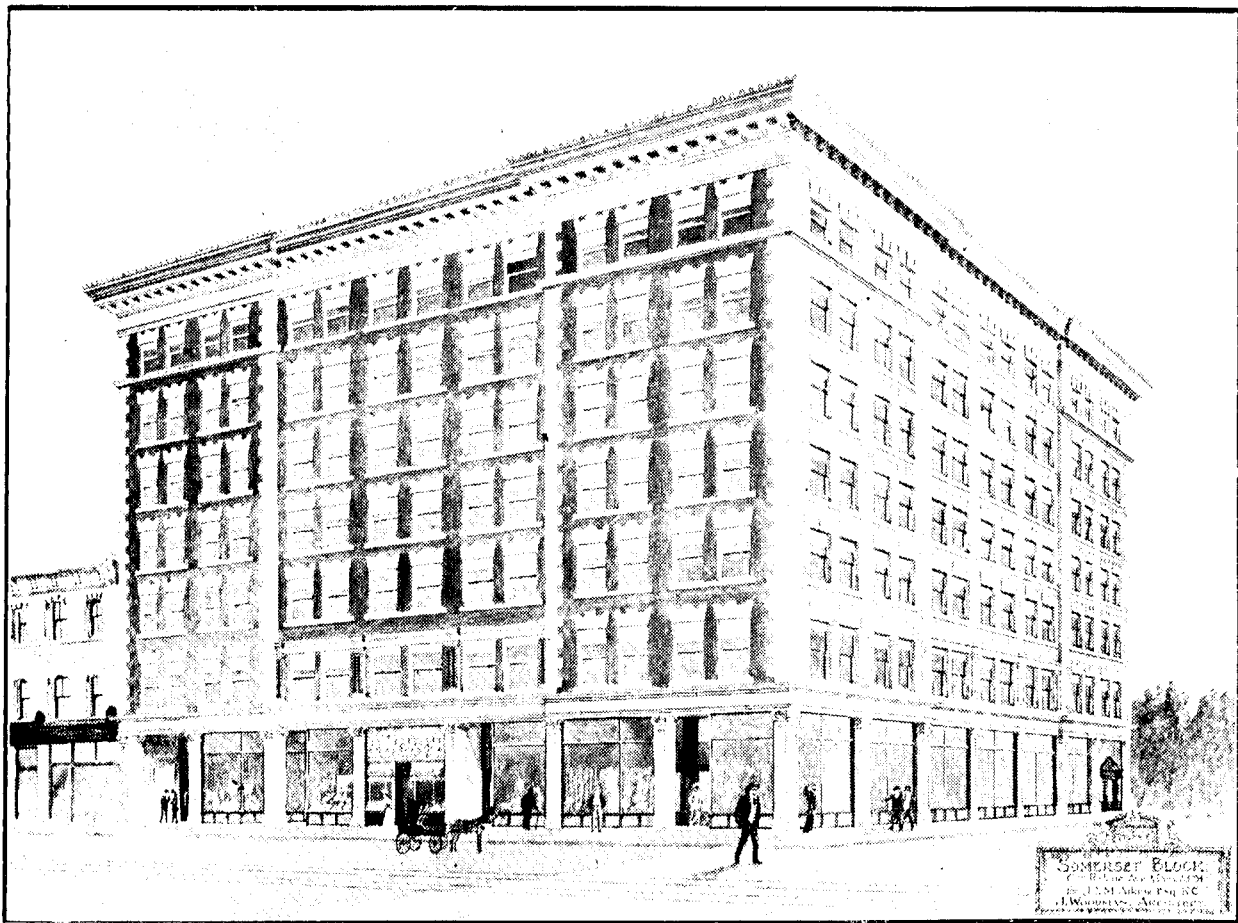
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'CONSTRUCTION'

.. A JOURNAL FOR THE ARCHITECTURAL ..
ENGINEERING AND CONTRACTING INTERESTS OF CANADA

Vol. 2

February, 1909

No. 4

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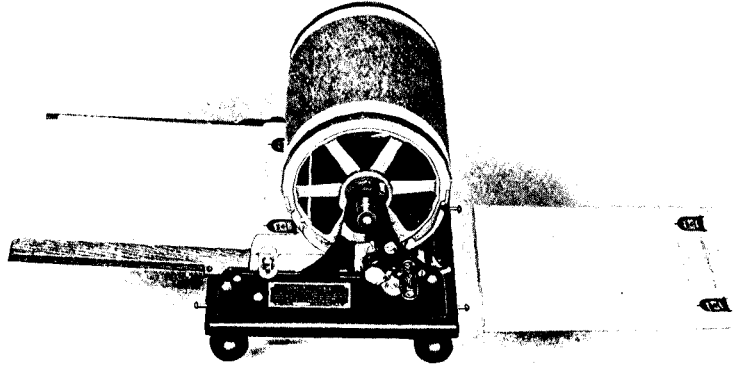
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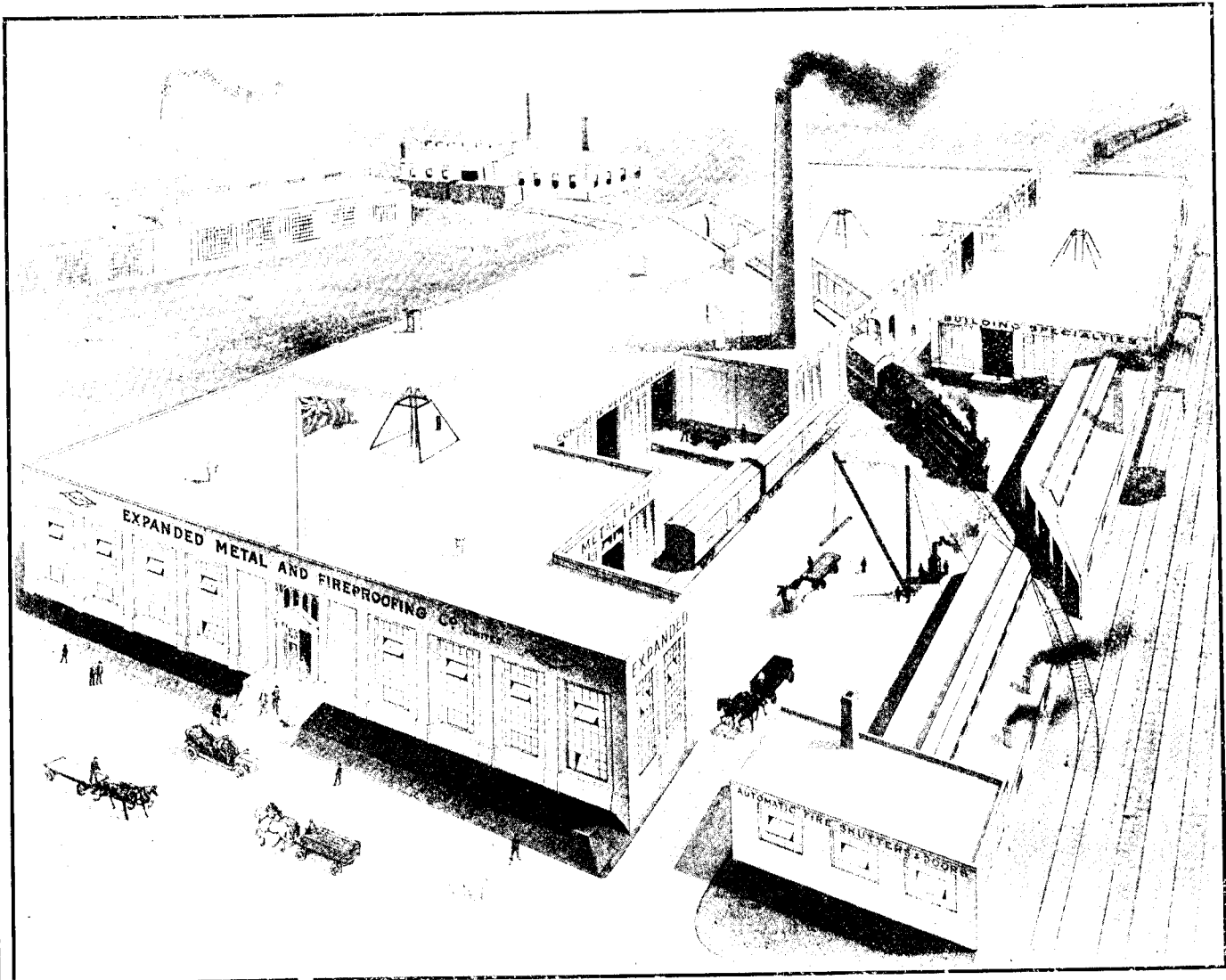
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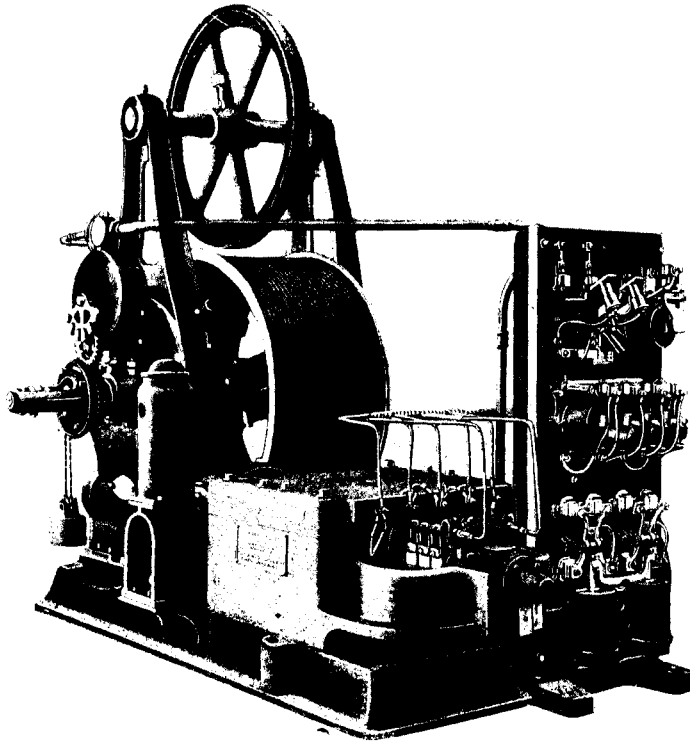
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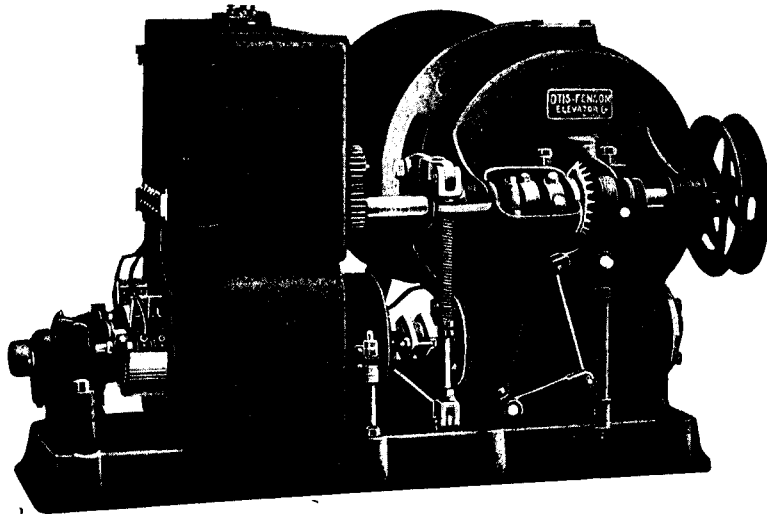
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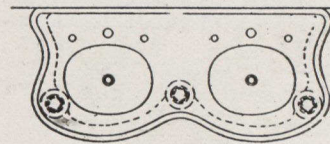
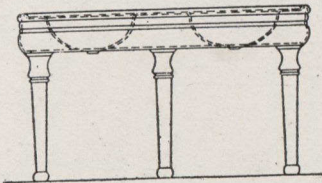
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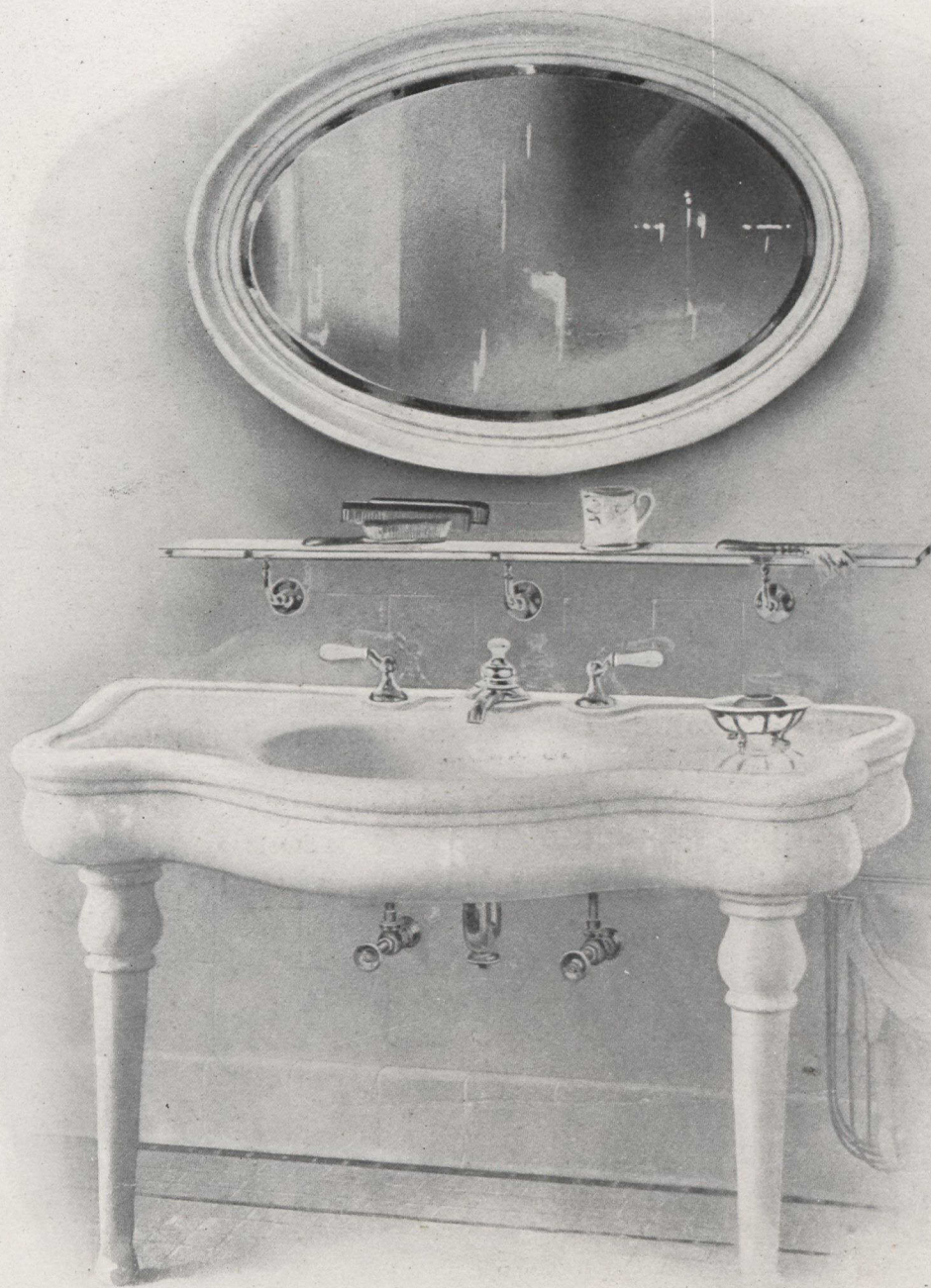
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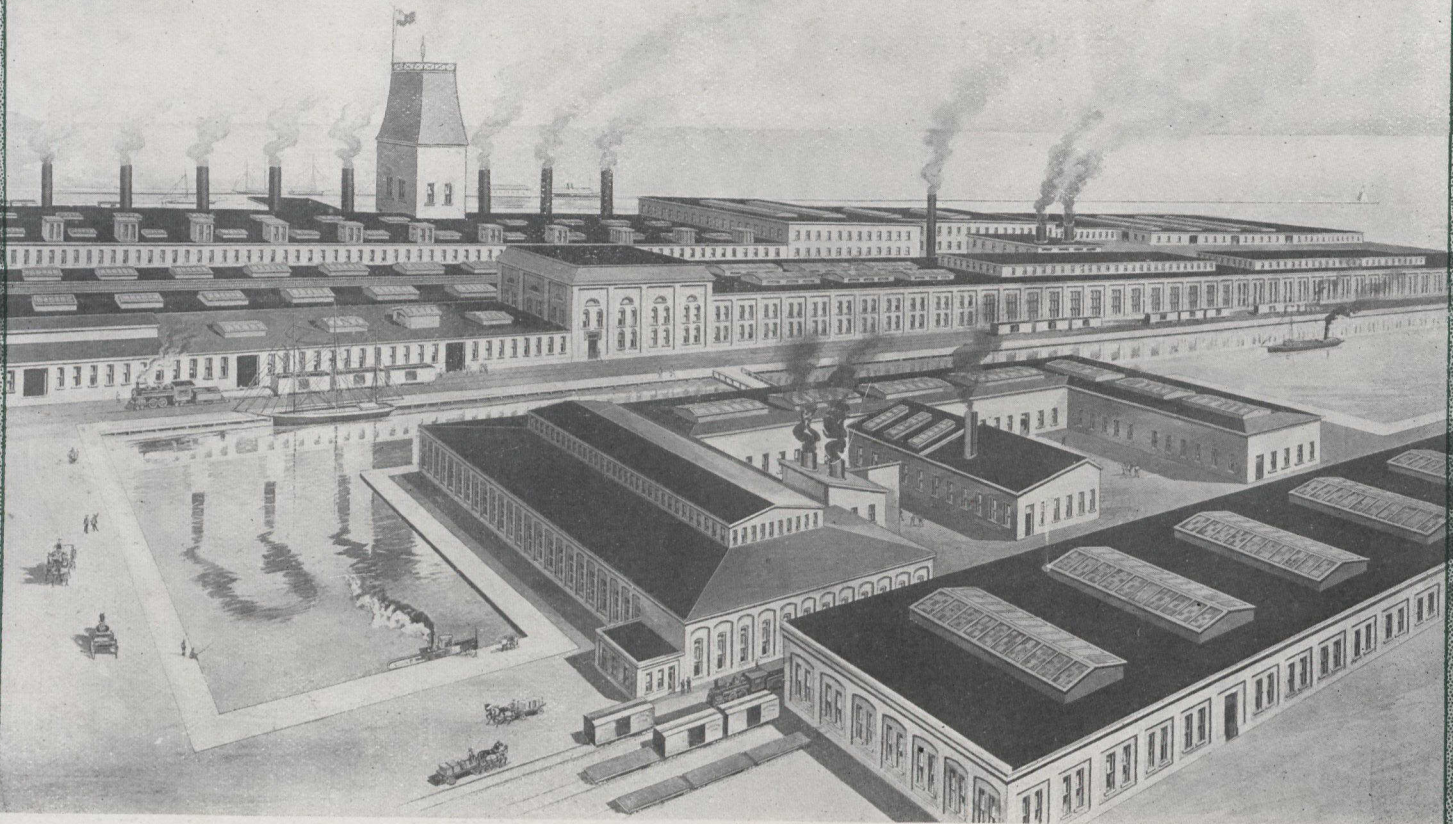


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A brilliant procedure is this. Toronto ought to be proud of this outfit. "Tory Toronto," with all its energetic advocacy of high tariff. "Toronto the good," with its boast of honesty and cleanliness in municipal politics.

Never was there a more flagrant attempt to avoid the rightful payment of duty, by a municipality, during the history of our Customs Tariff Laws.

We realize and have pointed out from time to time that individuals and private corporations have no compunction or even difficulty in smuggling into Canada blue prints of plans prepared in the United States, for Canadian buildings—a traffic that is as despicable, and in the same category, as the smuggling of diamonds.

But it is almost unthinkable that the city of Toronto has at its municipal head, officials who not only attempt to get plans of an \$800,000 job, into the country on a valuation of \$5.00, but that, when the plans are seized, they would take steps to get a special dispensation from the Customs Department, to get them released at a small nominal sum.

The officials responsible for this indignity to which the city of Toronto has been subjected, are guilty of one of two things, a crude attempt at smuggling, or gross ignorance. We believe it is the latter, for the absurdity of the statements several of the officials have been credited with in the daily press, shows what a well informed, brilliant set of men the City of Toronto has chosen to handle this important project.

Mayor Oliver has decreed that he will condescend to allow the city to pay Two Hundred Dollars for the release of these blue prints, for an \$800,000 job, but, it may be that the Mayor should be excused, in so far as his private business is not such as would acquaint him with the details of our Customs Tariff, nor its importance to the country.

City Engineer Rust, however, is very resourceful; he has struck upon the brilliant idea of having the plans re-drawn in Toronto, if the Dominion Government will not come to the city's terms. There is no excuse for Mr. Rust. He should know better. The duty of 25 per cent.

of the commission of the Architect or Engineer, on the plans of a building to be erected or an engineering project to be undertaken in Canada, is levied to protect the Canadian Architect or Engineer, in the same manner as a duty is placed upon a manufactured product to protect the manufacturer, and the Customs Department has no more right to allow the plans for a building or an engineering project to be admitted into the country duty free for the city of Toronto, than it has to allow a piece of machinery to come in duty free, because it is for the City of Toronto.

A highly intelligent argument put forth by Toronto's worthy officials, is that they are not paying Mr. Hazen, the New York engineer, \$20,000 for the drawing of the plans, but that this sum is paid him for his ideas. What does any Architect or Engineer get paid for? They get paid for their ideas, their knowledge, and their services. They have draughtsmen to make drawings, tracings and blue prints. What measure of protection would these professions get if a duty of 25 per cent. were charged only upon the value of the actual labor in preparing plans? The law would be absurd.

But Mr. Rust has a scheme. He is going to have the plans redrawn in Toronto. We do not know what ruling the Customs Department will make in this case, nor are we sure whether any distinct ruling, entirely covering such a case, was ever made by the Customs Department at Ottawa, but we do know that in the United States and in other countries where an import duty is levied upon plans, that duty may be collected at any time, even after the work has been completed, if it can be proven to the satisfaction of the Government, that the work was erected after imported plans.

In Canada, one is liable at any time for duty on an imported dutiable article, if it can be shown that such duty has never been paid. It is not simply a case of get past the Customs Official.

It would, therefore, appear that Mr. Rust's scheme will not work out so nicely as he anticipates, for, in accordance with the regular procedure of the Customs Department in Canada, in the collection of duties on other articles, and in accordance with the ruling of the Customs Department of the United States, on imported plans, even though Mr. Rust proceeds to redraw the plans, the city will still be liable for the rightful amount of duty, if it could be shown that the work was carried out in accordance with plans prepared in the United States.

This smuggling of plans into Canada must be stopped; they are sent through the mails, by express, carried across the Niagara Bridge in overcoats, and brought over in the luggage of individuals. Toronto now has several buildings erected after plans prepared in the United States, upon which never a cent of duty has been paid. Every building has its architect, and every engineering project its engineer; if that engineer or architect comes from

the United States, investigation should be made. The architect or engineer, as well as the contractors and owners, should be examined under oath, if a suspicion exists.

Something should and must be done to stop this perfidious smuggling of plans into this country.

MR. J. C. B. HORWOOD'S AND MR. A. H. GREGG'S LETTERS ON "ARCHITECTS' LICENSE LAW" IN JANUARY "CONSTRUCTION."

TWO LETTERS dealing with the question of the Licensing of Architects were published in the January issue of CONSTRUCTION, one by Mr. J. C. B. Horwood in which two editorials in November CONSTRUCTION, recommending the adoption in the Province of Ontario of what is generally known as an "Architects License Law," were strongly criticized; the other by Mr. A. H. Gregg, who took issue with Mr. Horwood on the question of Compulsory Education in architecture, and strongly indorsed the policy of CONSTRUCTION, as voiced in the editorials in question. Although written before the receipt of either of the letters from Mr. Horwood or Mr. Gregg, the two editorials, *Architects' License Law Makes Architect Responsible to Public as Well as His Client, Etc.*, and *Three Objections to Licensing Law, Etc.*, in January CONSTRUCTION, deal with most of the points brought up in Mr. Horwood's letter.

Briefly, Mr. Horwood has declared himself as opposed to a Licensing Act because of the following reasons, First, because he maintains it will not give the public the desired protection, to prove which he points to the close corporations of the medical and legal profession, and asks what measure of protection is given the public against incompetence and dishonest practice through the existence of these legally recognized organizations. He asks what guarantee of competency would be given the public by the fact that a man at one time in his life passed an examination to secure a license to practice. He recommends in lieu of a Licensing Act, a Provincial Building Code, which he maintains would examine an architect every time he prepared plans for a building.

Secondly, he intimates that law to raise the standard of the profession is not required, by quoting from the "BUILDER," London, Eng., as follows: "It must be apparent to all observers that Canada is a well built country, whose buildings reflect the intelligence and good taste of its people. There is neither extravagant display nor neglect of interesting features."

Thirdly, he believes in the qualifications provided for in a Government Examination, would set up a false standard for the architect, and would thus operate against the permanent welfare of the profession.

Fourthly, he contends that adequate educational facilities should be provided, before any compulsory examination should be established. In other words, we should provide the supply before we create the demand. In connection with this contention, Mr. Horwood believes that proper educational facilities would so inspire the student of architecture that without the incentive created by a compulsory standard of qualifications, he would exile himself from the world of sport and pleasure and voluntarily burn the midnight oil of ambition.

Mr. A. H. Gregg in his letter, agrees with Mr. Horwood, that Ontario should have stringent, well enforced buildings laws, and that it should have better facilities for architectural education, but takes issue with him on the question of compulsory education. He contends that, while there is the elite in every body of men, the only practical method of inducing the student or prospective architect to properly qualify himself, before he starts out as a practitioner, is through some compulsory method of education. After a standard has been established, then the necessary facilities for education will be provided.

Mr. Horwood and Mr. Gregg agree upon two points. First, that the public has a right to be protected against the operations of the incompetent. Mr. Horwood suggests Provincial buildings laws. Second, that some attempt should be made to raise the standard of the profession in the Province of Ontario. Mr. Horwood suggests better facilities for architectural education, and Mr. Gregg, compulsory education.

In answering Mr. Horwood's first objection wherein he states that such a law would not give the public the desired protection, and in which he compares the examination provided by such a law, with that of the Ontario Law Association, we would say that there is no such comparison. The examiners of the Ontario Law Association are responsible to the profession and not the public. In this association exists an "esprit de corps" which forbids to a great extent the harsh handling of wrong doers. The examiners and the members are fellows in the same association. On the other hand, an examining board such as would be provided for in an Architect's Act, would be appointed by the Government, and would be responsible to the Government, and not the profession. Their appointment would be entirely independent of any architect's association.

In the second place, in answer to Mr. Horwood's objection that examining a man once would not be a guarantee that he would keep abreast of the times and be competent to design buildings according to new methods of construction that would be adopted from time to time, we would point out that the examination, in the first place, is only a means to determine if a man has knowledge of the basic principles of the profession, such as entitles him to call himself an *architect*. Each year, however, he has to renew his license. He is not given a diploma or a license for an indeterminate period, as is the case with the law and medical associations. If in his practice he is found guilty of gross incompetence or dishonesty, an appeal can be made to the Licensing Board, which has the power to take evidence under oath, he stands to have his license revoked or to have the board refuse to renew it. This surely gives the public a much greater measure of protection than it now enjoys. It might be stated here that several licences were revoked in the State of Illinois during the past year; one for the illegal use of his seal in stamping the plans for a three-storey building in Chicago prepared by a draftsman without a license, for the purpose of enabling said draftsman to secure a building permit.

As to provincial building laws, we are highly in favor of the adoption of a provincial building code, and the appointment of provincial building inspectors, to strictly enforce same. While we are sorely in need of this legislation, such laws will not act in lieu of a Provincial Architect's Licensing Act. In the first place, while all plans for buildings to be erected in the Province, could be inspected and approved by a provincial building inspector, it would be impossible to establish a system of building inspection such as would permit of the personal inspection of buildings when under course of construction. The plans of a proposed structure may be all right, but will the building be erected in strict accordance with the plans? It is this difficulty that forces our city building departments to have an inspector regularly visit a building while it is in the course of erection.

But, even though this were possible, building inspection exists only in the interests of the community. The inspector has nothing to do with design, merit of investment, ventilation, comparative adaptability of materials, or method of construction. He does not inspect for the purpose of seeing that the owner has a competent architect or that his architect is giving him in a building, the best value for his money. If building inspection were all that was required, why is it that in the City of Chicago, still greater precaution is taken by the building de-

partment in insisting that all plans presented for permits, should bear the seal of a licensed architect.

Mr. Horwood's contention that Ontario is progressing very creditably in the character of the architecture of its buildings, without a Licensing Law, is rather a poor excuse why such a law should not be enacted, especially in view of Mr. Horwood's fervent appeal for better facilities for architectural education. In the editorial referred to in "CONSTRUCTION," it was not stated that architecture in Canada had degenerated, but that "the practice of architecture had degenerated to a very low point," and Mr. Horwood must agree with us that such is the case, when a man absolutely untrained and without knowledge of the first principles of the profession, can pose before the public as an "Architect," and accept his two or three per cent., beside the educated and competent practitioner who has spent much money and time in properly equipping himself for the conducting of a legitimate practice.

This evil does not exist so much in the larger cities as in the smaller towns and cities, where the public has less to do with the architect and consequently has an even more vague conception of the real meaning of the term, than city folk. We would advise Mr. Horwood, therefore, not to take too seriously the compliments of friendly English visitors, who, as a rule on their trips to Canada, only see the more substantially built portions of our larger cities.

We have discussed in these columns, on several occasions, the oft repeated objection to an Architects' License Act, that it would tend to create false standards in the profession, and will only say here that we cannot understand how the raising of the lower strata of the profession up to a certain standard, is going to operate as a levelling process. We cannot see how the fact that a man must have certain qualifications before he can call himself an architect, is going to have any other effect than create a desire, yes, a demand, for a better class of trained men who are ambitious to excel.

It is as practical to say that because the province of Ontario establishes a minimum standard of qualifications for the school teacher, that none will have any desire to better train themselves to qualify them for positions open to the most competent, to which is attached a salary in proportion to the importance of the position.

The Ontario Medical Society has a minimum standard of qualifications that must be complied with, but, do we not find the ambitious practitioner making trips to New York, taking clinical lectures, and to Germany and the United States, taking post-graduate courses? Do we not find in the medical profession an energetic desire to excel?

If a minimum standard so operates in one instance, it will in another. There is nothing about the architectural student that renders him constitutionally different from those in any other profession. We have reason to believe that there are just as many ambitious men among architects as in other professions. It is not the ambitious, the energetic man who needs attention. It is the man who hopes with a little smattering of architecture, gleaned from courses in correspondence schools, or procured by his previous connection in some branch of building, who must be made to understand that the term *architect* means something. It is the draftsman who continues day after day to simply do as he is bid by his employer, without an effort or a desire to study more than is required, to permit him, when the opportunity presents itself, to hang out his shingle as an architect, who is the object of Compulsory Education.

It is the man who, without any especial love for the profession (apart from its being a means whereby he may make a livelihood) wants to take the short cuts, who must be made to understand that to be an architect, he must prepare himself to qualify before a competent board of examiners.

Then comes Mr. Horwood's plea for additional facilities for architectural education. We agree that there is

much to be done along these lines, and our contention in favor of a Licensing Law is based upon our belief that it is a practical step towards creating a condition that will demand better educational facilities. We cannot see, however, why a Licensing Act would interfere with an agitation for better facilities for architectural education. The two should go hand in hand, the Licensing Act creating an imperative demand for better educational facilities, and increased educational facilities, pointing the way to higher education in architecture.

While Mr. Horwood's problematical deductions deserve careful consideration by those who have interested themselves in this question, the fact still remains that all his contentions are purely problematical.

The manner in which the Licensing Law has operated in the three States in the neighboring republic, where it has been adopted, does not bear out a single one of Mr. Horwood's several contentions. Who would say that the standard of the architect in the State of Illinois has been lowered by the existence of this law? There is not a civil law on the statute books of the State of Illinois that would be more difficult to repeal. It has operated most successfully for eleven years, in the interests of the public, the contractor and architect alike. Would it not be unreasonable to say that because of the existence of this "so-called" low standard, that Illinois architects have not found it expedient to seek higher education in architecture?

The success of the Illinois law has caused two other States to adopt measures practically identical with that of Illinois, and it is approved of, supported and highly commended by the most prominent architects in all three states. Agitation is now being made in several other states to have the law adopted, and the movement is being supported by the most eminent men in the profession in these states. It is true that in three or four states unsuccessful attempts have been made to pass a Licensing Act, but in no case was this defeat the result of opposition from the architectural profession. The defeats were due to some technicality, ill advised methods of presenting it, or because of purely political reasons.

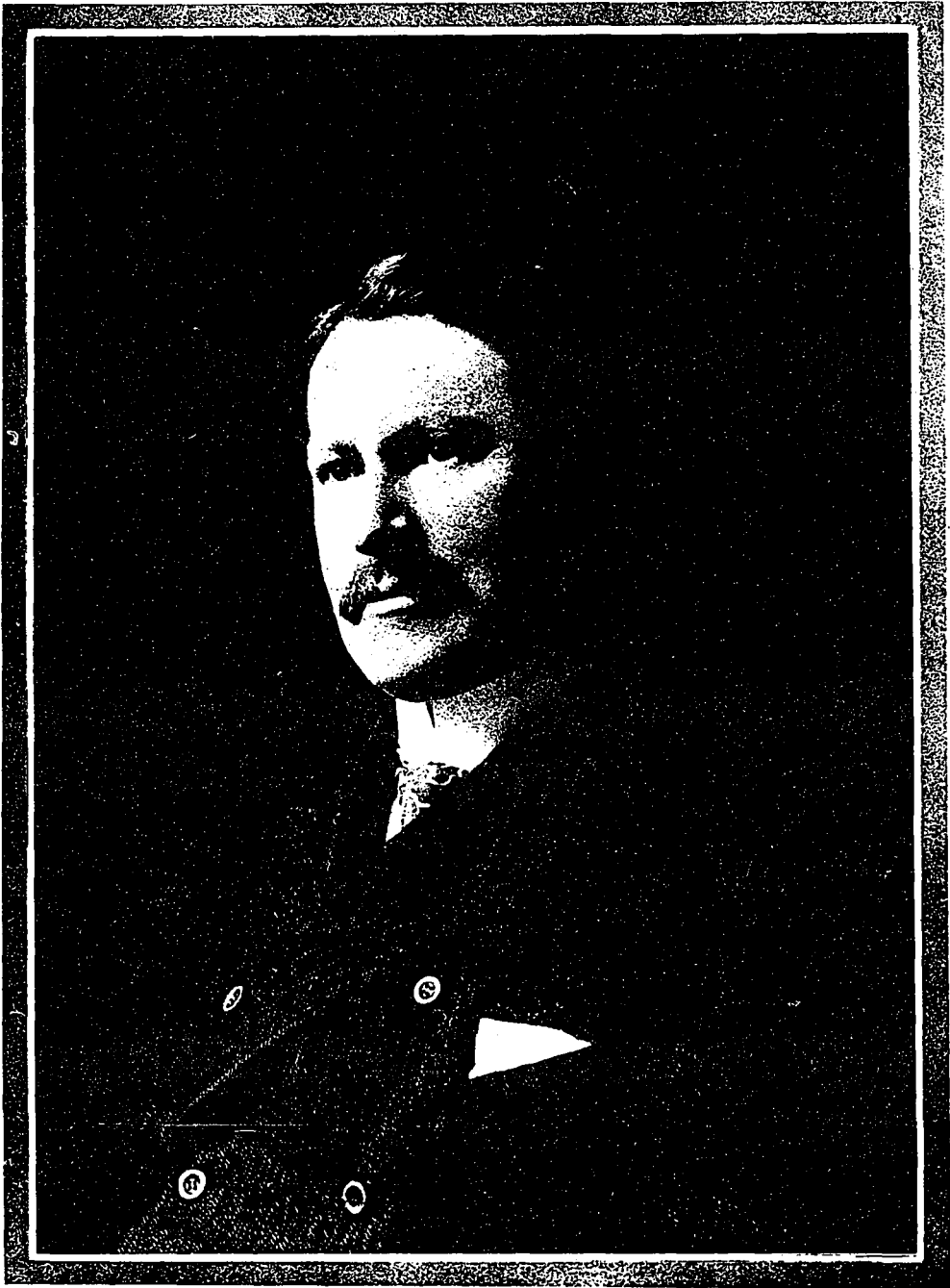
In England, where architectural monuments exist upon every side, where there are museums, where excellent facilities for architectural education exist, and where building inspection is carried on in a much more thorough and efficient manner than we can expect to obtain in Canada for some time to come, we find practically all the architectural bodies of Great Britain united in an effort to enact a most elaborate system of government examination known as the "Architects' Act." The objects of this law are almost identical with that of the Illinois License Law.

"The Architects' Act" would have been passed more than a year ago, had it not been for a clause objected to by municipal officials, which related to the employment of registered architects to do certain municipal work. This clause has been struck out, and according to recent reports the "Act" will be passed when next submitted.

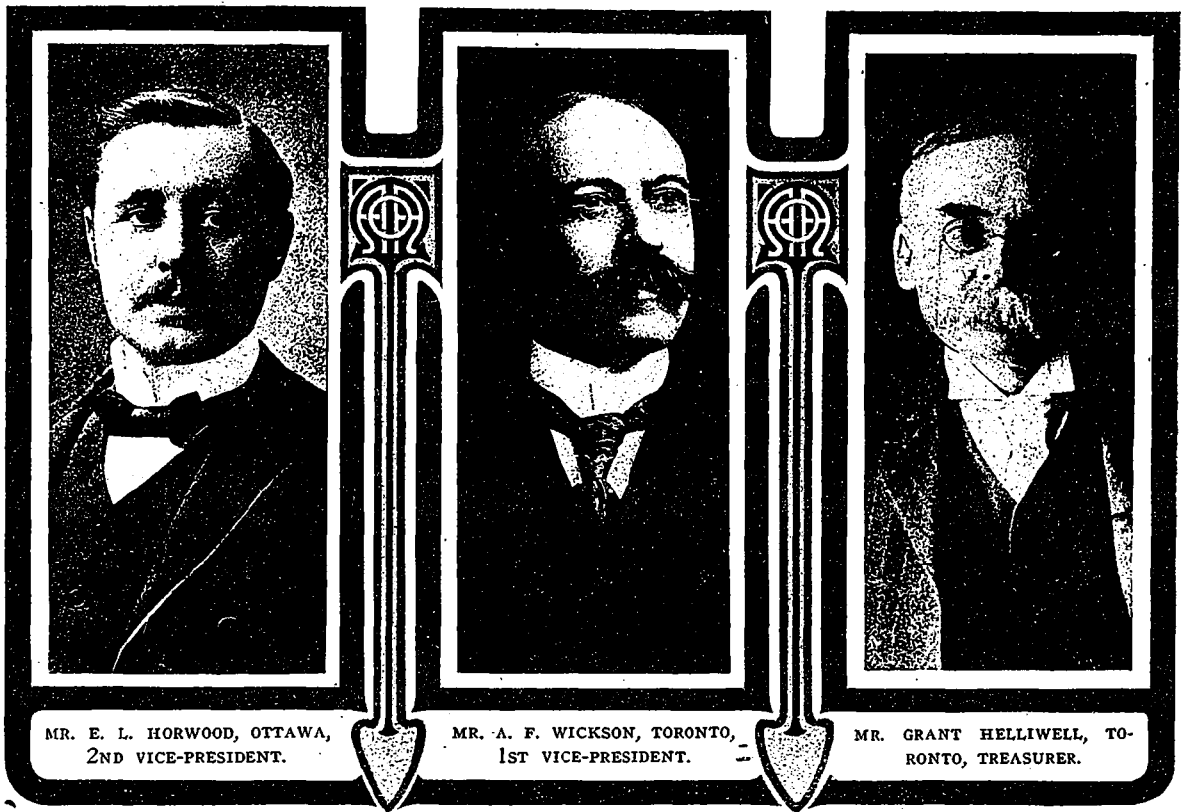
In the face of these facts, we cannot see why we should be worried over *problematical deductions*.

COMPULSORY EDUCATION is not a problem with which the architects only are confronted. At the recent annual meeting of the Canadian Society of Civil Engineers at Toronto, the necessity of a central examining board, such as exists in the legal and medical profession, was widely discussed, with the result of it being made evident that a very strong feeling existed among the prominent members of the Society in favor of some measure that would tend to raise the standard of the engineering profession, bar the incompetent and unqualified, and protect the Canadian engineer against the incursion of foreign members of the profession.

Dean Galbraith pointed out the necessity of some such law in his address at Convocation Hall, and several members made strong appeals in the business sessions of the Society for the adoption of some method or means whereby the competent engineer would be given some measure of protection.



**Mr. George W. Gouinlock, Toronto, Newly Elected President for The
Ontario Association of Architects**



MR. E. L. HORWOOD, OTTAWA,
2ND VICE-PRESIDENT.

MR. A. F. WICKSON, TORONTO,
1ST VICE-PRESIDENT.

MR. GRANT HELLIWELL, TO-
RONTO, TREASURER.

Newly Elected Officers of the Ontario Association of Architects.

ONTARIO ARCHITECTS' CONVENTION.---Con- densed Proceedings of Twenty-First Annual Assembly of O.A.A.---Architectural Education and Evasion of Duty on Foreign Plans Among Important Subjects Discussed.

THE ANNUAL convention of the Ontario Association of Architects, held in Toronto on January 12-13, was one which in many respects will enjoy a distinctive place in the annals of that organization. Of the many important matters considered, there was none which evoked a more lively interest and broader discussion than the question of architectural education. This discussion fully demonstrated that the members were giving this vital subject earnest and serious consideration, and while there was still a wide divergence of opinion, the conciliatory spirit which prevailed in general, clearly indicated that gradually an approach was being made towards the solution of this vexatious problem.

Two other important subjects which were discussed at length was the evasion of duty on imported building plans, and the question of seeking further legislation from the Ontario Government regarding the matter of architectural registration. In regard to the former, it was agreed that a united effort should be made to bring about a more strict interpretation of the customs tariff; while as to the latter, it was quite evident that nothing could be accomplished as long as a lack of unanimity existed among the members.

The programme of the convention was excellently arranged, and in addition to the discussion of these important questions, included a number of unusually interesting papers and addresses, together with a splendid exhibit of photographs and sketches representative of recent work done by members of the association.

The officers of the association as chosen for the ensuing year are: President, George W. Gouinlock, Toronto; 1st Vice-president, A. Frank Wickson, Toronto; 2nd Vice-president, — — Horwood, Ottawa; Treasurer, Grant Helliwell, Toronto; Registrar, Wm. R. Gregg, Toronto.

President's Address

By H. B. Gordon

THIS being the twenty-first annual convention, we are reminded that the Association is now of age. I hope we feel the full responsibility of manhood and are willing to enter fully into the obligations of our position.

How much has been accomplished for the profession and for the bettering of architecture in Ontario during that period, and what a large share this Association has borne in bringing such things to pass, I need not take time to relate. Those who have been members from its inception and remember the condition of affairs before that time, can fully understand what progress has been made. Then, mutual distrust between the members of the profession, the cutting of fees, the stealing of one another's clients and the slandering of other's professional reputation. Now, at least, some measure of brotherly feeling and of ethical and professional conduct, certainly a higher scale of remuneration, and a position of greater esteem in the eyes of the public. Then no formulated educational standard and few adequately trained men. Now a clearly defined standard for general efficiency and a considerable number of men seeking to attain it. These and a great many other benefits can largely be traced to the work and influence of this Association. Even those who are most indifferent to the success of the Association or are openly opposed to some of its aspirations, must be glad of the measure of progress that has synchronized with the history of this organization.

We have had, in the years that have passed, many matters of importance to deal with. Questions greatly affecting the welfare of the profession, and in the manner of the solution of which there has been room for honest difference of opinion. Some of these have received a partial settlement and others are yet facing us. We cannot all expect to think exactly alike upon these questions, but undoubtedly the best way to secure a workable solution is by calm conference among the various members of the profession, rather than by a wordy warfare before the public. I trust the Ontario Association of Architects will always be broad enough to admit of all reputable architects, however divergent their opinions, meeting together and evolving from that very conflict of opinion, the best solutions of the problems that make for the uplifting of the profession.

Architectural Education.

Prominent among these problems is the matter of Architectural education, and how best to secure that those who are aspiring to enter the profession shall be adequately educated. Every one admits that it is for the benefit of the public that all architects be properly educated. Certainly it is for the benefit of the young men who obtain such an equipment. Undoubtedly it would be for the uplifting of the profession and incidentally this would be a benefit to the older practitioners. So we are all interested, and perhaps because of this our discussions about the matter have been somewhat heated, and instead of drawing the members of the profession together have been a cause of division. But while heat temporarily separates the molecules, it is most necessary for the process of welding, so we may hope to see out of it all a united profession in a united organization accomplishing greater things than any of us may have hoped. Meantime we must thresh over the ground, gather up all the wheat of practical utility, reject the chaff of mere theory, and garner the results into an effective system of education and examination.

As superior education and general culture become more common, architects will require a more extended education if they are to occupy their proper place in society and uphold the status of the profession. Our students must not only have a higher educational standing before studying architecture, but they must also cultivate a wider range of study along with that which is purely professional.

The value of the scientific part of architectural education appeals to all men. Building operations are becoming more complex and the demand for scientifically trained men to direct the work is apparent. Each failure of a building that occurs, especially when accompanied by loss of life, loudly proclaims this necessity.

But architects are bound not only to design buildings that will not fall down. They should plan their buildings in such a scientific manner that the proper use of each material in its due proportion and correct relationship shall produce the best permanent result. The health, comfort and convenience of the public are largely in the hands of the architects, so that the best scientific education available is none too good for a member of our profession.

Designer's Duty to Educate Public.

The architect has yet a higher duty, viz., to so plan, proportion and decorate his buildings, so as to make them object lessons that will elevate the taste of the community. The creator of a badly proportioned or vulgarly decorated building commits a crime against society—a crime that may last for many years and vitiate the taste of many generations. Anything, therefore, in the way of education that will prevent men from committing such errors, should be hailed by both the profession and the public. While it is true that we cannot educate men to be artists, it is equally true that all artists are the better for being educated. And almost any man can be educated to avoid the gross inaccuracies of style and proportion which so often mar even expensive buildings.

And this leads to the vexed question: How shall this education be accomplished? Shall it be left a purely voluntary matter or shall it be made in some measure compulsory? If the former, how shall it be made so attractive as to enlist the co-operation of all or nearly all who are entering the profession? Moreover, how can it be made practically available to all or nearly all who are studying in the various parts of the province. Some say, strengthen and enlarge the architectural department of the University of Toronto, and this will solve the problem. Others aver that if atelier clubs or other means of associated study be provided, the necessary stimulus and help will be given. Both of these would prove a most desirable addition to our present educational equipment, but at best they would be largely local or selective in their influence.

The number who are able to spend three or four years at the University of Toronto in preliminary architectural education must necessarily be limited. It certainly would be ideal to have all our architectural candidates, graduates of a university, but times are not yet ripe for such an advanced step. The feasibility of carrying on atelier classes must necessarily be restricted to the large centres of population. Possibly Toronto is at present the only place in the province where such a class has any hope of success. A certain measure of class work and instruction has been carried on by this association during each winter at the rooms in Toronto. While these classes are well attended, especially this winter, they cover but a small proportion of those in training for the profession. So what can we do for those who are left to the uninviting field of individual study and the isolation of personal effort? Anyone who has attempted an individual course of study along any line, or anyone who has attempted to interest a young man in such a course, knows how hard it is to secure continuity of effort. A few, a very few may persevere, the majority are

sure to fail. And the sad part of it is, that whether they persevere and educate themselves or are lazy and neglect their opportunity, they all pass on into the ranks of the profession. And the profession is no higher than the average of attainment of its members.

Licensing of Architects.

At the present time there are some who are advocating a government examination and licensing of architects, so as to compel at least a measure of education in those who would practice architecture. This may be welcomed as an acknowledgment of the practical fact that the majority of men require some compulsory measure to induce them to qualify properly for the practice of architecture.

If we could all agree that this is the actual fact with which we are confronted, we would be better able to discuss how this compulsory test should be applied.

The licensing acts as operated in some of the States, means practically handing over the examination of candidates and the disciplining of all practitioners to a small body of men appointed by the government then in power. Were our governments ideal, possibly this might be the best way of solving the problem. But the democratic glamor of "The Government" fails to stir response in the hearts of those who see things as they are. The government consists after all of fallible men, necessarily strong partisans and more or less influenced by what is popularly called "practical politics." The particular minister in whose department the administration of the licensing bill belongs, may very likely be ignorant of the requirements of architectural knowledge and possibly prejudiced in favor of the so-called "practical man" who does most things by rule of thumb. Such a government might possibly make the best appointments to such a licensing board, without any political bias whatever, but it would be very unusual. The licensing board might be composed of the very best men available for such a purpose, but the chances are very much the other way. Why intelligent men should prefer to put themselves in the hands of a small body of politically appointed architects for the purpose of either examination or discipline, in preference to being in the hands of a widely representative body of architects with a popularly elected executive, I cannot imagine. Perhaps it is a concession to the popular clamor that the government should undertake all and sundry offices for the people. Perhaps it may be because they have never thought out the practical working of such a measure. More likely it is because it seems the only way to accomplish compulsory education and escape the insinuation of personal interest.

And here it may be well to consider the insinuation that the Ontario Association of Architects wish to lord it over all the members of the profession in this province, whether they wish it or not. I presume that no matter what form compulsory education and professional discipline takes, and no matter by whom enforced, there will be some who consider it irksome and resent being subject to it. So that whether it emanates from the government or from a professional body, the fact of such control will be a cause of opposition from some.

The progress of society, however, has been along the line of curtailment of personal liberty for the general benefit of the community. So if we want progress in architectural education we must be prepared to consent to the cost. If architecture were merely a fine art, then we might resent as unnecessary any limitation of individual liberty. But as it is both a science and art that enters very largely into the daily life of the community, the law of its progress must conform to the general law of society's progress. If by legal enactment, all architects now practicing are enrolled in an architectural body to whom is entrusted the examination of the candidates and the discipline of the practitioners, then each member has a much larger proportional voice in the matters of his profession, than the infinitesimal influence he could exert in a general political contest for the upholding or overthrowing of a government who appoint a licensing board. It is consideration of things like this that makes me wonder that any architect should prefer handing over the affairs of the profession to the control of a small board appointed by a party government, rather than have the examination and discipline administered by a representative body elected by the votes of the profession at large. If the fact of government control be advanced as a reason in favor of a licensing board, it is easily retorted that the same measure of government control, in revision of the proceedings of the professional body may be exercised as is proposed for the licensing scheme.

Public Needlessly Suspicious.

I am aware that some are advocating the licensing scheme, not because they think it the best solution of the problem of compulsory education, but because they think it is the only form of professional control that the public will sanction or the government grant. Unfortunately the public are needlessly suspicious in some things and remarkably credulous in others. It is our duty to enlighten them and secure what is best rather than weakly compromise on what we know will be less advantageous.

Some of the public seem to think that we as individuals have a great deal to gain by forming what they are pleased to call a close corporation. Let us see what that amounts to. We in the profession are seeking means whereby those who are to be our competitors shall be better educated than we are. Were we as selfish as some imagine, we might well frown down all efforts to give our coming competitors such great advantage over us. We might well rest content to see the rising generation of architects grow up without the equipment that will make them dangerous competitors. What little incidental advantage may come to us from the gradual uplift of the profession will be more than offset by the unequal competition we may be subjected to by the younger and better educated men. There are

however, many architects who love their profession apart from personal gain and who would delight to see it placed on a higher level irrespective of the results to themselves. Such generally are the men who spend their time and thought in seeking a solution of the educational problem. Men may differ from them as to methods and may not agree with their conclusions, but surely they should be freed from any imputation of self-seeking.

But what have the public to fear from placing the matters of architectural examination and professional discipline in the hands of such a body as the Ontario Association of Architects? Supposing that the legislature granted our desired amendments, made all bona fide practising architects in Ontario members of the association, and imposed reasonable government control over the decisions of this body, what would happen. Builders and others might go on making plans and charging for them. Any amateur might draw designs and specifications and any other fool might employ him without let or hindrance. No limitation of freedom would be felt in any direction save one, viz., no man might call himself an architect unless he honestly had a right to do so. I have heard somewhere that it is the highest function of law to make it easy for a man to do right and hard for him to do wrong. Judged by this standard our proposed amendment is of very high order, for it would prevent some men from acting a lie and would enable the public to do right in choosing men who had the necessary qualification. After twenty or thirty years' operation of such a law, when those who had come in without examination had retired from practice, any one employing an architect might be quite sure that the man he employed had an education that might enable him to rightly discharge the responsibilities of his position. Think of the incalculable benefit to the public if all our buildings were designed and carried out under the supervision of competent and trained men.

Affiliation with A. I. C.

Since our last convention the Dominion Association of Architects has been incorporated under the title of "The Architectural Institute of Canada." This larger body with a membership from the various provinces will naturally attend to architectural matters that are common to the whole country, while the provincial bodies will deal with the affairs that are more distinctly provincial. Many architects are members of both the Ontario Association and of the Dominion Institute and see possibilities of great usefulness for both bodies. The ultimate aim of each is to raise the standard of the profession. There need be no conflict in the operation of the two organizations. In order, however, to preserve a spirit of harmony and utilize to the best advantage the functions of each association, some scheme of affiliation or co-operation must be effected. No doubt your attention to this matter will be requested at an early date.

Provincial Building Law Necessary.

Another matter that should receive attention from this association is the desirability of some general building laws covering the whole province. To what extent this is feasible in view of our municipal form of government is yet to be discussed. The necessity for it cannot be doubted by any one who gives due consideration to the matter. While some of our cities have building laws, more or less complete, the major part of the province is entirely without restrictions, so that each builder is a law unto himself. The safety of the public from insecure construction and unsanitary arrangements demands some broad general laws. The danger to life and the enormous waste of property by fire make such laws imperative. Canadians are among the most extravagant of peoples in the annual offerings they make to the fire fiend. We need not wonder at occasional hard times when we are allowing so many millions annually to go up in smoke.

While more stringent regulations are possible and necessary in the large centres of population, there are a great many restrictions that can be wisely imposed upon building operations all over the province. Take for instance our schools where often hundreds of children are together in buildings that are little more than fire traps. The appalling loss of 150 children in the Collinwood school fire on the other side of the line, and the somewhat similar catastrophe at Hochelaga call loudly for some amendment to our present happy go lucky methods. Some general laws covering requirements as to exits, fire protection, materials and disposition of staircases, &c., are urgently needed. The average school trustee or the average council man who votes the money for schools has neither the knowledge or discernment to insist upon these necessary requirements in school buildings, and most likely is moved principally by the matter of cost. The average man who designs or constructs schools throughout the province even if he understands the need of protection against fire and panic, may yet lack the force of character necessary to impress his views upon a penurious school board or council.

Some of the town halls and many of the places of popular amusement throughout the province where large crowds assemble seem specially constructed to invite a catastrophe. Inadequate exits, flimsy wood construction and dangerous methods of lighting and heating are common. The same dangers are being constantly faced in many manufacturing establishments and, even in our midst, the large departmental store affords a field for some terrible disaster. The immense open area of floor space with piles of light inflammable goods, the open staircases, well holes and elevator shafts, and the crowds of customers and employees, present most favorable conditions for a dreadful holocaust.

If we wish to retain that part of higher civilization that insists upon the value of human life, something more must be done to protect both public and employees. There is a financial as well as a humanitarian aspect to the matter. When we are informed that about 78 per cent. of the loss by fire during 1907 was caused by reason of the open stairways, elevators or

light shafts, it is business folly to go on heedlessly providing more facilities for conflagration.

The question of limiting the height of buildings to some relationship to the width of the street on which they face, is one that should receive discussion and pronouncement upon by this body. The unfairness of allowing anyone to literally put the surrounding property owners into the shade while he utilizes their property area to give lighting scope to the upper parts of his building, is an ethical question that can be discerned by all. But the artistic, sanitary and constructional sides of the question should be pronounced upon by men who are able to form a sound technical opinion.

Expert Testimony.

There is another matter to which I would like some attention paid by this association. Many of us, especially those living in the cities, are called upon from time to time to give expert evidence in the courts upon building matters. First we are instructed by the employing counsel as to what kind of evidence he wants us to give and what he wants to avoid. Then in court we are subjected to the cross examination of the opposing counsel who by inferential questions and a demand for monosyllabic answers seeks to make us contradict ourselves. All this is bad enough, but altogether likely we are confronted with the evidence of a brother architect which goes to prove the very opposite of what we have stated. Hence the low estimate placed on expert evidence, and the sneering insinuation that experts can be hired to prove almost anything. No self respecting architect cares to be placed in such a position, and there is no doubt that the profession as a whole suffers in the eyes of the public from this condition of affairs. This association should co-operate with other professional bodies in a movement either by petition or popular agitation, seeking to have all professional experts who give evidence in court, appointed by the judge and thus placed in a perfectly impartial attitude.

Your attention will be drawn to an omission in our by-laws and a proposed amendment seeking to remedy it. At present there is nothing in our by-laws to prevent a member of the association from acting as a contractor as well as architect. The incompatibility of the dual position must be apparent to all who have given the matter consideration. An architect's duty is to insist upon the correct fulfilment of a contract, and for him to act as a contractor for the work, gives ground for the suspicion that he may make the duties of the former position in some measure subservient to the interests of the latter.

Still further to express what has been an unwritten law among us, and to publish our ethical standard, a by-law is proposed stating definitely that "No member shall accept direct or indirect compensation for services rendered in the practice of his profession, other than the commission received from his client." We are glad to believe that this is the working rule of most of the men in the profession in Ontario, but it is desirable that such a plain statement be found in our by-laws, both as an educative and preventative measure.

Unprofessional Scramble for Work.

There is another matter which cannot be regulated by by-laws and yet should receive attention by this association; it is the growing tendency of architects to canvas for work. No sooner is it rumored that some one is going to build, than some men, who ought to know better, hustle around to him with all sorts of offers of sketches and estimates, and concerted claims of being specialists in the particular kind of building contemplated. Not content with immodest exploitation of their own abilities, such men are sometimes not above slandering their brother architects. Even when preliminary arrangements have been made with some other architect, there are men who still persevere in seeking to turn the job to themselves. Such conduct not only cheapens the men who engage in it, but also lowers the profession in the eyes of the public. To canvas one's own acquaintances is bad enough, but to call on strangers and possibly run down other architects in order to enhance one's own claims, is to prostitute the profession and make it the laughing stock of the public.

Cases are not uncommon where after an architect has spent much time and thought upon a problem, he is supplanted by some one else. Even though he be paid for his services and every legal claim settled, there yet remains the loss of professional reputation on his part and serious damage to professional ethics. The practice of architecture is not a scramble for work, but the calm studying of all the problems involved in the particular job and their solution in the most scientific and artistic manner possible. And this should be carried on without the disturbing possibility that at any stage in the process the work may be taken away from the architect and given to another.

Employment of Foreign Architects.

The tendency in some quarters to pass by the local practitioners and employ foreign architects is one that not only is insulting to the profession in Ontario, but also detrimental to the progress of our art. If the work of these United States architects was a distinct gain to the artistic or scientific quality of our buildings we might pocket our pride and be pleased with the upward trend of affairs. But when we see Canadian buildings planned by foreign architects, which embody neither good planning nor artistic appearance, we cannot but feel hurt.

Private individuals may claim the right to go where they like for their designs, but even in such case it is poor business and poorer loyalty to pass by those in the community where they have made their wealth, and employ outsiders. But no adequate word of excuse can be given by institutions which are dependent upon the Canadian public for their capital and business, when they pass by Canadian architects and employ foreigners. In

the early days the Ontario government was a chief sinner in this respect with the unfortunate results that still point a warning in Queen's Park. Their bad example was followed by institutions which emblazon the word Canada or Canadian in their name. Rather a misnomer when they had important buildings to erect. Since then each year we are treated to some example of imported architecture. Even such institutions as the Y.M.C.A., which are so dependent upon the good will of the community, forget what is due to their constituency and import United States architectural service. I question however whether import is the correct term, for in a great many cases such plans are introduced to this country without paying duty. The Canadian architect is taxed by the Government on nearly all the things that go to make up his business outfit or his living expenses, while the United States competitor is allowed to introduce his productions free. A method which is now being used to avoid payment of duty, is to employ some Canadian as associated architect and issue the plans from his office. It is not only the Canadian architects that suffer. For it is the common practice of United States architects to import their own contractors and specify United States goods wherever possible. The owner of the building suffers for he gets a more expensive building and one no better planned or designed than many Canadian architects could provide. The only people that benefit are the United States architects, contractors and supply men who rejoice to keep up the fiction that "Far o.f hills are green" and to prove the proverb that "No prophet is without honor save in his own country."

Canadian Architecture Advancing.

However, after all, the better part of our progress depends upon our own endeavours, so despite all the handicaps, Canadian architects are winning out and Canadian architecture is advancing. One thing that makes for our progress is the educative effect of such exhibitions of drawings or photographs of our work, as we are holding at this convention. The value of such exhibitions is greatly enhanced if the designs are criticized in a frank manner by those competent to express a useful opinion. All men should welcome an honest criticism of their work. Indeed if it were possible to carry out some method of criticism of our designs before they were executed, there would be a distinct gain to architecture and also to our professional reputations. Even the best of men may at times produce designs containing ill judged mannerisms. The most are apt to run into grooves and the aspiring young man is very likely to blunder into crudities.

All have something to gain by a discerning criticism which while it may not flatter our vanity, will appeal to our judgment and help us to correct our faults. Where men are meeting together often, as in a chapter of this association, and the bond of good fellowship is more or less strong, such criticism can be indulged in without producing friction. The benefits that have accrued to the Toronto and Ottawa men by having a local chapter is so evident that the architects in other cities should seek to initiate some such form of organization in their own town. Even the busiest man in the profession will find that the time and thought spent in carrying on a local chapter or similar organization is repaid in the improved relationship with his fellow practitioners, the higher tone of ethical conduct and the incidental advantage of a higher respect from the public for the profession. A man generally reaps what he puts into any movement. So when we spend time and thought on any organization for doing good, not thinking what we can get out of it but what we can put into it, we always find that it is more blessed to give than to receive.

Whatever may be the official standing of the Ontario Association of Architects in the future, I believe that it can and will be increasingly made a channel of professional help and stimulus to its members and a powerful factor in the uplifting of architecture in our province.

Committee Reports

Registrar's Report

The Registrar's Report shows that during the past five years the Association has enjoyed a steady annual growth. The membership at the present time was ninety, two of which are honorary members, forty-eight active members in Toronto, and forty members in other places. During the year there have been eleven meetings of the Council, with an average attendance of five members. At the examinations and supplementary examinations, held in April and October respectively, five students passed the first, six the second, and four the final examination. Prizes of architectural books of the respective values of \$10.00 and \$5.00 were awarded by the council and the trustees of the Architectural Guild Prize Fund to students, for general proficiency and for design. The Guild Fund trustees have on hand a Canada Permanent Company's debenture of \$400.00, bearing 4 per cent. interest, and a savings account balance of \$59.72. The eighth annual volume of the proceedings was issued in April, and 1,200 copies were distributed. The annual examination for Canada, of the R. I. B. A., took place in the Association rooms in November, and the Association was represented by two members in conjunction with two representatives of the Province of Quebec Association of Architects.

Report on Travelling Scholarship

The Committee reported that the prize of \$50.00, offered by Mr. Edmund Burke, at the end of 1907, was not properly responded to, there being only three entries, and the work was not of sufficiently high standard to warrant the judges in awarding the prize. It was recommended that \$10.00 each be given to two of the competitors; Mr. Burke had agreed to this,

and had also generously renewed the offer, to be awarded for the same purpose during the coming year, under what was hoped to be happier conditions.

Report of the Educational Committee

The report showed that the mathematical classes held in the Association rooms on Monday and Wednesday evenings had in the past year a membership roll of twenty-five students, and that under the tutelage of Mr. Thos. Taylor, satisfactory progress had been made. Attention was called to the fact that there are several students in attendance who have not enrolled as students with the registrar, and that five others, who have registered as students in offices of the members of the Association, or in offices approved by the council, have not taken out articles of apprenticeship. It was recommended that approved articles of apprenticeship be deemed requisite for all students in offices of members of the O. A. A., who enter the Association examinations.

The Committee again urged upon the members the necessity of admitting to their offices only students who have scholastic attainments compatible with the qualifications of admission, as set forth in the curriculum; and also of the desirability of requiring them to take the Association course. While mathematical classes were perhaps the most easily organized and conducted, for the study of design, the problem presents many more difficulties. Instruction could not be so readily obtained, and it is much more difficult to place the study on a similarly permanent and businesslike basis. Without Government aid, under the existing conditions, it seems impossible to secure other than voluntary instruction, and past experiences have demonstrated that such instruction had a tendency to be fragmentary and ephemeral. An attempt was now being made by a club of students and draughtsmen, somewhat on the lines of the Atelier system, and it was to be hoped that the students by good attendance and enthusiastic work would show their appreciation and encourage the architects who were devoting considerable time and thought to their interests as patrons and critics. It was suggested that if ways and means permitted, classes be established at other quarters, in order to better prepare students in these places for the examinations. Ottawa at least, with a flourishing chapter, should be able to furnish a sufficient quota of students to warrant the establishment of a class in mathematics, if not in design.

The committee desired once more to impress upon the members that the real solution of these difficulties seemed to be in the hands of the Government. Were the profession of architecture put on a plane with other professions, students could be required by law to take a proper course of training, and it was the opinion of the committee that the proper place for work of this kind should be such an institution as the School of Applied Science, Toronto University. The architectural students there at the present time were almost a negligible quantity. If the desired legislation was obtained, the number would increase to an extent which would warrant the Government in providing a full architectural staff, and that the best possible training could be given in design, as well as in other technical branches. The atelier system could be adopted, and practicing architects retained as patrons, whose interests in the work would not necessarily be wholly altruistic. One thing, however, was clear, that no matter what efforts were made to improve conditions at the School of Science, it was hopeless to expect that a sufficient number of architectural students would attend to warrant the Government in providing the professorial staff and the equipment which is needed, unless it were made obligatory for all desiring to become architects to take the course.

Report of the Ottawa Chapter

The year's work of the Ottawa chapter was reviewed in the report prepared by its Secretary, Mr. F. J. Alexander. In the past year the membership was increased by the addition of three new names, and thirteen regular and special meetings had been held. These meetings evinced no lack of interest in the work of the chapter, but on the contrary have appealed strongly to the members, as affording valuable opportunities for the interchange of ideas and the encouragement of the united effort for the common good. The question of duty payable under the Customs Law of Canada on imported architects' plans, as dealt with under a separate report submitted by the chapter, was a matter of grave importance, and one which called for prompt consideration and concerted action on the part of all Canadian architects.

In addition to being chosen as the headquarters of the Institute of Architects of Canada, Ottawa has had the pleasure of having the first annual convention of that body. It was to be deplored that the charter granted to the Institute of Architects of Canada, owing to short-sighted opposition from Provincial Societies and individual architects, is vested of the right to place any restrictions on the title of architect, and it is urged that continued and unrelenting effort be made by the Ontario Association to secure this status for the profession from the Provincial legislature. The chapter desired to go on record as being in favor of placing the student's professional education, qualifying examinations, and subsequent license to practice, under Government control, as the only solution to the problem that will protect the public and the profession. During the year, the chapter had draughted a new set of building by-laws for the city of Ottawa, which had every prospect of being carried into effect this year.

Report of the Toronto Chapter

The report of the Toronto chapter showed that there had been sixteen meetings in 1908, with a total attendance of 204. There was a greatly improved average attendance over the preceding year, and the regular chapter luncheons have had a

strong tendency to stimulate friendly intercourse, and to promote a broader spirit in general.

One of the important items dealt with by the chapter during the year was the matter of revising the plumbing by-laws. The recommendations of the committee appointed to interview the Medical Health Officer were favorably received, and the committee was asked to draught such amendments as were deemed necessary. Two members of the chapter had been appointed to meet a committee from the Eighteen Club, to discuss ways and means to obtain a reduction in the assessment on architects' offices according to floor space. Nothing definite as yet has been decided as to the proper course to pursue.

Mr. Ivan S. Macdonald, Editor of "Construction," at the request of the chapter, gave an address on the charter appur to that by the Ontario Association of Architects. He pointed out that as long as the Association retained the name "registered" in the chapter, forcing all practicing architects to be members of the Association, and to pass examination for membership, there would be very little likelihood of the Government passing the law, as there was too great a feeling among the people against incorporating closed professions, especially in some of the professions themselves who object to being forced to belonging to an association. In this case the similarity of the doctors' and lawyers professions was shown, where some of the members object to the system of taxation. Mr. Macdonald advocates making it compulsory for practitioners to pass Government examinations before being allowed to call themselves licensed architects. Others could practice architecture, but would have to make public that they were not of the required standard. Statistics were given of American States, showing that it had proved advantageous to make architecture this kind of a closed profession. It was also shown how difficult it was to take plans into the States, but how easy to bring plans from the States to Canada.

Report of the Legislative Committee for 1908

According to the report of the Legislation Committee, the matter of amendments to the Architects Act was taken up with the Ontario Government during the last year. Early in the year, the sub-committee appointed by the senate of the University of Toronto to consider conducting by the University examinations referred to in the Act, transmitted a resolution to the effect that it was not deemed advisable for the University to conduct examinations except according to its own curriculum, and after instructions approved and controlled by its own senate; and that they believed the University could most effectively promote the advancement of architecture by strengthening its present teaching faculty and enlarging its curriculum.

The bill had received its first and second reading and the committee had appeared before the legal committee of the house on several occasions. However, the presenting and further discussion of the bill was deferred from time to time and at the request of the Government, owing to negotiations pending with the University, was laid over until the next session. Surprise was expressed at the opposition met with from the University, in the person of their representative, Prof. Baker, especially so in view of the fact that no specific reason was given. In order to ascertain, if possible, the objections of the University, the committee had met Dr. Falconer, who, while admitting not being conversant with the opposition to the bill, stated that the University could not undertake conducting the examinations, but if sufficient students presented themselves at the University, they would consider starting night classes. At a meeting of the council in November, it was resolved that the legislation committee be instructed not to take further action towards amending the present Act until after the annual meeting. A special committee was also appointed to consider the best method of draughting an architects licensing act, and presenting it to the legislature, and their solicitor had been instructed to draught up alternate amendments. It remained to be considered whether the bill as amended, excluding that portion relating to the University, or whether a genuine licensing act, similar to that adopted by the State of Illinois, should be presented at the forthcoming session of the Ontario Legislature.

Discussion

In the discussion that followed, Mr. Horwood, of Ottawa, wanted to know if there was anyone who could throw any light on the negotiations that had been carried on during the year, so that an intelligent opinion could be formed as to whether it would be wise to continue to press the matter or not. He said that according to the report, there was absolutely no information as to the state in which the bill was at the present time, or whether it would be wise to proceed with it.

Mr. Sparling asked if the word "registered" had been taken out, as it seemed doubtful whether it was still in the original draught or included in one of the amendments.

President Gordon stated that the question to be considered was whether the bill in the old form, or in an amended form, should be introduced, or whether supplanted by another scheme, one of compulsory education, a licensing bill, or something of that kind.

Mr. A. H. Gregg was of the opinion that the report should be adopted, as it was simply a statement of the legislative committee as to their actions during the past year. No recommendation was made, for the reason that it was thought best to leave the matter to the council or to the Association, to be acted upon at the annual meeting.

Mr. Watts stated that according to the report, it would look as if the Association should come to some decision as to what line of action would be adopted at the next session of Parliament. He believed that this was the information that Mr. Horwood was seeking, and wanted to know if the meeting was to make any decision on the matter.

President Gordon pointed out that the convention was the governing body of the Association, and the final court of appeal.

It could either go into details and decide then, or it could express its opinion and pass on the workings of the details to the next council. The President then put the motion for the adoption of the report before the meeting, which was duly carried.

Affiliation with the A.I.C.

The following letter was received by Mr. W. R. Gregg, Secretary of the Ontario Association of Architects:

Dear Sir,—

The General Annual Assembly of the Architectural Institute of Canada was held in Ottawa in September last. At this meeting the council was instructed to take preliminary steps towards a movement for the federation of all architectural bodies in Canada. I have the honor to inform you that the council of the Institute met last week in Montreal, and instructed me to communicate with you and ask you to appoint a representative to meet and confer with representatives from various architectural bodies throughout Canada, "or if you are unable to do this, to instruct a proxy from some other architectural body, to act for you," so that a full discussion of this proposal may be held and future action decided upon. In the meantime, it is suggested that this meeting be held some time in February or March, 1909, in Toronto, but the council of the Institute will be glad to meet the views of the majority regarding the date and place of this meeting.

Yours very sincerely,

Aldice Chausse,
Secretary, A. I. C.

With regard to the letter from the Architectural Institute of Canada, Mr. Baker stated that the communication disposed, to some extent of a notice of motion which he had given previously, and which had been printed in the Agenda, giving notice of the meeting. He thought that most of the members felt that the time was approaching when unity of action ought to be brought about among the architects of Canada. The scope of the architect seemed to be widening and new fields were opening out. He had discussed the question with a large number of members, and it seemed to be the consensus of opinion that if some manner could be devised to get down to a single basis of action, more would be accomplished with a large number than with a small number in individual groups. He referred to the importance of work along educational lines, and to the excellent results that had been obtained by the different provincial bodies. He believed that the action of the Institute was simply a suggestion to ascertain whether it would be possible to place a body like the Architectural Institute at the head of the whole profession in Ontario, and bring in all the provincial associations by affiliation or amalgamation with the Architectural Institute. There was a good deal of confusion at the present time, and it seemed that much could be said in favor of such a suggestion. He suggested that a committee be named to report on the matter, and, at the suggestion of the Registrar, read the notice of motion to which he referred, which is as follows:—"That in view of the establishment of the Architectural Institute of Canada, with objects identical with those of the Ontario Association of Architects, it be considered and, if found advisable, action be taken by the members to bring about affiliation or amalgamation of the Ontario Association of Architects with the Architectural Institute of Canada."

Report on Imported Architect's Plans

Mr. Horwood then read the report of the Ottawa Chapter, which, at the request of the Executive Council of the Association, had made inquiries at the Customs Department at Ottawa, relative to the duty at present payable on designs or drawings imported into Canada. To say that success, except in a limited way, had crowned the efforts of the Chapter would be misleading, but sufficient had been accomplished to justify and stimulate further effort, both individually and collectively. Mr. Alexander, Secretary of the Chapter, had been actively investigating the evasion of payment of duty on plans, and it had been their good fortune to be able to bring to the notice of the Department a number of instances where duty was not collected or being evaded, with a result that a very substantial sum had been subsequently collected by the Dominion Government. Similar cases of like success had been reported from other places in the Dominion, but there was still a number of instances where they were ignorant as to whether duty had been collected or not, owing to the non-committal attitude of the officials, who seem to maintain a strict secrecy as to the conduct of their department.

One of the greatest evils which militate against the interests of the profession is the practice of Canadian architects associating themselves, in the erection of large buildings, with outside architects, who open up temporary offices in Canada, in order to avoid the payment of duty, and in which the only reward that the Canadian architect receives is a share of the commission for local supervision of the work. It was the opinion of the chapter that some amendment should be made to the Customs Act, in order to deal with cases of this kind, and that the co-operation of the Canadian Manufacturers Association and other similar bodies should be asked in making representations to the Government. Although the present tariff gives 25 per cent. as the duty payable on the cost of imported plans and specifications, yet under the arbitrary ruling of the Customs Board which places the amount chargeable on the cost of the building as 2 1/2 per cent., apportioning 1 1/2 per cent. as covering the supposed value of the specifications, which as manuscript comes in duty free, and so leaves only a balance of 1 per cent. of the commission on which to charge the duty of 25 per cent., which it is considered is just one-half the proper duty. The proper method of valuing imported plans should be finally determined not on the author's estimate but on the actual tenders received for the work. The absolute necessity for architects in all the

large towns and cities to exercise a constant vigilance and to notice and report to the Customs Department every instance of imported plans and attempted evasions of tariff was imperative. It could not be too strongly urged on the Ontario Association the need of prompt, united and vigorous action in this matter, in bringing it officially before all sister societies throughout the Dominion, and impressing upon them the necessity for concerted action, in order that every legitimate influence can be brought to bear on the Government to have the tariff amended and effectively enforced.

Congress of Architects, Vienna

By D. B. Dick

THE eighth Congress must be considered to have been a very successful one. Vienna is admirably adapted to be the scene; the hospitality of its people from the Emperor downwards was unbounded; and the weather could not have been finer, unless perhaps it had been somewhat cooler. The number of members in attendance was over 1,500, which was about double the number expected and prepared for; and if the business department seemed to be in some respects overtaxed, this circumstance amply accounted for it.

Difference of language is always a difficulty at an International Congress, and if a greater one had been made of French or English in the published literature, those who had had the misfortune not to be acquainted with German would have been able to follow the proceedings more closely. This was especially noticeable in regard to the papers read. No abstracts of these were issued although at the Congress of 1906 very full abstracts of all papers were prepared in English and French and issued beforehand to the members. It was therefore not surprising that on this occasion those meetings were but sparsely attended by the foreign members, and there was only one instance mentioned in the newspaper reports of an English speaking member having taken part in a debate.

The subjects discussed in the papers and lectures were as follows:—

- The State and Art.
- Legal qualifications and licensing of architects.
- Building regulations.
- Conservation of public architectural monuments.
- Photometric survey of architectural monuments.
- Historical architecture.
- Competitions.
- Architectural copyright.
- Architecture and the Public.
- The artistic improvement of Engineering Work.
- Reinforced concrete.

In connection with this last subject, rupture tests on concrete iron pillars were made at the Laboratory of the Technical High School. All papers were in German except one which was in Italian.

Visits were arranged to a number of buildings interesting either in themselves or for the art treasures which they contained, as well as to some districts remarkable for their beautiful scenery. Some of these arrangements naturally overlapped so that it was necessary to make a selection. The visits included:—

- Various Museums and Exhibitions.
- The Semmering district.
- Klosterneuberg monastery.
- Several castles and palaces.
- Schonbrunn with its park, menagerie, Palm house, etc.
- The County Lunatic Asylum, "Am Steinhof."
- The new Post Office Savings Bank.

The asylum is a very large institution consisting of numerous detached buildings served by a small electric railway. The pay wards, to which the visitors were admitted, are most comfortably and artistically fitted up. The whole institution is equipped with the most modern appliances for cooking, laundry work, baths and sanitation generally. All the buildings are of simple design except the church, which was designed by Herr Otto Wagner, the President of the Congress, in a kind of Syrian Byzantine style. Although small its external effect is exceedingly impressive. The interior however, although displaying much originality of detail, does not fulfil the promise of the exterior, owing chiefly to the unfortunate treatment of the dome.

If one may judge by the amount of public interest taken in the Congress, the recognition bestowed on it by the government and municipal authorities, and the preparation made for the entertainment of the members, it would appear that in Austria the profession of architecture is regarded as a highly honourable and important one and its members as an influential body.

The opening meeting was held at the Parliament buildings (the Reichsrath) in the Representatives chamber, a fine semi-circular room with galleries which were occupied by ladies and other spectators. There were present the Ministers of the Interior, Railways, Instruction, Agriculture, Public Works, also the President of the House, the Chief Burgemeister, the American Minister and other personages. The President, Herr Otto Wagner, welcomed the delegates and thanked the government for the interest they had taken in the Congress. The Minister, apologizing for the absence of the Prime Minister, then opened the Congress with an address of welcome on behalf of the Government. Replies were made by representatives of Hungary and several foreign States including Germany, France, Holland, Belgium and the U.S.A. Britain and her colonies were here conspicuous by their absence.

The Congress headquarters were in the rooms of the Arch-

itects' and Engineers' Societies, and papers were read in a hall in the same building and in one in an adjoining building.

Notable Exhibition of Designs.

A special exhibition of designs by old masters was arranged in honour of the Congress in the large hall of the Imperial Library in the Hofburg, and some 4,000 drawings and pictures were shown. It was a most interesting historical collection and included drawings by Bernini, Rinaldi, Borromino and many others. Some of them were wonderful examples of draughtsmanship. The hall itself is an imposing room in the Baroque style, erected in 1722 by Fischer von Erlach, the leading Austrian architect of that day. It has a dome elliptical on plan, a peculiar feature which several of the churches also possess.

The exhibition of modern architecture was in the building of the Society of Garlleners which, being well lighted and containing numerous rooms, was well adapted to the purpose. As was natural, Austria, Hungary and Germany had the largest and best display. The Justice Palace at Buda Pest may be mentioned as a good design shown by a good drawing. But Russia, Italy, Belgium and France were well represented. The Committee of the U.S.A. had secured a large room which they had decorated with the national flag, and the walls were covered with drawings and photographs of buildings erected all over the country from Boston and New York to Seattle and San Francisco. So many of them were excellent that it seems invidious to particularize, but Mr. Cass Gilbert's fine wash drawing of the N.Y. custom house may be mentioned. The room allotted to England was small, but it was too large for the exhibit which consisted mostly of sets of small drawings and photographs in frames. Not a single important building was represented. The poverty of the British display was a matter of general remark, and it is to be hoped that on future occasions the Committee acting for Britain and her colonies will take the proper measures for ensuring an adequate representation in regard to drawings, preparation of papers, and speaking on such occasions as call for it.

Modern Architecture Cosmopolitan.

The cosmopolitan character of modern architecture is shown by the fact that with a few exceptions it would have been difficult, in the absence of titles, to tell which countries were represented in the different rooms. Russia was one of the exceptions, the characteristic style of the churches being unmistakable. It is difficult therefore to compare the modern architecture of the different countries as a whole. Criticism would have to be of individual designs rather than of countries. There were many good designs and some fantastic ones from the strivers after originality, and unfortunately a good deal of *l'art nouveau*. There was much good draughtsmanship in every medium, and a free and effective use of models, most of which were admirably executed.

The social side of the Congress began on the evening of the opening day with what was modestly described in the programme as a "reception by the Burgemeister" at the Rathaus but was followed by a grand banquet in the magnificent banquetting hall, at which fully 1,200 guests sat down. The speaking was confined to the usual toasts.

An evening reception was given at the Kunsterhaus (art gallery) by the Vienna Artists' Association and the Architects' Club.

Gentlemen attending the Congress were received at Court in the Hofburg, on which occasion the Arch-Duke Leopold Salvator represented the Emperor, who had that day received at Schonbrunn, in connection with his diamond jubilee celebrations, a great gathering of children, to which the ladies of the Congress were invited as spectators.

An evening fete was arranged by the Society of Austrian Engineers and Architects at the Kahlenberg, a favourite mountain summer resort of the Viennese, and from which there is a magnificent view of the city and surrounding country. It is ascended by a rack and pinion railway which winds through beautiful scenery.

At several of the places visited members were entertained to lunch or afternoon tea.

The farewell banquet was held at the Continental Hotel. The President occupied the chair and was supported by the Minister of Public Works and other distinguished guests. The usual toasts were proposed, and a representative of each of the nations taking part in the Congress replied on behalf of his country. The British guests were gratified that on this occasion Mr. Leonard Stokes, Vice-Pres. R.I.B.A., made an appropriate speech.

Next Congress at Rome.

It was decided by the Executive that the next Congress is to meet, by invitation of the Italian Government, at Rome in 1911 on the occasion of the inauguration of the great monument commemorative of the re-establishment of Rome as the Capital of united Italy.

For a city whose history dates back to the Celtic times before the Christian era it must be confessed that Vienna has wonderfully few ancient buildings. The only notable ones are the Cathedral, Church of St. Stephen, a glorious pile dating partly from the 12th century, and the small but very quaint and interesting Church of St. Maria Stegen, dating from the 14th century. But many of the Renaissance and Baroque churches and other buildings are interesting. Most of the buildings not of a public character are coated with cement with the almost inevitable consequence of meretricious detail.

Description of Vienna.

The chief interest of Vienna lies in its general layout, the Ringstrasse, the parks and gardens, and the admirable manner

in which its public buildings are placed in relation to these. Ancient Vienna or the "Inner City" is of an irregular horse-shoe form with the heel resting on the Donau canal, which is really a large and rapid branch of the Danube. On the island between this branch and the river proper lies the great park—the Prater—which may be called the Hyde Park of Vienna. The fortifications which surrounded the Inner City were removed shortly after the year 1860, and the wide space which they and the moat had occupied was used to form a splendid street nearly 200 feet wide, and to provide sites for public buildings and gardens. It was a great opportunity, and fortunately the authorities were equal to the occasion and made excellent use of it.

The Ringstrasse consists of seven straight sections of varying lengths and bearing separate names, and is laid out with shade trees and wide walks, leaving ample space for roadways and electric car lines, which are here equipped on the underground system, although the overhead is used in the outer districts. All the important new buildings face the Ringstrasse, most of them on the outside. The ample sites and gardens give a great air of spaciousness and dignity, while the manner in which the buildings have been grouped in relation to each other and to the leading features of the old town is altogether admirable. For instance one section is laid out with a large oblong garden, at the back of which is the Rathaus, a fine Gothic building, while at one end is the University, a large Renaissance pile, and at the other the Parliament buildings—a most successful Grecian design. On the inner side of the street and on the line of axis of the garden and the Rathaus is the fine Imperial Theatre, the whole thus forming one group. The section opposite the Imperial Palace or Hofburg is laid out with a square garden with the axis in line with the main entrance to the palace, and in the centre a statue of the Empress Maria Theresa, and at the sides two large buildings of similar design being the two Imperial museums of Art and Natural History. The Votive Kirche is effectively situated behind the angle formed by two of the sections and has a large triangular park in front. It is a Gothic church of Cathedral size with high twin spires of open stonework, and was built by the present Emperor as a thank-offering for his escape from assassination in 1857.

The city is embellished with many admirable statues and monuments. That recently erected in the Volksgarten to the memory of the Empress Elizabeth is an excellent composition consisting of a formal garden with terraces, balustrades, statuary, fountains, trees, flowers and shrubs, the whole leading up to the principal feature, which is a group in white marble with a seated figure of the Empress. The site is admirably selected and forms a vista leading from the statue to the Hofburg.

Altogether, Vienna was a happy choice as the meeting place of the eighth Congress, and all who were able to attend it must have felt themselves well repaid, especially those who look beyond individual buildings to the under subject of making cities beautiful.

NOTE

A most excellent paper on reinforced concrete construction was presented by Mr. Walter B. Francis, C.E., of Montreal. Mr. Francis covered his subject in a most comprehensive and interesting manner. The address was illustrated with a series of lantern views, showing typical examples of the constructive and artistic application of this material. As space in this issue would only permit of a limited instalment of Mr. Francis' paper, it was decided to omit its publication until the March issue, when it will appear in full, together with a large number of the views with which it was illustrated.—Ed. Note.

Annual Banquet

MR. BURKE, in responding to the toast of "Our Profession," which was proposed by Mr. Wickson, dwelt briefly upon the matter of architectural education, which he considered just then to be somewhat of a dry subject. The young men of to-day had greater opportunities by far, with regard to education, than the students in his day, when very little was thought about the subject. Then, if the students read Paley and Ryckman, that was about all that was expected of them, aside from looking out of the window when the boss was out. In the course of his experience, he had witnessed an enormous advancement in the profession. There was a different spirit now altogether, and this spirit he thought had been largely fostered by the Association. In the old days architects saw very little of each other, and he confessed that up to the time he had been in business three or four years, he was not acquainted with three-fourths of the architects whom he met on the street. To-day architects know each other pretty well, and have a kindly feeling towards each other, in ratio, he thought, to the frequency with which they met in the interest of the profession. Experience had proven that the benefits of association far transcend almost any other benefit that could be hoped or expected by the architect in connection with the pursuit of his work, and he looked forward to the day when a practicing architect in the Province would be united towards furthering the best interests of the profession.

Three Professions Closely Allied.

Mr. Gouinlock then proposed the toast "Our Guests," coupling with it the names of Dr. Galbraith, Dean of the School of Practical Science, and Mr. W. J. Francis, C.E., of Montreal.

Dr. Galbraith, in responding, pointed out the close connection that existed between the engineers, architects and artists. The engineers, he said, stand on one side, and the artists on the

other, with the architects between them. He regretted that progress and length of time had caused more or less divergence between these three professions, and it was to be deplored that engineers have been getting away to a very great extent from artistic work. He thought the fundamentals of the three professions were the same in that they all had the same subject and the conditions surrounding it. There was the work of composition and the bringing together of their ideas in the most effective form, in which the real joy of the work exists, whether it be the artist's work, the architect's work, or the engineer's work. They were dealing with elements that are ordinary, and the real creation was in the handling of the material, whatever it may be. That bond would always exist, and he felt that as time goes on, when the hurry and bustle which now exists, owing to rapid development, was ended that there would be more time to really enjoy artistic work.

The fault with the engineer and the architect at present was that they were being driven by the demands of the clients and business, and it was quite possible that that was also the case with the artist. It was the absolute hurry, the necessity of getting things done within a certain time, that prevented the thought that is necessary for the best work, and when there was more leisure time, if it would ever come, he thought that these professions would be united, as they had been in the early ages. There was one thing that all should certainly cultivate, and that was friendly and helpful feeling towards each other.

Mr. W. J. Francis, C.E., Speaks.

Mr. Francis, who followed Dr. Galbraith in replying to the toast, proved himself to be a raconteur of no mean ability. After regaling his auditors with a fusillade of witticisms and a number of humorous stories, he said, to be serious, that previous to coming to Toronto, he had been told in the strictest confidence that the members of the Ontario Association, and particularly the Toronto members, were opposed to reinforced concrete construction. It had not been his purpose to talk shop, but he had to protest most emphatically against the manner which the Association had adopted of "rubbing it in" by giving him a brick to eat, and especially a terra cotta one. To be consistent, he thought in his particular case, he should have at least been served with a reinforced brick.

The Sister Societies.

The toast of "Our Sister Societies," was proposed by Mr. Chapman, who named as respondents: Mr. Wyley Grier, President of the Ontario Society of Artists; Mr. Barry, President of the Engineer's Club, and Mr. Watts of the Dominion Institute of Architects.

Mr. Grier, in answering the toast, referred to the numerous occasions of late when those who are workers in the various arts have had an opportunity of co-mingling. These he regarded as being extremely important occasions, occasions not only of enjoyment, but more particularly of improvement and enlightenment. They brought the Sister Societies closer together by enabling their members to meet and individually converse, and were, therefore, the greatest factors in the betterments of their arts. There were moments when, in looking at an old picture by Fowler, with its broad, free wash of color, sepiatint and outline of extraordinary dexterity; or when he came across an old scrap by Jacobi or a perfect John Fraser, he had wondered if the painters of to-day were improving. As to the art of architecture, he was not well enough versed in it to know what progress was being made. In passing Osgoode Hall, he always metaphorically raised his hat, as it was an old building for which he had the greatest respect; and occasionally he saw a modest dwelling with a touch of what perhaps could be called colonial, that made him hope that the architects were advancing in the work. He expressed himself as being optimistic, and thought there were many evidences that the arts were going forward.

The first feature of Toronto, to which he had proudly called the attention of a New York artist, who was his guest for a fortnight, year before last, was its architecture. This gentleman, who was a person of rare aesthetic taste, was greatly impressed with the beauty of the city, and particularly with its suburbs, whose architecture he declared compared most favorably with the domestic architecture of any of the great cities in the United States. The tour about the city had prepared his guest's mind for the reception of whatever else was artistic, apart from the architectural; and, while there was no exhibition of pictures being held at the time, here and there among his friends, his visitor was able to see the work of the clever artists with whom he had the honor to associate.

Mr. Grier then alluded to the lofty influence which art in general exerted. In spite of the fact that the painter artists have from time immemorial been identified with Ideas Bohemian, he had found in them and in the other artists whom he was gradually coming to know, something fundamentally serious—a something which is deep and earnest and stirring. He was sure that these professors were beautiful and ennobling—ennobling to those who work in them, and ennobling to those who have an opportunity of seeing and enjoying their work and accomplishments. He thought that in this age of materialism, the members of the allied arts had a great responsibility; and in this country, with its extraordinary physical resources, it was especially incumbent upon them to carry forward, perpetuate, and to take into the unknown and unguessable future, the unbroken and untarnished thread of the spiritual idea. With all of them, it was a high privilege.

Engineer's Club and the Architects.

Mr. Barry, in replying to the toast on behalf of the Engineer's Club, said that the success of that institution was largely due to the close connection between it and the architects' association. It was through the co-operation, friendly advice

and financial aid of the latter that the engineers had to-day headquarters and a membership of about 300, which was exercising a certain amount of influence. A good many set-backs had been experienced, owing to the fact that the engineering profession in Canada had not been recognized to the extent it had been elsewhere. In some parts of the Dominion the Engineers' Association was a close corporation, but in the Province of Ontario anyone could call himself an engineer, and very often a corporation in seeking advice would engage the cheapest man that could be obtained.

The object of the club was to educate not only the public, but the corporations, and incidentally the Government, to the necessity of employing competent engineers. He thought that perhaps the public was now awakening to the situation. In conclusion, Mr. Barry said that the Engineer's Club considered themselves part and parcel of the architects, and he hoped that before long there would be an amalgamation not only between the architects and engineers, but other branches of the profession, so that they could have a central science building in which the different bodies could be housed. There would then be a greater opportunity for intercourse, which would certainly be for their mutual benefit.

Co-operation Essential.

Mr. Watts then briefly addressed the banquet on the objects and scope of the Dominion Institute, and in his remarks laid particular stress on the necessity for co-operation and support. The work they were doing was not alone for themselves, but for posterity, and the architects of to-day should be grateful for this opportunity. He called attention to the short space of time given in the convention sessions for business concerning the profession, and gave as his opinion that each one should be given an opportunity to help his fellow architect and spur him on to do his very best. In concluding, he expressed his thanks to the Association for the opportunity of speaking on behalf of the Institute, and assured them that he would convey to the Institute the pleasure it had given him to reply to the toast of "Our Sister Societies."

The Question of Legislation.

Mr. Baird, of the Toronto Bar Association, answered the toast "Our Legislature." After a few preliminary remarks, he took up the question of legislation and spoke of the lack of success in getting from the legislature what the architects wanted. The great difficulty was the want of unity, wherein the strength of the architect lies. Unless they were united and came forward with something which they actually wanted, and would consistently support, their efforts would be futile. As an instance of unity, he cited the case of a man who had applied to the legislature for a license to practice dentistry, which the legislature refused to grant, owing to the hue and cry that was raised by the dental profession from Ottawa to Windsor and from Toronto to Port Arthur.

Mr. Baird impressed upon his auditors that it was a difficult matter to get a bill through the legislature, where there were a number of men in the Association, no matter how small the percentage, who opposed it. The legislature would only consider a bill that the architects, as a unit, want. He spoke of the necessity of united effort, and said that the architects could get any bill they required, if they would only act in concert. This was essential, as there was no other way of obtaining favorable legislation.

Mr. Gordon's Response.

Mr. Gordon then arose in acknowledgement of the toast proposed to his health as President of the Association, and in a warm and appreciated manner thanked the members for the hearty way in which the toast had been received. The night, he said, had proved that brevity was the soul of wit. There had been a good deal of wit, and it had been in speeches that were brief and to the point. He desired to conclude by one that would probably be shorter than the rest, and he aroused the enthusiasm of the banquet to the highest when he proposed "that we all resolve from now on that there shall be the highest ethical standard, the most brotherly relationship one to another, the most earnest and studious attention to the details of our profession, and the earnest endeavor to get all who are aspiring to be architects to acquire that education and qualification which will in the days to come, raise the standard of the profession so as to place it in the eyes of the public, in that position which its utility, its duty, and its art demand, and should receive."

He hoped that the members would unite in meeting, so far as it was possible, the views and opinions of those who differed from them. This he believed would give one another the intention of the highest and best motives for the uplift of the profession, and it was to be hoped that by their own conduct and associated conduct, and by the results of the educational policy, which would be adopted, that they would all live, even the oldest of them, to see the time when the profession of architecture in Ontario, and in the whole of Canada, would have attained that high position which he believed it was entitled to.

Business Session, Wed., Jan. 13th

Amendments to By-Laws

The two amendments to the Association By-Laws, as proposed and adopted, were as follows:

(1) "No member of the Association shall be either a building contractor or manufacturer of building materials, nor shall he have any pecuniary interest in any contract or work carried

on under his superintendence, or in any materials used in the said work."

(2) "No member shall accept, direct or indirect, compensation for services rendered in the practice of his profession, other than the commission received from his client."

Discussion

A lengthy discussion followed the introduction of the amendments, as to whether they would be strictly understood or not. There was some fear that they might be misconstrued by an architect who intended to build for himself, for prospective profit. Several additional clauses were suggested, but, after debating the point pro and con, it was decided that this would only serve to make the amendments more complicated.

Mr. Gregg pointed out that the motion as it stood, did not cover the case in question, and did not affect such case; that an architect, as his own client, could do what he liked. He thought the matter was quite clear, as the explanation would be embodied in the proceedings, and would sufficiently cover that point. The term "building contractor" does not refer to a man building for himself.

The President put the motion that the two clauses, as read, be incorporated in the by-laws, which, on a vote having been taken, was declared carried.

Report on Future Legislation

The report of the committee, consisting of Messrs. Gouinlock, Watts, Burke and Gordon, appointed to consider the desirability of future legislation, recommended the following amendments:

(1) That the president, vice-president and treasurer be elected by direct vote of the convention.

(2) Any person who shall have been practicing the profession of architecture in the Province of Ontario for two years before the first day of May, 1909, may on or before that date, be admitted to enrollment as an architect with the privilege of uniting or declining to unite with the Ontario Association.

(3) Any person who has obtained a degree or certificate from the University of Toronto, or the School of Applied Science, or who may be a graduate or the course prescribed in the curriculum of the University for architectural study, shall be admitted to the practice of the profession upon serving two years as a student, without further examination.

(4) The striking out of the words "registered under this Act," in section 24 of the Ontario Architects' Act, and the substituting of the words "a qualified architect unless he is registered under the Act." (That is no one shall be allowed to use the title of "architect" unless he is registered under Act, whether he becomes a member of the association or not.)

(5) The insertion of a clause making the fees to be changed, subject to the approval of the Lieutenant Governor in Council.

(6) The insertion of a clause giving the right to appeal from the examiners to the council.

Discussion

Mr. Gordon, who presented the report verbally, stated that the majority of the committee felt that one more attempt should be made to get the bill passed in a revised form; as they believed that the amendments suggested would not only eliminate the opposition of those who do not want to join the Ontario Association, but also overcome the opposition of the University and the popular idea that the association was seeking a close corporation and the arbitrary fixing of fees. To his mind the amendments covered all opposition, with the exception of those who were of the opinion that the profession should not be made subject to law. The opinion of the minority of the committee was that the association should seek a licensing bill somewhat similar to the Illinois Act.

Mr. Burke in vindication of his position as to the minority report, stated that he had been identified with attempts to secure amendments to the charter, ever since the movement began. Personally he had concluded that in view of the temper of the House and public, and the opposition of the newspapers, any further attempt would be useless. The best solution, he believed, would be to let some outside party move for a licensing bill protecting the public. This would incidentally raise the status of the profession, as all who would engage in the practice of architecture would have to pass an examination. However, he wished it understood that he would stand loyally by the majority report, if adopted.

Mr. Gordon, at the request of one of the members, then briefly outlined the main features of the Illinois Licensing Law, explaining the numerical strength of the Examining Board, the manner in which they are appointed, their jurisdiction regarding professional ethics, and the conduct of the architect, the methods of holding examinations, and the matter of examination and yearly registration fees, which are imposed by the State, to defray the expenses of the Board.

Mr. Spratt was not in favor of a licensing bill. He thought that a good building law would practically cover the whole matter, and that an architect could not be made by legislation or licensing. A well defined building by-law would examine an architect in every building he erected, and the object of the association would be to govern the architects in professional standing towards the public.

Mr. Watts called attention to the fact that there were now certain fixed conditions which placed the Ontario Architect at a great disadvantage. Quebec and Alberta, as was known, had close corporation and he believed other Western Provinces would incorporate on the same lines at the coming sessions of the legislature. There was nothing to prevent the architects in these provinces from practicing in Ontario, while on the other hand, Ontario architects could not operate in provinces where close corporation exists; unless with the sanction of the governing council, and, even, then, they could be

debarred by the inimical attitude of two or three men. The Toronto members were not in a position to fully appreciate the circumstances as well as the architects who reside in the extreme eastern and western portions of the province. He contended if Manitoba and British Columbia and some of the other provinces legislated in favor of close corporation, that the architects of Toronto and Ontario would be narrowed down to the confines of their province, over which the architects from other sections could swarm at will.

Mr. Sproatt maintained that Mr. Watts had argued the points that he had advanced, in showing the law to be an injustice in Quebec. He could see no reason why the Ontario architects should perpetrate a similar injustice, and that some attempt should be made to overcome it, if it was a bad thing. Because they have a law in Quebec which was a bad law, was no reason why they should have laws all over Canada which were good laws. There were other provinces where such a law had not been passed and if Ontario enacted an unfair law, they would naturally follow suit.

Mr. Gordon then stated that Mr. J. C. B. Horwood, of the Toronto Architectural Club, who was present, had read to him a letter which he thought fully covered the case. He thought that if Mr. Horwood could be prevailed upon to disclose its contents at the meeting, they would learn the opinion of the other society, which could be thoroughly discussed. Mr. Gordon's suggestion met with the approval of the members.

Mr. Horwood replied that the letter was a communication written to the Editor of "Construction," and that he doubted as to whether he was privileged to read it before the meeting, until after it had been published, as it had been given for that purpose.

Mr. Rolph thought that it would be doubly interesting to hear Mr. Horwood's letter, because afterwards the members could see it printed in "Construction," when they would go through it at their leisure.

Mr. Horwood stated that, belonging to the Toronto Architectural Club, and coming to the Association, that they got at the question from two different standpoints. The contention of the organization to which he belonged was that the attitude of the architect should be for the benefit of architecture, rather than for the benefit of the profession. He referred to a letter in "Construction" advocating a license law, which he thought was a one-sided view of the matter, and so had written the Editor accordingly. Mr. Horwood then read his letter, which was published in the January issue of "Construction."

Mr. A. H. Gregg declared that there were two ways of looking at the question. There was no doubt but that the Ottawa architects suffered a great injustice in connection with work which they might obtain in Quebec, but at the same time, to bring forward an amendment to the bill at the present time, would be a matter of practical politics. While personal and factional differences existed there was no hope of a change, and he believed there was not the slightest possibility of an amendment to the act being carried through for some time to come, and that the recommendation of the committee should not be adopted by the convention. As regards the matter of education, he took strong grounds that compulsory education was a necessity and that the matter of bringing it about was something which ought to be carefully considered at the present time. The method to be pursued was not as important as the result. It was necessary to consider the whole body of architects and the whole body of students, and he did not think that it was ever possible to obtain a proper standard of education unless there was a certain minimum qualification, which they were compelled to attain. This could only be brought about by some means such as the licensing bill or an act such as has been proposed in the past, making architecture practically a close corporation; or by making the membership in some association, like the O. O. A., of such recognized qualification that the general public would seek the services of only those who were members of it. He objected to the system as advocated by Mr. Horwood, in that there was no decided proposition which would insure all students taking such a course. It was unfair to compare the work done by students attending ateliers in the various large centres with the average of the work of students who pass the examination as was required by the State of Illinois. Naturally the work of a few students in some of the big cities, who were enthusiastic and were encouraged by enthusiastic architects to attend some atelier, was far superior to the average student who was passing some minimum standard. There were always certain ambitious students who would improve their qualifications in matters of design, and attend the ateliers over and above all the examinations which they would be required to take. It was true that the passing of any set examination was not a continued guarantee that the architects would keep up with the times, but the establishment of stringent building laws, as favored by advocates of compulsory education, would to an extent make the architect conform to the times in the matter of building construction. It was necessary that every student should attain a certain standard to begin with. It was impossible to have the same results from the work of a student who had not received sufficient primary education, as it was from one who had a good fundamental training. One of the arguments against compulsory education, he continued, was that it could not be expected of an artist to pass through certain dry courses of study with which he had no sympathy, that it was possible to have an architect, one who could not mathematically qualify, who was a good designer and builder, and who could get the necessary assistance to enable him to carry out the structural part. An artist should not be prevented from practicing architecture if he wanted to, not any more than a man of good impulses should be prevented from entering the ministry. Yet it was found that all leading denominations insist on a certain standard of education. Mr. Gregg agreed with Mr. Horwood that school and museum should be established to enable students in architecture to carry on their studies properly, but claimed that until there was a compulsory education demanded, there

was no hope of getting such institutions. A license law or a law requiring all students to take a prescribed course, would make it mandatory for the government to provide a proper professorial staff and appropriations necessary for the proper equipment. The objections advanced that a college course deburred the poor man's son, Mr. Gregg did not think held good. There was an abundance of evidence to prove that he generally succeeded in some manner. If any person doubted the point, they could examine the rolls at the University, which he felt would ably bear out his statement in this respect.

Mr. Watts stated that he had paid close attention to Mr. Horwood's letter, and thought that it would have been better to have compared the architect with the doctor than with the lawyer. He thought the close corporation of the medical men was a guarantee that the doctor had received a training which safeguarded the public. It seemed to him that the public was equally entitled to some guarantee from the architects that their interests would be properly guarded in the erection of buildings. There were incompetent men who should not be practicing architecture. Reinforced concrete was a factor to be considered, and there was a greater need to-day for a thorough knowledge of mathematics than ever before. The clamor for schools and museums, and the talk of the student life in New York offered no solution to the question as it exists in Ontario. The conditions were entirely different. Even take the Architectural Association, the greatest educational establishment for architects in London, which he had attended, and out of a membership of 400 or 500 in the class, the largest attendance to his memory would not exceed forty. In a scattered country like this, it was impossible to have students unless there was something to compel them to qualify for practice. Mr. Watts then cited the case of the accountants who had applied for close incorporation, which was denied them. Instead they got "Chartered Accountants," and by use of that word became as close a corporation as could be desired, because they receive exclusive recognition from all the big financial institutions. He could safely say that in nine cases out of ten the general public would prefer a man who was registered, to one who had simply the name of architect. It would be a guarantee to the public that the student would be versed in all that was necessary to insure the safe erection of buildings. As regards the draughting of building laws he thought the matter should rest with the profession, and in support of this contention pointed to the new code prepared by the Ottawa Chapter, and to which no great objection has been taken to any particular clause. Mr. Watts declared the Association's motives were more altruistic than selfish. Whether or not they had close corporation would not affect the interests of most of the present practitioners. It was more of a work for posterity and an effort to place the profession on a higher plane. If the members would unite they could get anything they wanted from the government.

The convention, on the motion being put by the President, then voted in favor of receiving the majority report. Both the motion for receiving the minority report, and the motion for the adoption of the majority report, were defeated.

Report on Affiliation with A.I.C.

- (1) The membership of the Architectural Institute is now about two hundred and fifty, including many members of the Ontario Association of Architects, while the membership of the Ontario Association numbers about ninety.
 - (2) The Architectural Institute is not an examining body and does not contemplate obtaining a bill protecting the word "architect."
 - (3) Owing to its charter and wide spread membership, its influence will extend to all parts of Canada. Negotiations are now under way looking to its affiliation with the Royal Institute of British Architects.
 - (4) If an arrangement could be made whereby the Ontario Association of Architects could as a body be made members of the Architectural Institute, and the matter of fees arranged so that members of the association would not pay any entrance fee to the Institute, and that the annual fee to both bodies would not exceed by much the present annual fee of the association, and could at the same time retain its individuality as "The Ontario Association of the Architectural Institute of Canada, or the Provincial branch of the Architectural Institute of Canada," and carry on its educational and examining work, receiving financial support from the Architectural Institute in connection with this, your committee believes that an improved condition could be brought about, especially if the Architectural Club of Toronto, and other architectural clubs would join the Institute in the same way and devote their efforts more particularly to the training of the students in design and the art side of the profession, thus preventing the duplicating of effort in any locality.
 - (5) Your committee is of the opinion that if such a condition as above suggested, could be brought about between the various Provincial bodies and the Architectural Institute of Canada, the power of the architects as a force for good in the building of this young country, whose destiny it is not possible to estimate, would be greatly increased.
 - (6) Your committee would also recommend that a standing committee of five members, with power to add to its number, be appointed to consult with the Architectural Institute of Canada regarding the possibility of some such arrangement as above cited. This committee to appoint a representative to attend the proposed conference of all the Provincial bodies, as per letter of the Architectural Institute, just received, and that the Architectural Institute be communicated with to this effect. This committee to report to the annual convention of the Ontario Association in 1910.
- The report was then adopted, and in accordance with the motion, a committee consisting of Messrs. F. S. Baker, E. Burke, E. L. Horwood, W. A. Langton and A. H. Gregg, was appointed to consider the question of affiliation with the Architectural Institute of Canada, with instructions to report at the next convention.

Following the business session Mr. W. A. Langton delivered an illustrated address upon "Style in Architecture." Mr. Langton's talk was enthusiastically received and the views which he used for illustration were greatly enjoyed by all present.

The Training of an Architect

By Prof. C. Francis Osborne

If I venture to take part in your discussion this afternoon it is because your very kind invitation assures me that in Ontario, as elsewhere, the best minds in the profession are aroused to the importance of securing for the architectural student a systematic course of training, and that when your Association is ready to suggest such a course, it will carry with it all the weight of your official recognition and support.

I have, therefore, as my contribution to the occasion, endeavoured to embody very briefly in the following paper certain conclusions to which I have been led by my experience in the field of architectural education, together with some indications of the reasons which have seemed to support them; but as time and space alike forbid a detailed consideration of the many difficult questions which are involved in the problem, it is suggestion rather than argument which I have the honour to offer for your consideration.

Whoever strives to formulate such a programme will soon discover that no progress is possible until one's objective is clearly defined. It is not enough to say that the training of the architectural student is our objective because back of that lies the question "What is he to be trained to do?" and back of that again is the insistent demand for a fundamental definition of architecture itself.

Architecture I would define as the art of building; contrasting it, for illustration, with engineering which is the science of building. And for myself I cannot understand any other definition of an architect which will clearly differentiate him from all other professional men than that he is a designer of compositions which are to be executed in building materials. The fundamental difference between the architect and the engineer may be made clear by two examples taken from that vast field of building operations in which both the architect and engineer are engaged at their respective tasks. Let us first consider the case of a great dam, to be erected near the headwaters of a river, miles away in the wilderness. This is a typical engineer's task, and the only considerations which determine the lines of the structure are those which arise from meeting the stern demands for resistance to the mighty stresses of the stream in flood, taken in connection with the materials available for its construction and the opportunity for securing an adequate foundation. Every line of the profiles in plan, section, and elevation, is determined by the strictest requirements of utility and economy.

Let us take, by way of comparison, some structure completely typical of the architect's work—say a memorial monument. Here, neither utility (in the engineer's sense) nor economy are concerned. Any materials the architect may regard as appropriate are at his command, quite regardless or negligibly so, of considerations of the relative hardness or specific gravity of these materials, to each of which qualities the designer of the dam had to pay the closest attention. Every line of the memorial is determined purely as a matter of feeling, the architect having regard only to this question:—"What effect or expression in the finished monument and its setting will be most appropriate to the time, place, and purpose of its erection?"

There is of course a neutral zone where the interests of the architect and the engineer commingle, and where co-operation is necessary. This has already taken place, under the pressure of enlightened public sentiment, in such matters as civic bridges, harbour approaches, railway stations, and the like. It is interesting to note for instance, in connection with the gigantic operations of the Pennsylvania Railroad in New York, that the company's engineers, while engaged in their underground affairs, have encountered some new problems of construction on a scale of unusual magnitude and have been able to meet them in the most skillful manner, but that as soon as they emerge to the surface, where their operations become visible in the heart of a great city, they call to their aid one of the most distinguished architectural firms in America to give to the great terminal station an expression suitable to the occasion. There were no constructive problems in the building of the station which the engineers could not have solved, but the feeling they sought for was beyond their powers of expression, and so it was placed in the hands of men who were professionally trained for such expression.

Art the Architect's Function.

We are abundantly justified, then, in the conclusion that the faculty which differentiates the architect from all other men engaged in the field of building operations, is the faculty of imparting to his structures, by means of the attributes derivable from form, color and texture, such an expression in each particular case as shall stir the beholder to an appreciation of the fact that the building is pleasingly and appropriately indicative of its function. But when I say this, I do not refer to the exterior or elevation of the composition alone, for the elevation is inextricably linked with the plan; and when you have an orderly, convenient, and economical plan, a good elevation must follow. To those conversant with design methods it is not necessary to call attention to this detail, but I do so because I desire to avoid any interpretation of my point of view as assenting to the idea that architecture is construction plus decoration. On the contrary, those qualities which make

for good design are fundamental to the solution of the problem and are developed in the original choice of scheme, quite as much as in any details of the plan or elevation.

If ability to design be the distinctive test of the architect, the teaching of design must be the paramount objective of his course. On this point some strange proposals have been made. It has been suggested, for instance, that the theory of design should be taught in the schools, and the practice of design—that is, the working out of design problems—should be under the direction of practicing architects in the office. It has not needed some recent experiments in this direction to show that no good results can come from such a course of procedure. It is based upon a fallacy which has been fully exposed by the Engineering Record in a recent editorial dealing with the subject of engineering training.

I quote one paragraph:—"There is a ridiculous idea prevalent that a man who is successful as an engineer is necessarily competent to teach undergraduates in an engineering school; the fact is, nobody can be a successful teacher who does not make a careful study of pedagogics, a subject calling for as much thought and detailed consideration as any course in engineering." This testimony from an engineering source is especially significant.

Personally, I am convinced from long observation that there is only one effective method of stimulating the highest powers of the undergraduate for the solution of any design problem, and that is the method of teaching design which has unfortunately come to be known as the French method. I say "unfortunately," because this word "French" seems to act as a curious irritant to many people who are not at all familiar with the thing criticised. These, either through such unfamiliarity, or because of an inability to understand the system when it is presented to their scrutiny, fail to discern its real spirit, and suffer their attention to be distracted by such superficial characteristics of the method as might be likely to develop under the skies of France.

Good Design a Matter of Feeling.

This system is based upon the idea that the only way to learn to design is to design. Theories of design are not for undergraduates, and even when discussed by mature minds are usually unfruitful. Good design is purely a matter of feeling which eludes definition, but which can be cultivated by assiduous practice. Problem after problem must be presented for solution to the student, who must work under the eye of a master whose chief vocation is criticism in the atelier. The problems may be of as practical a character as you like, but worked out without too much consideration of how many tenpenny nails go to a pound.

The second question is, "what comes next in importance after design?" The fact that the architect uses building materials to develop his compositions might seem to place a study of these materials and their combinations next on the list. You may be surprised to hear that I relegate this subject to third place in our curriculum and rate drawing next. If we assign, of the total number of hours in any undergraduate architectural course, fifty per centum to design, I should allot twenty per cent. to exercises in drawing from the cast and from life, with an ancillary course in modelling. Such practice greatly increases the student's powers in design, and though it is not always true that a good draftsman is a good designer I have never known a poor draftsman who was so. This fact has so often come under my observation that it is impossible for me any longer to question it. Practice in drawing from the figure and modelling should continue during the entire course, so soon as the student, from his previous practice from the cast, is prepared to take them up.

We now come to the subject of building materials and construction, and I will explain why I have placed it as third in importance in the undergraduate course of study. Up to this point the subjects in the course have been included in the field of art. Construction, however, lies within the field of science, and from a pedagogical point of view its teaching must be undertaken in a different manner. Where the teaching of applied science is concerned all experience goes to show that in his undergraduate studies the student should be thoroughly grounded in fundamental principles, and theory, and that no attempt should be made to render him expert in the office sense in their application to all imaginable cases. If we attempt to teach theory by the medium of manifold examples, the average student proves unable to see the forest for the trees.

This subject is best taught in an undergraduate course therefore, by courses of lectures, fully illustrated, and supplemented by sketching in the student's note book of typical examples. Building materials should be fully developed, so that the student may know the characteristics of each, its usual applications, and what may be expected of it in practice. The study of building construction should proceed from simple to the more complex assemblages in all materials, still with continuous sketching.

Finally, there should be a course in theoretical and applied mechanics lasting a full year, with special stress laid on graphical statics.

The only stated exercises in drawing that I should recommend, in connection with such a course, (aside from the exercises in graphical statics) would be just sufficient practice in scale and full-size detail drawing, as will enable the student to correctly grasp the principles of such work, and prepare him to take up with confidence that side of the office routine. No attempt should be made to make him familiar with all possible kinds of details, for it is futile to attempt to train the undergraduate, even if it were at all desirable to do so, to a point where he can produce working drawings and scale

and full-size details under office conditions, with facility and precision.

Academic Training an Advantage.

The fact should never be lost sight of, and especially in this connection, that the student's training is to be obtained in two places:—one the school, but the other, and equally important, the office. It is in the school that he will learn most of his design, but it is in the office that he must acquire most of his practical knowledge of construction. But his undergraduate course in this latter subject will enable him, if it has been properly taught, to very rapidly assimilate the practice of whatever office he may happen first to enter after his school work is completed, and by the end of three years' office experience he should be a first rate all round man, far in advance of a man of similar capacity who entered the office when the student entered the school. It is matter of common observation here, that the school man ultimately attains a far higher professional position than is ever possible for the office trained man. This fact is being so generally recognized with us, that experienced office men are coming to the schools in increasing numbers, in an endeavour to overcome this handicap. They labor under one disadvantage however with regard to the study of design, and that is most of them have waited too long—for you must catch your designer young.

Allowing twenty per cent. to the subject of building materials and construction, there yet remains ten per cent. of the undergraduate's time to be accounted for.

This I would allot for the most part, to the history of architecture and the allied arts, reserving a small modicum of the time for a course of lectures dealing with professional ethics, office organization, contracts, and kindred matters, and a special course given by practising architects of the highest professional standing, who will present to the student's attention instances drawn from actual practice. It is of great benefit to the student to bring him in contact with such men.

A brief word should be said as to the amount of preparation to be required of all students who present themselves for such a course of study as I have here outlined. The requirements are few, but insistent. Sound training in English; the fundamentals of general history (ancient, mediæval, and modern); mathematics up to and including trigonometry; the fundamental principles of elementary chemistry and physics; and descriptive geometry, including shades, shadows, and perspective. No further instruction will be given in any of these subjects in the professional school, but the student's knowledge of them will be tested from the first moment he takes up his architectural studies.

My paper, gentlemen, would be incomplete, did I not include some notice of another theory of architectural education which has had some distinguished advocates, but which I am unable to approve.

No one knows better than those of us who are engaged in the field of architectural education how extensive are the boundaries of that field. Indeed it seems at times to some of us as if no other profession could be so comprehensive and inclusive.

Training of the Students.

Mother of the arts and issue of the elemental forces of nature acting upon the varied materials of construction, architecture, springing from a vast historical background, touches on every hand the bounds of human knowledge. It is natural therefore that to some of those who have concerned themselves about the adequate training of the young architect... should have seemed not only desirable but possible that such a course of study should be devised for the undergraduate as will enable him on its completion to meet any demands which the complexities of his chosen profession may make upon him. To this end it has been proposed that he be taught not alone the technicalities of his profession, but that he be brought into sympathy, through courses in general academic subjects with all that is best and most broadening in the world of culture.

To carry out this comprehensive programme several expedients have been proposed. It has been suggested, for instance, that the usual four-year undergraduate course in architecture be lengthened to five years, of which the first two shall be devoted exclusively to academic and cultural subjects, and the last three to professional subjects exclusively. Two, at least of our universities offer a six-year option in a combined course in arts and architecture, whereby the A.B. degree may be taken at the end of the fourth year and the first degree in architecture at the end of the sixth. This is accomplished by permitting the student to take all of the elective hours in the arts course in the course in architecture.

One other university requires the equivalent of two years' work in an arts course as a preparation for admission to its course in architecture. Still another has had the courage to carry this doctrine to its extremest development, and now requires the degree of A.B. of all its architectural matriculates. It is worth while to note that the president of this last institution has recently declared it to be his opinion that the future welfare of that university demands that it be made the most difficult to enter and the most difficult to remain in of any institution of learning in America. Each of these tentative schemes of education strives to attain the same end, viz.—to prepare the student not only for the practice of his profession but for speaking and writing with learning and discernment on all its collateral interests, as well.

The Unattainable Idealistic.

It is not difficult to picture for ourselves the paragon of architectural virtues which the well meaning promoters of these schemes of professional training have in mind—though the vision of his activities is somewhat overwhelming. Prepared to discuss with the archaeologist the Semitism of the Sumerians or the significance of the abrys supporting the altar of the

gate slab of Mycenæe, he is equally at home with the epigraphist in an interpretation of the dowel holes in the Parthenon epistyle. Representing his profession at the annual dinner of the Society of Painters, he takes an intelligent part in a discussion regarding the inexplicable phenomenon of Duccio's art, and later in the evening makes a formal and eloquent plea for the subordination of the mural decorator to the controlling and directing mind of the architect. With the general historian he holds his own in a discussion regarding the correct definition and interpretation of universal history, and yields nothing to the Egyptologist on the point of Iknoton's brilliant witness to the truth of the Semitic conception of the oneness of the Divine Ruler of the Universe. Descending from these transcendental realms to the sphere of practice, at the office next day he learns from his morning's mail, though without too much surprise, that his design for the new National Art Gallery upon the Mall in Washington has won a famous competition. Annoyed by the appearance of an extensive efflorescence upon the brickwork of his Carnegie Library, to which he has endeavoured to impart a XIVth century Veronese air, he writes forthwith to his brickmaker for analyses of his clays and to his cement maker for an analysis of his cement in order that he may determine the source of the annoyance and apply the proper remedy. Pending the arrival of this necessary data, he turns his attention to the designing of the reinforced concrete cantilevers for one of the walls of his Mining Building at the impending World's Fair at Jumeau—a difficulty having arisen from a pocket of quicksand which has manifested itself in a most inconvenient quarter of the site. In his fifty-four story warehouse for the Universal Providers (Limited) he has devised a new method of wind bracing for wide panel designs in structural steel which bids fair to revolutionize engineering practice in that particular as soon as his method becomes known through publication in the professional journals. He next reviews the sketches of his head draftsman for the ball room of the American Embassy at Paris, where he points out the incorrect profile of the consoles of the rosace which strike an incongruous Louis Quatorze note amid a Louis Seize harmony. He remembers, also, to caution his assistant to correct the contour of the buttress weatherings of the new half-million-dollar chapel of ease of St. Simeon-by-the-Waves, where the full-size detail shows them to have taken on a too pronounced Edward III. character. Leaving his office for his daily exercise at the Racquet Club, he ruminates on his way thither, on the essential points of his paper for the Electrical Engineer's Club regarding a new method of closing the solenoid and relay circuits of a type of remote control switch which he has devised for large private installations. After a couple of hotly contested games of squash and a bath, he dresses for dinner, but foregoes an evening of relaxation at the opera to dine with the Sculptors' Society where he makes an address on the vitality of Donatello's art, with special reference to the qualities of architectural sculpture as exemplified at Reims and Athens. On his return home, he concludes his day's labours by revising proof of a forthcoming article in 'The Builder' on "The neutralization of the action of atmospheric carbon dioxide on building stones; after which he retires to his virtuous couch and is soon lost in a profound and well earned slumber. As he sinks to his repose, we awaken from our own dream to a realization of the fact that he has been but a product of our imagination, for modern conditions have made him impossible. We part from him with reluctance, for he has been a stimulating companion, but we have taken his measure and may allow him to depart in peace.

Do not mistake me, gentlemen. It is not the cultivated architect whom I ridicule, but the impossible product of an impracticable scheme of professional training. There is something more fundamental than modern conditions which makes him impossible.

Critical and Executive Ability.

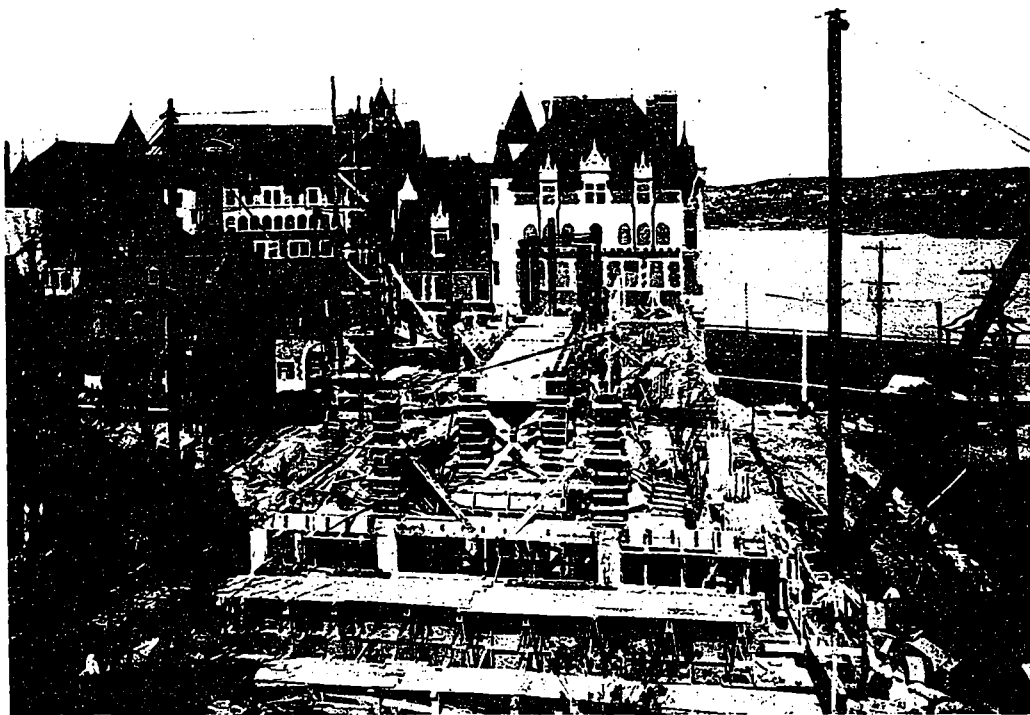
There are two laws of intellectual development which preclude him. First, because critical ability—the power of mental analysis in any art—bears an inverse relation to the power of execution in that art. There are exceptions, it is true—but they remain exceptions. Turner paintings and Ruskin expounds. Whistler does both, but his contemporaries are the first to admit that he was rara avis, and posterity will confirm their judgment. If Berenson has painted a masterpiece it has not yet been catalogued; and we have yet to hear of an edition of L'isle des Pingouins with illustrations from the pencil of the distinguished author. In ancient Egypt, the king's architect was a man of war and of affairs, whose varied activities make his architectural labours seem incidental. This is possible where the art of building, as in ancient Egypt, has been reduced to its lowest terms. But as art becomes more complex and refined, it compels undivided attention; and we do not hear that Ictinus distinguished himself in the Euboean campaign.

The operation of the second law is perhaps exaggerated by modern conditions. It has to do with the direct relation between efficiency and specialization.

It was my good fortune during a recent journey to fall in with a distinguished army officer on detached duty at one of the government's advanced schools of instruction for officers. It was evident from his conversation that he was not only a man of the highest character but very skilled in his profession. As a brother pedagogue, I naturally enquired in what subjects he gave instruction in the school. I must confess that I was momentarily taken aback by his unexpected reply "Retreats." A brief period of reflection served, however, to make clear the vital importance to the soldier of knowing how to safeguard his command in the event of not attaining his objective, and that it is better to learn before rather than after the event. Napoleon, doubtless, could have given valuable advice in this matter on his return from Moscow, but the more modern is the better way.



NEW ADDITION TO CHATEAU FRONTENAC, QUEBEC CITY. VIEW SHOWING THE TEN STRUCTURAL STEEL COLUMNS AND STEEL TRUSSES USED IN THE BUILDING, AND THE PROGRESS OF THE WORK MADE UP TO JULY 22ND. W. S. PAINTER. ARCHITECT.



NEW ADDITION TO CHATEAU FRONTENAC, QUEBEC CITY. VIEW TAKEN AUG. 14TH, SHOWING THE GENERAL FLOOR CONSTRUCTION, TOGETHER WITH THE CONCRETE COLUMNS IN THE FOREGROUND WHICH ARE DESIGNED TO CARRY THE TOWER PORTION OF THE BUILDING. W. S. PAINTER, ARCHITECT.



NEW ADDITION TO CHATEAU FRONTENAC, QUEBEC CITY. VIEW TAKEN IN THE MIDDLE OF NOVEMBER JUST BEFORE COMPLETION OF THE BUILDING. NOTE THE ABSOLUTE HARMONY OF THE OLD AND NEW SECTIONS OF THE BUILDING, WHICH SHOW THE TRANSITION OF THE WORK OF ONE DESIGNER TO THAT OF ANOTHER. W. S. PAINTER, ARCH'TECT.

NEW ADDITION TO CHATEAU FRONTENAC.---Large Reinforced Concrete Extension at Famous Hostelry Nearing Completion. ---Architectural Lines in Accord with Original Structure.---Features of Its Design and Construction. By GUSTAVE KAHN

THE NEW WING now in course of completion at the Chateau Frontenac, the famous hostelry of the Canadian Pacific Railway, in the City of Quebec, is of more than usual interest, in that it not only represents the successful retention of absolute harmony in the transition from the work of one architect to that of another, but because it also affords a more noteworthy example of the application of reinforced concrete to building construction.

The original structure has long been regarded by students of building design and architectural enthusiasts as one of the best examples of its class to be found on this continent, the inspiration for the design coming from the French Chateau; while the picturesque beauty of its site is only too familiar to those who have visited the Ancient Canadian French City.

Owing to the fact that the site is not a level one, it was found necessary to build the additions considerably higher than the original building, and the problem of grouping the new so that it would be strictly in accord with the old was an exceptionally difficult one, and the architect before proceeding with the work, made a special trip abroad for the purpose of thoroughly familiarizing himself with the best examples of this class of structure.

The accompanying illustrations show the addition at various stages during the process of construction, the entire structure as it appears to-day, and the study that has been given to the general grouping of future additions. To assure a uniformity of material and color between the two parts, it was decided to use the same materials for the exterior of the additions had had been used in the original portion of the building, the original walls consisting of Terrabone Stone, which is a native Quebec stone that might be classed a granite, and Scotch fire brick.

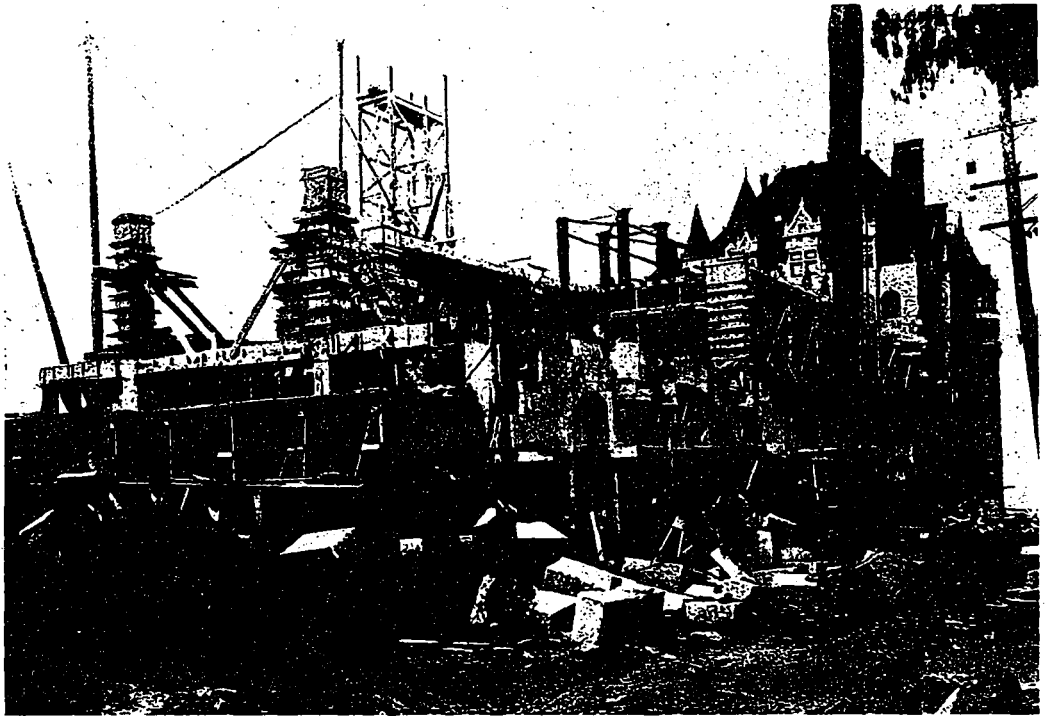
In carrying out the work, many novel effects, both architecturally and structurally, have been produced, and possibly one of the most happy solutions of a difficult

problem is the manner in which the usually ugly scheme of fire escapes have been overcome, the scheme adopted really adding to the architectural beauty of the building instead of detracting from it as is frequently the case.

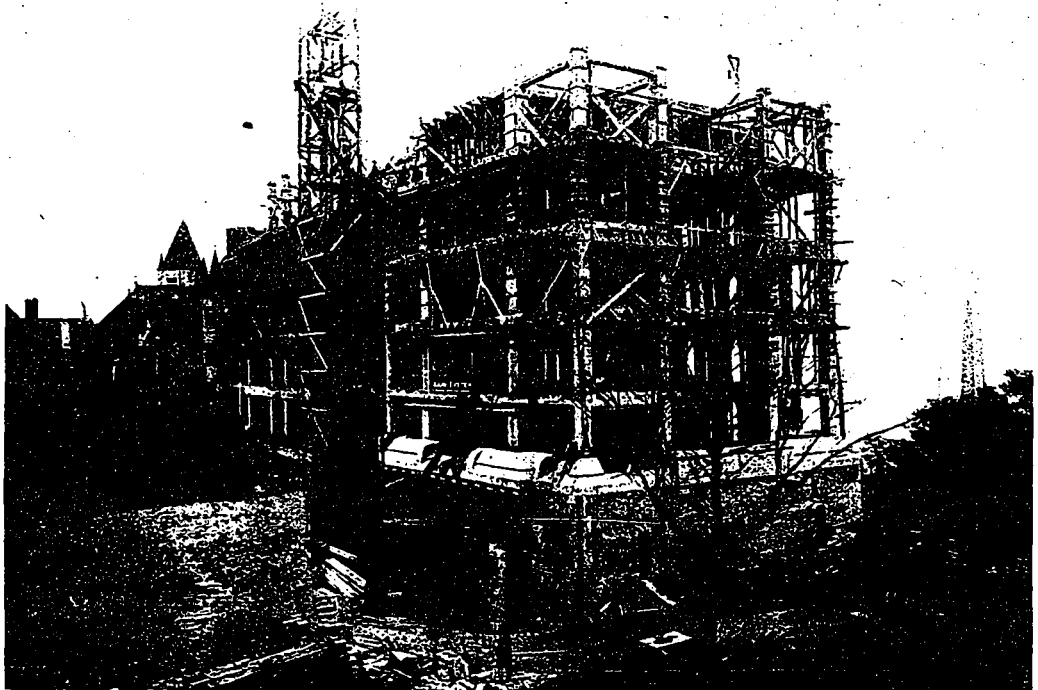
The original site of the building was not sufficiently large to accommodate the additions, and it was, therefore, necessary to arch across two public highways so as to connect the additions with the old structure. These arches have been exceptionally well treated, and the detail of the entire structure, though very simple, is most effective, the architect depending more upon the grouping of the openings than upon ornamental detail for the desired effect.

It is hard to conceive how the contour of the original roof line could be more symmetrically preserved. The roof of the new wing, the same as the original part of the building, is finished in copper. In order to properly utilize all the space within the enclosure, two living floors besides an attic floor are taken care of in the roof portion of the main addition. In the tower roof four floors were provided, two of which are used for living rooms, one for taking care of the water tanks, and one for general storage—the latter floor having been necessary to procure the desired air space.

The new building is 150 feet long and 55 feet wide, and the top of the tower, which is at the end farthest from the old building, is 170 feet above grade. The main portion of the building has nine floors, and the tower extends four storeys higher. In the construction of the building, the Kahn System of reinforcement was used throughout, the reinforcement of the beams consisting of Kahn Trussed bars, while for columns cup bars were used. With the exception of the attic floors, which like the roof are of solid concrete slab construction, the floor system in general is a combination of concrete and hollow tile; this method of construction giving flat ceilings of large span throughout the building. The columns along the corridors in the lower storeys of the main portion



NEW ADDITION TO CHATEAU FRONTENAC, QUEBEC CITY. VIEW TAKEN AUGUST 20TH SHOWING THE MANNER IN WHICH THE CONCRETE SKELETON WAS WALLED IN WITH BRICK AND STONE, AND HOW SOON THIS WORK FOLLOWED THE CONSTRUCTION OF THE CONCRETE FRAME. W. S. PAINTER, ARCHITECT.



NEW ADDITION TO CHATEAU FRONTENAC, QUEBEC CITY. VIEW TAKEN SEPTEMBER 14TH FROM THE SIDE OF THE BUILDING WHICH WILL EVENTUALLY FACE THE INNER COURT. IT SHOWS THE CONCRETE SKELETON OF THE TOWER PORTION COMPLETED UP TO THE 6TH FLOOR, AND THE RAPID PROGRESS THAT HAS BEEN MADE IN THE SPACE INTERVENING AUGUST 20TH AND THE ABOVE DATE. W. S. PAINTER, ARCHITECT.

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of the building are of structural steel, this being done to economize space. These columns are fireproofed with concrete, the outside diameter of the finished columns being 18 inches. The structural steel columns are stopped off at different levels, none of them extending above the sixth storey, while all other columns are hooped concrete.

In the tower portion of the building, the top of which is 53 feet higher than the balance of the building, the concrete columns begin right at the footings, the largest column being 34 inches in diameter and carrying a load of about 550 tons. These are reinforced with ten 1-4 inch Kahn Cup Bars vertically and are spirally wrapped with 7-16 inch diameter round rods on a pitch of 1-2 inches. In addition to the structural steel columns there are in the building two steel trusses and two box girder beams over the lower driveway which passes through the ground floor of the building, and steel I beam lintels over the arched openings in the first storey; while structural steel girders supported on concrete piers underpins the end of the old building. In the former case, sufficient depth could not be obtained for concrete girders strong enough to carry the concentrated loads of the columns above, and in the latter case, the heat from the boilers in use in the old building during the time of construction made it unadvisable to use concrete owing to the fact that the heat would cause the concrete to set too fast and thus prevent its obtaining full strength.

All other structural portions of the building throughout the structure are of reinforced concrete as before noted. The concrete skeleton is enclosed with brick and stone masonry, the brick and stone walls being carried on reinforced concrete beams at each storey, these beams framing generally into wall columns and in some cases into cantilever brackets.

In calculating the stresses, the live loads figured for all floors excepting tank and attic were 100 lbs. per square foot, tank floor 600 lbs. per square foot, attic and roof 30 lbs. per square foot and a wind pressure of 40 lbs. per square foot horizontally was provided for.

The following specifications were used in designing the concrete structure:—

Stresses.—The Unit Stresses shall not exceed the following values:—

- (1) Reinforcing steel in tension 12,000 lbs. per sq. in.
- (2) Concrete in beams and girders, average compression 375 lbs. per sq. in.
- (3) Concrete in shear, 50 lbs. per sq. in.
- (4) Adhesion of concrete to steel, 50 lbs. per sq. in.
- (5) The ratio of the coefficients of elasticity of concrete and steel shall be taken at 15.
- (6) Maximum bearing of steel on concrete must not exceed 400 lbs. per sq. in.
- (7) Maximum bearing of concrete beams on steel brackets must not exceed 300 lbs. per sq. in.
- (8) Beams, girders and slabs should be figured on the assumption that a plane before flexure remains a plane after flexure.
- (9) Care must be taken in erection to see that bearing angle of brackets are absolutely horizontal and has perfect bearing on stiffener angles.

SPECIFICATIONS FOR BEAMS AND SLABS.

Concrete for beams and slabs must be proportioned for a ratio of 1 of cement, 2 of sand and 4 of broken stone. Floor slabs generally shall be of concrete and tile construction and shall have concrete joists not less than 4 inches wide, and shall have 2 inches of concrete on top of tile. Slabs shall have at least 3-4 inch concrete fireproofing below the reinforcing steel; beams and girders shall have at least 1-2 inch of concrete fireproofing on both bottom and sides. Steel beams and columns shall have at least 1-2 inch of concrete fireproofing reinforced with No. 12 gauge 21-2 inch wire mesh around same to support concrete. In beams and girders one-half of total live load and dead loads shall

be assumed to act continuously, and the other half on a simple supported beam. The results of these two methods of loading shall be combined. In slabs one-third of the load shall be taken as acting continuously and the other two-thirds as acting on a simple beam (where adjoining spans are within 20 per cent. of equal lengths). Sufficient reinforcement must be provided near the top of beam or slab, to provide for negative bending moments, over tops of all beams. Wherever T beams are penetrated by pipes or other openings, the beams shall be reinforced with top reinforcing at these points.

SPECIFICATIONS FOR COLUMNS.

Concrete columns shall be proportioned in the ratio of 1, 1, 2, except where structural steel is specified, and shall be of the type designated as hooped. That is they shall be banded with continuous steel rods, spaced not more than 1-6 of the core diameter and not less than one inch clear and of such area that when stressed at 12,000 lbs. per sq. in. tension, the resulting radial pressure on the concrete core shall not be less than 65 lbs. nor more than 130 lbs. per sq. inch.

In addition to this hooping, the column shall have vertical reinforcement of Kahn Cup Bars, to the amount of not less than 1 per cent. nor more than 3 per cent. of the area of the concrete core. The verticals shall be wired to the hooping. The area of the concrete will be considered as that of a circle whose diameter equals the inside diameter of the hooping coils and 4 inches less than the least outside diameter so as to provide at least one and one half inches of concrete fireproofing.

Hoop columns shall be figured by the following formula:—

$$\text{Total load equals } 750 A_c, \text{ plus } 10500 A_v, \text{ plus } 4.8 \times 12000 \times 2 A_h \times \frac{d}{4 p}$$

where

- A_c equals area of core;
- A_v equals area of vertical steel;
- A_h equals area of hoop;
- P equals pitch of hooping, centre to centre;
- d equals diameter of core.

Where loads are very light, columns may be figured with hooping 12 inch pitch, in which case concrete shall be stressed at not more than 500 lbs. per in. and the vertical steel at not more than 7,500 lbs. per sq. in.

Vertical reinforcement in columns shall be spliced at each floor at the ends held in contact by pipe sleeves about 10 inches long. Vertical reinforcement shall be wired to dowels embedded in the concrete footing, or attached to the steel girders or columns.

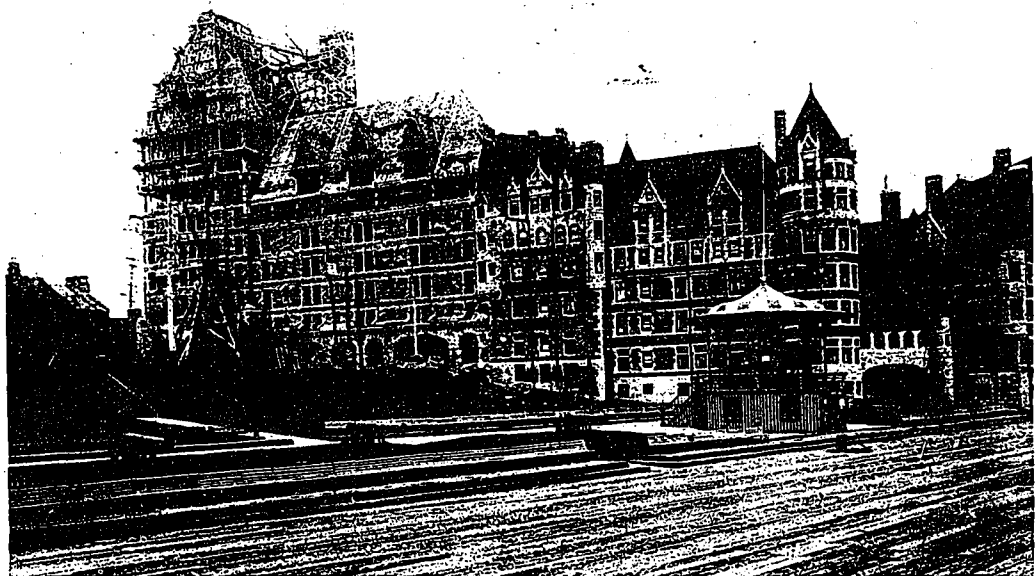
CONSTRUCTION OF ROOF.

The roof construction proved to be an exceptionally interesting one, as the pitch of the main roof is 60 degrees, while that of the tower is 75 degrees, the reinforcing running in the direction of the slope. The slab is supported on concrete purlins at the level of each floor which in turn are supported at the ninth floor by concrete cantilevered beams extending on the corridor columns and at the eighth floor by beams running from the corridor columns to columns at the side of the large dormers. The ridge beam is supported on concrete posts, and the columns supporting the tower roof become rafters after they intersect the sloping surface.

At elevation 264 and 273 above datum (datum being approximately 100 feet below the basement floor) they are braced with concrete struts which in turn are knee braced both vertically and horizontally. The floors throughout the tower are also knee braced as is also the main building at two points. Above elevation 273 there is no concrete, this portion of the tower roof being all skylight having structural steel frame. In concreting the roof the forms for same were necessarily doubled. The outer forms were not stripped but were left in place to



NEW ADDITION TO CHATEAU FRONTENAC, QUEBEC CITY. VIEW TAKEN OCTOBER 1ST, SHOWING THE EXTERIOR OF THE LOWER PORTION OF THE BUILDING FINISHED, AND THE FORM WORK OF THE ROOF IN COURSE OF PREPARATION. NOTE THE MANNER OF MAKING THE CONNECTION BETWEEN THE OLD AND NEW PART, THE GENERAL TREATMENT EFFECTING A PERFECT ASSIMILATION. W. S. PAINTER, ARCHITECT.



NEW ADDITION TO CHATEAU FRONTENAC, QUEBEC CITY. VIEW TAKEN OCTOBER 31ST, AT WHICH TIME THE CONCRETE PORTION OF THE BUILDING HAD BEEN FINISHED. THE ONLY EXTERIOR WORK WHICH REMAINED TO BE DONE BEING THE CURTAIN WALL, OF THE UPPER PORTION. W. S. PAINTER, ARCHITECT.

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be utilized for wooden sheeting under the copper finish. On account of this 7-8 inch tongue and grooved boards were nailed in panels to battens on the side next the concrete so that when the slab was poured these battens were solidly embedded in the concrete. The outer form or sheeting was held at the proper distance from the inner by 1-2 inch bolts with gas pipe separators. As the battens run in the same direction as the reinforcing, they do not weaken the slab.

EQUIPMENT AND PROCEDURE OF CONSTRUCTION.

In the carrying out of the concrete work, the materials were dumped into a hopper with gates controlled by a lever, the hopper being flush with the ground outside the building. This hopper fed into a Smith mixer of 1-2 yard capacity, which after properly mixing the material, dumped the concrete into a bucket hoist, the bucket in turn being elevated to the floor under construction, where the concrete again was dumped into a hopper, from which it was fed into wheelbarrows, which deposited the concrete into its final place.

For the construction of the roof portion however it was found that handling the concrete by means of wheelbarrows was unsatisfactory and consequently the concrete was conveyed by means of chutes from the discharging hopper onto platforms immediately over the various points along the ridge. The columns and roof slabs were puddled with long poles, the steel being placed before any concreting was begun. Special care had to be taken in the columns and roof slab to prevent separation of the stone from the mortar in its long drop. The concrete in floor slab and beams was puddled merely by spading same, the reinforcement being placed in this case as well as in the former before the concreting was begun. The men placing the reinforcement material followed immediately after the carpenters had finished the form work, and only after all steel and form work had been carefully inspected by the superintendents in charge, was concrete permitted to be placed.

Owing to the short season in which concrete work can be done in the City of Quebec, and the contractors being under bonds to complete the building within a limited time, the work had to be considerably rushed, and it was found necessary to do a great deal of night work. In removing the forms, the columns were first stripped and inspected, then the floor slab, centering and sides of beam boxes were removed and examined, the supports under the beams being left in several days longer than the balance of the form work. The forms generally were not removed until four weeks after concrete had been poured.

An interesting feature in the building is the overhang of the walls at elevation 176, 198 and 220, being one foot six inches, one foot nine inches and one foot nine inches respectively; also the large cantilevers next the old building at elevation 142, supporting the overhanging tower at the intersection of the new and old building, and the cantilever slabs supporting at each floor the towers on the north side of the building.

The entire building stands practically upon a solid rock, the footings resting on uptilted strata of trap rock. The excavation necessary in itself being a large undertaking owing to the fact that a great deal of it had to be done by blasting close up to a building already finished and during a time of year when it is most occupied by tourists, special precautions had to be taken against injuring adjoining property. It was begun in the early fall of 1907, but when the contractors were ready to begin actual building work in May, 1908, it was found that the excavation was filled practically with solid ice, which occupied considerable time in its removal and was the source of considerable expense.

Concreting the footings of the building proper was begun on May 26th, and the under pinning the old building

and erecting structural steel columns and trusses occupied considerable time. Through various delays the concreting of the ground floor was not finished until June 29th, when another delay of six weeks ensued, owing to non-delivery of cut stone for arches and piers at driveway, which it was found necessary to place in position before proceeding further with the concrete structure. And again following this, the work was also considerably retarded on account of the Tercentenary Celebration, which practically brought about a general cessation of operations in the City of Quebec. According to the records of the superintendents in charge and the daily reports made by them to the architect and supervising engineers, the second floor concreting was not finished until the 11th day of August, after which date the work proceeded with as great dispatch as could be wished for under any conditions.

The dates on which the different floors above the second were finished show the dispatch and speed with which the work on such a large and important structure was proceeded with. On October 31st the final concreting was done on the extreme high point of the tower roof, in other words, from the second to the thirteenth storey, counting the roof above the attic floor as one storey, the work was finished in 81 days, not deducting Sundays or holidays. According to the contract, the building must be completed ready for occupancy in May, 1909.

Every possible precaution was taken during the construction of this work to assure its ultimate success, all the materials used being carefully inspected and tested by engineers specially appointed for the purpose, and all work done throughout the structure received the most careful possible inspection. The cement used (a Canadian brand) was first inspected and tested by the architect's engineers in the bins at the mill. After having been tested the bins were sealed and only cement from these bins was furnished to the job. To further insure against any error being made, the cement was again tested upon arrival at the site, where it was stored for a number of days before being permitted to be incorporated into the work.

RECORD OF COST.

In addition to the careful inspection of the work, the architect deemed it advisable to keep accurate records of the cost of this form of construction for future use. The records were kept separately for each floor. We are publishing one of the typical floors, being floor at elevation 187. It shows that there were required 255 8-10 cubic yards of concrete in floor and beams, 43 5-10 cubic yards of concrete in columns, and reinforcing steel amounting to 25 9-10 tons, being an average of 7.55 lbs. per square foot of floor surface. There were also required 28,000 pieces of 8 in. x 12 in. x 12 in. terra cotta tile, and for the necessary form work 45,000 board feet of lumber, which included all the necessary shoring as well as clamps. The cost records show that the concrete materials for the beams and floors cost \$5.65 per cubic yard or \$1,445.27 for the floor. Concrete materials for the columns \$9.21 per cubic yard or \$464.00. The labor for placing this concrete \$173.60 or 58 cents per yard of concrete. The steel was figured at \$75.00 per ton for 25 9-10 tons, \$1,942.50. Cartage from the railway to the building on the steel for this floor, \$20.72, or 80 cents per ton. The cost of handling the steel and placing it in position after it reached the site was \$129.50, or \$5.00 per ton. The lumber for the form work cost \$990.00, or \$22.00 per thousand board feet. Cost of labor for placing this form work, \$615.70, carpenters being paid 25 cents per hour. The hollow tile cost 10 cents per piece f.o.b. cars Quebec, or \$280.00. Carting same from cars to building, \$32.48; handling and laying same, \$42.00, or 1 1-2 cents per piece.

Thus the total cost of the concrete portion of this floor of the building was \$6,072.41, being equal to .883

dollars per square foot. Classifying the total cost of this floor therefore resulted in the concrete costing 33 per cent., steel 35 per cent., forms 26 per cent., and tile 6 per cent. of the total.

Every precaution has been taken to make the building as fireproof as possible. All the floors excepting cafe and bathrooms are finished in cement, the cafe floor being wood, the bathrooms having terrazzo floors. The dividing partitions throughout the building are of terra cotta tile. Bathrooms, both shower and tub, adjoin practically every bedroom in the structure.

The stairs throughout are of cast iron and steel and are covered with marble, and hydraulic elevators communicate with all floors.

The proper installation of heating system in itself was found to be quite an engineering problem, the structure making it difficult to place the chimney near the boiler room, and necessitating the building of a smoke flue under ground, running a distance of about 100 feet, to the end of the building before it reaches the stack.

The plumbing throughout is the most modern type, all fixtures being solid porcelain. In planning the structure, provision was made so that all piping is kept in specially built flues, easy of access, so that any pipe or pipes may be easily repaired or replaced should occasion require. The ventilation for the structure is treated in the same careful manner.

The late Mr. Bruce Price was the architect of the original building. Mr. W. S. Painter was the designing as well as supervising architect for the described additions, all drawings being prepared under his immediate care. The structural engineers were the Trussed Concrete Steel Company of Canada, Limited, who prepared their structural drawings under the immediate supervision of and in the office of the architect. The Canadian Stewart Company were the contractors. The architect had two inspecting engineers on the work during its progress, the Trussed Concrete Steel Company two, the Canadian Stewart Company one general and numerous assistant superintendents.

THE DISPLAY OF MACHINERY and appliances at the Cement Exhibition to be held at Toronto in the first week of March, will, it is said, cover more floor area than any previous exhibition of its kind held on this continent.

CONVENTION OF ALBERTA ARCHITECTS.

---Members of Provincial Association Discuss Important Matters and Elect Officers for 1909.

THE THIRD ANNUAL meeting of the Alberta Association of Architects was held in Edmonton on January 29 and 30. The officers elected for the present year were as follows: Hon. president, Jas. E. Wize, Edmonton; president, R. Percy Barnes, Edmonton; 1st vice-president, E. C. Hopkins, Edmonton; 2nd vice-president, Jas. A. Macdonald, Lethbridge; secretary, H. M. Widdington, Strathcona; treasurer, Jas. Henderson, Edmonton; council, W. S. Bates, Calgary; H. D. Johnson, Edmonton; J. Llewellyn Wilson, Calgary; C. Lionel Gibes, Edmonton; Roland W. Lines, Edmonton; Jas. E. Wize, Edmonton.

Among other important subjects discussed was the present unsatisfactory Mechanics' Lien Law, and a recommendation will be forwarded to the Attorney-General embodying the suggestions of the Association for certain amendments.

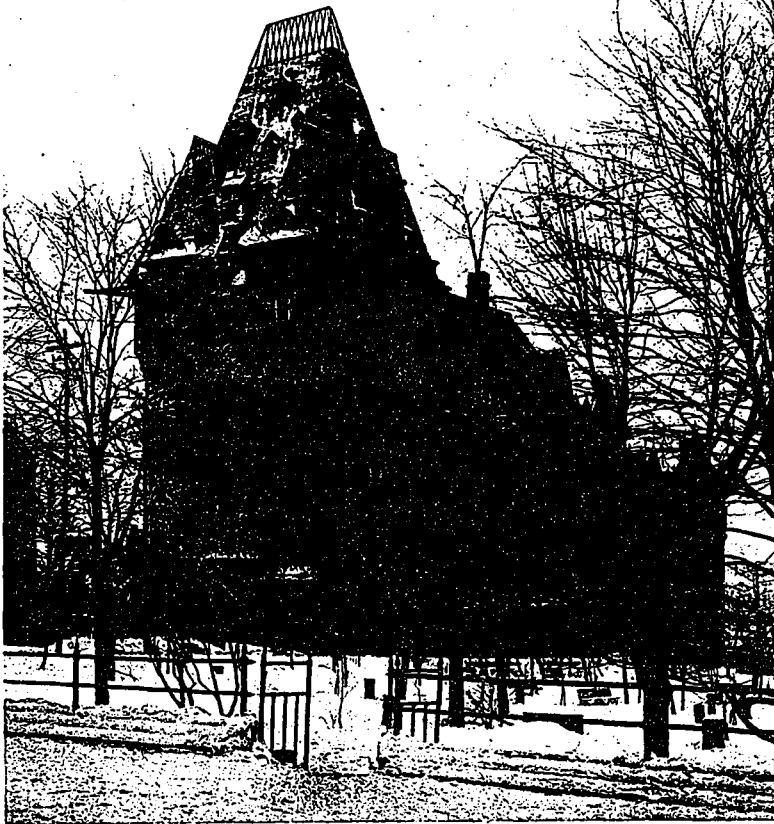
The regulations governing architectural competitions was another important matter dealt with, and copies of the same are to be sent to all public boards and architects throughout the province. These regulations are in accord with those which have been adapted in the United States, Great Britain, Eastern Canada and Ontario.

The meeting also decided upon a uniform contract for all architects practising in the province of Alberta, which will be printed immediately.

A self-governing chapter of the Association has been established in Calgary, and others of a like nature will

be established in other parts of the province as the occasion demand. The proceedings of the convention will be published in what will be known as the Year Book, to be issued in the near future.

IN VIEW OF EXTENSIVE IMPROVEMENT now being begun, Brazil seems to offer an excellent market for the sale of cement. The projects to be carried out include the construction of large port works and other great public undertakings, and it is said that the importation of cement in 1909 will in all probability exceed that of any previous year.



NEW ADDITION TO CHATEAU FRONTENAC, QUEBEC CITY. VIEW TAKEN FROM REAR OF THE NEW PORTION, LOOKING TOWARDS THE OLD, SHOWING THE MANNER IN WHICH THE ARCHITECT SUCCEEDED IN PROVIDING FOR A FIRE ESCAPE WITHOUT MARRING THE ARCHITECTURAL BEAUTY OF THE BUILDING, THE FIRE ESCAPE BEING PLACED IN THE DEEP RECESS TO BE SEEN IN THE FOREGROUND OF THE PICTURE. W. S. PAINTER, ARCHITECT.

MR. GEORGE A. MOUNTAIN.---Newly Elected
President of Canadian Society of Civil Engineers.

MR. GEORGE A. MOUNTAIN, of Ottawa, the newly-elected president of the Canadian Society of Civil Engineers, is one of the best known and highly respected members of the profession in Canada. He was born in Quebec in 1860, and was educated there for the practice of civil engineering. Mr. Mountain served his apprenticeship with the City Engineer of Quebec and Messrs. Kinipple & Morris, of London and Greenock. In 1878 he was transitman on the first surveys of the Quebec & Lake St. John Railway, and in the following year became instrument man on the original surveys of Prince Louise Embankment, Quebec and the Graving Dock at Levis. His next advancement was in 1880, when he was appointed first assistant on Division E of the Island Railway of Newfoundland, with which company he remained until March 31, 1881, when he joined the engineering staff of the Canada Atlantic Railway, under Walter Shanley, with whom he served as assistant engineer until 1886.

Upon the resignation of Mr. Shanley in that year, Mr. Mountain became his successor, and was chief engineer in charge of the steel bridge, which was at the time, built across the St. Lawrence at Coteau.

In 1890, Mr. Mountain commenced the surveys of the Ottawa, Arnprior & Parry Sound Railway, from Ottawa to Georgian Bay, which was completed in 1897, and was afterwards amalgamated with the Canada Atlantic system. Together with his duties with the Canada Atlantic Railway, he assumed, in 1892, the position of chief engineer of the St. Lawrence & Adirondack Railway, from Valleyfield to Malone. Mr. Mountain resigned his position with the Canada Atlantic system after twenty-three years' consecutive service, in 1904, to accept the position of chief engineer of the Board of Railway Commissioners of Canada, which position he still holds.

Mr. Mountain is also a member of American Railway Engineering and Maintenance of Way Association, American Superintendents of Bridges and Buildings, Royal Astronomical Society, and Dominion Land Surveyors.

ONTARIO ARCHITECTS' CONVENTION.---

Continued from Page 47.

So it is in our own profession, gentlemen. Modern environment makes it a condition precedent to our attaining the highest degree of success that, while we may know something of many things, we must endeavour to learn everything of something.

Cultural Studies Secondary.

A few words more, and I am done. First, to remind you that the vast majority of practicing architects in America to-day are men who have received no systematic course of training whatever, and who are consequently forced to rely more and more on the trained men from the schools for assistance. It is upon the skill of these assistants that they especially rely when the importance of the work in hand must meet the requirements of a rapidly enlightening public opinion in matters of design. Such a state of affairs should make it quite clear that the immediate task of the architectural school is to fit men for such positions and not to repress students seeking a professional training by a prolonged and exacting course of study containing much irrelevant matter, which, if appropriate at all to such a course, should be relegated to the post-graduate curriculum. Those who have proposed the inclusion of such "academic and cultural" studies in an undergraduate course of architectural studies are evidently unaware of the fact, well known to experienced teachers in that field, that of all the courses of study offered in our universities to-day there is none so well adapted to soften the asperities which may have been acquired by the student in previous unfavourable surroundings, and to develop in him a sympathetic appreciation of all that is best in the world of culture, as is some such course in architecture as I have proposed. I repeat, with the greatest deliberation and confidence, that as between a course in arts, for example, and a well balanced course in architecture, the latter will produce in the under-

graduate student a much higher degree of fundamental culture than the former. The two courses in design, and the history of architecture and the subsidiary arts, will have a marvelous effect in that direction. This has been noted by experienced observers in the course in the Ecole des Beaux Arts in Paris, and striking cases have repeatedly fallen under my own observation here in America. Moreover, to take the student at the age at which he usually enters our professional schools, and devote even two years to sociologic and cultural studies, as has been proposed in one of the schemes I have recorded, is to lose two of the most vital years, at his most impressionable age, for artistic training. It is between the ages of fifteen and twenty-one that the student can be taught the fundamentals of design, and the earlier the better if he is ever to develop a first-rate capacity in that field. After that, it is too late. And again, men in the Freshman and Sophomore years in college are not mature enough to derive much benefit from such courses. If they are to be given at all it should be in a post-graduate year. It is one of the soundest of pedagogical principles that a student does his most effective work in any subject if it is taught to him only after his previous work has shown him his need of it.

In conclusion permit me one word on the subject of foreign travel. No student should regard his professional training as having completed its first stage unless he has spent at least one year abroad, and has especially studied the architecture of Italy. Next in importance I rank France and England, but the student should take as wide a sweep at first as is possible, and include in his preliminary survey Constantinople, Greece, Egypt, and Spain. At some subsequent time he can look in at Vienna and some of the German cities, in order that he may make up his mind as to the real value of the Art Nouveau movement, but modern architecture in German lands outside of that influence is a negligible quantity.

Finally, gentlemen, it only remains for me to express again my appreciation of the honour conferred by your invitation, and to thank you for the very courteous attention with which I am sure you have received this paper; and to assure you that if it in any way proves to have furthered the movement you have undertaken, it will have accomplished its purpose, and the pleasure with which I have prepared it for your Convention will have been fully justified.

THERE IS A GROWING APPREHENSION in municipal circles at Edmonton that the new municipal producer gas plant which was recently put in operation will prove a failure, and consequently seriously affect the street car service and electric light system. The gas producer plant was purchased by the administration in 1906 on the advice of B. R. Keeley, who was then city engineer, but the city, owing to financial reasons, deferred the delivery until last summer. The complete plant, including the erection of the building, represents an outlay of \$110,000, and of this amount \$75,000 was spent on the producer plant proper and the gas engine. According to a leading Edmonton paper, a prominent engineer connected with the city, is authority for the statement that the plant will never work at greater than seven-tenths of its rated capacity, and even then it will have to be closed down one or two days a week. In his opinion plants of this kind of a small capacity have proved a success, but that larger ones are still in the experimental stage. However, until the thirty day official trial has been fully made, it will be difficult to determine as to what degree it will perform the work required of it. It is to be hoped that Edmonton is not the victim of misplaced judgment on the part of her former engineer, and it would be advisable for other municipalities which are contemplating the installation of a similar plant, to note carefully Edmonton's success or failure in this experiment.

TO PREVENT THE FLOODING of a low area at Southsea, England, in times of severe storm, an automatically operated pumping station has recently been built. It consists of a concrete pump and machinery lying entirely beneath ground level, and receiving the overflow from weirs at different points of the sewerage system in the flooded area. There are two motor-driven centrifugal pumps, each with a capacity of 200,000 gal. per hour against a head of 30 ft. The pumps are started and stopped by float-operated switches, one of the pumps being first thrown in and the other one later in case the first pump is unable to handle the flow coming to the sump.



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CORRESPONDENCE.—The Editor will be pleased to receive communications upon subjects of interest to the readers of this journal.

Vol. 2 February, 1909 No. 4

Current Topics

AT A MEETING OF THE COUNCIL of the Royal Institute of British Architects, held on the 4th of January, it was unanimously resolved that the request of The Architectural Institute of Canada to become an allied society of the Royal Institute be approved and that the necessary arrangements be made.

* * *

RAILWAY CONSTRUCTION in the Western part of Canada during the past year, it is estimated, amounted to about two thousand miles in new extensions. The Canadian Pacific and Canadian Northern Railways, according to the reports of their engineering departments, added 826 miles and 245 miles respectively, while the Grand Trunk Pacific completed and brought under operation 854 miles.

* * *

AN ASSOCIATION HAS BEEN ORGANIZED within the past month by the electrical contractors of Montreal for the purpose of bringing about a mutual understanding with a view of placing the trade in general on a higher status. The object of the association is to adjust trade grievances, both general and individual, raise the standard of electrical work in its various applications, and attain results that will be of benefit to its members, employees and the public alike.

* * *

THE PARISH CHURCH OF ST. BOTOLPH, Boston, England, popularly known as the Boston Stump, embodies in its construction a chronometrical significance that possibly entitles it in this regard, to the distinction of being in a class all by itself. There are 365 steps—one for each day of the year; 52 windows—one for each week; 7 doors—one for each day of the week; 12 pillars—one for each month; 24 steps in the porch—one for each hour of the day, and two flights of 60 steps leading to the roof—one for the number of seconds to the minute, and the other for the minutes to the hour.

EIGHTY-SIX PER CENT. of the new buildings erected in Ottawa during the past year were built either partially or wholly of brick, according to the annual report of Building Inspector Robert Fotheringham. The tabulated amounts show that \$912,900 was expended on brick veneer buildings; \$581,350 on solid brick buildings; \$159,950 on concrete structures; \$126,255 on frame buildings, and \$13,850 for new-iron clads. It is gratifying to know that wood finds it place near the bottom of the list, and it is to be hoped that less of it will be used in the future.

* * *

IT IS SAID THAT AS A RESULT of the confusion and general dissatisfaction that has arisen from the selection of a Seattle architect's plan for the Vancouver Horse Show Building, the architects of that city will form an association for the purpose of "harmony, co-operation and defense." In such an event, it would be advisable for the Vancouver architects to unite with the provincial and Dominion associations, as it is only by concerted effort that legislation which will militate against the importation of building plans, can be obtained.

* * *

THE OFFICIAL ROSTER of the Toronto Builders' Exchange for 1909 as decided upon at the recent annual meeting is: President, A. Dennis; First Vice-President, George Gander; Second Vice-President, Charles Bulley; Treasurer, James Crang; Directors, Robert Page, H. Jennings, John Chalkley, John Aldridge, O. M. Moore; Auditors, J. B. Thomson, W. Davidson. The members of the Exchange, in view of the general settling down of things during the past year, are extremely pleased with Toronto's good showing, and they believe that in the coming twelve months operations in the building line will be unusually active.

* * *

SEVERAL NEW COMPANIES have been formed to develop the new asbestos deposits recently discovered near Fastman, Quebec. The Orford Mountain Railroad is near these properties, and a spur will be built from the main line to the mills, which are already in course of construction. This discovery is important, as bearing on the extent of the asbestos fields in this province. The mines near Danville, Quebec, some 65 miles from this new find, and at Thetford Mines, Black Lake, and Broughton, Quebec, and several smaller places on the line of the Quebec Central Railway, about 100 miles from Eastman, are now the only producers of this mineral on this continent, with the exception of a small output in Vermont and a new mine in Georgia. The development of these new mines will induce more thorough prospecting all over the eastern townships.

* * *

HAMILTON IS LOOKING FORWARD to the best building year in its history. As forecasted by The Herald of that city, there is a vast amount of work in prospect, renewed confidence shown in real estate, and no indication of labor trouble manifest. The three-year agreement between the bricklayers and the bosses which will expire in April, is to be perpetuated for three years longer, both parties having recently signed to that effect. The men will receive 50 cents an hour, with an eight-hour day for the next three years, or exactly the same conditions under which they worked last year. There is a difference over a clause in the International Union rules which says that a bricklayer shall have charge of all cement work on the jobs. This point will be referred to Ald. Allan, one of the special referees. There is not likely to be any trouble with the carpenters, who will also get the old rate of 37 1-2 cents an hour, and it looks as though the painters and plumbers would have no cause to make trouble.

A ROUGH ESTIMATE made by Edwin C. Eckel, of the United States Geological Survey, places the total production of cement in that country for last year at 40,000,000 barrels, which indicates that there has been a falling off of about one-fifth the tremendous output of 1907. The cause of this decline is attributed to the depression prevalent during the early part of the year in a number of sections of the country, including some of the most important commercial centres.

* * *

IT MIGHT PUZZLE the ordinary mortal to state in legal form just how much time and how much money he would require to take down a tall brick chimney. The contracting engineer would make it take itself down. After doing a small sum of arithmetic on his cuff he would direct certain portions of the base removed. In the spaces thus left he would fit a lot of very stout timbers, then remove the bricks which remained between them. Then he would set fire to the timbers, and, watching from a safe distance with a camera, would take a snapshot of it as it fell.—Scribner's.

* * *

FIREPROOF CONSTRUCTION for moderate price dwellings has just been achieved in a row of nine 17 x 70-ft. three-story houses on New York avenue and President street, Brooklyn. They have brick walls, full-span I-beam floor and roof girders, hollow terracotta floor and roof arches and special thin cast partition slabs. The construction was adopted in competition with estimates of reinforced concrete, the conditions being such that the design accepted was the more economical. The designs were made by Mr. Arne Delhi, architect, and Mr. Bernt Berger, consulting engineer.

* * *

HOUSES WITHOUT FRONT ENTRANCES, it is said, are giving the post office department at Chicago no little concern regarding the delivery of mail. Section upon section of the dwellings have been built along Fortieth avenue, and it is contended that a carrier having a piece of mail for every house in a block, is obliged to walk nearly a quarter of a mile to and from back doors. The whole matter is assuming such proportions that the postal officials may be compelled to make a ruling which will require owners or tenants to put up boxes at the front for the receipt of mail.

* * *

SUCCESSFUL EXPERIMENTS recently made by the street cleaning department of Magdeburg, Germany, with a new sand-strewing wagon, an invention of Herman Fricke, of that place, has led to its adoption by the city. The wagon spreads rapidly an even layer of sand on the streets which, in the case of asphalt paving, is of great benefit, in that it minimizes the slipping of the horses when the streets are either extremely wet or frozen. This has heretofore been done in German cities exclusively by hand. The apparatus is worked by the driver and can be adjusted to strew a layer of sand or gravel from 6 to 16 metres (19.68 to 52.49 feet) wide.

* * *

THE GENERAL DEVELOPMENT OF JAPAN, together with the introduction of waterworks systems in all the principal cities, has brought about a largely increased demand for pipes and tubing of foreign manufacture. It is the opinion among foreign traders there that a profitable market offers itself for the sale of substantial pipes, which are not only strong, but are light and easily transported and installed; tubes of heavy design will not prove satisfactory as the water supply for nearly all cities and towns is conducted from the mountains and it is quite difficult on account of the primitive modes of conveyance to handle other than these types.

A BRIDGE, THREE MILES LONG, including its approaches, is to be constructed by the Pennsylvania railroad upon the completion of the company's terminal at New York City. It will connect the mainland of New York with Long Island, and its greatest span, over Hell Gate channel, will be a thousand feet long and 140 feet over the water. When the bridge and its connections are made through trains will be run from New England points to the south by using it and the Long Island tunnel and the Hudson River tube.

* * *

AN INTERNATIONAL EXPOSITION of Improvements of Cities and Resorts has been organized by the Society of Civil Engineers at St. Petersburg, Russia, and will be opened there on May 9, continuing to September 14, 1909. The exhibit is to be grouped in separate classes which will include the following: Building; ways and means of communication and transportation, lighting, heating and ventilation; sanitation; resorts and hospitals; school and education; protection against fire and insurance; charitable institutions; artistic decorations of cities and buildings, household effects; municipal government; water supply; accounts of cities and resorts.

* * *

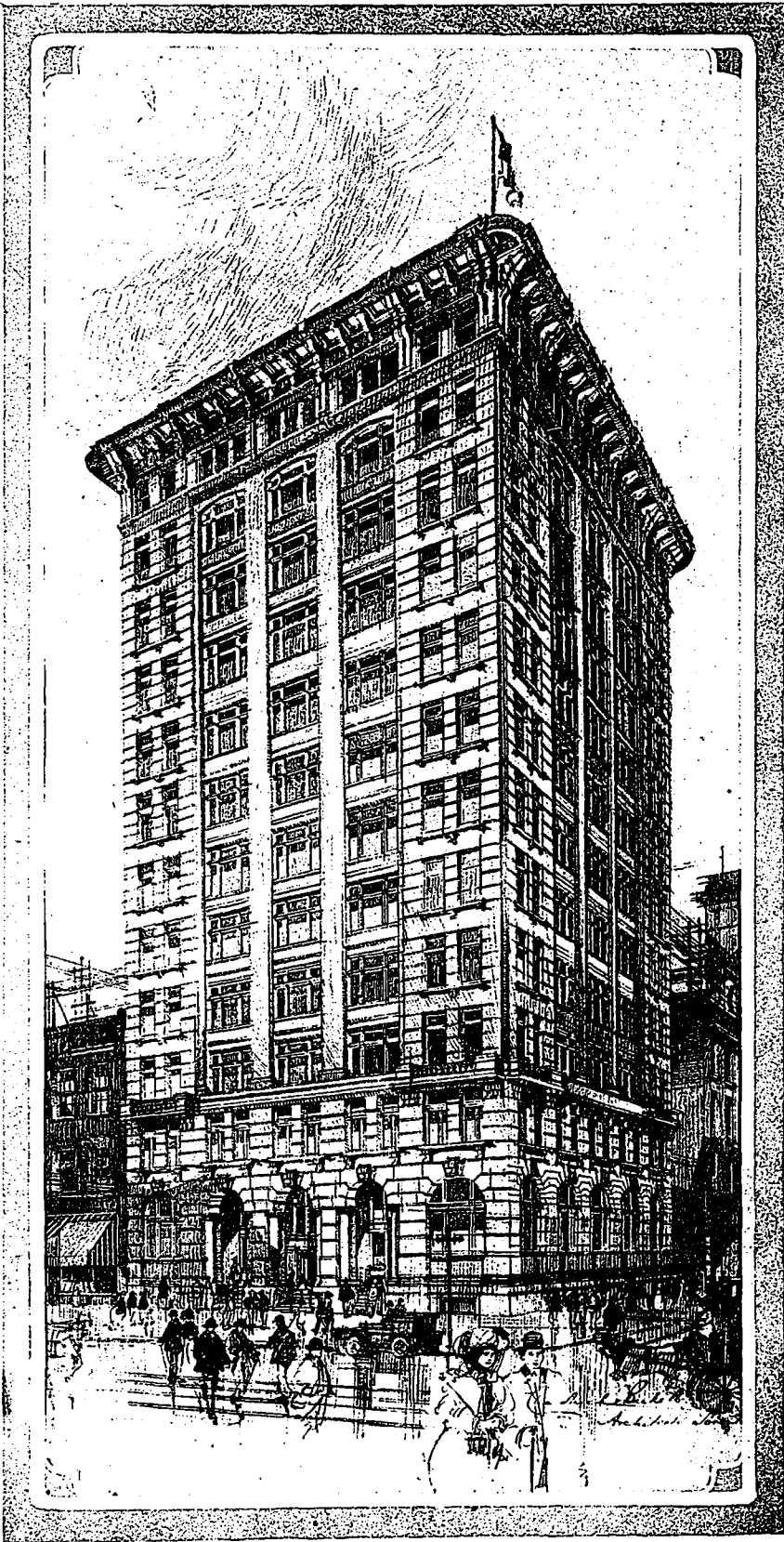
TORONTO TRUNK SEWER PROJECT has given rise to considerable discussion between advocates of brick and cement as to which material is best adapted for its construction. Both interests have advanced innumerable arguments to discredit the materials of the opposing side. These involve the question of cost, labor, time of construction, durability and the action of sewer gas on each respective material. Even ancient history has been resorted to in order to cite specific instances showing where brick takes precedence over cement and vice versa. Those who have been disinterestedly studying these materials know that both have their advantages and uses, and that it remains with the city to decide as to which will serve its purpose in the most durable, serviceable and economical manner.

* * *

CALABRIA AND SICILY, which were recently laid low by earthquakes, can ascribe the complete destruction which befell them, to the fact that their structures were built on the wrong system. This is the opinion of a Japanese commissioner who had been sent by his Government to investigate the methods of building construction in regions where convulsions of the earth are to be expected, as is the case in Japan. The Commissioner happened to be in Rome at the time of the catastrophe, and after making a special trip to study the ruins of the collapsed buildings, gave as his conclusions, that the whole system of architecture in the affected districts was in the highest degree unsuitable. The walls of the buildings were found to be weak, the walls heavy, and exactly the reverse should have been the case.

* * *

"POURED CONSTRUCTION" as reinforced concrete has come to be known in London, England, will be given a wonderful stimulus in Great Britain as a result of the Government adopting this system in erecting the great new wing of the general post office, which is to cost \$1,250,000. In the opinion of a London publication, "now that the Government has gone in for 'pouring' its buildings, private contractors will more fully take up the work. There are already three or four big 'poured' buildings in London—the largest being at 38 Victoria street, a great office structure—but, so far, the English contractor has not taken to them very favorably. He has been hard to convince that they were not of a flimsy character, but it only needed the Government to set its seal of approval on the process to give the new scheme a chance."



A PROPOSED 12-STORY OFFICE BUILDING TO BE ERRECTED IN TORONTO (OWNER'S NAME WITHHELD). CHADWICK & BECKETT, ARCHITECTS. THIS DESIGN PROVIDES FOR A STRUCTURE THAT WILL OUTCLASS ANYTHING IN TORONTO IN THE WAY OF AN OFFICE BUILDING, BOTH IN PLAN AND DESIGN. IT SERVES AS ONE OF THE MORE RECENT PROOFS OF THE FACT THAT WE HAVE ARCHITECTS IN CANADA THAT CAN EXECUTE DESIGNS EQUAL TO THOSE OF ANY FOREIGN ARCHITECT.



MR. G. A. MOUNTAIN, NEWLY ELECTED PRESIDENT OF THE CANADIAN SOCIETY OF CIVIL ENGINEERS, AND RETIRING PRESIDENT GALBRAITH, DEAN OF THE FACULTY OF APPLIED SCIENCE, TORONTO UNIVERSITY. MR. MOUNTAIN IS CHIEF ENGINEER FOR THE CANADIAN RAILWAY COMMISSION. (SEE PAGE 56.)

ANNUAL MEETING C.S.C.E.—Canadian Society of Civil Engineers Convenes at Toronto.—Good Attendance and Spirited Meeting.—Broad Discussion of Problems Confronting the Profession.—Condensed Proceedings of Business Sessions.

THE CANADIAN SOCIETY OF CIVIL ENGINEERS held one of the most successful meetings in the history of the Society, in Toronto on January 28, 29 and 30, 1909; this being their twenty-third annual convention. In view of the fact that the twenty-three hundred members of this, Canada's largest and most successful society of scientific men, are scattered from coast to coast, the attendance was considered exceptionally large.

The convention programme, in addition to the regular meetings, included a supper at Convocation Hall, where they were the guests of the Engineering Society of the School of Practical Science; a trip on the Grand Trunk Railway to Port Colborne, and the annual banquet held at the King Edward on Friday evening, January 29.

Among the more important questions discussed were, the establishment of a central examining board similar to that in the legal and medical professions, the raising of the standard of associate membership in the Society, and standard specifications for cement. The meetings were well attended, and the discussions were in the most part spirited and interesting, indicating the earnestness of the members in their endeavors to solve the problems with which the Society is confronted.

Morning Session, Jan. 28th

PRESIDENT GALBRAITH, who presided at all meetings, opened the Thursday morning session, and, before taking the Chair, he wished, as a citizen of Toronto, to welcome the Society and hoped that they would be encouraged to make another visit to the Queen City. He was satisfied that the Toronto people would do all in their power to make their visit enjoyable.

The minutes of the General Meeting, held in Montreal, on January 28th, 1908, were read by the Secretary and confirmed, after which the scrutineers were nominated by the President. For the election of the officers and members of the Council they were as follows: J. C. T. Crofts, chairman; S. Gagne, A. F. Wells, T. T. Black, J. T. Farmer and T. A. Rutherford. For the election of the nominating committee: O. W. Smith, chairman; W. E. Douglas and J. M. Oxley. For amendment of by-laws: E. B. Merrill, chairman; A. C. F. Blanchard and D. C. Raymond.

Members' Benefit Fund.

Mr. COUTLEE, of Ottawa, opened the discussion by referring to a paragraph on page No. 6 of the report, which read as follows: "The desirability of instituting some sort of insurance or benefit fund for the members' benefit. It was found that an insurance scheme would require special legislation and that its success was doubtful. The establishment of a benefit fund along the lines of that of the Institute of Civil Engineers was thought to be practicable and was recommended to the consideration of the incoming council." Mr. Coutlee referred to the large membership of the Society scattered all over the Dominion and to the fact that the engineers were taking a very great part in the development of the Dominion. He believed that each member should give some attention personally to this matter and that they should communicate to the council any scheme that they might think feasible. He was in favor of such a scheme and believed that it should have the active support of everybody in the Association.

MR STEAD, of Chatham, N. B., wanted to know if special legislation was necessary and suggested a plan of making an assessment of 50 cents per member in case of each death.

At the request of Mr. MURDOCK, of St. John, N. B., Col. ANDERSON gave some information as to the method of the Institute of Civil Engineers of Great Britain. He believed it was impossible for the Society to force any member to subscribe anything beyond his regular dues and that a separate organization would be necessary, as in the case of the Civil Service Association, where only members who contributed to the fund received any benefit from it. He believed it would be of material benefit to the members if they voluntarily enrolled themselves in such an organization.

The PRESIDENT then gave an outline of his recollection of the method of the British Institute and stated that theirs was a purely benevolent fund and was used for the benefit of those who needed assistance. He did not know of any similar institution that had such a thing as an insurance fund.

Mr. HARKOM believed that the Society would be assuming an onerous duty in attempting to distribute such a fund. A benefit fund appealed to him. He was of the opinion that the members of the Society would be willing to subscribe to a fund

that was not only for the benefit of the subscribers and suggested that the matter be referred to a special committee. Mr. UNIACKE contended that the matter, when boiled down, would be nothing more or less than fraternal insurance. He did not think the scheme would be a practicable one and that the Society should not become a benevolent institution.

Mr. STEAD moved that the question be left over for further discussion on Saturday morning. Upon motion of Mr. MOUNTAIN the question of the insurance fund was deferred for the present.

Reports of Branches Received.

The report of the Library and House Committee was then adopted, as was also the Treasurer's report. Mr. MITCHELL read the report of the Toronto branch of the Society. The Secretary read the report of the Quebec branch. In view of the fact that there was no report from the Winnipeg branch, Mr. SCHWEITZER, at the request of the President, gave an informal verbal report. He reported that little had been done beyond getting well organized. They had held several well attended meetings and had had an annual dinner attended by forty-five or fifty members. He was satisfied that the branch was going to be a success. He stated, further, that they had found in the West a considerable feeling of liberty and a desire to cut loose from the parent body and form a separate organization. However, they had killed that feeling altogether.

The PRESIDENT read a petition from Ottawa addressed to the Council: "The undersigned members of the Canadian Society of Civil Engineers request the authority of the Council for the formation of a branch of that Society in the City of Ottawa, under the rules of the Society."

The report on Students' Prizes was read by the Secretary. He stated that in the general class two papers were recommended for prizes, one of which was not provided for. This report was adopted, including the award of two prizes.

A motion was then adopted regretting the loss by death during the past year of several members and to place on record the Society's sympathy with the members of their respective families.

Establishment of Testing Laboratories.

The report on the Establishment of Testing Laboratories was then brought under discussion. Mr. JAMIESON stated that, in view of the importance of this question, there should be a special committee appointed to take this matter up with the Government, or to empower the existing committee to do so.

The PRESIDENT, as a member of this committee, said that the question brought up by Mr. Jamieson was a very important one. One of the main difficulties was in the fact that the members had to make expensive journeys, for which there had been no provision made for remuneration. He did not believe that they would have any satisfaction until the Society was prepared to pay at least travelling expenses. Mr. JAMIESON concurred with the President in this view and believed that the Society was in good enough financial condition to reimburse members of the committees when on the Society's business.

The question then arose as to whether the Council had already powers to make such an appropriation. The PRESIDENT suggested a motion authorizing the Council to reimburse members of certain committees or all committees, as they may see fit for their out-of-pocket expenses. Mr. JAMIESON believed that such a course should be taken to provide for extra expenses. He was opposed to reimbursing members for their time. He believed that care should be taken in calling meetings of committees so that they would not prove too expensive. Mr. O'SULLIVAN concurred with Mr. Jamieson in his views and believed that disbursements should be approved and submitted to the executive head of the Society for payment.

MR. LEONARD believed, that in so far as a large number of the members were in the employ of railroads, they should get some concession as to railway rates.

Mr. CONDY agreed with Mr. L. W. Gill that the matter was provided for in the by-laws and it would be safe to leave the matter with the Council.

Mr. J. H. HUNTER also believed that it would be perfectly safe to leave the matter in the hands of the Executive Committee of the Council, but he did not see why the Society should not supplement those powers by a motion that would sanction anything that they might do in that regard.

Mr. GILL did not approve of that motion as he thought that it was unnecessary, but he thought that the suggestion as to reduced railway fares should be taken into consideration.

Mr. ARMSTRONG wished to move that the payment of travelling and other expenses which the Council might deem proper, be ordinary expenses in the discretion of the Council. This brought up a somewhat lengthy discussion on the point as to what might be considered ordinary and extraordinary expenses. This discussion was cleared up to some extent by the PRESIDENT who read the by-laws covering this subject, after which Mr. ARMSTRONG withdrew his resolution and suggested that the chairman should appoint a committee to consider the matter.

Col. ANDERSON did not believe that the Society should pay travelling expenses. He contended that the individual mem-

ber, in the interests of the Society, should be willing to give his time and pay his own expenses; that in beginning to pay such expenses incurred by individual members in the workings of the Society, it would be opening a door that there would be no closing to and would take away the profit that they might expect to make from membership fees. In matters of this kind it would be reasonable to appoint men who were at the centre where the work is required and thus obviate unnecessary expense.

A motion was then adopted that empowered the President to name a committee to report on the subject before the end of the meeting.

The motion for the adoption of the report on the Establishment of Testing Laboratories was then carried.

Mr. DION wanted to know if the fact of adopting a report was simply that it should be filed, or was the executive committee going to take some action and approach the Government, as recommended by the report and if a deputation was to be appointed should not the meeting appoint it. The PRESIDENT answered that the incoming Council should be asked to take action in this matter.

Mr. JAMIESON believed that it was a matter for the meeting and not for the Council. He was in favor of the present committee acting on this matter instead of allowing them to shift their responsibility to someone else.

Mr. MURDOCH seconded Mr. Jamieson's motion. The motion was then put by the President and was carried. Mr. KERRY wanted to know if the committee was to take action without reference to the general management of the Society. The PRESIDENT believed that that was so and explained that the meaning of the report was that the Society agreed to the principles of the report and that it was ready to ask that the committee should go on. Mr. KERRY asked if the Committee should not be required to get into communication with the Council and if the meeting was not asking the committee to take action outside of the Society and taking a position for and committing the Society. The PRESIDENT answered in the affirmative. This opened up a very lengthy discussion as to whether the Society should not constantly report to the Council and be governed more or less in their actions by the dictates of the Council.

Mr. COSTE did not think the Society should delegate power to a committee to represent the Society before the Government or any other body and that the Council should carry out the recommendations of the Committee. In his opinion it would not be diplomatic to approach the Government through a committee, however wisely selected.

Mr. STECKLE stated that the Government was spending some money to improve their laboratories and it would hardly be likely that they would consent to spend any money on the laboratories proposed by the Society. The PRESIDENT answered that he had gone very thoroughly into this matter and that the laboratory required was not along the lines of those already in existence. It was an investigating laboratory along the lines of that of the United States Geological Survey into properties and of materials in engineering interests.

Mr. JAMIESON explained that the intention was that the committee should be in touch with the Council, but not throw their duties on the Council. Mr. KERRY suggested that Mr. COSTE be asked to form a resolution covering this matter, so as to give a clear understanding of it. The meeting then adjourned until 3.00 o'clock.

Afternoon Session, January 28

The PRESIDENT named the following to act on the Committee of Out-of-pocket Expenses: Messrs. W. P. Anderson, of Ottawa; W. Murdock, of St. John; J. A. Jamieson, of Montreal; J. E. Schweitzer, of Winnipeg; C. H. Rust, Toronto; A. Leofred, of Quebec; J. G. G. Kerry, Campbellford.

Mr. COSTE again opened the question of the report of the Committee on the Establishment of Testing Laboratories. He stated he did not understand that a resolution was carried settling the matter continuing the committee in existence and giving it power to carry out its own recommendations. He did not believe that a committee was a proper body to represent the Society before the Government and that in an important matter of this nature the strongest members of the Society should take final action in following out the recommendations of a committee.

He believed that the President, flanked by the Council, was the proper body to wait upon the Government. He contended that such a committee should make its recommendations to the Council and not be empowered to carry them into effect.

Mr. Coste's position on this matter opened up a very heated discussion as to the meaning of the motion which adopted this report. A number of views were set forth by several members with the result that a motion by Mr. Coste, seconded by Mr. Kerry to rescind the former motion of the adoption of this report was carried and a motion by Mr. Armstrong providing "that the Committee be continued, with power to add to its numbers and that when they had a specific scheme to inform the Council which be authorized to approach the Government taking with them such other members on the deputation as they might select." This motion was seconded by Mr. Hunter and was carried unanimously.

After the PRESIDENT had made some announcements with regard to the reception at the Government House and the dinner to be given by the Engineering Society at Convocation Hall, the report on the Usefulness of the Society was declared open to discussion.

Usefulness of the Society.

Mr. J. N. RHEUME made some remarks upon the subject of professional ethics, precedence and courtesy in all branches of the profession. He believed that engineers should cultivate an "esprit de corps" such as exists among lawyers and

physicians. Every member should be impressed with the fact that due courtesy should be shown, or precedence given to fellow-members of the profession and in so far as the constitution was not clear on this subject he would suggest that a clause effecting this purpose should be prepared by the Council.

The PRESIDENT stated that the character of this report did not call for a motion of adoption and a motion that the report be received and discussed was carried.

The most important clause in this report, or at least the one which brought forth the greatest amount of discussion was that dealing with the subject of providing some more restrictive measure as to the title "civil engineer" or as to admission of Associate Memberships to the Society.

Protection For Canadian Engineers.

Mr. LEOFRED referred to some remarks Mr. Frost had made at the last Annual Meeting relative to the fact that it was useless to try to form a close corporation in America and that he thought that the best man would always come to the top and the people would find out anyway after some time who was the most competent.

Mr. GILL spoke of the Alien Labor Law which would, if pressed by the Society exclude foreign engineers from being engaged on Canadian work. He, however, did not think that Canadian engineers required this and that the Society should be an international one.

Mr. MORRIS dwelt at some length upon the subject of young engineers coming from European countries who may even bring with them qualifications, in printed form which no young Canadian has and that there young men find their way into the Society because the standard of qualifications for Associate Membership was not sufficiently high.

Mr. Morris stated that there were young engineers in Toronto who to-day are not members of the Society for the reason that they felt that in spite of the fact that they had spent years and considerable money on their education they were in no better position before the Society than the great mass of young men coming to this country from Great Britain or foreign countries. He believed that the standard of qualifications for Associate Membership of the Association should be as high as that required for a degree from any of the schools of applied science.

Mr. SCHWEITZER did not believe that too great emphasis should be laid upon examinations. That there were many competent engineers with a creditable practical experience that would be unable to undergo an academic examination. He did not believe that a man's nationality should have any influence whatever. The only question was whether he was competent to do the work, and competence being equal the Canadian should be given the preference.

Mr. COUTLEE stated that this view was all right theoretically but that the fact remained that many young Canadians were in Ottawa trying to get work and could not. However beautiful the theory may be the fact remained that there were eighty million people to the south of us, very nice people, good workmen, but that eighty completely floods out our six or seven million during hard times.

Mr. A. W. ROBINSON believed that the Society should be broad enough to be an international Society. It might be true that there were many young engineers who had found difficulty in obtaining employment during the past year, but it must be remembered that last year was an exceptional one. He would welcome English or foreign engineers to Canada and if they have the required qualifications of the Society, welcome them to the Society.

Mr. JAMIESON agreed with Mr. Robinson and he thought the remedy would be to broaden some of the employers. It was a fact that preference had been given by employers to outsiders, but he did not believe there was any complaint outside of that. The meeting then adjourned.

Banquet at Convocation Hall

The Engineering Society of the Faculty of Applied Science of Toronto University entertained the Society Thursday evening, at Convocation Hall. Something over 900 members and guests were present, and a very enjoyable evening was spent.

President Galbraith read his address in the Auditorium, before the guests adjourned to the Banquet Hall. Dr. Galbraith spoke of the necessity for a broad education for the engineer, in view of the important part they work in our national development. He impressed his hearers with the importance of having the engineering profession under the control of some sort of a governing body, of very much the same nature as that of medicine or law. He referred to the great national resources of Canada, and impressed upon his hearers the fact that these resources should be fathered and taken care of. He called attention to Mr. Carnegie's statement that the iron ore of the United States would be exhausted in another forty years, and of England in seven years, and remarked what a great prospect this opened up for Canada in developing her natural resources. He referred to electric processes of melting iron and steel, and showed that the future of these processes depended upon Hydro-Electric power. Portland cement was to become a great factor in the future development of Canada, as it will, not many years hence, take the place of steel and wood construction. He referred further to the importance of the regulation of rivers and maintenance of forest growth.

After Dr. Galbraith's speech, the guests repaired to the great draughting room, adjoining Convocation Hall, where the banquet was held.

One of the pleasing incidents of the evening was the presentation of a silver service to Dr. J. Galbraith, Dean of the Faculty, and of a gold watch to Dr. W. H. Ellis, Prof. of Chemistry. The two men have been teaching in the School of Practical Science for thirty years.

The Toast "Canada" was proposed by Mr. A. D. LaPan,

Introducing Mr. Byron E. Walker, who wished to impress upon the great gathering of young men he saw before him, many of whom would be the engineers of the future, the necessity of conserving Canadian resources from the grasping hand of the world, which was growing poor in iron, timber, and other treasures, which Canada has in abundance. We, in Canada, are in great danger to-day, said the speaker. No other country of only 7,500,000 people has such great resources and has at the same time, lying to the South, the most profligate user of natural resources in the world, and one which to-day has practically exhausted all that it once possessed. Our problem to-day is not to develop Canada's wealth, but to conserve it. It is true that in a comparatively few years, the iron and timber of the United States will be exhausted. Do not think that when that time comes, we will be allowed to enjoy our own resources at our leisure. The United States will turn like lightning upon them and devour them as fast as it can, so I say "learn to conserve what we own. If you do, in future centuries Canada will be master of the steel trade, and rich in lumber and water power."

President Falconer, when he arose to reply to the toast "The University," was greeted with great applause from the students. He wished to impress upon them that it was necessary to be a man, as well as an engineer.

Annual Banquet.

On Friday, the Canadian Society of Civil Engineers went over by Grand Trunk, special train, to Port Colborne and Welland. At Port Colborne they were entertained at luncheon, and then viewed the Government's new elevator, and the public works in the harbor. On returning to Welland, the excursionists visited the Plymouth Cordage Works, but, for lack of time, were unable to inspect other local enterprises, which it had been desired to look over. Returning to Toronto in the evening, they attended their Annual Banquet at the King Edward Hotel.

Dean Galbraith, retiring President of the Society, presided, and among those present were Messrs. M. J. Butler, Deputy Minister of Railways; G. A. Mountain, chief engineer of the National Transcontinental, and President-elect of the Society; F. H. McGulgan, J. Osborne, general superintendent of the Ontario division of the C.P.R.; James Leitch, K.C., chairman of the Ontario Railway and Municipal Board; Prof. W. G. Miller, Provincial Geologist; J. P. Watson, president of the Toronto Board of Trade; G. H. Frost, New York; J. J. Salmond, C. B. Smith, C. H. Mitchell, chairman of the Toronto branch C.S.E.; J. J. G. Kerry, A. G. Van Nostrand, president of the Ontario Land Surveyors; A. W. Campbell, Deputy Minister of Public Works; C. H. Rust, City Engineer; W. McNab, assistant engineer G. T. R.; E. Marceau, Montreal; Gustave Lindenthal, New York. The programme and menu card was unique, the design being by Mr. C. H. Mitchell, chairman of the Toronto branch of the Society.

Mr. A. W. Campbell proposed the toast of "Our Guests" in a felicitous speech, coupling with it the names of Mr. J. P. Watson, Mr. W. McNab and Mr. G. H. Frost. "Canada and the Empire" was submitted by Mr. R. W. Leonard, and responded to by Mr. J. A. Macdonald.

"Kindred Societies" was proposed by Mr. M. J. Butler and responded to in suitable terms by Prof. Miller, representing the Canadian Mining Institute; Mr. G. Gouinlock, president of the Ontario Architects' Association, and Mr. A. G. Van Nostrand, president of the Ontario Land Surveyors. Mr. G. A. Mountain, in giving the health of the retiring President, referred to the great services of Dean Galbraith, who in responding expressed his wish to do all in his power to forward the interests of the Society.

Morning Session, January 30

The SECRETARY read regrets from Sir Sandford Fleming and H. J. Lambe, for their inability to be present at the dinner on the previous evening. The PRESIDENT stated that the Secretary was prepared to distribute the printed proceedings on Thursday in accordance with a resolution of the Meeting a year ago. Each member was requested to correct his own remarks and return his corrected copy to the Secretary as soon as possible. The PRESIDENT then called for a report of the Committee re Payment of Expenses of Members of Committees, but in view of the fact that the Chairman had left the city the night before, the matter was left over.

Mr. HUNTER re-opened the discussion on the Usefulness of the Society. He believed that this clause should not be further considered and was of the opinion, after reading Mr. Frost's statement of last year and after listening to the addresses at the dinner on the previous evening by eminent engineers, that the engineering brain should be allowed the widest scope. In history exclusion laws and retaliatory measures

had never effected a good purpose. The greatness of the Empire was due to the fact that it gave freedom to men; who being persecuted in their own country, came to Great Britain and assisted in the building up of the country and its industries. He believed in the open-door policy and he did not think there was a member of the Society who in the bottom of his heart favored any course of exclusion. It savored too much of trade-unionism.

Mr. COUTLEE disagreed with what he termed "this nonsense of the theoretical state of having a professional standing as broad as the four winds of Heaven." He desired to put himself on record as absolutely objecting to it. He pointed out that the constitution of men were the same on the south side of the line; the same in Great Britain as in Canada, yet a medical man cannot come from the United States to Canada and practice his profession. He cannot come from Great Britain to Canada. He cannot even go from one Province to another in Canada and practice his profession, and it was absolute nonsense that engineers should be on a different footing to them.

Mr. LEOPRED agreed with Mr. Coutlee on this matter and pointed out that the main questions recommended by the Council was to raise the level of the engineering profession and that the only way that the professions of law and medicine had been raised was by proper legislation. Mr. Hunter, said the speaker, seems to put a professional man on the same

footing as the farmer and laborer coming to work as laborers in a United Empire. He believed if the Society continued to follow its present course young Canadian engineers whose parents had deprived themselves to put them through a regular course of instruction would be obliged to exile themselves to foreign lands to get work. He pointed to the high professional standing of engineers in France and stated that several had been elected to the Presidency of the French Republic during the past fifty years. The reason for this was the exceptionally high course of training provided for the engineer in that country. He believed that instead of spending money endeavoring to have civil engineers elected to Parliament they should endeavor to raise the level of the profession.

Mr. HUNTER believed that his remarks had been misunderstood. He believed the standard should be raised as high as possible, but by the Society of Civil Engineers and not by legislation. The curse of engineering was the meddling of politicians. When a politician gets hold of an engineer's report he fits it to his own ends and then when failure comes, who gets the blame? He believed in keeping out of politics, but believed that the Society should legislate for itself and should set its own standard.

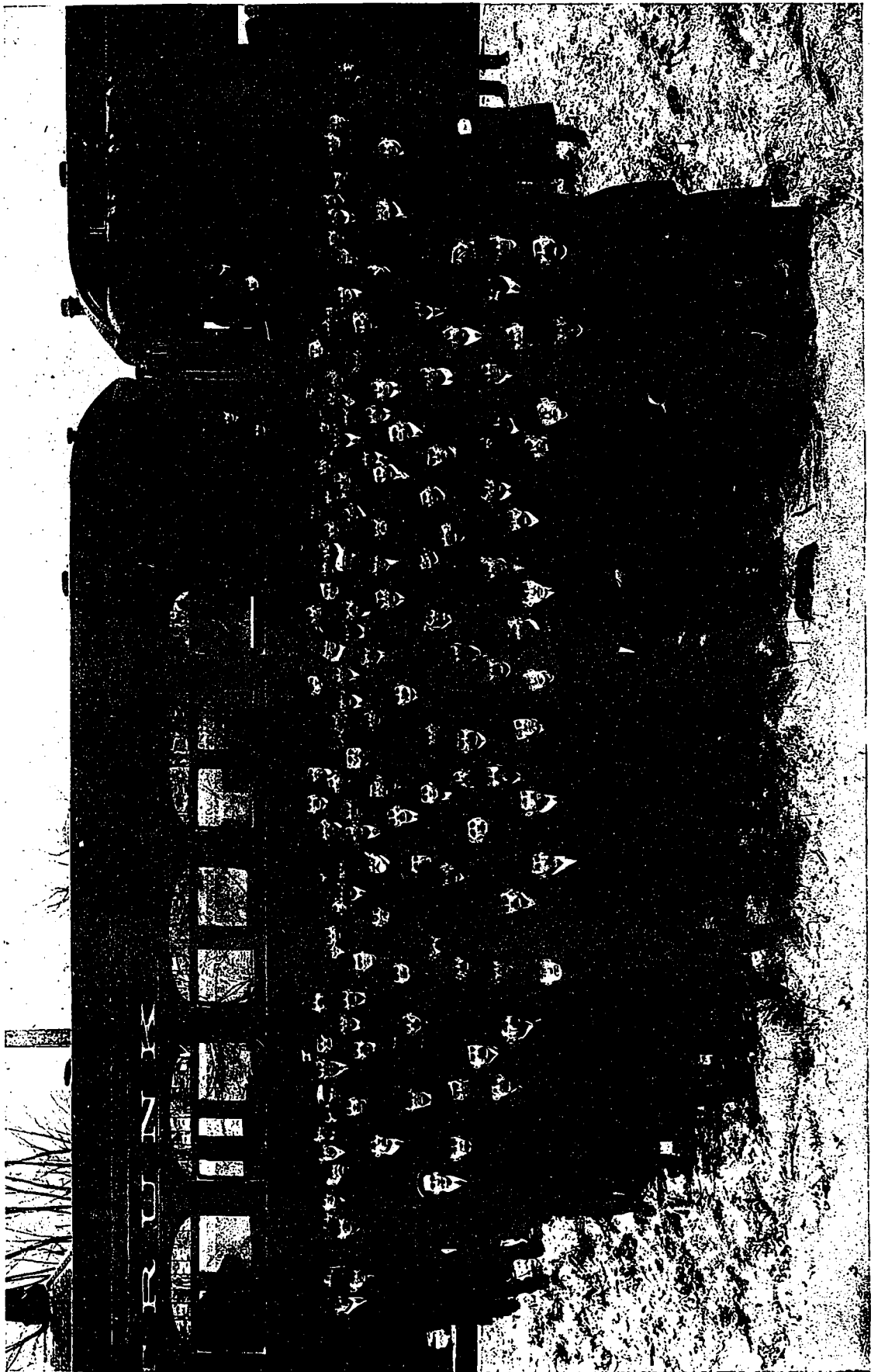
Mr. MORRIS made a motion, seconded by Mr. Coutlee, as follows:—"That it is advisable, owing to the large number of foreign engineers applying for admission to the membership in the Canadian Society of Civil Engineers, to have a central board of examiners representative of all branches of engineering and that a committee be appointed to propose some different system of examination for the admission of Associate members and report at the next General Meeting of the Society. That the Committee report as well on all necessary changes or additions to by-laws entailed by the recommendations."

The PRESIDENT pointed out that the report dealt with this question to some extent. One of the committees after discussing the matter very thoroughly came to the conclusion that it was best not to discuss the question. The feeling was that professional experience of engineers should be looked into and if, in the opinion of the Society, the time had come when graduation from some recognized engineering school could be made a pre-requisite, action could be taken. It was thought also that an examination of some kind might be held for younger men without professional experience and who were not graduates of any school. The Society could organize a body of examiners for that purpose.

Mr. MORRIS stated that his ideas quite agreed with those of the Committee. This opened up considerable discussion on the subject which was concluded by an amendment to Mr. Morris's motion by Mr. McNab, seconded by Mr. McPherson, that the discussion be adjourned until the result of the ballot



DEAN GALBRAITH IS PRESENTED WITH A CABINET OF SILVER BY GRADUATES OF THE SCHOOL OF PRACTICAL SCIENCE.



MEMBERS OF THE CANADIAN SOCIETY OF CIVIL ENGINEERS WHO TOOK ADVANTAGE OF THE EXCURSION ON THE GRAND TRUNK RAILROAD, TO PORT COLBORNE AND WELLAND, DURING THEIR RECENT CONVENTION AT TORONTO. VIEW TAKEN AT PORT COLBORNE. A SPECIAL TRAIN WAS PLACED AT THE DISPOSAL OF THE SOCIETY BY THE GRAND TRUNK, AND THE MEMBERS WERE GIVEN AN OPPORTUNITY TO INSPECT THE NEW ELEVATOR AND THE PLANT OF THE CANADIAN PORTLAND CEMENT COMPANY, AT PORT COLBORNE, AND THE PLYMOUTH CORDAGE WORKS AT WELLAND.

Construction, February, 1909.

dealing with the by-laws was announced, Mr. Morris's motion being left over until that time.

Clauses 4, 5, 6 and 7 Laid Over.

Other clauses of the report on the Usefulness of the Society were then discussed. Three and four being left over until after the balloting on by-laws, as was also five dealing with the question as to whether the Society as a body should interfere in cases of dispute between a member and his client and under what conditions or authority.

Clause six, by motion of Mr. Hunter seconded by Mr. LeGrand, was left over to be discussed at the same time as the report of the Transportation Committee. Clause seven was also laid over to be discussed with the other clauses.

Report on Transportation.

The report of the Committee on Transportation was then taken under consideration. Mr. MOUNTAIN, Chairman, stated that Mr. Butler, the former Chairman, had requested him to take the Chairmanship of this committee owing to the fact that Mr. Butler had not the time to do the work. Mr. Butler had told him that the Committee on Transportation was appointed to look into the question of rails, fastenings, roadbed, transportation and routes. Mr. Butler had resigned in December when Mr. Mountain took the Chairmanship.

The Committee on Transportation had been divided into four sub-committees, as follows:— Rails, fastenings and tieplates, chairman, Mr. H. G. Kelly, Chief Engineer Grand Trunk Railway; ties, chairman, G. McPherson; roadbed and ballast, chairman, Mr. Sullivan. Mr. Mountain then outlined the larger sub-committee on "transportation routes." He reviewed the large amount of work connected with the duties of this committee and stated that they had had representatives of all the railways in Canada, all the steamship lines on the Great Lakes and of those interested in transportation by water, canals and terminals to co-operate with them. He then outlined the information that had been gathered together, but it was impossible to give it in shape to give a report to the Annual Meeting.

This report opened up a very thorough and lengthy discussion which arose in the first place out of a misunderstanding as to the scope of the work of this committee. It was thought by several members present that the scope was altogether too great, but it was explained that while these several branches all reported to the Transportation Committee they each had their specific duties. Then the question arose as to the advisability of having a report covering such an important branch of engineering discussed at the Annual Meeting where, it was contended, sufficient time and thought could not be given the important subjects it dealt with and that the report of such a committee should be made to the Council in Montreal. The difficulty, however, was surmounted by a motion by Mr. Mountain, seconded by Mr. Murdoch, that the Committee be allowed to continue their investigations for another year, which was carried, and a motion by Mr. Kerry that the reports of the special committees appointed by this Annual Meeting shall be submitted to the Council and by it transmitted to the next Annual Meeting with such recommendations for action as it may deem advisable. This motion was seconded by Mr. Coste and carried.

Out of Pocket Expenses.

Mr. MUST, of the Committee on Out of Pocket Expenses gave the following report:—"Your Committee beg to report that in their opinion it is not advisable to make any recommendations; that the Council should have power to deal with this matter." The motion for the adoption of the report was carried.

Cement.

The next report that came up for consideration was that of the Cement Committee.

Committee's Report.

Mr. JAMIESON stated that the report of the Committee accompanying the specifications prepared by the committee was not printed for distribution. He wished to read the report of the committee in presenting the Specifications and Standard Rules for Testing Cement. Mr. COSTE very strongly objected to having Mr. Jamieson give this report because he did not feel that this was a matter to come before the Annual Meeting. The Annual Meeting was not for the purpose of lecturing the engineering profession as to what they should adopt in the way of a standard.

Mr. JAMIESON stated that he did not propose reading their recommendations for Specifications on Cement. He wanted to present the report of his committee. After some discussion in which the President declared he believed Mr. Jamieson to be perfectly in order in presenting his report, Mr. Jamieson continued.

The report strictly applied to the Specifications and Rules

for Testing Cement. The Committee considered, up to date, that their work was at an end, but they felt that they had been deficient in the past. The late specifications of the Society were very much out of date.

The second paragraph of the report dealt with the question of establishing a standard package of one hundred pounds. He explained that the usual package was a bag and that the Canadian package was 87½ pounds, while the American was 94 pounds. The committee had taken this matter up with the manufacturers, and while they had not committed themselves, some seemed to be strongly in favor of the 100 pound package, others were against it because of the expense of making the change. Others were preparing to order bigger bags to meet the committee's suggestions, irrespective of the Association as a whole.

Mr. Jamieson had been advised by the Secretary of the Manufacturers Association that the cement branch of the Association had recently voted against making any change and requested the Canadian Society of Civil Engineers to act with them in endeavoring to obtain legislation towards standardizing 87½ pounds as the packages which he regretted the committee could not do.

Mr. COSTE interrupted stating that Mr. Jamieson was out of order; that these matters should not be discussed at the Annual Meeting, but should be submitted to the Society in Montreal.

Mr. JAMIESON, however, was permitted to proceed and he pointed out that the Cement Branch of the Manufacturers Association thoroughly recognized the importance of having a specification on which all can agree so that they will manufacture a good grade of cement and at the same time meet the conditions of the engineers.

The American Society issued their specifications and recommendations of their Committee on Cement with the names of the Committee behind it to give it standing, without guaranteeing it as a Society. This was what the Committee was endeavoring to do. A great deal of progress had been made in getting the manufacturers to agree on their specifications. The method of testing had been finally agreed upon with the manufacturers, which was a great step in advance.

In presenting this report, while he did not think it possible to discuss it generally, the members might have some point that they would like to refer to.

The PRESIDENT wanted to know what disposition could be made of the report and it was suggested that it be circulated among the members without adoption and without any recommendation from this Annual Meeting. The report could be examined and be reported back with a view to final adoption at the next meeting. This, however, was thought would result in too long a delay.

A lengthy discussion followed, relative to the disposition of the report, which was finally settled by a motion by Mr. Coste, seconded by Mr. Morris, that the Report on Cement be printed and distributed to the members and referred to the incoming Council for action. It was then moved by Mr. LeGrand and seconded by Mr. Hunter that the present Committee on Cement be appointed a standing committee.

Afternoon Session, January 30

Voting on By-laws.

The PRESIDENT announced the result of the vote on sections. The vote stood fifty in favor of abolishing the sections and sixty against, which he stated was an extremely small vote for the Society on such an important subject. The result of course, was that the sections stand as they did before. After some minor matters had been settled, the President read the result of the vote on the amendments to the by-laws.

- By-law No. 8, for 166; against 47. Declared Carried.
- By-law No. 13a, 141 for, 68 against. Declared Carried.
- By-laws 27 to 45 inclusive, 135 for, 71 against. Defeated.
- A clerical by-law referring to the change of numbers was carried but inoperative on account of the failure of the previous set to carry.
- To omit by-laws 28 and 36 was also carried.
- By-law 37A, for 73, against 114.
- By-law 27, for 68, against 123.
- By-law 28, for 68, against 123.
- By-law 33, for 73, against 119.

The President stated that By-law 37A was apparently repeating the first, but was marked on the report as a vote referring to what was called here the first part of the second vote.

Sunday Business.

The PRESIDENT stated that he did not understand it, but the result was 73 for and 117 against, so that none of the by-laws on the white paper had carried. There was some discussion over the apparent mix-up caused by the vote on the several by-laws and the question of obtaining legal advice on the matter. The difficulty was finally cleaned up by a motion by Mr. Hunter, seconded by Mr. LeGrand, that the incoming Council be authorized to deal with the difficulties resulting from



PRESIDENT G. A. MOUNTAIN
TAKES THE CHAIR.

the omission of by-laws and the inconsistencies from the votes of the Society on the amendments to the by-laws.

Mr. MORRIS'S motion relative to appointing a Central Board of examiners representative of all branches of engineering which was made during the morning session when the report on the Usefulness of the Society was being discussed, was put and deemed lost.

The clause in this same report which was carried over from the morning session, relative to Provincial Legislation that might be detrimental to the profession, or that might be repealed, upon motion of Mr. Mountain, seconded by Mr. McNab, was laid over and it was decided that no action should be taken at present. The next clause:—"Should the title 'Civil Engineer' be controlled by legislation" was included in Mr. Mountain's resolution. Clause No. 9 was also laid over.

Mr. LEOFRED read a resolution passed at the Annual Meeting of the Quebec Branch of the Canadian Society of Civil Engineers asking that a rebate of \$2.00 be made to all members of the Quebec Branch who reside between Three Rivers and the eastern boundary of the Province of Quebec. Upon motion of Mr. Jamieson, seconded by Mr. McNab, the request of the Quebec Branch was referred to the incoming Council.

Article 10, page 36, as well as No. 7 were also referred to the new Council.

Mr. LEOFRED read another resolution passed by the Quebec Branch recommending that the Canadian Society of Civil Engineers should take steps to study the question of establishing a tariff which would be recognized by the Courts, similar to the land surveyors, architects, lawyers, notaries, etc. Upon motion of Mr. Coste, seconded by Mr. McPherson, the above resolution was referred to the incoming Council.

It was moved by Mr. Coutlee, seconded by Mr. Armstrong: "That as branches of the Society are rapidly forming in various parts of Canada, all reports of Committees appointed at the Annual Meeting be printed and forwarded to the branches one month before a special meeting of the Council and that the Chairman of each branch or other approved delegate be invited to attend that meeting and present a concise statement voicing the opinions of the members of his branch on all such reports and that the reports be considered at said meeting of Council, and further the Council is recommended to make reports, recommendations and draft motions to be presented at the Annual Meeting of the Society to facilitate the discussions thereat." (Carried.)

Moved by Mr. Kerry, seconded by Mr. Coste: "That the Secretary be instructed to send the members of the nominating committee a list of the men who have held office in the branches of the Society, because it is the opinion of this meeting that service in a branch is a recommendation for election to the general office of the Society." (Carried.)

Moved by Mr. Kerry, seconded by Mr. McNab: "That the Council be directed to transmit all applications for admission to membership, for transfer of membership, coming from within the district of a recognized branch to the Executive Council of that branch for recommendation before taking final action upon the application." (Carried.)

A vote of thanks was then proposed to the various individuals and organizations who were responsible for the entertainment of the Society.

Officers for 1909.

The following were elected for the nominating Committee for 1909:—Province of Ontario, Messrs. C. H. Mitchell, C. W. Dill and T. C. Irving, Jr.; Manitoba, L. A. Vallee and C. S. Leech; Section North West of Ontario, T. E. Schweitzer and H. N. Rattan; Maritime Provinces, C. E. W. Dodwell; Section outside of Canada and Newfoundland, Henry Holgate.

The following were elected as Officers and Members of Council for 1909:—G. A. Mountain, President; Vice-Presidents, W. F. Tighe, H. N. Rattan, C. J. Desharats.

For Members of Council, J. E. Schweitzer, A. E. Doucet, D. Macpherson, R. A. Ress, N. J. Kerr, R. S. Lea, J. G. LeGrand, F. W. Doane, Mr. Coutlee, L. A. Vallee, F. P. Gutelius.

For General Section, P. Sherwood, A. St. Laurent.

For Electric Section, C. H. Mitchell, L. A. Herat.

For Mechanical Section, H. A. Bayfield and W. Kennedy, Jr. Mining Sector, F. L. Wanklyn, Chas. Fergie and R. W. Leonard.

At the request of the PRESIDENT, the newly elected President, Mr. Mountain, took the Chair. A vote of thanks was tendered to the retiring President and Officers for their services during the past year.

Mr. BURCHELL had some very flattering remarks to make about Mr. Mountain and his connection with the Railway Commission. Ex-President Galbraith spoke very highly of the services rendered by their Secretary, Mr. McLeod.

Mr. McLEOD replied and thanked the meeting for their kindness in proposing and accepting this vote of thanks. Mr. LEOFRED suggested that the next Annual Meeting be held in Ottawa. Mr. COSTE believed that, in view of the fact that hotel accommodations were so heavily taxed, in Ottawa during January that the place of meeting should rest between Montreal and Quebec City.

After a motion thanking the scrutineers for their work the Twenty-First Annual Meeting of the Canadian Society of Civil Engineers adjourned.

WELL-KNOWN ARCHITECT PASSES AWAY.—Mr Maurice Perrault of the A.I.C. Vice-Presidency Succumbs to Lingering Illness.



THE LATE MR. MAURICE PERRAULT, A.I.C., P.Q.A.A.

A bereavement which has cast a gloom over the architectural and engineering fraternity of Quebec, and which will be learned with deep regret by many members of the profession throughout the Dominion, occurred February 4 at Longueuil, a suburb of Montreal, in the person of Architect Maurice Perrault, one of the vice-presidents of the Architectural Institute of Canada. The immediate cause of Mr. Perrault's death was cancer of the throat, and although it was known that he was in poor health for some time, his sudden demise came as a real shock to his many friends and acquaintances.

Although being devoted chiefly to the pursuits of his profession Mr. Perrault had been closely identified with the political life of his city and province, and since 1900 represented Chambly county in the Quebec House of Assembly. He was chairman of Private Bill's Committee, and during the last session was frequently mentioned as a cabinet possibility.

Mr. Perrault was born in Montreal on June 12, 1857, and was the son of Mr. H. M. Perrault, his mother being before her marriage Miss Octavie Masson, daughter of Mr. Damase Masson. After studying at the Seminary, he engaged in the practice of architecture, specializing in churches, convents and other large structures, many of which pay a fitting tribute to his ability as a designer.

From 1888 to 1892 he was the official architect for the district of Montreal under the Hon. P. Garneau, then Minister of Public Works. Aside from the duties of this position, he became architect to the city of Montreal, which position he held from 1889 to 1905, and during the first six years of which period he was also acting expropriation commissioner.

In addition to being a charter member and a Fellow of the Architectural Institute of Canada, with which he had been associated since its inception, Mr. Perrault was one of the organizers of the Province of Quebec Association of Architects, a member of the Canadian Society of Civil Engineers, and a member of the American Public Health Association. Mr. Perrault was a person of pleasing individuality, a splendid platform speaker and a debater of recognized ability. In the Legislature he was always accorded the greatest respect and attention by his colleagues, and was regarded as an authority on the financial affairs of the province.

FROM 1898 TO 1907, INCLUSIVE, the production of cement in the United States increased almost five-fold. A statistical compilation of the mineral products for that period, as recently sent out by the U. S. Geological Survey, give the total output for 1898 as 12,111,208 barrels, valued at \$9,859,501, as against the striking figures of 1907, when the output reached 52,230,342 barrels, valued at \$55,903,851.

A CHILDREN'S THEATRE, the first of its kind in the world, is to be erected in New York. Plans for the structure have been completed, and it is said that in design and construction it will introduce a number of novel features. The reported backers of the project are Mrs. Carter Harrison, of Chicago; Frances Hodgson Burnett and Mrs. Russell Sage, of New York.

COMPULSORY ARCHITECTURAL EDUCATION OPPOSED.

---Mr. Eden Smith in a letter to "Construction" Sets Up a Strenuous Argument Against Architectural Registration.---Society Demands Good Buildings Not Architects.---Suggested Legal Qualification an Impertinence to the Art.



MR. EDEN SMITH,
TORONTO.

may see if he wants to. And you neglect to give as one of the reasons for opposing license law, the contention of its opponents that proper building regulations will make more effectively not only the architect, but all who build, responsible to the public.

Among what you call the few who oppose license law you will find, if you will read the English Builder of January 16, 1909, Professor Beresford Pite, F.R.I.B.A., an architect who has had *some* recognition in England for the last twenty-five years, and you will see that this, according to you, "highly aesthetic" member of the profession is also imbued with a "Bohemian conception" of the profession when he says the attempt to set up legal qualification in the art of design, of universal application to architecture, will be an impertinence to art, unworthy of any cultivated race; doomed to distressing failure architecturally, and that its impracticable absurdity is not evident to the promoters of architects' registration, he fears, is due to an imperfect sympathy with that essential liberty of spirit which is the vital air of all artistic movement.

For that scientific building involving "mathematical calculation," which, as you say, in this "commercial age" society demands proper building laws, compel a perpetual examination of the designs which registration would not supply, and these laws would therefore better furnish society with what it demands of the architect, than would registration.

I hardly need point out the absurdity of accusing those who ask for facilities for architectural education of bolstering up a student who could design and not construct. We have no false conception of what society demands of an architect. Society demands good building, and if an architect desires to build badly, society's building regulations should prevent him. I think the false conception rises, in imagining those architects who want protection, are society.

WHAT SOCIETY DEMANDS.

Society does not demand architects, it demands that good building be obtained and bad building prevented, and for years and years it has been pointed out that license

law does not provide what society demands and that proper building regulations do.

It is unnecessary for you to point out that architects now practicing would not be required to pass an examination. Some of us have been in civilization long enough to know that a license law on coming into operation must put the most ignorant person now calling himself an architect, on exactly the same legal standing as the most learned, and a license would be no oftener revoked than licenses are now in the legal and medical professions; are these professions so fortunate as to include in their ranks no careless or incompetent practitioners.

If registration is enforced I do hope we shall not be required to believe that "architektonia," as the source of the word architect, is derived from chief carpenter. This is the popular idea, and I think it is about as accurate as most popular ideas. Because architecture, the art of the architect, a word derived from archon, a ruler or chief, and teknon, a worker, teknon including all kinds of workers, was so understood by the Greeks to be building, in the sense of constructing or contriving, that they used it metaphorically in place of stratagem, plot or artifice. When they used teknon, they may have meant mason or sculptor, quite as well as carpenter, especially as they had words derived from xylon, wood and ergon, work, such as "xylourgos," a carpenter, to use when they meant carpenter.

ARCHITECTURAL PHILOLOGY.

Are we to believe that the Greeks who spoke of architecture as the master art would have chosen a carpenter to direct Phidias, when the woodwork of their houses was so rude, and when we have to believe that Callimachus, the designer of the Corinthian order, was a sculptor. It is more easy to believe, as our first interest in Greek rose in the translation of the Gospels, and that as St. Mark used "teknon" to describe one traditionally known as a carpenter, that teknon has had since to live up to that reputation. In the Old Testament I cannot find the word carpenter, unconnected with mason or builder, except: in Zechariah 1, 20, which is so obviously the wrong word, that in the revised version "smith" is used in place of it, while the Hebrew word also means workman, craftsman, or artificer. In the earlier days of clay and pottery, or of the monolith builders, the chief contriver was hardly likely to be a carpenter.

It is likely that an artizan perhaps, not a freeman, could acquire mastership, then leadership in his trade, and find time to get such qualifications as Vitruvius said an architect should possess, a knowledge of drawing, geometry, optics, arithmetic, be a good historian, philosopher, well skilled in music and not ignorant of either physics, law or astrology. How long would it take a foreman carpenter in these days of condensed methods, libraries and technical schools to do this? Neither is it likely that an architect would be found in those associations of freemasons, becoming evident in the thirteenth century after the greatest Gothic work was done, or in those trade guilds, more interested in the craftsman's privileges than in the development of their art, which in England after the thirteenth century formed much more slowly than on the continent, because the Englishman was always jealous of anything savoring of interference with freedom of trade, even as late as in Adam Smith's time. It is not likely that in such organizations an architect

would be found who could have designed the subtle differences which enable us to distinguish the work of the Cistercians from that of the Clunians, differences which enable us to see how the twelfth century architects expressed in their building, more of their philosophy (that is their idea of the spirit of Christianity) than did the architects of philosophic Greece of their philosophy.

Any one who has studied, measured and drawn such work as we see in the Cistercian churches of Fountains, Furness, Rievaulx and Buildwass, and compared it with the semi-French church of Westminster, bearing in mind the disputes between St. Bernard and the Abbots of Cluny, is hardly likely to give a rule of thumb craftsman the credit for perpetuating in stone such intellectual refinements as six or seven hundred years after still excite enthusiasm in a church builder.

11TH AND 12TH CENTURY ARCHITECTS.

We know, too, that in the eleventh and twelfth centuries, at least in western Europe, the poet, philosopher, artist, or man of science could have had no existence save in the cloister, and we know that in the cloister was preserved the poetry, philosophy, art and science of Greece and Rome. We know that these eleventh and twelfth century architects did not, as you say, build so substantially that their buildings could not fail, but that they made the most daring experiments in building engineering the world has ever seen, and established principles of construction that were never heard of before or improved upon since. It is because the philosophy and life rules of these men which led them to work anonymously, deeming personal fame unworthy and the glory of the church everything, is so unaccountable to us in these commercial, self-seeking days, that I suppose we would give the credit of their work to vulgar artisans rather than imagine such queer men existed. Perhaps after the thirteenth century till the Renaissance, in the decline of Gothic architecture, when the influence of Cluny and its lay schools had diffused throughout western Europe, the chief workman became the building designer, but he was called the master mason or master builder and not architect; and we know that before the worker became a master of his art he served an apprenticeship of not less than seven years, during which time probably his talents and ability became evident to society; and so on through his years of service as journeyman, before he became a master or chief workman. Such training as that cannot be compared with what would be necessary to qualify under a license law, accomplishment so meagre that I expect every real estate agent would expect some of his assistants to possess it, so that he might have a legally qualified architect in his own office.

CAUSE OF DISSENTION.

We anti-license architects are sorry to see in your editorial a continuation of the role of an architectural "bumble," an assumption of authority on insufficient foundation, treating those who disagree with registration as untaught children, who are playing instead of working and to whom you can extend your clemency very little longer. It is this method of promoting the interest of the profession, so objectionable to men who were once younger members, that has divided the architects into two camps, for you can hardly expect them to think that men like Mr. J. C. B. Horwood, to whom your editorial* obviously replies, are one-sided men with a "highly aesthetic Bohemian" idea of the profession.

Instead of being untaught boys, these opponents of registration may be true Canadian men, anxious that their country may not add another inoperative law to their already half useless code, anxious that she may not adopt what even China is relinquishing. Instead of acting on purely personal grounds, they may think that in the world there are states worth more consideration than Illinois,

and towns that can excite even higher aspiration than Chicago.

They may have learned that society no longer considers that qualification may be ascertained by competitive examination, and that Germany, the leader of technical education, has in some cases abandoned it, and in other cases done what is practically the same thing, permitted the use of text books during examination.

Realizing, as even China does, that progress is too swift for standards to be maintained, and without standards one cannot examine for qualification.

You say in the second part of your editorial that the objections to a measure providing for registration "are few and far fetched."

One does not need, as a rule, many fatal objections to outrule a scheme, any more than it needs many fatal wounds to kill a man, and when a practical man like Mr. J. C. B. Horwood clearly shows that license law does not accomplish its ostensible object, as well as does the measure its opponents support, that objection is near enough.

Of course, society is justified in demanding that "those who design her buildings should know the basic principles of their profession." The basic principle of architecture is construction.

REGISTRATION AN INEFFICIENT METHOD.

Registrationists cannot show so efficient a method of protecting society as that of establishing a law compelling the examination of a design for construction, licensing the plan and inspecting the erection. Would any man be practical who contended that to examine a man once in his life on some hypothetical scheme and never imagine he could forget it, would be a better protection for society. The reiteration of the statement that the opponents of registration are not practical men does not make the statement true. The frequently implied suggestion that those who are contending for better architectural education, disregard construction, could only rise in the mind of one who had never been to an architectural school.

The practical man knows that only some one with no higher knowledge of architecture than that which would be demanded as a standard for registration, would ever think it possible to divorce construction and design, and that architectural education shall not suffer from the perpetration of such an idea, is one of our reasons for opposing registration.

I suppose it will be allowed by practical men that the license will make an architect responsible to the public, not the examination; one can suspend a license, a man once examined is examined for all time. The purpose would be fulfilled quite as well as far as the public are concerned, if the architect obtained a license without examination, like a pedlar, and he would be spared the ignominy of having to pose before society as the professor of an art stamped by registration with a standard within reach of a fourth year school boy, a parrot like knowledge of a little elementary formulæ.

Society shows so little interest in architectural license law that one might be justified in thinking the measure was for the protection of the profession rather than for the protection of the public.

THE INTEGRITY OF THE ARCHITECT.

The suggestion that society needs to be protected from the fraudulent business methods of an architect more than from another business man is rather a contemptible one to come from the profession. My experience of thirty years leads me to believe architects are more honest than the ordinary business man, apart from their reputation depending upon it, their work with its fixed remuneration, its ideals more interesting than money-making and the habit of exacting honesty from others, prompt honesty.

What society "demands" and what she needs are rather at variance with each other. She needs the wisest to govern, yet she demands that the preponderant vote be given to the illiterate so that the wisest may not be elected to govern, though when she needs pure milk, she has sense

*The Editorial referred to was written and in type before the receipt of Mr. Horwood's letter.—Ed. NOTE.

enough to examine the milk not the milkman. She needs that those engaged in the production of a commodity show her how to obtain the best of that commodity rather than that the producers of a commodity be shown how to get the best of society.

The "demands" she makes of an architect apply even more forcibly to a journalist; he should be responsible to the people as well as to those who employ him or the party he represents. She needs that those who teach her by means of newspapers have some knowledge of the "basic principles" not only of the subject they write about, but of all the wisdom of the last three thousand years and of its effect on the government and development of society physically, mentally and spiritually, so that they may not teach what would retard or distort its growth.

Society does not "demand" architects any more than she demands tee squares. She needs good building and that those with a knowledge of good building show her how her present enactments fail and how the proposed innovation would succeed in obtaining it. This would be shown if facts were put before her, proving that all buildings in the State of Illinois under license law were better than those in Toronto under building regulations.

It is fortunate for society that as well as practical architects she has practical politicians who will wonder why the only medicine for one of society's ills should be food for those who point out the ills, because the characteristic expression of those who have cured most of society's ills have been "never mind me."

If examination will discover good men, then competitive examination should discover the best.

This is notoriously untrue in the British army and Civil Service. Most of us can quote such examples as the well-known one of two young men who went as companions to Woolwich, one passing all his examinations brilliantly and finishing his career some time ago with the rank of a colonel, while the other who could barely get through the school is Commander-in-Chief of the Imperial Forces in India, obtained an earldom, and has not yet finished his career, examination having failed to distinguish which was the practical man.

Society has many ills that we know of, but they are not so numerous as the remedies proposed for them by every organization in society from those of the unemployed to those of the overworked.

If license law is a panacea it might be universally employed. For as society demands that all its members conform to a recognized system of ethics, she might examine each one on coming of age as to the quality and quantity of his virtues. License him and give him such distinguishing marks that all could see his proficiency. The marks might take the form of medals with a suitable device on the face. When the person defaulted, the medals would be reversed as a sign that he was suspended. Such a course would remove the need of police.

The examinations need not be limited to the ordinary virtues. The leisured and wealthy classes might take honorary degrees in religion, as there might not be room for these badges in front, they might be worn behind somewhere, where a man need not lean on them and be uncomfortable. Then to prevent some from reversing their badges for fun, or if they had been suspended, society would have to go about in couples looking after each other's virtues as men and women now do.

Yours truly,

EDEN SMITH.

BUILDING STATISTICS FOR JANUARY.---
Phenomenal Increase Recorded in Many Places.---
Outlook Most Promising.

IF BUILDING OPERATIONS for the month of January can be taken as an indication of the amount of work which is to be carried on during the present year, Canada is entering upon a period of activity which

in the past history of the Dominion will be without a parallel.

The returns for the month from various parts of the country, as submitted to CONSTRUCTION, show gains of such abnormal proportions as to seem almost incredible for any season of the year, much less a month like January, when it is generally expected for everything in the construction line to be practically at a standstill.

Of the fifteen cities reporting, twelve submit comparative figures. Of these nine registered increases ranging all the way from 7 per cent. up to 3,900 per cent., while three, Fort William, Toronto and Halifax are the only places to show a loss.

The greatest decrease is that of Fort William, where the comparative falling off has been 96.93 per cent. This decline, however, comes after a year of consecutive monthly gains, and can be regarded only as a temporary settling down. In view of the vast amount of work in prospect, Fort William will in all probability not only overcome this disparity, but on the year's operations pile up a greater total amount than was tabulated in 1908.

The other two places to record decreases are Halifax and Toronto, both of which failed to equal the amounts of January, 1907, by 20.43 per cent. and 19.90 per cent. respectively. Halifax also experiences this break after successive monthly gains and a year which topped its predecessor by more than 25 per cent., while Toronto's falling off for the month following the second greatest building year in her history.

The largest increase for the month is that of Three Rivers, which is 3,900 per cent., while the next best showing is made by London with a gain of 1,525 per cent. Both of these places present an exactly reverse condition to that experienced in January, 1908, when the building trade was decidedly dormant.

In the far West everything is apparently moving along in a most satisfactory manner.

Winnipeg, although in the throes of her worst season, shows a phenomenal gain for the month of 203.92 per cent., while Calgary has added to her increase of December by an advance of 61.32 per cent.

Vancouver, Victoria and Edmonton are also ahead on the month, and register increases of 1.53 per cent., 42.46 per cent., and 7 per cent. respectively.

Montreal, in recording a gain of 52.72 per cent., is evidently starting off with a determination to more than offset her loss on the past year, and from the amount of work which is reported to be in prospect, there is every indication that she will succeed.

Two belated yearly reports to hand are those of Sherbrooke and St. Hyacinthe, both of Quebec province. The former shows that building operations to the extent of \$300,000 was carried on last year, as against \$250,000 in 1907; while the latter register a total of \$176,000 for 1908, as compared with \$74,500 the year previous.

Reports as to future prospects in various sections of the country are as follows: St. Hyacinthe, P.Q., "very bright"; Edmonton, "look bright"; Vancouver, "all indications point to a banner year"; Calgary, "most promising"; London, Ont., "excellent"; Winnipeg, "bright"; Berlin, Ont., "good, great many buildings in contemplation"; Brandon, Man., "fairly good."

	Total cost of Permits for 1909.	Total cost of Permits for 1908.	Increase per cent.	Decrease per cent.
Berlin.....	\$ 2,000	.....	.....	.....
Brantford, Ont.....	3,710	.....	.....	.....
Calgary, Alta.....	21,650	\$ 12,800	\$ 61.32	.....
Fort William, Ont.....	17,050	510,600	.....	96.66
Halifax, N. S.....	17,545	22,050	.....	20.48
Kingston, Ont.....	3,900	.....	.....	.....
London, Ont.....	24,885	1,500	1,525.68	.....
Peterboro, Ont.....	2,300	200	1,050.00	.....
Montreal, Que.....	120,120	78,650	62.72	.....
Three Rivers, P.Q.....	20,000	500	3,900.00	.....
Winnipeg, Man.....	50,300	16,550	203.92	.....
Edmonton, Alta.....	30,210	18,915	7.00	.....
Vancouver, B. C.....	36,130	355,685	1.53	.....
Victoria, B. C.....	78,080	54,725	42.67	.....
Toronto, Ont.....	380,025	474,453	.....	19.90

CONCRETE HOUSES ON LARGE COUNTRY ESTATE.---

An Ideal Group of Buildings Designed in English Gothic of the Tudor Period.---

All of Monolithic Construction.---

Club House for Grooms and Employees a Novel Feature.

THE many ways in which concrete can be utilized in connection with country life, is remarkably illustrated by the groups of buildings which have recently been erected on the estate of Frederick Pabst, Jr., in Wisconsin. Mr. Pabst has about 1,000 acres in Waukesha county which he purchased for the purpose of having not only a country seat but for conducting farm operations as well as the raising of blooded horses for riding and driving. To have the suitable buildings, it was necessary to erect several different groups including not only the house itself and the owner's private

though they were erected at a remarkably low cost owing to the cheapness of the material.

As will be noted by the photographs, the buildings are not only appropriate, but picturesque in appearance, while they have been decorated and furnished in keeping with the purposes for which they are intended. The home of the owner is charmingly placed, forty feet above the level of the lake, on whose shores it is situated. From the massive concrete porch, overlooking the shore, can be seen ever-changing vistas as the sun, and shade play on the waters below. The architecture is English



VIEW OF OWNER'S RESIDENCE ON THE PABST ESTATE, LOOKING NORTH-EAST TOWARDS THE MAIN ENTRANCE. FERNECKES & CRAMER, ARCHITECTS.

stables, but homes for the farm manager and his assistant, storehouses for grain and other products, in addition to stock barns as well as a large covered riding paddock. A novel feature of the plans is a club house intended for the grooms and other employees connected with the horse raising industry.

The architects for Mr. Pabst, Messrs. Ferneckes & Cramer, found that upon the estate were large deposits of sand, also stone suitable for concrete composition. Upon learning of this fact, Mr. Pabst decided to construct all of the buildings—about a score in number—of home made material with the exception of the cement, and consequently has one of the most unique, yet picturesque group of farm buildings in this country, al-

Gothic of the Tudor period, and the material is well adapted to the type. It is built in the form of an L, sixty by one hundred feet, and contains three storeys and basement. Facing the lake to the northeast, there is sun on every side. Within, the concrete walls are "furred" with tile to obviate any possible chance of dampness. The back yard on the kitchen side is hidden from view with a high yet graceful cement wall, and on the lake side is a wide brick-paved terrace.

Entrance to the grounds is by a private drive from the main highway, winding along the shore and crossing a meadow-bordered lagoon over a reinforced concrete arch bridge of fifty-foot span. A picturesque path winds down the hill through the trees to this road, and to the

solid concrete boat house with cement slips, large enough for good sized launches and small steamers. The bath house adjoins, and nearby is an engine room which fur-

crete lends itself to so many forms of architecture, the exterior of this house is not only appropriate but very attractive. Again, provision has been made for enjoyment out of doors by the spacious verandah which completes the side wall. This is connected with the interior by large glass doors, which, as well as the windows, can be thrown open in the summer so that the porch forms practically a part of the interior. The archway from the front entrance moulded of concrete is simple, yet artistic, and an opportunity is given to produce a natural stone effect in the concrete approach to the entrance.



ASSISTANT MANAGER'S HOUSE ON THE PADST ESTATE. FERNECKES & CRAMER, ARCHITECTS.

As will be noted the houses of the farm manager and his assistant are three storeys high. They contain not only parlors, dining room, pantry, kitchen and laundry on the first floor, but a surprisingly large number of sleeping rooms, while they are equipped with appliances for providing hot and cold water, ranges, baths, the latest ideas in hygienic plumbing, and, in fact, are as complete in this respect as the home of the owner.

nishes power for the water supply. Numerous springs give an inexhaustible supply of pure water.

Besides the private stable, forty feet wide and one hundred and twenty-five feet long, which is perfectly equipped, two storeys and basement, harness and wash-rooms, there is an artistically designed concrete garage and an automobile repair shop. These buildings harmonize with the style of the residence, and near them is a quaint gardener's cottage and private greenhouse, all of reinforced concrete. As will be noted by the illustrations, the use of the concrete gives the home a dignified and imposing appearance, and from a distance the walls look as if they had been erected out of massive stone blocks.

The house of the farm manager, although of smaller dimensions, is equally as attractive, being located on an eminence partially surrounded by forest trees. At one end is a massive concrete portico, while windows of various sizes, including a picturesque one-storey bay window furnish ample light for the front. A feature of the house is the huge concrete chimney which permits generous open fireplaces.

The extent of the farming interests is such that a manager and an assistant are employed. The photograph of the manager's house shows that it is as ornate and pretentious as that of many a country home in other portions of the United States, yet it has been erected at a fraction of the expense which has been required to build many others of the same size and design. As con-

used, but in the character of the building. It is situated on what is called Farm Number One, where are raised the blooded stock. While it is used for the farm offices, space is also devoted to a commodious rest and lounging room, one portion of which is finished off in a library with books and newspapers.



MANAGER'S HOUSE ON THE PADST ESTATE. NOTE THE COMPARISON OF THE UNTREATED SURFACE WITH THAT OF THE FINISHED HOUSE IN ILLUSTRATION ABOVE. FERNECKES & CRAMER, ARCHITECTS.

On the same floor is also what is called the living room, used likewise for a dining room in addition to the kitchen, for this is not only a social club, but a sort of

hotel for the employees. In the upper storeys are fourteen bedrooms, each large enough to accommodate two or three if necessary, so that the house has a capacity for fifty people. While the exterior is plain and without ornament, the way in which the concrete has been moulded gives it a very pleasing effect. Like the larger buildings it has a roof of shingles in which a composition of cement and asbestos is used.

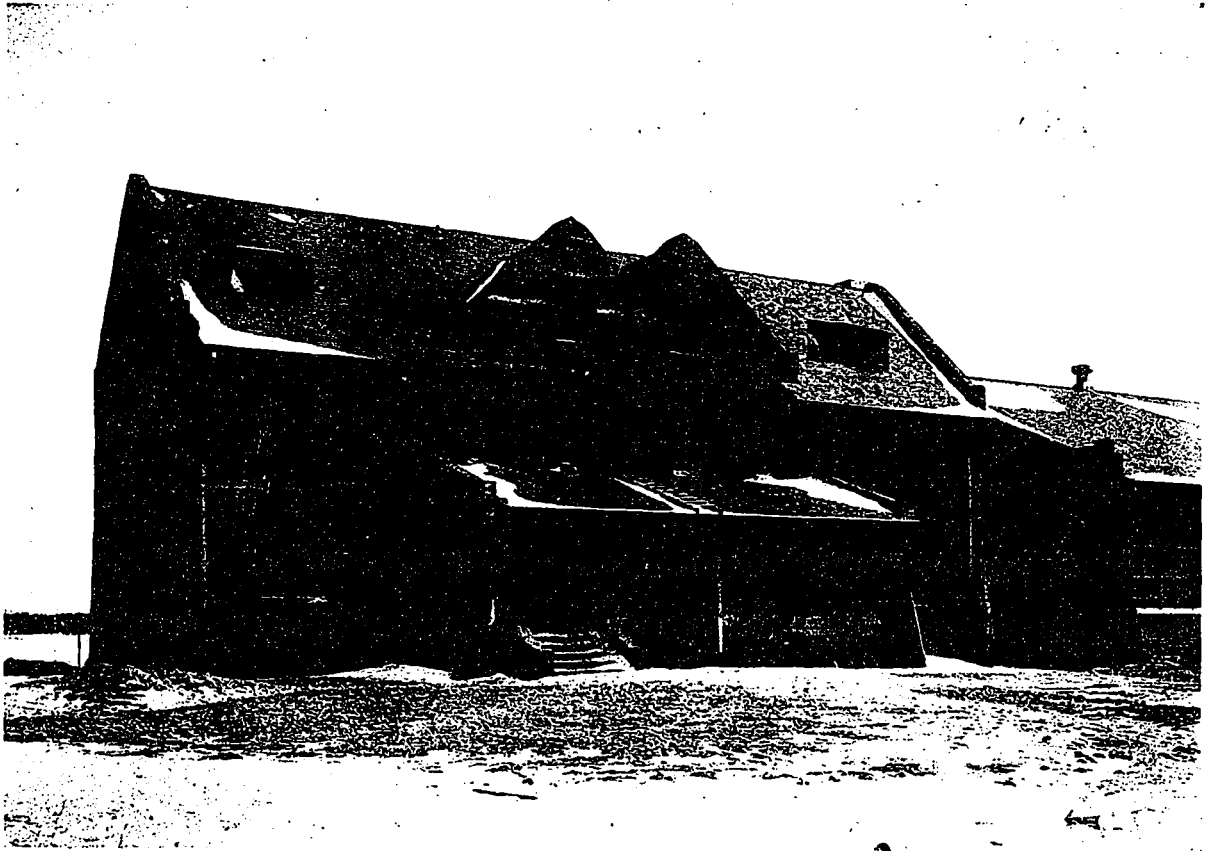
A portion of the riding paddock can be seen at the right of the club house. This is probably the largest covered paddock in the world, for it is over two hundred feet in length and seventy-five feet in width. Here again the use of concrete has been a great advantage, as it has not been necessary to utilize posts or pillars of any kind in upholding the roof, and the interior is entirely unobstructed. The concrete is of special advantage as the floors of the stalls are composed of it, and it can be kept

at an expense which would be far less than if the cheapest brick or natural stone were employed owing to the abundance of the home made material which enters into them.—CEMENT AGE.

THE ILLINOIS LICENSE LAW.—How It Deals with Malpractice and Unscrupulous Methods in the Practice of Architecture.

CANADIAN ARCHITECTS who doubt the efficacy of a law requiring a license to practice, or who cannot conceive of how it will be of benefit to the profession, will probably find much of interest, in the manner in which the Illinois License Law is operating against practitioners in that State who are guilty of malpractice or unscrupulous methods in the conduct of their profession.

According to the records of the State Board of Ex-



CLUB HOUSE FOR GROOMS ON THE PAIST ESTATE. IT CONTAINS OFFICES, LIBRARY, DINING ROOM AND BEDROOMS FOR EACH GROOM.

clean and odorless without difficulty. The same is true of the farm horse barn, which is also two hundred feet in length, and has accommodations for nearly one hundred horses.

To give an idea of the extent of this group of buildings and the work required, it may be stated in all over 10,000 barrels of Portland cement were required. The process employed in finishing the exterior was what is known as the rough cast, which prevented any cracking or peeling of the plaster, and gave an excellent finish. While the groups of buildings can truly be called picturesque and appropriate, perhaps the most important feature of their construction is the fact that they are practically fire-proof owing to the material used, not only in their walls, but the roofs. While the entire outlay for them is a secret known only to the owner, building experts who have visited the estate say that considering their size and proportions, they have been erected

aminers, a number of licenses were revoked during the past year. One of the most recent instances of the application of the law in this respect was in the case of Gustav Voigt, an architect with office at 3220 South Canal street, whose certificate to practice was revoked "for cause." The charge brought against Mr. Voigt by the board was that of placing his official seal on the plans of a basement and three-story building erected on the southeast corner of Leavitt and Crystal streets, Chicago, said to have cost in the neighborhood of \$30,000, made by E. J. Patelski of 383 East Ontario street, a draftsman without license, and used for the purpose of obtaining a permit from the building department for the erection of the building. The action of the board was unanimous, and only taken after a trial in accordance with section 10 of the Architects' License Law, in which the state and the defendant were represented by counsel and witnesses were examined on both sides.

CEMENT AND CONCRETE INTERESTS TO MEET.---Final Arrangements Complete for Convention and Exhibition of C.C.C.A.---First Event of Its Kind in Canada.---Indication Points to a Large Attendance from All Parts of the Dominion.---Exhibit to be a Big Feature.

WITH ALL ARRANGEMENTS completed, an excellent programme prepared and final details well in hand, everything is practically ready for the first annual convention and exhibition of the Canadian Cement and Concrete Association, to be held in Toronto, during the week of March 1 to 6.

From the present indications the attendance will far surpass what was at first anticipated. Communications are reaching Toronto daily regarding exhibitors' space and hotel accommodation, and there is every evidence that all sections of the Dominion will be represented by large delegations of visitors and members.

That the executive of the Association has spared no effort or expense in order to make this event an unqualified success in every particular, is amply attested to in the elaborate and comprehensive character of the convention programme. Among those who will address the meetings are a number of the most eminent engineers and authorities in Canada and the United States on cement and concrete construction, and one or more papers and discussions are to be devoted to each and every branch of the industry. Some of these lectures are to be illustrated with lantern slides showing the practical application of cement and concrete in construction work.

The convention will be opened in the Banquet Hall of the King Edward Hotel on afternoon of March 2, and the business session will continue through the two following days.

The exhibition will be officially opened on the evening of March 1, and will continue through the entire week. All the space at St. Lawrence arena, where it is to be held, has been practically sold, only a limited number of booths now remaining to be taken up. An idea as to the magnitude of this feature of the event can be imagined from the fact that the exhibition hall approximately takes in an area of 40,000 square feet, all of which will be fully occupied with cement and concrete machinery appliances of every conceivable kind. This floor space is in excess of that of any previous cement exhibition ever held.

Among the large list of firms who will have displays are some of the best known companies in Canada and the United States, and a large part of the machinery is now under way. Cement products of every character will be shown, and most of the machinery, such as mixers, concrete block machines, etc., will be seen in active operation.

St. Lawrence arena will be decorated in an appropriate manner, and an orchestra will be provided to dispense music throughout the day and evening.

Arrangements have been made with the Eastern Canadian Passenger Association for reduced rates. Delegates upon purchasing single fare ticket to Toronto at their home town will, upon request to the local agent, receive a receipt for this fare upon a standard form, which, when validated by the Secretary of the Canadian Cement and Concrete Association, will entitle the holder thereof to a return ticket free of charge.

Official invitations have been extended to the following organizations to attend the business session of the convention and to take part in the discussions of the several papers and addresses to be given, and to delegate members to represent their respective organizations on the convention programme: Ontario Association of Architects, Toronto Architectural Club, the Architectural Institute of Canada, the Engineers' Club of Toronto, the Toronto

branch of the Canadian Society of Civil Engineers, and the Guild of Civic Art.

Those attending the Good Road Association convention, and the meeting of the Mutual Underwriters' Association, to be held in Toronto during the same week, will be entitled to the reduced railway rates and all privileges of the cement and concrete convention and exhibition.

The following programme which has been prepared is subject to changes and additions:

PROGRAMME.

Monday, March 1, 1909, 7.30 p.m.

Formal opening of the Exhibition in St. Lawrence Arena by Hon. Dr. Reaume, Minister of Public Works, Province of Ontario. This evening is reserved for the special reception of the citizens of Toronto by the officers and members of the Association.

Tuesday, March 2, 1909, 10.30 a.m.

Meeting of Executive Board of the Association at the King Edward Hotel.

2.30 p.m.

Address—Dr. John Galbraith, Dean, Faculty of Applied Science and Engineering, University of Toronto.

Annual address by the President—Mr. F. Gillespie, Lecturer in Theory of Construction, Faculty of Applied Science and Engineering, University of Toronto.

Address—Richard L. Humphrey, Structural Materials Testing Laboratories, St. Louis.

Why Sidewalks Fail—William M. Kinney, Asst. Inspecting Engineer, Universal Portland Cement Co., Chicago, Ill.

8.30 p.m.

Tests and Inspection of Cement—J. E. Moore, Inspecting Engineer, Robt. W. Hunt & Co., Chicago, Ill.

Concrete Bridges—Frank Barber, Engineer, County of York.

Concrete Blocks—J. Augustine Smith, Ideal Concrete Machinery Co., South Bend, Ind.

Portland Cement Mortars—A. G. Larsson, chemist, Grey & Bruce Portland Cement Co., Owen Sound, Ont.

Wednesday, March 3, 1909, 11.15 a.m.

Annual general meeting of members for the reception of the report of the Executive Board, and the election of officers.

2.30 p.m.

Designing and Testing of Reinforced Concrete Beams—E. Brown, Associate Professor of Applied Mechanics, McGill University, Montreal, Que.

Twenty Years' Experience in Cement Walk Building—C. W. Cadwell, Mgr. Cadwell Silix Stone Co., Windsor, Ont.

Modern Methods of Waterproof Concrete—Lucius E. Allen, Ontario Limestone & Clay Co., Belleville, Ont.

Reinforced Concrete Design from the Standpoint of Practical Engineering—A. W. Burge, Trussed Concrete Steel Co., Toronto.

8 p.m.

Field-made Concrete—Walter J. Francis, Consulting Engineer, Montreal.

The Use of Cement in Municipal Work—A. W. Campbell, Deputy Minister of Public Works, Province of Ontario.

Reinforced Concrete in Building Construction—Emile G. Perrott, architect, Philadelphia, Pa.

Ornamental Concrete Stone—Fred A. Norris, Consulting Engineer, Boston, Mass.

Thursday, March 4, 1909, 2.30 p.m.

Factory-made Concrete Building Products—Chas. D. Watson, Consulting Engineer, Cleveland, Ohio.

Electrical Equipment for Cement Plants—D. M. McCargar, late Electrical Engineer, Belleville Portland Cement Co., Belleville, Ont.

Artistic Concrete Bridges—C. R. Young, Lecturer in Applied Mechanics, University of Toronto.

Address—Merrill Watson, General Sales Manager, Consolidated Expanded Metal Companies, New York.

8 p.m.

Factory-made Concrete—M. Morssen, Consulting Engineer, Montreal, Que.

Municipal Engineering—Mr. Blanchard, Sewers' Engineer, City Hall, Toronto.

Selection of Concrete Materials—Sanford E. Thompson, Consulting Engineer, Newton Highlands, Mass.

PROSPECTIVE CONSTRUCTION

The following information is obtained from our correspondents, from architects, and from local papers. These items appear in our Daily Advance Reports and are herein compiled for the use of subscribers to the monthly issue of "CONSTRUCTION." Should any of our readers desire this information oftener than once a month, upon receipt of request we will be pleased to submit prices for our Daily Service.

Mills and Factories

Toronto.—Henry Disston & Sons, Limited, Philadelphia, have purchased a four acre tract on Fraser avenue, just opposite Diamond Park, on which they will erect a branch factory. Architect G. W. Gouinlock, Temple Building, is preparing plans for the building.

Toronto.—The Toronto Show Case Company will erect a large factory, to employ two hundred men, on Carlaw avenue.

West Toronto.—Heintzman & Co., Ltd., piano manufacturers, have purchased a block of land immediately south of their present factory, in West Toronto, on which they will erect a large addition.

London, Ont.—The Globe Casket Company's factory has been practically destroyed by fire, entailing a loss of \$200,000, of which \$110,000 is on the building. The insurance amounts to \$93,000.

London, Ont.—The Canadian Packing Company, whose plant at Pottersburg was recently destroyed, have secured a site in London, on which they propose to establish a public abattoir.

London, Ont.—It is understood that Messrs. Geo. White & Sons are negotiating for the purchase of the property adjoining their premises, on Cabell avenue, with a view of extending their plant.

Hamilton, Ont.—The Meriden Britannia Company will erect a three-storey addition to their works at this place.

Hamilton, Ont.—Messrs. Chadwick Bros. will erect another storey to their plant at this place.

Hamilton, Ont.—The Dewswell Manufacturing company will erect a large addition to their works.

Hamilton, Ont.—The Stanley Mills Company will erect a number of new buildings on their property in John street, in the near future.

Collingwood, Ont.—The Collingwood Shipbuilding Company will greatly enlarge its plant. The improvements will include two new dry docks, one four hundred feet in length and the other seven hundred and five feet in length, with the necessary equipment.

Sudbury, Ont.—The Ogilvie Milling Co., of Montreal, is contemplating establishing a branch mill at this place.

Brantford, Ont.—The Hempel Paper Works, a four-storey structure, has been destroyed by fire. Loss estimated at \$10,000, covered by insurance. The works were owned by Mr. W. J. Hempel and will in all probability be rebuilt.

Woodstock, Ont.—The Oxford Knitting Company, Limited, will, in the near future, erect a new building on Ingersoll avenue, just east of the C. P. R. station. The building will be 200 feet long and 56 feet wide, two storeys in height, with basement, of brick construction. In addition to this a dye house 70 feet by 30 feet will be erected.

Belleville, Ont.—Tickell & Sons' furniture factory has been damaged by fire to the extent of \$2,000. Loss covered by insurance.

Galt, Ont.—The Canadian Potato Ma-

chinery Company, Limited, a branch of the Champion Potato Machinery Works, of Hammond, Ind., has purchased a four-acre site on the Stone road, on which they will erect a factory. The initial building will be 100 ft. by 80 ft. Mr. Walter H. Schreiber, late of Hammond, will be resident manager.

Blenheim, Ont.—The Pere Marquette Railway's coal chute, at this place, together with the machinery, coal, etc., have been totally destroyed by fire. Loss estimated at \$10,000, fully insured.

Sault Ste. Marie, Ont.—According to the terms of an agreement, practically arrived at, between the city of Sault Ste. Marie and John O'Boyle, representing a company of capitalists, arrangements are made for the construction of a dry dock and shipbuilding yards in the Soo, work to commence in the spring. The company asks the city for exemption of taxes and a cash bonus annually for twenty years, and in return promises to construct a shipbuilding plant and dry dock 620 feet long, the initial expense to be \$500,000.

Kingston, Ont.—The Gould broom manufacturing plant and considerable property in the car barns of the Kingston and Cataract Street Railway Company, adjoining, have been destroyed by fire. Total loss estimated at about \$30,000. The broom plant was owned by Mr. Geo. Crawford, whose loss will be about \$10,000.

Montreal.—The scrap iron building of the Grand Trunk Rolling Mills, at Point St. Charles, has been destroyed by fire. Loss estimated at \$10,000.

Montreal.—Architect H. C. Stone, 84 St. Francois Xavier street, has prepared plans for the erection of a carriage factory in Delormier municipality, for the E. N. Heney Co., Ltd.

Montreal.—The preserving and canning establishment of Mr. J. W. Windsor, 740 Visitation street, has been damaged by fire to the extent of \$30,000, fully covered by insurance.

Montreal, Que.—Architects MacVicar & Heriot, 104 Union avenue, have prepared plans for a factory building to be erected for Messrs. J. Eveleigh & Co.

Montreal.—N. Pichet's biscuit factory, at the corner of Ontario and Jeanne d'Arc streets, has been damaged by fire, to the extent of approximately \$12,000.

Montreal.—E. Gauthier, 39 Bag Street, has taken out a permit for the erection of a factory at 46 Albert Lane. The building will cost \$8,000.

Montreal, Que.—Articles of Incorporation have been granted to The Labrador Pulp and Lumber Company, capitalized at \$1,500,000, and with headquarters at Montreal. The incorporators are: Ernest Hutcheson, Joseph Alexander, Trotwood Richards and Thomas Stephens, all of Montreal, Que.

Lachine, Que.—The plant of the Canadian Asbestos Co., corner of Broadway and Twentieth avenue, Lachine, has been destroyed by fire. Estimated loss, \$40,000, fully covered by insurance.

Dartmouth, N. S.—The Halifax Fish Company's factory has been destroyed by fire, entailing a loss of \$15,000. Insurance, \$11,000.

Winnipeg, Man.—The Manitoba Iron Works has under consideration the extension of its plant on Logan avenue, by the addition of a large structure, 450 by 130 feet, at an initial cost of over \$150,000. T. R. Deacon, manager of the company.

Nelson, B. C.—The McGillivray Creek Coal and Coke Company, owners of the extensive coal fields adjoining those of the International Coal and Coke Company, Coleman, Alta., just east of the

British Columbia boundary, are said to be making arrangements for the establishment of a large coal and coke plant at Michel, B. C. The president of the company is H. L. Symons, of Glencoe, Minn., while others interested are: Byron E. Sharpe, formerly of the firm of Sharpe & Irvine, stock brokers of Nelson, B. C.; Frank Povah, formerly accountant at the Hall mines smelter, Nelson, B. C. Estimated cost of plant is given as \$200,000.

Rosland, B. C.—The Rosland Engineering Works, owned by M. W. Cunniffe, have been badly damaged by fire. The loss is estimated at \$10,000, fully insured.

Vancouver, B. C.—The Empress Manufacturing Company will rebuild their plant, which was destroyed by fire. The new building will be three stories and basement in height, of mill construction, and will cost \$20,000. Smith & Sherborne have the general contract.

Vancouver, B. C.—It is reported that Mr. C. A. McGillivray, of Bellingham, will erect a large sawmill here at the corner of Strathcona and Boundary avenues.

Vancouver, B. C.—The Vancouver Pipe and Foundry Company, Vancouver, B. C., will erect a large foundry in the southern part of Hastings townsite. The proposed building will be 150 by 75 feet.

New Westminster, B. C.—The plant of the Fraser River Tannery Company has been sold to the Swift Packing Company of Chicago. The plant will be greatly enlarged and operated to its full capacity in the near future.

New Westminster, B. C.—The Brooks-Scanton Lumber Co., of Minneapolis, Minn., will erect three large mills, each capable of handling at least 100,000 feet annually, on the banks of the Fraser River, near this place.

Gas Plants, Elevators and Warehouses

Toronto.—Messrs. J. D. Young & Son, 274 College street, have been awarded the general contract for a four-storey warehouse to be erected on Clinton street, near College street, for the Imperial Storage & Cartage Co., Ltd., 429 Spadina avenue. The building will be of mill construction, with brick walls and will cost \$20,000.

Toronto.—Gratton Bros. have the contract for a three-storey brick warehouse to be built at 145 Wellington street, for J. Stevens & Son Co., Wilckson & Gregg, 59 Yonge street, are the architects.

Toronto.—The following contracts have been awarded for a \$40,000 warehouse to be erected at 40 Queen street east, for the Vokes Hardware Company, Yonge and Adelaide streets; Masonry, H. N. Dancy & Son, 184 Howland avenue; carpentry, E. G. Powell; tinsmithing, A. B. Ormsby & Co., Queen and George streets; steel work, Reid & Brown, 63 Esplanade east; plumbing and heating, Fred. Armstrong Co., 277 Queen street west; cut stone, John Vokes, 275 Avenue road; elevators, Parkin Elevator Co., Hespeler, Ont. The building will be of mill construction, with brick foundation, felt and gravel roof, hardwood floors, open plumbing, steam heating, etc.

Montreal.—Architect Joseph Perreault, 17 Place d'Armes Hill, has awarded to Lynch & Sharp, 16 St. Sacramento street, the contract for the brick work for the new warehouse of the Campbell Manufacturing Company, Ville St. Louis.

Montreal.—Architect Robt. Findlay, 10 Phillips Place, has awarded to C. E. Deakin, 11 St. Sacramento street, the general contract for the erection of a new warehouse and office building, on Craig street west, for W. J. McGuire & Co.

Montreal, Que.—Architect Joseph Perreault, 17 Place d'Armes Hill, has awarded the following contracts for the erection of the Campbell Manufacturing Company's new warehouse in Ville St. Louis: Dressed stone, Chas. Charbonneau, St. Louis; masonry and brick, Lynch and Sharp, St. Louis; georgia pine timber, Shearer, Brown & Wills, Ltd.

Vancouver, B. C.—The Vancouver Milling Company has taken out a permit for the erection of a frame grain elevator on Smyth street, to cost \$25,000.

Vancouver, B. C.—Seattle and Kansas capitalists have purchased, through A. D. Goldstein, of this place, a property with 200 feet water frontage on the north shore of False Creek, east of the Westminster avenue bridge, on which they will erect a large grain elevator.

Calgary, Alta.—The International Harvester Company will in the near future erect a four-storey solid brick warehouse, 75 by 120 feet, on Tenth avenue.

Saskatoon, Sask.—The International Harvester Company has had plans prepared for a large warehouse to be erected at this place. The building will be 100 by 110 feet, three storeys and basement in height and will be of brick construction, faced with pressed brick.

Revelstoke, B.C.—Messrs. P. Burns & Co.'s cold storage warehouse has been destroyed by fire. Loss not stated.

Toronto.—The members of the Hydro-Electric Commission have awarded contracts for the equipment for the transmission line, to the Westinghouse Company of Hamilton, and the General Electric Company of Peterboro.

Montreal, Que.—Architects Mitchell & Creighton, Inglis Building, have awarded to H. H. Willetts, 1154 Ontario St., East, the contract for the electrical work in the new Lyman warehouse on St. Paul St.

North Vancouver, B.C.—The British Columbia Electric Railway Company will rebuild the transmission lines, carrying them up Lynn Creek. New transformers will be installed in the substation, and also a new transformer giving double power to the street lighting system. Mr. A. G. Perry is local manager of the Company.

Bridges, Wharves and Subways

Toronto.—The City proposes to expend the sum of \$16,850 on the Island maintenance this year; \$42,950 for permanent works; and \$24,700 for concrete bridges. The estimates will be taken up by the Island Committee.

Niagara, Ont.—The Fort Erie and Buffalo Bridge Company will apply to the Dominion Parliament for articles of incorporation for the purpose of constructing, maintaining and operating a general traffic highway bridge over the Niagara River, beginning at a point on the Niagara River, within the corporate limits of the Village of Fort Erie, and extending to a point at or near Ferry St., Buffalo, N.Y.

Montreal.—The Canadian Pacific Railway will in all probability erect a number of steel bridges along the main line of the Pacific division, and on some of the branches of the interior.

Montreal, Que.—A. D. Swan, C.E., who was chief engineer of the new Bristol, England, docks, has been appointed resident engineer of the new Montreal harbor works, which it is expected will cost about \$20,000,000. The plans will be submitted to the Minister of Marine before the end of the present session, but in all probability the work of construction will not be commenced until the spring of 1910.

St. John, N.B.—Mr. F. W. Holt has been engaged to prepare plans and specifications for a bridge across the harbor. It is expected that the plans will be completed so that the matter may be presented to the local legislature at the coming session.

Fredericton, N. B.—It is estimated that \$100,000 will be spent in repairing bridges throughout the province, which were damaged by the recent freshet. Chief Commissioner of Public Works Morrissy will be addressed.

Fredericton, N. B.—Chief Commissioner Morrissy has awarded the following contracts: Brown's Flats high water wharf, to G. W. & B. R. Palmer, of Kars; McFarlane bridge, parish of Sussex, to A. E. Syme, of Albert County.

Vancouver, B. C.—A deputation repre-

senting Vancouver city, North Vancouver, and a number of suburban districts, will wait upon the Government at Victoria, with a petition for the building of a bridge across the Second Narrows of Burrard Inlet, at the Government's expense. Plans have been prepared by Architect Cameron, and will be presented to the Government, for both a high level and a low level bridge. The cost of a high level bridge would not exceed \$750,000.

Edmonton, Alta.—The City Commissioners will in the near future tape up with the Dominion Government the question of enlarging the Saskatchewan bridge.

Clover Bar, Alta.—A petition, signed by 190 residents on both sides of the North Saskatchewan river, at Clover Bar, asking for better traffic accommodation across the Saskatchewan, has been filed with the Edmonton Board of Trade. The petition will be forwarded to the City Council of Edmonton, and thence to the Provincial Government.

Waterworks, Sewers and Canals

Hamilton, Ont.—At a meeting of the Fire and Water Committee, it was estimated that \$53,840 will be required for the Waterworks Department for the following improvements: Beach pump house, \$25,975; high level pump house, \$3,735; Barton reservoir, \$1,320; James street reservoir, \$300; filtering basin, \$800; sand pump, \$500; high level reservoir, \$800; inspecting, etc., \$14,300; office, \$5,700; telephones, \$410. It is estimated that \$67,000 will be required for waterworks construction to include extension of mains, \$35,000; new services, \$20,000; meters, \$3,000; conduit valves, \$3,000; filtering basins, \$2,000; crib work at filtering basin, \$2,000.

Meaford, Ont.—The ratepayers have passed a by-law authorizing the installation of a waterworks filtering basin.

Simcoe, Ont.—The ratepayers have passed a by-law authorizing the installation of a waterworks system.

Burlington, Ont.—The ratepayers have passed a by-law authorizing the installation of a waterworks system.

Beamsville, Ont.—Messrs. J. Ritchie & Company have been awarded the contract for the new Lindsay locks and dam.

Hull, P. Q.—The Hull Council will extend the waterworks system, including the installation of new hydraulic pumps, and new main.

Hallfax, N. S.—Orders have been given to the City Engineer to proceed at once with the laying of sewer and water pipes on Brussels street.

Winnipeg, Man.—H. N. Ruttan, City Engineer, has recommended that the old softening plant at well No. 2 be rearranged to provide a capacity of 5,000,000 gallons; that a new plant with 5,000,000 capacity be built at well No. 5; and that a third plant of 2,000,000 gallons capacity be located at well No. 6. The estimated cost of providing the three plants would be \$150,000.

Winnipeg, Man.—The Board of Works has under consideration the construction of an immense trunk sewer to carry off all the sewage west of the Red and north of the Assiniboine, to a point north of the city limits. The proposed work, it is estimated, will cost several millions.

Edmonton, Alta.—The Roberts Filtration Company, of Philadelphia, Pa., has been awarded the contract for the installation of a filtration plant, at cost of \$16,500.

Railway Construction

Ottawa.—The estimates for the coming year, as placed on the table of the House of Commons, include the following items for the Intercolonial Railway, viz.: Increased accommodation at Truro, \$52,000; cut-off line at Moncton, \$50,000; increased accommodation at Halifax, \$180,000; locomotive and car shops at Moncton, \$400,000; to increase accommodation and facilities along the line, \$100,000; improvements at Campbellton, \$50,000. For the Prince Edward Island Railway there is an appropriation of \$194,000 to increase accommodation at Charlottetown.

London, Ont.—The Grand Trunk Railway is having plans prepared for the elevation of the tracks through the city, and also for the erection of a new station.

Sarnia, Ont.—The Northern Navigation Company, which will in future be known

as the Grand Trunk Route, will erect a terminal station at this place. C. H. Nicholson is general traffic manager of the company.

Temagami, Ont.—The T. & N. O. Railway station at this place has been destroyed by fire. The building was just completed about a year ago, at a cost of \$15,000. It will be rebuilt at once.

Toronto.—The Toronto Railway Company will erect new brick and concrete car barns on its property on the west side of Lansdowne avenue. Work on the building, which will be 100 by 350 feet, will be commenced this spring.

Montreal.—Plans are being completed, and arrangements are under way by the Canadian Pacific Railway, for the carrying out of the long projected improvements to their Windsor street headquarters, which will mean an expenditure of over a million dollars. It is understood that work will be commenced in the spring.

Montreal.—Mr. William Whyte, second vice-president of the Canadian Pacific Railway states that the company will expend the sum of \$6,000,000 in construction work in the Western provinces, the plans including the building of some 300 miles of additional line. The most important piece of work will be the building of a new line north through Alberta from Lethbridge, parallel to Crow's Nest line.

Bonaventure, Que.—The Bonaventure Depot has been damaged by fire to the extent of \$6,000.

Vancouver, B. C.—The Great Northern will expend the sum of three million dollars in the erection of terminals at this place.

Edmonton, Alta.—A five mile extension will be built to the street railway system during the present season.

Winnipeg, Man.—Tenders will be received at the office of the Commissioners of the Transcontinental Railway, Ottawa, up to noon, Mar. 10th, for the construction and erection complete, in accordance with the plans and specifications of the Commissioners, of shops east of Winnipeg. Plans, details and specifications may be seen at the office of Mr. Hugh D. Lumsden, Chief Engineer, Ottawa, Ont., and Mr. S. R. Poulin, District Engineer, Winnipeg, Man.

Winnipeg, Man.—The Grand Trunk Pacific Railway will, next month, commence the erection of a twelve-storey block at the corner of Portage avenue and Main street. On the ground floor will be the ticket, telegraph and freight offices, while the upper stories will be used for offices of the company and for rental.

Portage La Prairie, Man.—The C. P. R. roundhouse at this place has been destroyed by fire. Loss on building estimated at \$5,000.

Public Buildings

Toronto.—In his estimates for the year the Park Commissioner asks for the sum of \$310,540 for park maintenance, and permanent improvements. Among the most important improvements recommended are: Permanent shelter buildings at High Park, \$7,500; new shelter at Riverdale Park, \$8,000; at Riverdale zoo, new lion house, \$4,500; bird and monkey house, \$8,400; shelter building, etc., at St. Andrew's Square, \$2,500; grading and completing section of sea wall and boulevard, near foot of Dufferin street, \$10,000, etc. etc.

Toronto.—The Property Commissioner has asked for the following interim appropriations: Public buildings, \$7,000; general markets, \$4,500; City Hall, \$13,000; cattle market, \$5,000; city wharf buildings, \$200, etc.

Toronto.—The Board of Control will recommend to the City Council that tenders be called for in the near future for the erection of the new Transportation building to be built at the Exhibition Grounds. It will cost \$86,000.

Elora, Ont.—The ratepayers have voted in favor of the erection of a new public library.

Strathroy, Ont.—A new armory will be erected here at a cost of \$5,000.

Leamington, Ont.—Messrs. Leslie and McNoll, St. Marys, Ont., have been awarded the general contract for the erection of the new post office at Leamington, Ont.

Milverton, Ont.—Mr. Andrew Carnegie has agreed to donate to the village of Milverton the sum of \$7,000 for the er-

ection of a public library building, with music hall, providing the village will supply a suitable site.

Lindsay, Ont.—The County Council has approved of the plans of architect G. M. Miller, Toronto General Trusts Building, Toronto, for the proposed enlargement and interior improvement of the Registry Office. The improvements will cost approximately \$7,000.

Mount Forest, Ont.—The ratepayers have voted in favor of erecting a new public library.

Dundas, Ont.—The Dominion Government will erect a new post office at this place. The building will cost between \$35,000 and \$45,000.

Montreal.—It is reported that the contract for the erection of the 65th Battalion's new armory, on Pine avenue, has been awarded to Messrs. Labelle & Lesard, 1018 St. Urbain street.

Montreal, Que.—Architect W. E. Doran, 130 St. James street, has awarded to C. E. Tenkin, 11 St. Sacrament street, the contract for the erection of the United States Immigration Offices.

Quebec, P. Q.—Plans have been prepared for a new branch post office to be erected in Quebec east, at estimated cost of \$93,000.

Woodstock, N. B.—The Building Committee of the municipality of Carleton will receive tenders up to February 20th for the erection of a brick court house in the town of Woodstock, during the summer of 1909. Henry A. Phillips, Chairman Building Committee, Woodstock, N. B.

Winnipeg, Man.—The Winnipeg Horse Show Association has had plans prepared for a large amphitheatre to be erected in the near future.

Vancouver, B. C.—The management of the Vancouver Horse Show has taken out a permit for the erection of a new building, on Georgia street, to cost \$45,000.

Fernie, B. C.—At a meeting of the City Council it was decided to at once call for tenders for the erection of the Municipal Building, at this place.

New Westminster, B. C.—Tenders will be called for in the near future for the erection of a Land Registry Office, at this place.

Calgary, Alta.—An additional \$50,000 will be required to complete the City Hall. The extra amount will be used for the raising of a tower, installing an elevator, and equipping a laboratory.

Strathcona, Alta.—The Market Committee of the City Council, composed of Aldermen Tipton, Elliott, and Duncan, are taking up the question of the proposed new market building.

Saskatoon, Sask.—Messrs. Smith Bros. & Wilson, Regina, have been awarded the contract for the erection of the land titles building at this place. The contract price is \$26,700. Work on the building will be started in the spring.

Battleford, Sask.—The Dominion Government will in all probability erect a post office and Dominion Lands Office at this place.

Business Buildings

Toronto.—Architect J. M. Cowan, 65 Adelaide street east, has prepared plans for two two and a half storey stores and dwellings to be erected on Bloor street, near Bathurst street, at a cost of \$5,000. The building will be of brick construction, with brick foundation, felt and gravel roof, pine floors and interior finish, open plumbing, hot water heating, combination lighting.

Toronto.—Mr. W. S. Walker, 627 Palmerston avenue, will erect a three-storey store and dwelling on Bloor street, near Palmerston avenue, at a cost of \$4,000. It will be of brick construction, with stone foundation, felt and gravel roof, hardwood and pine floors and interior finish, open plumbing, hot water heating, combination lighting, metal ceilings, plate glass, art glass, leaded glass, electric bells, mantels. Jos. Walker is the architect.

Toronto.—Architect Leonard Foulds, 43 Victoria street, has prepared plans for a three-storey store and dwelling to be erected on Sorauer avenue, near Wright avenue, at a cost of \$3,500. It will be of brick construction, with stone foundation, felt and gravel roof, pine floors and interior finish, open plumbing, combination lighting, hot air heating, elec-

tric bells and mantels. Mr. Wright, 220 Sorauer avenue, will receive tenders.

Toronto.—Major A. G. Peuchen has purchased the property at No. 177 King street west, on which will be erected a large office building for the Standard Chemical Company, Manning Chambers.

Ottawa, Ont.—Plans are being prepared for a large office building to be erected by Messrs. Ahearn and Soper, on their property, which extends from Sparks to Queen streets. It is proposed to erect a fireproof structure, with a frontage of 66 feet and depth of 200 feet, six stories in height. In all probability work on the building will be commenced next summer.

Hamilton, Ont.—Architect Chas. Mills has completed plans for a large store building to be erected on John street south. The building will be commenced in the spring, and will be occupied by the Mills Hardware Company.

Ottawa, Ont.—Mr. Thomas Smith has taken out a permit for a brick veneer building to be erected on McLeod street, at a cost of \$12,000.

London, Ont.—Contracts have been awarded as follows for alterations to the London Loan and Saving Co.'s offices: Masonry, Scott Murick; carpentry, Tumbling & Jones; painting, Lewis Bros.; vault of enamelled brick, tile floor, hardwood office fixtures, Barton Netteg, Windsor. Architect, Wm. G. Murray. Cost of improvements, \$8,000.

Cobalt, Ont.—Messrs. Couture & Aubrey have been awarded the contract for a three-storey store and office building to be erected for The Nipissing Stores Company. The structure will be of frame construction, with cedar foundation, Carey roofing, steam heating, electric lighting. W. R. Graham is the architect.

Montreal.—Mr. Jacob Jacobs has purchased the property at the corner of St. Catherine and St. Alexander streets, on which he will erect a large building to be used either for commercial purposes, as a hotel building.

Montreal.—Architect Jos. Sawyer, 407 Guy street, has prepared plans for a two storey hall to be erected in St. Henry, for Mr. A. Delorme, Laporte avenue. The building will be of stone construction, with stone foundation, gravel roof, hot water heating, and electric lighting.

Montreal.—Architect Eric Ham, 30 St. John street, has prepared plans for the erection of a six-storey stone front to the premises of the John D. Ivey Co., Ltd., 240 Notre Dame street west.

Montreal.—It is reported that Mr. David Ogilvy will prepare the plans and supervise the construction of the departmental store to be erected by Messrs. Jas. A. Ogilvy & Sons, on the corner of St. Catherine street west and Mountain street. Approximately \$400,000 will be expended.

Montreal, Que.—Jas. E. Wilder has purchased two blocks of property on the corner of Bleury and Ontario streets, which will, in all probability, be used as the site for the new store for W. H. Scroggie, Ltd.

Montreal.—Architect J. E. Huot, 260 St. James street, has prepared plans for the erection of new offices for Mr. Rudolphe Forget, at corner of Notre Dame and St. Xavier streets.

Winnipeg, Man.—Mr. T. D. Farmer, a Hamilton capitalist, has purchased the property next to the new Bank of Montreal, on Main street, on which he will erect a new block.

Winnipeg, Man.—Plans have been prepared by Architect J. G. Russell, for a twelve-storey, fireproof office building, to be erected on Portage avenue, between the hotel and the new Nanton block, for Mr. J. D. McArthur. The work of construction will be commenced within the next two months.

Winnipeg, Man.—Mr. C. H. Enderton, real estate dealer, will erect a business block at the corner of Portage avenue and Hargrave street. Plans for the building are being prepared.

Winnipeg, Man.—The Great Life Assurance Company has acquired the property on the northwest corner of Lombard and Rorie streets, on which they will erect a building to cost \$150,000.

Vancouver, B. C.—Messrs. Douglas & Thorley have had plans prepared for the erection of a three-storey structure on Granville street. The building will be 50 by 120 feet, and will cost about \$20,000. Farr & Fee are the architects.

Vancouver, B. C.—Architects Parr & Fee have prepared plans for a three-storey building to be erected at the corner of Hornby and Dunsmuir streets, for Messrs. Gordon & Campbell. The building will be 50 by 120 feet and will cost \$25,000.

Vancouver, B. C.—Architect Parr & Fee have prepared plans for a large building, to be known as the Codson block, to be erected on Beatty street. It will be three storeys in height, 50 by 120 feet, and will cost \$50,000.

Vancouver, B. C.—Mr. A. Filion purposes erecting two additional storeys and an extension to the rear of his brick store building on Carrall street. The improvement will cost \$15,000.

Vancouver, B. C.—Messrs. C. S. Douglas & Co. have taken out a permit for the erection of a business building on Cordova street. The structure will be of mill construction, and will cost \$22,000.

Vancouver, B. C.—Mr. Samuel Burris has taken out a permit for the erection of a brick business building at 904 Davie street, to cost \$15,000.

Vancouver, B. C.—Architects Parr & Fee have prepared plans for a three-storey and basement building to be known as the Fuller block, to be erected at a cost of \$15,000.

Vancouver, B. C.—The National Finance Company has taken out a permit for the erection of a business block at the corner of Westminster avenue and Barnard street, at a cost of \$30,000.

Victoria, B. C.—The British-American Trust Company, Ltd., have purchased the Redfern block, Government street, on which site they will erect a large modern office building.

Calgary, Alta.—Messrs. Tees and Perce have had plans prepared for a four-storey solid brick building, to be erected in the rear of the Brock warehouse, on Second street.

Strathcona, Alta.—Plans are being prepared for a three-storey brick store and office block to be erected on Main street, near Whyte avenue, for Mr. Henry Harvey. The building will have two large stores on the ground floor and offices and living rooms on the second and third. It will cost between \$15,000 and \$20,000.

Prince Albert, Sask.—Plans are being prepared for three business blocks to be erected in the vicinity of the City Hall, for Mr. D. Agnew, Mr. Andrew Holmes and Mr. G. W. Baker.

Prince Albert, Sask.—Mr. T. Baker has purchased property on Central avenue on which he will erect a large business block.

Banks

London, Ont.—The Dominion Bank has purchased the property at the N. E. corner of Dundas and Richmond streets, on which they propose to erect a new building.

Hamilton, Ont.—The Imperial Bank has purchased the Glassco property, on which they will erect a large office building. Plans for the building have been submitted to the head office in Toronto.

Montreal.—The Quebec Bank, New York Life Building, has taken out a permit for the erection of a bank building at the corner of Atwater avenue and Notre Dame street. The building will be of pressed brick, with stone trimmings, stone cornice, tar and gravel roof, concrete foundation, hot water heating. Architects, Cox & Amos, 112 Mansfield street. Contractors, Peter Iyall & Son, Board of Trade Building. It will cost \$10,500.

Winnipeg, Man.—The contract for the erection of the head office of the Royal Bank of Canada, at this place, will be awarded shortly and the work of construction commenced as soon as weather permits.

New Westminster, B. C.—The Bank of Commerce, on Columbia street, has been damaged by fire. Loss not stated.

Prince Albert, Sask.—The Imperial Bank has had plans prepared for the erection of a new block opposite the City Hall.

Clubs and Societies

Toronto.—The I. O. O. F. Hall Association has purchased the property at 229 College street, on which they will erect a new lodge building, to cost at least \$60,000. The plan is to erect a hall hold-

ing several lodge rooms, and office apartments. John T. Hornbrook, President of the Association; Geo. A. Kingston, secretary-treasurer.

Toronto.—The Young Men's Christian Association have commenced a campaign to raise funds for the erection of a new building to replace the structure at the corner of Yonge and McGill streets. Mr. E. R. Wood is the chairman of the committee having the arrangements in hand.

Ottawa, Ont.—The Rideau Club has asked the Legislature for permission to issue \$250,000 debentures, to redeem old debentures and make additions to their clubhouse.

Hamilton, Ont.—At a meeting of the Y. W. C. A. directors it was practically settled that a new building be erected on the present site, at cost of \$35,000. The plans make provision for sixty rooms and a gymnasium.

Belleville, Ont.—Mr. A. H. Kerr, of Ottawa, proposes to erect a large yacht club house in the harbor just west of Victoria park, at this place.

Montreal.—It is reported that a new club house will be erected on the N. A. A. grounds at a cost of \$50,000. A new grand stand will in all probability, also be built.

Bonaventure, P. Q.—Architects Ouellet & Levesque, 115 St. John street, Quebec, P. Q., have prepared plans for a frame club house to be erected here for Cercle Pie. The building will be two and a half storeys in height and will cost \$12,000.

Saskatoon, Sask.—The Saskatoon Club will erect a \$10,000 building sometime during this year.

Moose Jaw.—The Y. M. C. A. will erect a new association building this spring. R. E. Manley is the local secretary.

Asylums and Hospitals

Toronto.—Mr. Ambrose Kent, President of the Toronto Home for Incurables, has filed with the Provincial Government plans for the proposed extensions to the building, including a new wing, facing on Dunn avenue, to be three storeys in height; and a nurses' home, to be built on the west end of the building, to face Close avenue. The cost of the two additions is \$70,000, towards which the city has granted \$50,000.

Toronto.—The Building Committee of the Western Hospital have instructed Architect E. J. Lennox, 164 Bay street, to prepare plans and call for tenders for the first large section of the new hospital to be erected on Bathurst street. This section will be three stories in height and will cost about \$150,000.

Toronto.—The Board of Health has approved Dr. Sheard's proposal that the Isolation Hospital be enlarged at an estimated cost of \$60,000.

London, Ont.—The sum of \$6,300 has been subscribed towards the fund for the erection of a sanitarium at this place.

London, Ont.—Chairman Niven, of the Board of Health, will ask the City Council to set aside \$2,500 for the erection of an addition to the smallpox hospital.

Montreal.—Architects Mitchell & Crighton, Ingils Building, have prepared plans for alterations to the Protestant Infants' Home, recently purchased by Frank H. Norman. The building will be used as a dance hall.

Quebec, Que.—It is understood that Architects Stopes & Fuerstman, Saranac Lake, N. Y., are preparing plans for the erection of two sanitariums, one at St. Agaths, to be called "The Montreal," and the other at Quebec, to be called "The King Edward."

St. John, N. B.—About \$100,000 will be expended in repairs, new buildings, etc., at the Provincial Hospital, which was recently badly damaged by fire. A separate building of brick and stone will be erected for the heating and lighting plant, and laundry. The wing of the main building, which was destroyed will be rebuilt. It is also expected that new boilers will be installed in the engine room. Plans for the proposed work will be prepared at once.

St. John, N. B.—The Provincial Government has promised financial aid towards the construction of a tuberculosis hospital at this place.

Winnipeg, Man.—The Hospital Commission has made a report recommending that the General Hospital be enlarged.

Ninette, Man.—At a meeting of the

Board of Trustees it was decided to locate at Ninette the proposed Manitoba sanitarium for tuberculosis.

Residences and Flats

Toronto.—Architects Simpson & Young, 17 Toronto street, have prepared plans for a three-storey apartment house to be erected on King street west, at a cost of \$30,000. The building will be of brick construction, with felt and gravel roof, pine floors, Georgia pine interior finish, open plumbing, electric lighting, steam heating, staved columns, plate glass, leaded glass and mantels.

Toronto.—Architects Simpson & Young, 17 Toronto street have prepared plans for a two and a half storey residence to be erected on Broadview avenue. It will be of brick construction, with slate roof, oak floors, hardwood and pine interior finish, open plumbing, hot water heating, electric lighting and mantels. Estimated cost \$12,000.

Toronto.—The following contracts have been awarded for the erection of a two and a half storey brick dwelling at the corner of Heath street and Dunvegan avenue, for Mr. Jas. Ince, 33 Front street east; Masonry, J. C. Claxton & Son; 311 Stair Building; carpentry work, F. Heal; roofing, Webb & Dunlop, 15 Kensington avenue; plastering, J. W. Nonson; painting and glazing, Faircloth & Co., Ltd., 64 Richmond street east; plumbing, Toronto Furnace Co., 72 King street east; heating, Joseph Harrison, 608 Yonge street; wiring, R. A. F. Gray, Chadwick & Beckett, 20 Toronto street, are the architects.

Toronto.—Architect J. W. Siddall, 75 Yonge street, is preparing plans for a two and a half storey residence to be erected on Roxborough street, at a cost of \$20,000. The building will be of brick construction, with slate roof, oak floors, and interior finish, open plumbing, hot water heating, combination lighting, ornamental columns, plastic relief work, plate glass, leaded glass, electric bells, refrigerator, and five mantels.

Toronto.—Architect J. W. Siddall has prepared plans for a \$5,000 two-storey brick dwelling to be erected on Park Place, near Indian road, for H. H. Halls. The building will have brick foundation, shingle roof, hardwood and pine floors and interior finish, open plumbing, hot water heating, combination lighting, staved columns, electric bells and four mantels. The owner will supply materials for masonry work, and sublet all other trades.

Toronto.—Architect J. Hunt Stanford has prepared plans and specifications for two pairs of semi-detached, and one detached dwellings, to be erected on Margueretta street, at a cost of \$7,000. The buildings will be two and a half storeys in height, of brick construction, with stone foundation, shingle roof, pine floors and interior finish, open plumbing, hot air heating, combination lighting, electric bells and mantels.

Toronto.—Architect J. Hunt Stanford has prepared plans for a \$6,500 residence to be erected on Forest Hill Road, near Heath street, for Mr. C. Pace, Shaw street. It will be of brick construction, with stone foundation, slate roof, hardwood and pine floors and interior finish, open plumbing, hot water heating, combination lighting, electric bells and four mantels.

Toronto.—Architect J. Hunt Stanford has prepared plans for a \$7,000 residence to be erected on Palmerston Boulevard, for Mr. C. Baker. It will be of brick construction, with stone foundation, slate roof, hardwood floors, hardwood and pine interior finish, open plumbing, hot water heating, combination lighting, electric bells and four mantels. The owner will receive tenders.

Toronto.—Architect J. Hunt Stanford has prepared plans for a pair of two and a half storey dwellings to be erected on St. Clair avenue, near Poplar Plains road, for Mr. R. McLeod, Walmer road all, at a cost of \$6,500. The building will be of brick construction, with brick foundation, slate roof, hardwood and pine floors and interior finish, open plumbing, hot water heating, combination lighting, electric bells and four mantels.

Toronto.—Architect J. Hunt Stanford has prepared plans for two pairs of two and a half storey dwellings to be erected

on Howard Park avenue, near Sunnyside avenue, for Mr. J. Gibson, 413 Deleware avenue, at a cost of \$8,000. It will be of brick construction, with slate roof, pine floors, interior finish, open plumbing, hot air heating, combination lighting, electric bells and mantels.

Toronto.—Architect J. A. Harvey, Manning Chambers, has prepared plans for a two-storey residence to be erected on Major street, near Lowther avenue, for Mr. S. G. Near, 27 Bellair street, at a cost of \$4,500. It will be of brick construction, with slate roof, hardwood and pine floors, Georgia pine interior finish, open plumbing, hot air heating, combination lighting, electric bells and mantels.

Toronto.—Architect J. A. Harvey has prepared plans and specifications for a two and a half storey residence to be erected on Lucas street, near Roncesvalles avenue, for J. S. Loughheed, Lucas street, at a cost of \$2,800. It will be of brick construction, with brick foundation, shingle roof, pine floors and pine and hardwood interior finish, open plumbing, hot air heating, combination lighting and two mantels.

Toronto.—Architect J. A. Harvey has prepared plans for a two-storey apartment house to be erected at the corner of Havelock street and Sylvan avenue, for Mr. J. T. Hutson, 43 Victoria street. It will be of brick construction, with stone foundation, felt and gravel roof, open plumbing, hot air heating, combination lighting, pine floors, hardwood and pine interior finish, electric bells and mantels. Estimated cost \$14,000.

Toronto.—Architect J. H. Galloway, 77 Victoria street, has prepared plans for four detached two and a half storey stores and dwellings to be erected at 1550-6 Queen street west, for Mr. R. T. Smith, 1643 Queen street west. The building will be of brick construction, stone foundation, felt and gravel roof, hardwood and pine interior finish, open plumbing, hot air heating, combination lighting and electric bells. Estimated cost \$8,000.

Toronto.—F. J. Hale, 74 Parkway avenue, will erect a two and a half storey dwelling on Thorold avenue, near Alhambra avenue, at a cost of \$3,000. It will be of brick construction, with pine floors, hardwood and pine interior finish, open plumbing, hot water heating, combination lighting, electric bells and two mantels. Architect, J. H. Ganoway, 77 Victoria street.

Toronto.—Architect W. G. Hunt, 255 Westmoreland avenue, has prepared plans for a two and a half storey residence to be erected on Deleware avenue, near Vanhorne street, for W. C. Clatworthy, 580 Deleware avenue, at a cost of \$2,800. It will be of brick construction, with stone foundation, shingle roof, open plumbing, combination lighting, hot air heating, pine floors and interior finish and tile mantel.

Toronto.—Architect H. H. Wilmot has prepared plans for the erection of a two and a half storey dwelling on Woodlawn avenue, near Yonge street, for Mr. John Wilmot, 806 Yonge street, at a cost of \$5,000. It will be of brick construction, with stone foundation, slate roof, hardwood and pine floors and interior finish, open plumbing, combination lighting, hot water heating, electric bells and mantels.

Toronto.—Architect J. Hancock has prepared plans for a pair of two-storey, semi-detached dwellings to be erected at 490-2 Givens street, for W. A. Nixon, 615 Crawford street. It will be of brick construction, with stone foundation, slate roof, hardwood and pine floors and interior finish, open plumbing, hot air heating, combination lighting, electric bells and mantels. Estimated cost \$4,000.

Toronto.—Architect T. Hancock, 838 Dovercourt road, has prepared plans for a pair of two-storey dwellings to be erected on Westmoreland avenue, near Hallam avenue, for H. E. Le Drew, 339 Concord avenue, at a cost of \$4,000. It will be of brick construction, with brick foundation, hardwood and pine floors, pine interior finish, open plumbing, hot air heating, combination lighting, electric bells and mantels.

Toronto.—The Designing and Draughting Co., 23 Jordan street, has prepared plans for a \$4,500 brick dwelling to be erected on Indian Road, near Howard Park Road, for Mr. T. W. Murray, 41 Calendar street. The building will have hardwood and pine floors and interior finish, open plumbing, hot water heating,

combination lighting, electric bells and two mantels.

Toronto.—The Designing and Draughting Co. have prepared plans for a frame residence to be erected in Munro Park district for Mr. A. Brovan, 103 Charles street. It will have pine floors, pine and hardwood interior finish, open plumbing, hot air heating, combination lighting and brick mantel.

Toronto.—Joseph Hutchison, 317 Spadina avenue, has been awarded the general contract for a pair of two and a half storey dwellings to be erected on Huron street, between D'Arcy and Baldwin streets, for Mr. Geo. Lowe, 106 Huron street. The building will be of brick construction, with slate roof, hardwood and pine floors and interior finish, hot water heating, open plumbing, combination lighting, electric bells and mantels. Estimated cost of building, \$5,000. Architect, H. G. Paull, 395 College street.

Toronto.—Architect E. G. Wilson, 77 Victoria street, has drawn plans for a two storey brick residence to be erected on Sorauen avenue, near Roncesvalles avenue, for Mr. Dinsmore at a cost of \$3,000. It will have brick foundation, slate roof, pine floors and interior finish, open plumbing, hot air heating, combination lighting, electric bells and mantel.

Toronto.—Architect E. G. Wilson has prepared plans for a brick residence to be erected on the south side of Langley avenue, near Broadview, for J. A. Gallagher, corner Langley and Broadview. It will have slate roof, hardwood floors, pine and hardwood interior finish, open plumbing, hot air heating, combination lighting and electric bells, mantels.

Toronto.—Architect J. H. Cowan, 65 Adelaide street east, has prepared plans for a two and a half storey residence to be erected on Palmerston boulevard, near Harbord street, at a cost of \$5,000. It will be of brick construction, with slate roof, open plumbing, hot water heating, combination lighting, oak floors and interior finish, electric bells and mantels.

London, Ont.—Mr. John Heyman has purchased the property at the corner of Wellington and Queen's avenue, on which he will erect a large apartment house.

London, Ont.—Messrs. Moore & Henry will erect a terrace of four residences, two storeys and basement in height, at the corner of Colborne and Queen's avenue, for Mr. Arthur McClary.

Ottawa, Ont.—Architect W. G. Hunt, 255 Westmoreland avenue, Toronto, has completed plans for a two-storey apartment house to be erected here for Mr. J. McMurchy, James street, at a cost of \$3,000. It will be of brick construction, with pine floors and interior finish, open plumbing, hot air heating, combination lighting, dumb waiters, sidewalk lifts, telephone system and four mantels.

Weston, Ont.—Architect P. H. Finney 43 Victoria street, Toronto, has prepared plans for a two and a half storey dwelling to be erected here for Mr. Irwin, of Nobleton, Ont. It will be of brick construction, with concrete foundation, pine floors and interior finish, plumbing with septic tank, hot air heating, electric lighting, electric bells and one mantel.

Daviesville, Ont.—Architect E. C. Wilson, 77 Victoria street, Toronto, has prepared plans for a two and a half storey residence to be erected here for Mr. Davis, at a cost of \$4,000. The building will be of brick construction, with slate roof, hardwood floors, pine and hardwood interior finish, open plumbing, hot air heating, combination lighting, electric bells and mantels.

Huntsville, Ont.—Mr. J. H. Johnson will erect a two storey residence at a cost of \$3,500. It will be of frame construction, with pine floors and interior finish, open plumbing, hot air heating, electric lighting and mantels. J. H. Galloway, 77 Victoria street, Toronto, is the architect.

Edgeburg, Ont.—Architect Leonard Foulds, 43 Victoria street, Toronto, has prepared plans for a two-storey residence to be erected here for Mr. John Jones, at a cost of \$2,500. It will be of frame construction, with brick foundation, shingle roof, hardwood floors, pine interior finish, open plumbing, hot air heating, electric lighting and mantel.

Meaford, Ont.—Architects Ellis & Connery, Manning Chambers, Toronto, have prepared plans for a \$3,000 residence to be erected here, for Mr. Geo. Carnahan. The building will be of brick construction,

with oak floors, pine interior finish, open plumbing, hot air heating, electric lighting, electric bells and mantels.

Montreal, P. Q.—Architects Wright & Son, 204 St. James street, have completed plans for a three-storey apartment house to be erected on Crescent street, at a cost of \$35,000. It will be of brick construction, with stone foundation, cement roof, plaster partitions, hot water heating, electric lighting, hardwood interior finish and two dumb waiters.

Montreal.—Messrs. Lynch & Sharp, 16 St. Sacrament street, have been awarded the contract for the erection of three houses, at the corner of Montrose and Clark avenue, Westmount, for Mr. A. D. Roraire.

Montreal.—Architect J. E. Huot, 260 St. James street, Montreal, has prepared plans for the erection of a residence on St. Catherine Road, Outremont, for L. J. Beaubien.

Montreal.—A three-storey apartment building will be erected on Mountain street, for Mr. J. D. Duncan, 218 Mountain street. It will be of brick construction, with stone foundation, stud partitions, cement and gravel roof, pine and birch floors, pine interior finish, hot water heating, electric lighting, skylights and electric bells. MacVicar & Heriot, 104 Union avenue, are the architects.

Montreal.—Architects Brown and Son, 207 St. James street, have prepared plans for a \$25,000 apartment house to be built on Major street. It will be of brick construction, with stone trimmings, concrete foundation, expanded metal lath partitions, gravel roof, birch floors, open plumbing, hot water heating, electric lighting, fire escapes, dumb waiters, skylights, metal lath and electric bells.

Montreal.—Architect Jos. Sawyer, 407 Guy street, has prepared plans for a three-storey building to contain stores and dwellings, to be erected at the corner of St. Catherine and Dufresne streets, for Mr. F. Harel. It will have stone walls, pine interior finish, electric lighting, open plumbing, hot water heating, metal ceilings, cornice, skylights, plate glass, prismatic glass, electric bells and refrigerator. Cost of building, \$55,000.

Montreal.—Architect J. Perrault, 17 Place d'Armes Hill, has prepared plans for eight two-storey dwellings to be erected on Park avenue, near Bernard for Mr. J. M. Derlon, 350 Park avenue. The buildings will be of brick construction, with stone foundation, plaster partitions, gravel roof, gas and electric lighting, hot water heating and electric bells. Estimated cost of buildings, \$18,000.

Montreal.—Architects Finley & Spence, Guardian Building, are preparing plans for an apartment house, to be known as the "Seaford," to be erected on Cote des Neiges Road, G. W. Badgley, 124 St. Peter street, Montreal, is promoting the company which will erect the building.

Montreal.—Architects Saxe and Archibald, 59 Beaver Hall Hill, have completed plans for the erection of a residence in Westmount for Mr. Scott.

Montreal.—Architects Saxe and Archibald, 59 Beaver Hall Hill, have prepared plans for a residence to be erected in Westmount for Mr. Fraser.

Montreal.—Architect J. E. Knot, 260 St. James street, has prepared plans for two two-storey residences, to be erected in Outremont, St. Catherine Road, for Messrs. C. P. Beaubien and E. G. Beaubien, of Montreal. They will be of brick and stone construction, with red birch, chestnut and pine interior finish, hot water heating, combination lighting, plumbing and dumb waiter.

St. Zotique, Que.—Architect J. E. Huot, 260 St. James street, Montreal, has completed plans for a country residence to be erected at St. Zotique, Soulanges County, for Mr. N. Corbeau.

Moncton, N.B.—Mr. William Stone will shortly erect three houses on the upper end of Cornhill street.

Moncton, N.B.—Mr. Collingwood Clark will erect a two-storey residence on Austin street, and Mr. W. G. Jones will build at least twelve new buildings on the Mount View Estate.

Brandon, Man.—A company of capitalists has decided to erect a large apartment building at this place in the near future. A. H. Bartlett is the local representative of the promoters.

Vancouver, B.C.—Architects Parr & Fee have prepared plans for a three-

storey and basement structure to be known as the Banfield Building, to be built at the corner of Bute and Melville streets. It will be utilized for stores on the ground floor and tenement apartments above. Estimated cost, \$3,000.

Saskatoon, Sask.—Mr. R. N. Baldwin will erect a three-storey tenement block on Second avenue, near the Empire hotel.

Fire Stations and Jails

Toronto.—In his estimates for the year 1909, the Civic Property Commissioner asks for the sum of \$464,000 for the following improvements: Fire hall at East Toronto, fire hall at College Heights, fire hall in vicinity of Bathurst and Dupont streets, fire hall in vicinity of Perth avenue and Bloor street, four police and patrol stations, approximate cost, \$33,000 each; public building, \$21,978; registry office, \$1,160; general markets, weigh scales, etc., \$16,279; cattle market, \$35,195; city hall maintenance, \$51,178.

Ottawa, Ont.—The Fire and Light committee recommends rebuilding No. 6 fire station, which was destroyed by fire, rebuilding No. 4 station, and the erection of an entirely new station, to be known as No. 10, in Ottawa South.

Hamilton, Ont.—A new police station will be erected in Hamilton at a cost of \$6,000.

Opera Houses and Rinks

Montreal.—Architects Mitchell & Crighton, Inglis Building, have prepared sketch plans for the erection of a vaudeville theatre on Bleury street for the Blumenthal Estate.

Gananoque, Ont.—The Turner block, corner King and Stone streets, owned by W. Y. Boyd, and the Grand Opera House block adjoining, owned by W. G. Rogers, Gananoque, have been destroyed by fire. Loss estimated at \$10,000. The Grand Opera House was a concrete block building valued at \$30,000.

St. John, N.B.—Plans have been prepared by Architect F. Neil Brodie for remodelling the theatre building of F. G. Spencer.

Chatham, N.B.—The Chatham Curlers propose to erect a new curling rink, towards which the sum of \$1,100 has been subscribed. A committee composed of Messrs. F. M. Tweedie, R. A. Snowball, and A. McKinnon, has been appointed to solicit additional subscriptions.

Hotels

Edmonton, Alta.—Plans have been prepared by E. C. Hopkins and Edmund Wright, associate architects, for a large addition to be built to the Castle Hotel. The present building will also be remodelled and made to correspond with the new additions. The building will be of solid brick with stone trimmings, and will have a frontage of 100 ft. on Second street and 150 ft. on Athabasca avenue. Passenger and freight elevators will be installed, and telephone connection with each bedroom will be provided. The corridors on each floor and the main staircase will be made fireproof. The improvement will cost \$100,000. Mr. J. A. Hendry is manager of the hotel.

Vancouver, B.C.—Plans have been prepared by Architects Parr & Fee for a seven-storey hotel building to be erected at the corner of Howe and Hastings streets for Messrs. Bauer & Harrison. It will be 78 by 120 feet, of steel and concrete construction, and will cost approximately \$150,000.

Star City, Sask.—The Star City Hotel at this place has been destroyed by fire. Loss estimated at \$5,000, partly insured.

Ottawa, Ont.—Mr. Wainwright, of the Grand Trunk Railway, announces that the company will build a hotel on Major Hill Park, commencing work on the first of May.

Kingston, Ont.—Extensive improvements will be made to the Hotel Frontenac. Plans have been prepared for the erection of an arcade between Ontario and King streets, connecting the Frontenac with the British American. Bath rooms will be connected with each suite of rooms; the hotel will be fitted with an elevator, billiard room, library, bowling alley, etc.

Park Laval, Que.—The Hotel Berthelet has been damaged by fire to the extent of \$15,000.

Peterboro, Ont.—Mrs. W. H. Graham's summer resort "Vlamede" at Stony Lake, Ont., which was recently destroyed by

fire, will be rebuilt at once. It is expected to have the buildings ready for the tourist season this coming summer.

Sydney, N.S.—E. LeRoy Willis announces the formation of a syndicate of prominent Montreal and Sydney capitalists, with capital of \$350,000 for the purpose of enlarging and reorganizing the Sydney Hotel. The new addition will extend along Charlotte street, and will provide for at least twenty sample rooms and additional parlors and bedrooms. Salt water baths will be installed.

Moncton, N.B.—The Brunswick House has been damaged by fire to the extent of \$4,000.

St. John, N.B.—It is stated that Messrs. Raymond & Joherty, St. John, have purchased the property on Germain street belonging to the estate of the late James Reynolds, with a view to enlarging the Royal Hotel.

Churches

Toronto.—The congregation of St. Aiden's Anglican Church, Balm Beach, will commence the erection of a new church building in April.

Toronto.—The Parkdale Congregational Church, at the corner of Brock avenue and Maple Grove, has been practically destroyed by fire.

West Toronto, Ont.—The congregation of the Royce avenue Presbyterian Church will in all probability erect a new edifice on a site west of Dundas street.

Ottawa, Ont.—At the Official Board Meeting of the Bell street Methodist Church a resolution was passed that more accommodation was necessary. The congregation is undecided as to whether it will build a new church and hall or just a Sunday School hall. Rev. J. E. Lavety is the pastor.

Ottawa, Ont.—At the annual meeting of the McKay Presbyterian church it was announced that plans had been prepared for a new edifice which is to be erected this coming summer.

Woodstock, Ont.—At the annual congregational meeting of Chalmers Church the following committee was appointed to take up the matter of the erection of a new church building: Messrs. Jas. W. Innes, Wm. Matheson of the Governor's Road West, John Weir, Hugh McDonald, Wm. Amos, Pierce Irving, R. W. McPherson, Jas. Forbes, Geo. A. Mason and Allan Virtue. Rev. Dr. Dickie, pastor.

Port Colborne, Ont.—The interior of the Presbyterian church has been badly damaged by fire.

London, Ont.—The congregation of St. Andrew's Church is contemplating making extensive improvements to the church and manse. Rev. Dr. Ross is the pastor.

Renfrew, Ont.—The Baptist Church has been badly damaged by fire. Loss not stated.

Ingersoll, Ont.—At a meeting of the Quarterly Board of King street church the plans for the proposed remodelling of the church were accepted.

Lindsay, Ont.—The sum of \$3,000 will be expended on interior decoration to St. Mary's Church. Bishop O'Connor or Archdeacon Casey may be addressed.

Deer Park, Ont.—Plans for a new building to replace Christ Church, Deer Park, one mile from Toronto, have been submitted to the Anglican Young People's Association of that church. The building it is estimated will cost \$20,000.

Windsor Mills, Que.—The congregation of St. George's Church have had plans prepared by Architect C. E. White, Sherbrooke, Que., for the erection of a new church. The building will be of frame construction, exterior walls to be covered with cement over metallic lath, interior to be finished in plain oak, stained leaded glass, etc. Work of construction will be commenced as soon as weather permits.

Newport, Que.—The Roman Catholic Church at this place has been totally destroyed by fire. Loss not stated. Rev. Father Laurent is the pastor.

Port Essington, B.C.—St. John's Church, which was recently destroyed by fire, will be rebuilt. The building was valued at \$2,000, with insurance of \$1,000. Rev. Walter Ruchwork is the pastor.

Calgary, Alta.—At the annual meeting of Knox Presbyterian Church it was decided to purchase two lots on the corner of Fifteenth avenue and First street west for the purpose of erecting a new edifice. Trustee, Hugh Neilson; Board of Managers, W. N. Connacher, chairman; J. T. Macdonald, secretary; William Stuart,

William Carson, T. Allan, W. D. Thornton.

Lethbridge, Alta.—The congregation of the Baptist Church is contemplating the erection of an addition to their church this year.

Schools and Colleges

Toronto.—Architects Darling & Pearson, 2 Leader Lane, are revising the plans for the Faculty of Education and Pedagogy buildings, which will be erected this year, on a smaller scale than previously intended.

North Toronto.—A by-law has been passed providing for the issue of debentures to the amount of \$13,000 for the purpose of enabling the School Board to make additions and alterations to the school house in Eglinton East Ward.

Oshawa, Ont.—The ratepayers have voted the sum of \$20,000 for a new high school and also in favor of the county roads scheme.

Stratford, Ont.—At a meeting of the Collegiate Institute Board a motion was carried to authorize the city architect to submit pencil sketches and suggestions for the erection of a four room addition to the Collegiate Institute.

Ottawa, Ont.—At a public meeting of the residents of Westboro, Woodroffe and Ottawa west, it was decided to erect a school building at Westboro and a smaller building at Woodroffe, to be completed by Oct. 1st; cost not to exceed \$18,000.

Ottawa, Ont.—Architects Weeks and Keefer have prepared plans for the Ashbury College building to be erected at Rockcliffe Park, at the rear of the former residence of Lord Dundonald. The building will be fireproof throughout.

Ottawa, Ont.—The Separate School Board will in all probability erect two new school buildings this year.

St. Mary's, Ont.—Plans have been prepared for a two-storey stone school building, 104 by 80 ft., to replace the present structure. The building will have slate roof, and will be heated and ventilated by means of fresh air driven over steam coils, and distributed throughout the building by means of fans.

St. Thomas, Ont.—The ratepayers of S. S. No. 13 have decided to erect a two-room brick school building at Paddon's, Yarmouth heights, near St. Thomas, Ont. The plans, as prepared by Architect Nell R. Darrach, St. Thomas, provide for a two-storey building to cost approximately \$4,500.

Flesherton, Ont.—The ratepayers of the rural districts propose to erect a high school in Flesherton, Ont.

Port Arthur, Ont.—Competitive plans have been invited for a collegiate building to be erected on the present site of the high school. The building to be faced with grey sandstone and brick lined, to contain seven class rooms, also provide for typewriting, physics, chemistry, assembly hall, staff rooms, domestic science, manual training and storage, ventilation, mechanical draft and stack heaters, etc., automatically regulated steam heating. Separate gymnasium in rear of collegiate, government standard, with basement. Total cost, \$60,000, allowing \$5,000 for gymnasium, heating, plumbing, ventilation and equipment. Plans to be submitted by Feb. 20th.

Norway, Ont.—Brother Edward, of the De La Salle Institute, Toronto, is looking after the purchase of a site for a preparatory school for the Brotherhood, to be located at this place.

Scarboro, Ont.—At a meeting of the Scarboro Ratepayers' Association, a deputation consisting of William Kelly, W. Stewart, F. Hall, F. Baskerville, T. S. Cumber and Wm. Burns, was appointed to wait on the Scarboro Township Council, at its next session, to present a petition for the erection of a public school building.

London, Ont.—Architect Wm. C. Murray has prepared plans for a two-room building and also for a four-room structure to be erected on Chelsea Green. The first building will be one storey in height, with felt and gravel roof, hot air heating. Estimated cost, \$4,000.

London, Ont.—A proposition is before the Board of Education regarding the erection of a technical school in conjunction with the collegiate. The committee has been instructed to have estimates and rough plans prepared for the building.

Montreal.—The plans for the new tech-

nical school have been submitted to the Provincial Government, and accepted. The working plans are now being prepared, and it is expected that tenders will be called shortly. Messrs. John S. Archibald and Maurice Perreault, associate architects.

Montreal.—A bill to provide for the raising of increased revenue for the building of schools and for the enlargement of some of the present school buildings will be presented at the coming session of the Quebec Legislature, by the Protestant Board of School Commissioners.

Montreal.—The Royal Arthur School has been partially destroyed by fire. The loss will amount to about \$10,000.

Montreal.—At a meeting of the managers of the Technical Institute, Sherbrooke street, it was decided to make an addition to the building. A second room, to be fully equipped with electrical apparatus, to accommodate one hundred students, will be built.

Hull, Que.—The Fathers of the Holy Ghost, who conduct an agricultural college on the old Alonzo Wright property, near Hull, purpose enlarging their institution. They will make application at the next session of the Quebec legislature for power to maintain schools for the purpose of giving religious, industrial and agricultural instruction, to establish model farms, butter and cheese factories, etc. It is proposed to incorporate under the name of "The Agricultural and Industrial Corporation of the Missionaries of the Holy Ghost," for the purpose of possessing and acquiring immovable property not in excess of \$400,000.

Halifax, N. S.—Messrs. Faulkner & McDonald have been awarded the contract for the erection of a large addition to the Convent of the Sacred Heart. The plans, prepared by Architect H. E. Gates, call for a pressed brick building of three storeys, 100 x 40 feet, with basement, foundation walls and trimmings of granite. French slated roof. The building will be commenced in April.

Sydney, N. S.—The Special Committee appointed to report to the School Board regarding proposed new county academy, recommends the construction of a new and thoroughly modern academy with as little delay as possible. It is estimated that the sum of \$50,000 would be required.

Newcastle, N. B.—Tenders will be received up to 12 o'clock noon, Mar. 1st, for the erection and completion of a stone addition to Harkins' Academy, according to plans and specifications prepared by Harry H. Nott, architect, St. John, N. B., and which may be seen at the office of the architect and on application to J. E. T. Lindon, secretary to Board of School Trustees, Newcastle, N. B.

Winnipeg, Man.—The School Board is negotiating for a site on which to erect a new Collegiate Institute. The building will contain thirty rooms, and will cost approximately \$200,000.

Vancouver, B. C.—The Board of Trustees have selected a site for the new high school building, for which \$45,000 has been appropriated. Plans for the building will be prepared at once. It is expected to have the building ready for occupancy by August 15th.

Edmonton, Alta.—Architect Roland W. Lines has been instructed to prepare plans for a new sixteen room high school building, to be erected this year at a cost of approximately \$75,000.

Saskatoon, Sask.—Tenders are being called for a suitable site of three or four acres, on which to erect a collegiate institute.

Raymond, Alta.—At a meeting of the ratepayers it was decided that another election would be held to vote on raising money to build a twelve-room school building. Plans had previously been prepared for an eight-room building, but it was found that this would not give sufficient accommodation. Estimated cost of twelve-room building is given as \$30,000.

Calgary, Alta.—Estimates will be called shortly for the construction of twelve miles of street pavement.

Edmonton, Alta.—During the coming year the city will expend the sum of approximately \$150,000 for bitulthic pavement on Kinistino avenue, from Jasper to the C. N. R. tracks, and Namaye avenue from Isabella street to Sutherland street, and on Fraser avenue. Tenders for the work will be called for in the immediate future.

GAS PRODUCING PLANTS.

TO SUCCESSFULLY demonstrate, under ordinary conditions, gas engines as a means of producing power and lighting current can show results unobtainable by any other method of power production, and to prove conclusively that a suction gas engine equipment specially designed to meet Canadian conditions and properly installed, would furnish the manufacturer with his power at a cost considerably lower than if on a steam engine basis, and with the same or a greater degree of reliability, is what the Colonial Engineering Company, Limited, Montreal, set about doing when it was organized two years ago.

That great economy could be obtained with gas engines was generally admitted, but upon the point of reliability opinion was divided, due, no doubt, to the fact that the development of the suction gas engine had not been accomplished without failures. These failures, however, were not without value, as they served to indicate to the experienced builder where the trouble lay, and by a process of elimination the evolving of a perfectly reliable suction gas engine equipment was only a question of time.

That a perfectly reliable suction gas engine equipment has been evolved, and that it is meeting operating conditions in Canada with perfect success, is evidenced by the installations which this company has made.

The company owns and controls the Canadian rights for the manufacture of the celebrated Hornsby-Stockport Improved Patent Suction Gas Plant, an English product, which, it is said, has met with such widespread recognition that to-day there are 30,000 of them in active operation in all parts of the world.

Among the special advantages which are claimed for this plant are its moderate first cost, great economy in working, extreme simplicity, small space occupied, little attendance required, little or no cost in repairs, requires no gas holder, boiler or chimney, an entire absence of smoke, soot, smell and danger, and is ready for use in fifteen minutes. The entire apparatus consists of a generator lined with fire-brick in which the gas is made, a vaporizer for producing the steam from the heat of the gas, a scrubber for cooling and cleaning the gas and a reservoir from which the gas engine draws its supply, the various parts being arranged to suit the space at disposal. The gas is generated without a greater pressure than the atmosphere, which eliminates all chance of leakage and smell, while no gas holder is required by reason of the fact that just enough gas is manufactured as will be immediately consumed by the engine, and ceases the instant the engine is stopped. Very little attendance is required, it only being necessary to replenish the fuel about every four hours, and remove the ashes at the end of the day.

The Colonial Engineering Company have installed a large number of these producer gas plants in various cities of the Dominion, which it is reported are giving the highest degree of satisfaction.

In Chatham, Ontario, a city of 12,000 population, the company erected and equipped a large municipal street lighting plant, which, according to figures given, now consumes but \$1 worth of fuel a day, as compared with \$6.50 a day, which was previously the case. This comparison of daily fuel cost is with the engines operating with natural gas, although they are designed to operate with either natural gas or suction gas. By using suction gas (anthracite pea coal) the daily full cost would be \$1.50.

The Chatham plant has been inspected by a large num-

ber of extensive power users, many of whom, in seeing its advantages, have adopted the system in their own plants.

Among those receiving entire satisfaction by the use of the Hornsby-Stockport Improved Patent Suction Gas Plant may be mentioned the Empire Manufacturing Company of London, Ont., who have reduced their coal bill from \$8.30 a day to \$1.60 for one hundred horsepower; the Ames-Holden, Limited, of Montreal the largest shoe manufacturers in the Dominion, who have reduced their annual coal bill from an average of \$2,750 to \$700, while the Queen City Printing Ink Co., of Toronto, who formerly paid \$60 per year per horsepower, now find that it costs them but \$19 per year per horsepower by using this system.

A few others who may be mentioned are the Essex Roller Mills Co., Essex, Ont.; Dominion Brewery, Toronto; Frame & Hay Fence Co., Stratford, Ont.; Vegreville Electric Light and Power Co., Vegreville, Alberta, and the Megantic Electric Light and Power Co., Lake Megantic, Que.

The Colonial Engineering Company have during the past year created a wide interest in manufacturing circles of the Dominion, and their claims of producing horsepower for less cost than can be produced by steam engines or water power, has seemingly been amply demonstrated.

LOCATES IN MONTREAL.

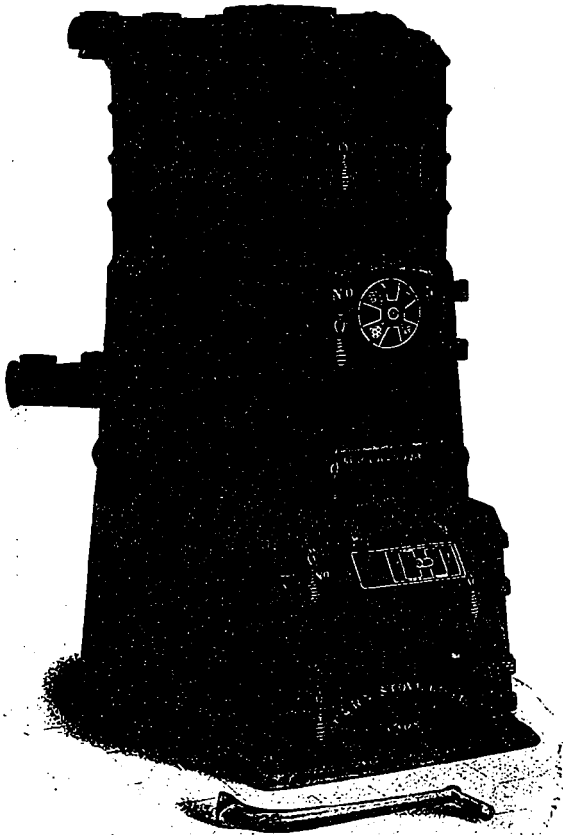
MR. THOMAS REID, identified as sales manager of the John Betram & Sons Company, Limited, for a number of years past, has moved his headquarters to Montreal, where he will be associated with the Canadian Fairbanks Company, Limited, who are the general sales agents of the Betram Company. Owing to the importance of the Montreal machine tool market, this move is evidently a highly advantageous one to both the Betram Company and the Canadian Fairbanks Company.

AN 80,000 BARREL ORDER.

WHAT IS POSSIBLY by far the largest single order for Portland cement ever placed in Canada, was recently received by the Canadian Portland Cement Company, Temple Building, Toronto, from Messrs. John Gunn & Sons, contractors, of Winnipeg. It calls for 80,000 barrels of Star Brand cement, to be used in the construction of the municipal power plant of the city of Winnipeg at Point du Bois, for which Messrs. Gunn & Sons, have the general contract. Aside from the enormous quantity it represents, this vast order is of more than passing interest in that it indicates in an unmistakable manner the tremendous growth of the West, and the great extent that cement is being employed in its upbuilding.

The Star Brand of cement has been used in a large number of important jobs throughout the Dominion, and always with the most satisfactory results. It was one of the two brands specified in the construction of the reinforced concrete chemical plant of the Woods Product Company, Limited, at Donald, Ont., which was published in the January issue of CONSTRUCTION. A remarkable instance of its excellent quality is to be found in the concrete pier of the ill-fated Quebec bridge, which successfully withstood the awful crash of iron and steel, which

"IT'S JUST AS GOOD" AS THE DAISY



1908 SERIES

is the talk some people use when they try to sell their boilers, yet, unconsciously they pay a tribute to the DAISY'S WORTH and PRESTIGE.

There is but One Genuine

that is just as good, and it is the incomparable, unapproachable pioneer of HOT WATER Boilers, 30,000 of which are in active service—its name, need we tell you, is

THE DAISY

Built on honor—of the best materials money can buy, by superior workmen, under the direction of competent engineers, and at the best plant ever devoted to the production of a Hot Water Boiler.

THE DAISY

Canada's Best Production—It Stands in a Class by Itself
IMITATED, BUT NEVER RIVALLED

CLUFF BROTHERS

LOMBARD STREET, TORONTO

Selling Agents : WARDEN KING, Limited

brought to a tragic end the greatest attempt of bridge engineering ever undertaken.

The company will have a booth at the exhibition to be held in connection with the convention of the Canadian Cement and Concrete Association at Toronto, from March 1 to 6, where its representatives will be pleased to meet its customers and to expound the virtues of the Star Brand to the trade in general.

A CONCRETE BLOCK CHURCH.

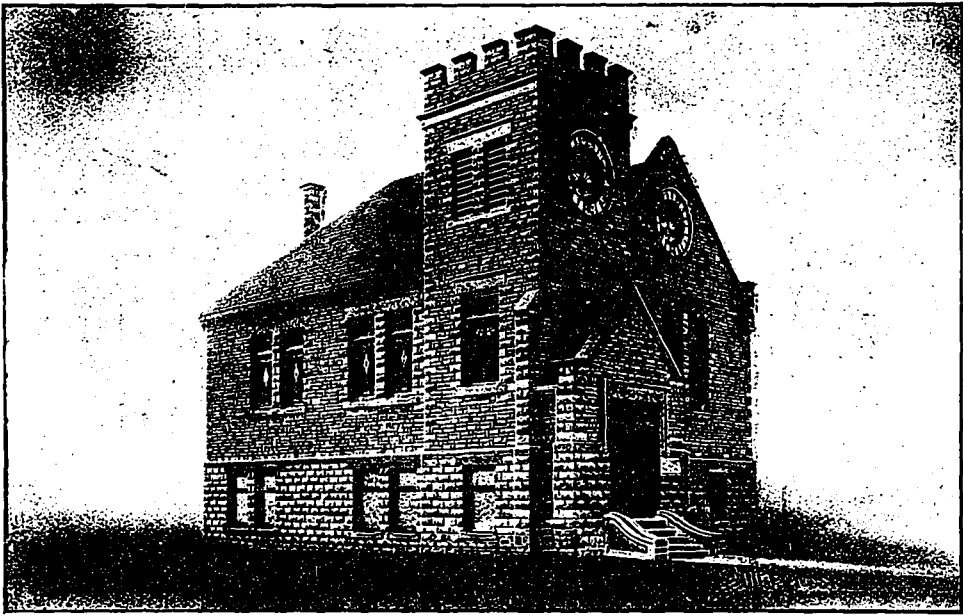
THE HIGHLY satisfactory results that can be obtained with concrete block construction when intelligently executed, is strikingly exemplified in the Salem Methodist church which was recently erected at Derwent, Ont. Not only does this building demonstrate what can be attained in rural church architecture, but it also brings out forcibly the possibilities of concrete blocks along other lines in the hands of an architect who understands his material.

The church, which was erected during the past summer, is a 40-ft. square structure with a 12-ft. tower on one side of the main entrance, and a vestry at rear 11 x 22

London adjustable, sill, step and window cap mould machine. They were made of one part cement to five parts of fine gravel, and were faced with a 1:2 mixture of cement and sand respectively. In making the blocks the size of the core opening was governed by the weight the walls had to carry. It is claimed that often builders of structures of this kind use blocks with very large core openings, as the machine on which they are made will only make one size of core opening in one size of block, and that in heavy structures the concrete blocks should not only have increased width but the core opening should also be varied according to the weight of the structure.

In this special case, as is shown in the accompanying drawing, the basement walls are built of 10-inch concrete blocks having a 2-inch core opening, and backed by a 4-inch solid concrete block wall, a 2-inch air space intervening the two.

Fig. 2 shows a section of the walls of the basement and a portion of the upper story. It will be noted that the concrete footings of the structure are two feet wide and one foot in depth. Fig. 4 shows the method of bonding the first course, the second course being bonded so as to overlap the first. Fig. 3 shows the method of bonding the second course in the wall, the dotted line which runs



SALEM METHODIST CHURCH, DERWENT, ONT., BUILT OF CEMENT BLOCKS. THE STRUCTURE WAS DESIGNED BY H. POCOCK, ARCHITECT AND PRESIDENT OF THE LONDON CONCRETE MACHINERY COMPANY, LONDON, ONT.

ft. in size. All the material used in its walls and the outside trimmings were made on the grounds, and it was built complete at a cost of \$6,500.

The auditorium of the building is excellently arranged, the seats radiating from the pastorium, which is in one corner, on a grade of one foot in fifty feet. Immediately to the right of the pastorium is the organ loft and choir gallery, while directly between them at the back is a door leading into the vestry. In designing the interior due consideration has been given to the acoustic properties. The ceiling, which is finished in light oak and panelled, curves from the walls and extends in horizontally four feet on all sides, from which point it rises domically three feet higher. In the basement are class rooms capable of seating 150, small library, ante-rooms and kitchen, having thoroughly under-drained concrete floors.

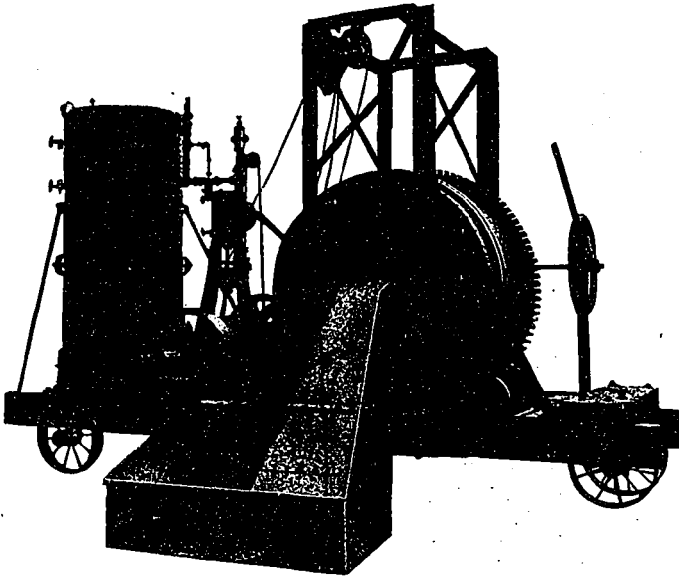
The concrete blocks used in this structure were made on a face-down adjustable block machine manufactured by the London Concrete Machinery Company of London, Ont., and the sills, steps, window caps and coping on a

vertically through the walls indicating the air chamber in the block.

This method of construction, it is claimed, insures an absolutely dry wall and one that is thoroughly tied. Several churches and other structures in western Ontario, which have been built under the joint direction of capable architects and the London Concrete Machinery Company, attest abundantly to this fact. The Hyatt ave. Methodist church, of London, is one that is particularly referred to. It is now undergoing the rigors of a second winter. During the greater portion of the first winter, on account of the grading not being properly done, a pool of water lay directly on each side of the building, but at no time did any moisture appear on the inside of the walls.

In the basement of the Salem Methodist church and the other structures mentioned, the only interior finish of the walls is that of the blocks themselves, which are vertically tooled faced, the points being neatly beaded up. The appearance is particularly good, and, it is said, in

CONCRETE MIXERS



Ransome Concrete Mixer, equipped with Engine-Boiler and Pivot Charging Hopper.

Ransome Concrete Mixers

have solved the problem of mixing concrete. Mixing it properly —with the greatest economy and with the greatest possible speed. Study a Ransome and see how it works. We will send you the necessary data for such study.

Mixers supplied, equipped for steam, electric, gasoline or belt driven.

We carry all sizes in stock for immediate shipment.

Prices upon request:

“Ransome”

CONCRETE CARTS

For Economical Handling of Concrete.
6 cubic feet capacity.



TWISTED STEEL

For reinforcing concrete.
All Sizes--All Quantities--Prompt Shipment

MEET US AT THE TORONTO
CONVENTION,
MARCH 1st to 6th,
FOR DEMONSTRATION.

F. H. Hopkins & Co

Canadian Representatives
MONTREAL

this respect that a large amount in each case was saved in painting and wainscoting.

The London Concrete Machinery Company has just issued a large, handsome catalogue, which contains a large amount of data regarding the handling of concrete for different classes of work, as well as figures and estimates which will be of general value to the contractors.

Illustrated within its covers are four different types of concrete mixers, concrete block machines, silo block ma-

decide as to what machine or equipment will most effectively and economically serve the purpose for which it is to be used.

"Time is money" is a trite saying which especially applies to the construction work, and a delay of a couple of weeks in the delivery of required machinery may run a job into bad weather which usually means a heavy financial loss to both contractor and owner.

In order to meet conditions of this kind it is not only necessary for the supply house to have a perfect organization and a complete stock of machinery, but it also means that it must have at its disposal the very best facilities to insure the immediate delivery of goods.

One of the firms in this respect, whose warehouses contain a most complete array of machinery and equipment and whose facilities for the prompt execution of all orders are unsurpassed, is the A. R. Williams Machinery Company, Limited, of Toronto. This company's extensive stock of steam engines, boilers, hoists, derrick swingers, cement mixers, etc., seemingly include every conceivable type of machine in each particular line. Steam engines are shown in both vertical and horizontal styles, plain slide valve motion and also the automatic cut off such as the Brown, Corliss and Wheelock, slow, medium and high speed types. The sizes range from 3 h.p. up to 300 h.p., suitable for all purposes. Marine steam engines are also shown in a large range of sizes.

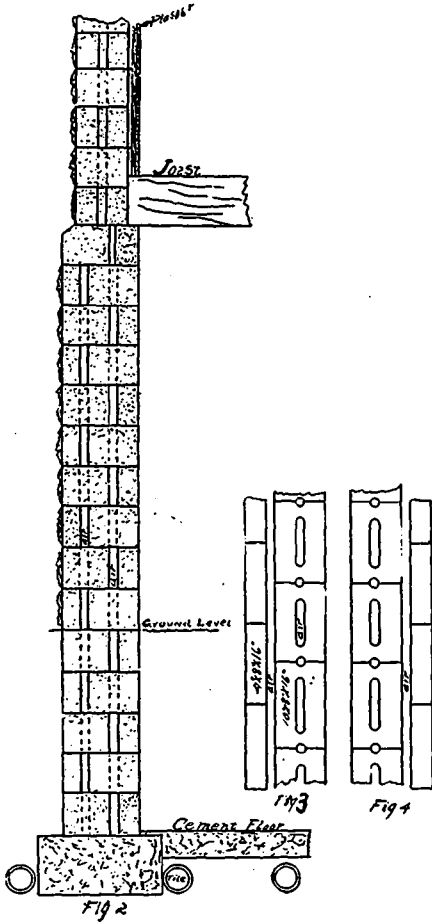
In boilers there are all types from the small vertical ones of 3 h.p. up to the largest horizontal ones of 80 h.p. each. The ordinary return tube boiler is in evidence in large numbers and also the locomotive fire box type.

A large well equipped boiler shop is operated by the firm in order that any boilers reaching them in a defective condition can be readily put into proper order so as to conform to the inspection laws. Every boiler is subjected to a severe test before being allowed to be sent out, so that any annoyance to the purchasers after receipt and installation of the same is avoided.

Another feature of the company's display are the hoists. These are to be seen in every variety from the small sizes with single drum and sheave for handling bricks, cement or mortar to the workmen on the different floors of a building in course of construction, up to the large outfits with large boiler, double drums and swinger attached. They are to be had with or without boilers as desired and with either plain valve motion or link motion for reversing as the work demands. Quite a number of hoists to be operated by horses are also carried in stock.

The magnitude of the company's warehouses can be better appreciated when it is known that they occupy two buildings—one the original structure at 95 Front St. and the other the new acquired premises on Lake St. Both of these buildings are five storey structures, and the floor has an area of 15,000 square feet. This makes a total floor space of 150,000 square feet, all of which is fully taken up with general machinery, and it is claimed in this connection that the amount of floor space is not exceeded by any one firm of machinery dealers in America.

In view of the Cement Convention and Exhibition to be held in Toronto the first week in March, the R. J. Williams Company extends an especial invitation to the contractors and visitors who will be in attendance to visit its warerooms, and to inspect the large and interesting stock of machinery designed for their especial use.



DETAIL OF WALL CONSTRUCTION AND SECTION VIEW OF BLOCKS, SALEM METHODIST CHURCH, DERWENT, ONT.

chines, silo curbs, cement brick machines, ornamental porch column and baluster moulds, pier block moulds, lawn vase moulds, head stone moulds, grave post moulds, tile and sewer pipe moulds, rock crusher, sill step and window cap mould, fence post mould, hitching post mould, side-walk tools, cement working tools, wheel barrows and many other cement working appliances. This catalogue will be mailed to any address upon request.

CONTRACTORS' MACHINERY.

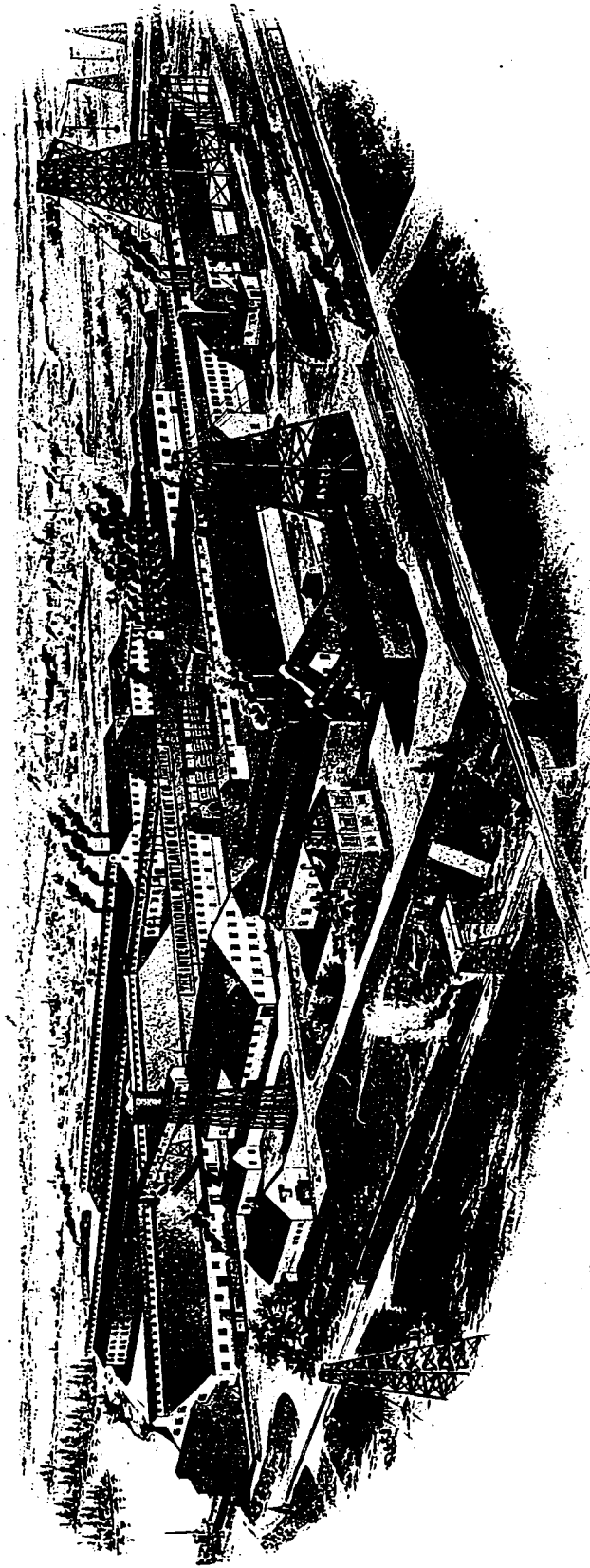
THE EXIGENCIES of the building trade are many and varied, and the quick delivery of contractors' and builders' machinery is often a very important matter. Where to obtain the equipment needed and how to get it on the job in the quickest possible time is a vexatious problem with which builders are frequently confronted. At a time like this, to be able to reach a central shipping point and to personally select the apparatus best suited to the requirement of the job in hand, is a decided advantage. It enables the prospective buyer to quickly and thoroughly compare the various outfits, and to readily

FENESTRA STEEL SASH.

A NEW FEATURE in window construction which is now being introduced to architects, engineers and contractors, and which gives every promise of attaining a wide popularity, is the Fenestra Steel Sash manufactured by the Expanded Metal and Fireproofing Company, Limited, Toronto.

The universal success with which this sash has met in

International Portland Cement Co., Limited



FACTORY OF THE INTERNATIONAL PORTLAND CEMENT CO., LIMITED, HULL, QUEBEC, SHOWING EXTENSIONS MADE TO THE PLANT DURING THE YEAR 1908. DAILY CAPACITY, 3,000 BARRELS.

INTERNATIONAL PORTLAND CEMENT is unapproached by any other brand of Cement on the market for Uniformity, Strength, Purity and Perfection. PRACTICAL TESTS prove it.

Ottawa

Canada

Great Britain and continental countries, where it has become a recognized standard, is readily understood when its many excellent points are taken into consideration. It not only combines a handsome light appearance with great rigidity and strength, but as to cost it compares most favorably with the wooden sash, while its fire resisting qualities are unsurpassed.

Another advantage of the Fenestra Sash is that it is adapted to any character of building, from the residence or church to the largest industrial and office buildings.

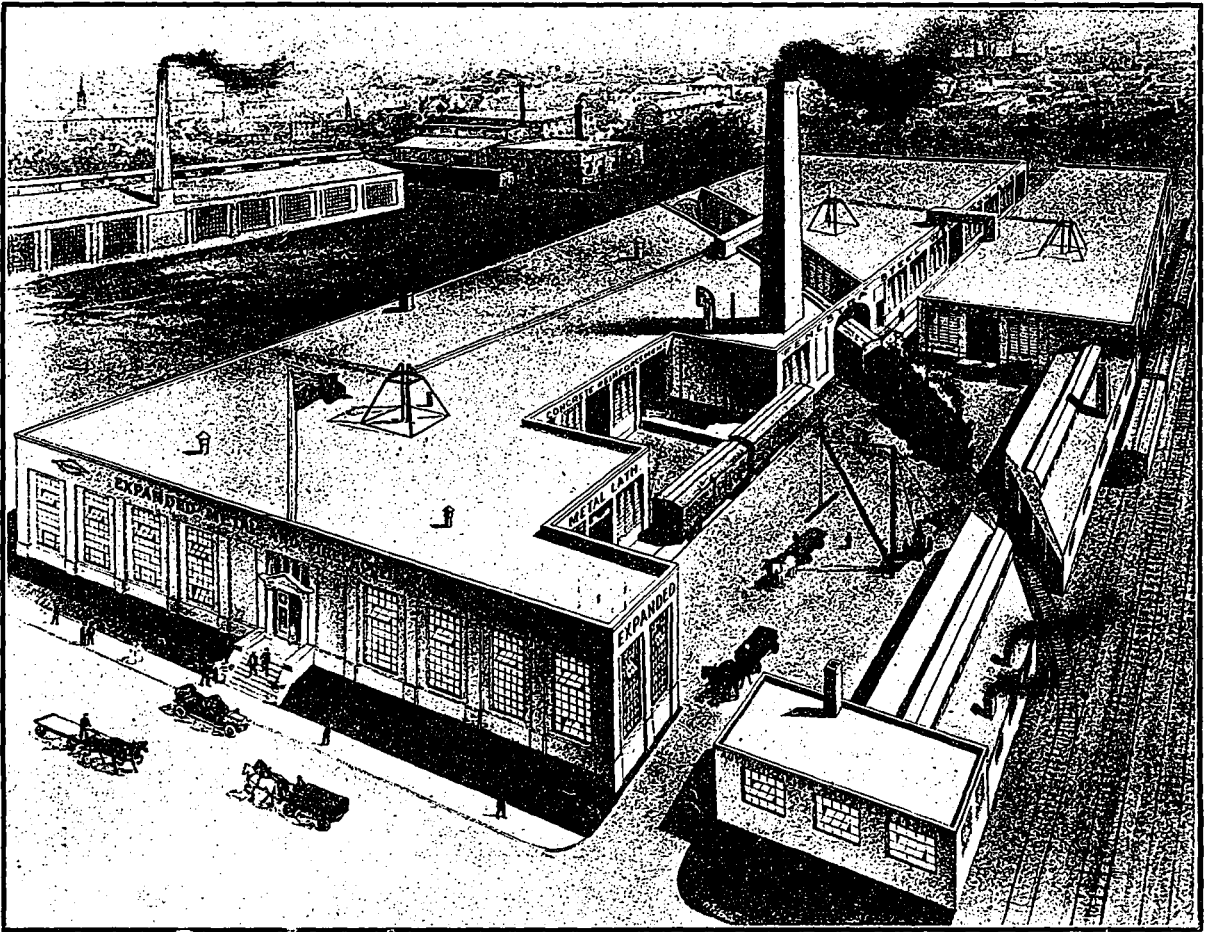
Three excellent examples of its use in manufacturing buildings are to be seen in the plant of the Sunbeam Incandescent Lamp Co, the factory of R. Bigley, and in the plant of the Expanded Metal and Fireproofing Company itself. All of these are large modern plants which were erected in Toronto during the past year.

The construction of the Fenestra Sash is in itself very interesting. All intersections of members are securely made. A small slot is made in the vertical bar, just sufficiently

The Expanded Metal and Fireproofing Company's new factory on Fraser ave., Toronto, is one of the most perfectly appointed manufacturing institutions in the Dominion. Both in design and construction it demonstrates the possibilities in factory construction with the use of the materials the company manufactures.

It is a concrete building in its entirety, the walls and columns which support the roof being built according to the reinforced method, while expanded metal is used extensively on the interior. The window arrangement leaves little to be desired, as it permits of a maximum degree of light in the interior.

A feature of the plant and one which is being adopted in quite a number of modern factories, is the mezzamono floors in both the steel sash department and the expanded metal lath and reinforcing departments. These are enclosed with glass and occupied as offices by the foremen who can command a complete survey of the shops over which they have charge.



THE NEW FACTORY OF THE EXPANDED METAL AND FIREPROOFING COMPANY ON FRASER AVE., TORONTO.

large to allow the flange of the horizontal bar to pass through. The mould portion is then pressed out so as to fold closely the mould portion of the horizontal member, which is cut only in one place, a small niche being made to allow of it being firmly locked in position. Owing to the amount of metal removed in making the joint, being comparatively infinitesimal, this allows the use of the highest possible section, making a great saving in weight of material and cost of sash.

A noteworthy feature of this sash is that it can be designed with an area of ventilation in the following styles: centre hung, pivoted at sides or at top or bottom; and side hung, top hung or bottom hung, to swing inwards and outwards.

Another line the company is manufacturing in this connection is economic and standard steel casements, which have numerous good points to commend them to the trade.

The plant is heated by a forced draft system, a suction fan drawing the air through steam coils and forcing it through galvanized iron duct to the different parts of the factory, where it is discharged.

All shafting in the two departments is driven by induction motors, which are also used to drive the motor of the heating fan.

The lavatory is of the most sanitary type, and every consideration has been given to the welfare of the employees.

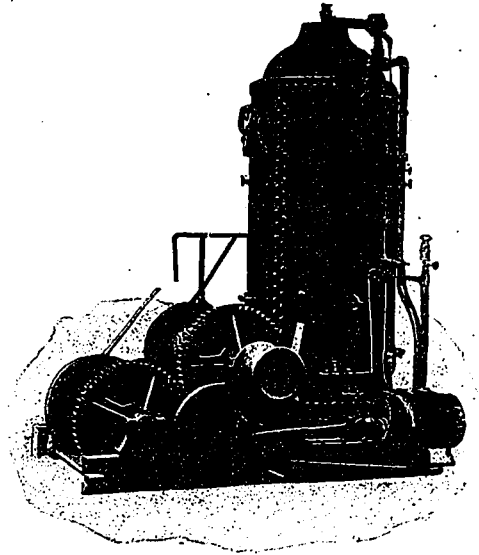
The company has ample yard and side track facilities to enable them to make prompt shipment to any part of the country.

The company will have an exhibit at the coming Cement and Concrete Show in Toronto, at which the merits of its method of reinforcement and expanded metal will be explained to the delegates and visitors. The Fen-

Hoisting Engines

For all Purposes

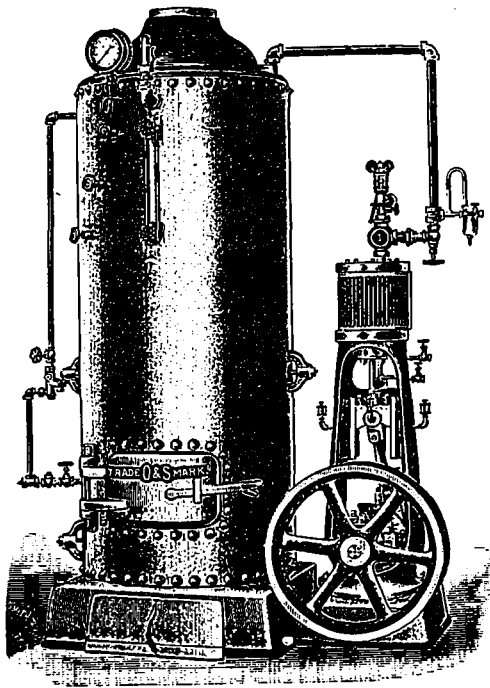
Furnished with or
without Boilers



Concrete Mixers

Furnished with either engine
and boiler or gasoline engine.

Visitors to Cement Show should not miss seeing our large stock of Hoists, Engines, Boilers, Concrete Mixers, General Machinery and Supplies.



Vertical Combined Engines & Boilers

in any size

We have for sale Contractors' Second-Hand Machinery.

A. R. Williams Machinery Co., Limited

95 Front Street West, Opposite Queens Hotel

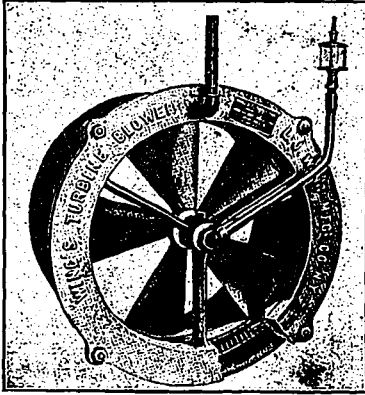
Toronto, Ontario

extra steel window sash will form part of the display, and the admirable manner in which it combines with all forms of concrete construction will readily be appreciated by all those who are in attendance.

TURBINE BLOWERS.

SOMETHING with which architects and builders are always concerned is the problem of ventilation, and any apparatus which will facilitate its solution is always a matter of utmost interest.

An apparatus which has many salient features in both its general character and method of operation is shown



WING'S TURBINE BLOWER, MANUFACTURED BY THE LAURIE ENGINE AND MACHINE COMPANY, MONTREAL.

in the accompanying illustration. It is the Wing's Turbine Blower, manufactured by the Laurie Engine and Machine Company, Limited, of Montreal, and is something which merits a thorough investigation when a system of ventilation is being considered

The blower consists of the well known "Wing Disc Fan," to which is connected an impulse turbine engine of simple construction. One of its many features are the fan blades which are fastened to the inside of a ring carrying the turbine buckets or vanes on the outside, so that the fan and vanes are literally one piece, and as the steam acts direct on them, the centre shaft or spindle is a fixture around which the blades revolve. No power is transmitted by the shaft, and the only friction loss is that due to the weight of the blades, which, as they are built of a special alloy, are quite light. Ample provision is made for lubri-

required to drive it passes in under the grates with the air thoroughly mixed. This gives the best combustion at lowest cost, and the steam so used helps to preserve the grates by reducing the clinkers and keeping open the entire grate surface.

These fans are built in four sizes, 12-in., 16-in., 20-in., and 24-in., and can be applied to boilers ranging in size XX from the smallest up to 400 horsepower. The larger sizes can also be installed in pairs, thereby doubling their range.

In addition to their use for mechanical draft, they can also be applied to such purposes as that of ventilation, drying, removing heat, steam, vapors, dust, etc., and are also particularly available for cooling towers, humidifying the air in cotton, silk, or other mills, etc. For ventilating of mines, tunnels, factories, theatres, etc., the fans can be run with compressed air acting on the buckets instead of steam, and is an ideal system of supplying cool, fresh, pure air.

Additional information regarding the many excellent points of the Wing Turbine Blower may be obtained from the Laurie Engine and Machine Company, Montreal.

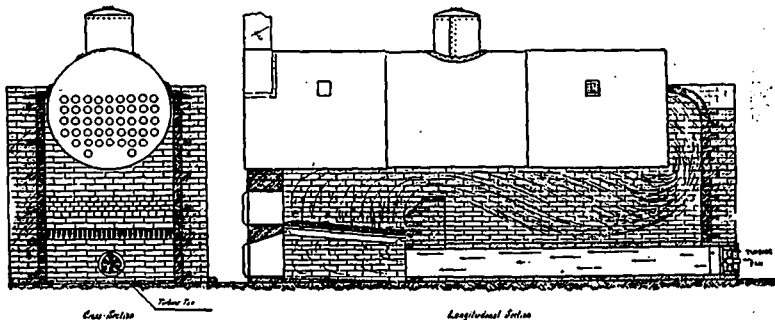
MONTREAL FIRM MAKES IMPROVEMENT

EXTENSIVE improvements are being made to the offices and showrooms of the Calkin Tile & Mosaic Company, 458 Bluery St., Montreal, which when completed will give the firm many additional advantages for the displaying of its goods and the transaction of business. The new arrangement, in general, will be ideal as it provides a large public reception room connecting with the showrooms and offices on either side.

Another improvement which the company will shortly undertake, in order to better meet the demand of its growing business, is the erection of a large warehouse, off Bluery St., which will be devoted for wholesaling purposes, and also a large shop which will be used for the manufacturing and cutting of all kinds of mosaic work. The building will be 143 x 52 ft. in ground area, and will be of brick construction with concrete floors. Messrs. Hutchinson and Wood, Montreal, are the architects, and plans will be ready about March 1st.

The "Dago Motor" which greatly reduces the cost of finishing mosaic floors, etc., is the property of this company, and is the only machine of its kind in Canada. The possession of this machine, it is claimed, enables the company to execute contracts in less time, at less cost and with more satisfactory results than has been customary in Canada heretofore.

The Dago Motor is the invention of the president of the company, Mr. S. H. Calkins, who claims that the old way of laying mosaics cannot possibly compete with



CROSS AND LONGITUDINAL SECTION SHOWING THE LOCATION OF WING'S TURBINE FAN AND THE DIRECTION IN WHICH THE AIR TRAVELS.

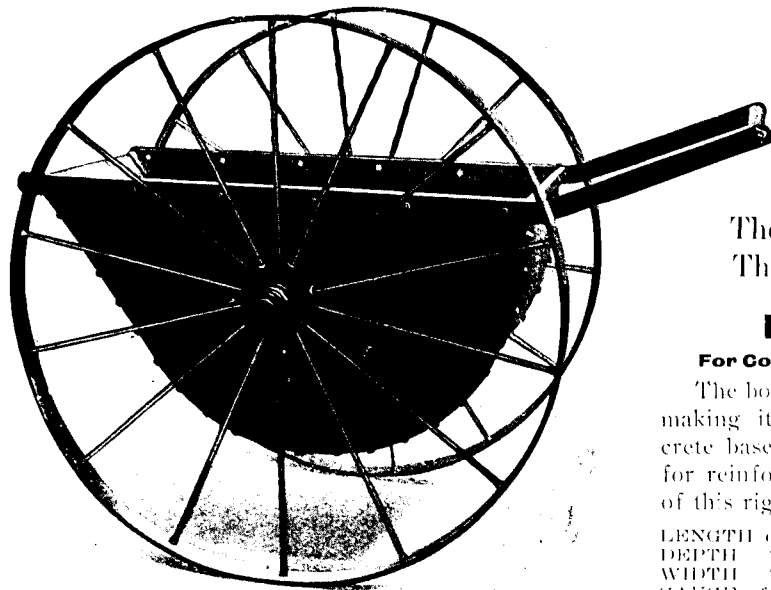
cating, and after being installed this is the only thing that requires the occasional attention of the engineer.

The fan is easily installed, each boiler having its own individual installation, and the small amount of steam

this modern method on account of the great reduction in labor effected.

Designs, samples and estimates will be forwarded by the Calkins Tile & Mosaic Company upon request.

The Best Your Money Can Buy



Consider The Quality
The Workmanship
The Price

These cuts show a few specials.
They cannot be improved on.

No. 1 Concrete Cart

For Contractors, Cement and Concrete Workers

The bowl is so hung that it can be turned bottom up, making it especially convenient for laying the concrete base for sidewalks, reservoir bottoms and floors for reinforced concrete buildings. A brief description of this rig is as follows:

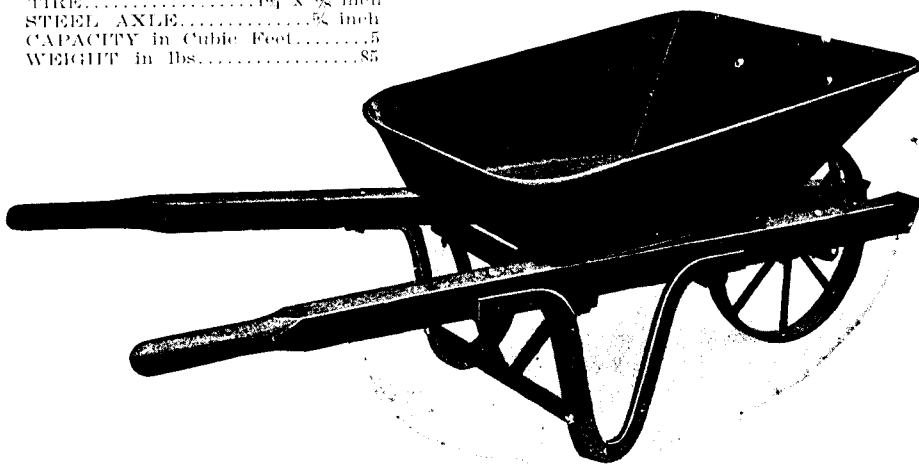
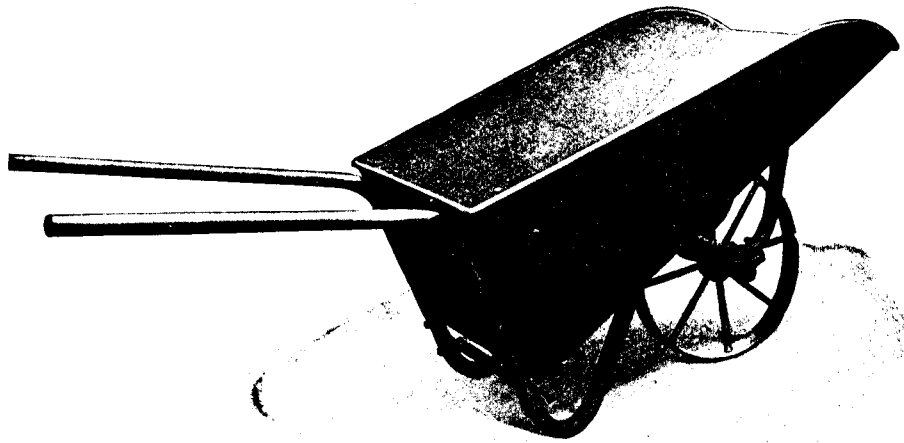
LENGTH of Body.....39½ inch	HANDLE.....1 inch gas pipe
DEPTH " ".....20 inch	WHEELS.....12 inch dia.
WIDTH " ".....21 inch	.....2 in. tread
GUAGE of Steel.....No. 12	AXLE.....1¼ inch cold rolled
LENGTH over all.....58 inch	WEIGHT.....225 pounds
WIDTH over all.....32 inch	CAPACITY.....6 cubic feet

H--22, LANSING TUBULAR

especially adapted for Cement and Concrete. It has stability and carries its large load easily and without strain on the arms for the reason that the bulk of the load is below wheel bearings and handles. On a large variety of work this barrow will be found a time and money saver.

A brief description follows:

LENGTH over all.....64½ inch
WIDTH " ".....25 inch
HEIGHT " ".....28 inch
TRAY LENGTH.....38½ inch
" WIDTH.....25 inch
" DEPTH.....15½ inch
HEIGHT at Nose.....26 inch
GUAGE of Steel.....No. 16
WHEEL Diameter.....16 inch
TIRE.....1¼ x ¾ inch
STEEL AXLE.....¾ inch
CAPACITY in Cubic Feet.....5
WEIGHT in lbs.....85

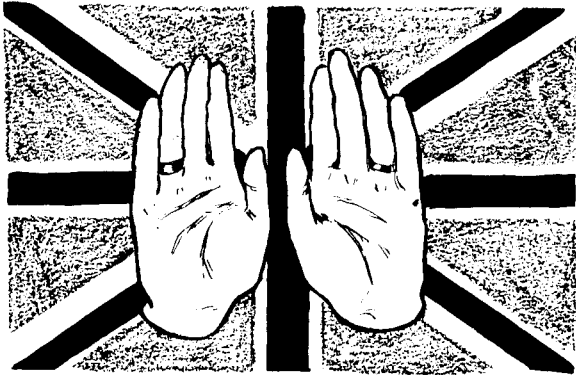


F--2, LANSING STEEL TRAY

with angle steel legs and braces is similar to the No. 11-20 as to size of tray and capacity, and like it, is an excellent barrow for mortar and wet concrete.

Tray measures 34 x 26 in. and is made of No. 16 specially prepared steel reinforced at corners and strengthened at top by a 5-16 in. steel rod. Heavy steel wheel 16 in. in diameter, 1 3-4 x 5-16 in. tire and runs on a steel axle firmly held to underside of handles by heavy lugs. Capacity 4 cubic feet, weight per dozen, 76 lbs.

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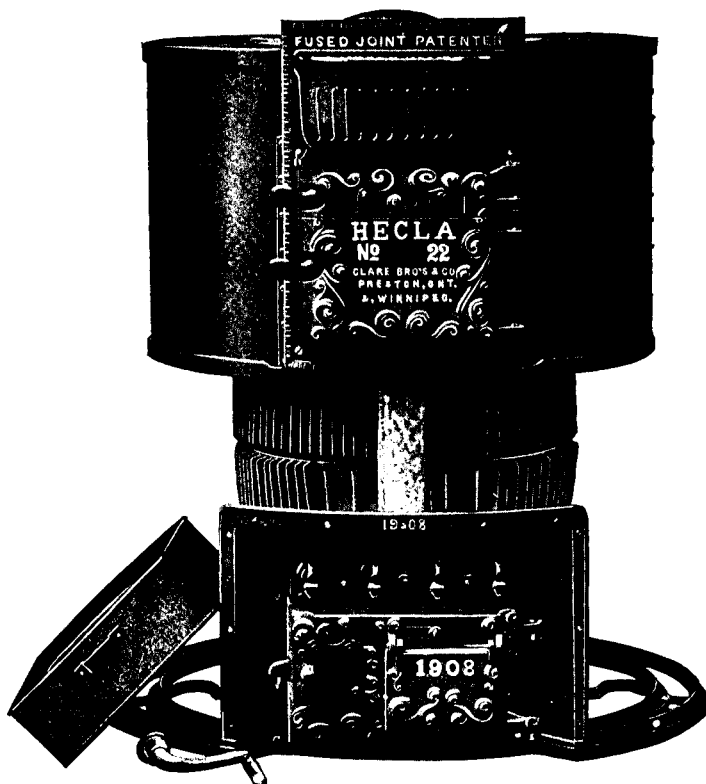
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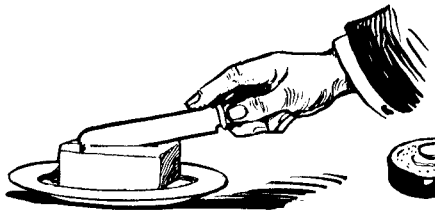

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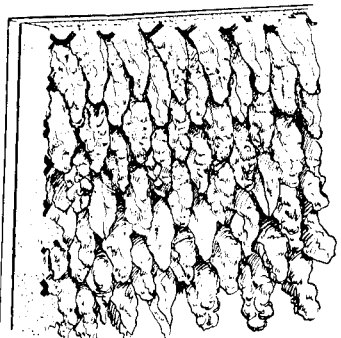
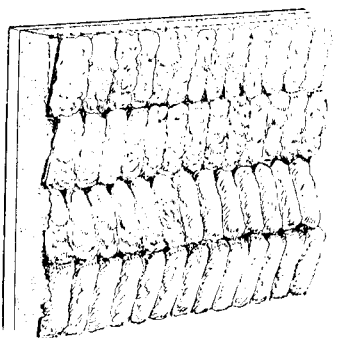
You cut your butter with the edge of the knife.

And you spread it with the flat of the knife.

Demonstration:—Herringbone is the only metal lath which is reinforced with ribs lying edgewise to the thrust of the trowel. The ribs are the joists of the lath. No ribs—no joists. No joists—no stiffness. Herringbone lath stabled to wood will span sixteen inches, even on ceilings. No furring needed. It don't bag. It takes less plaster.

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You cut your plaster with the edgewise filament.

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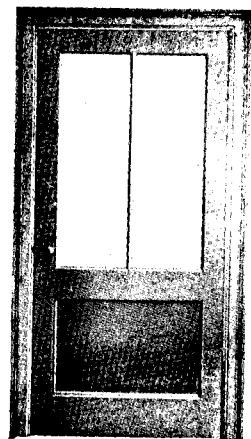
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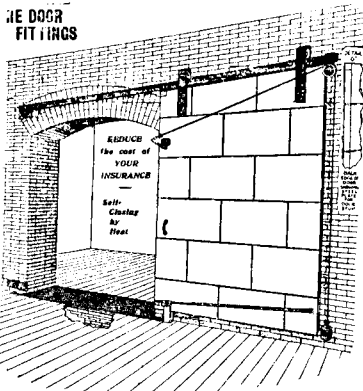
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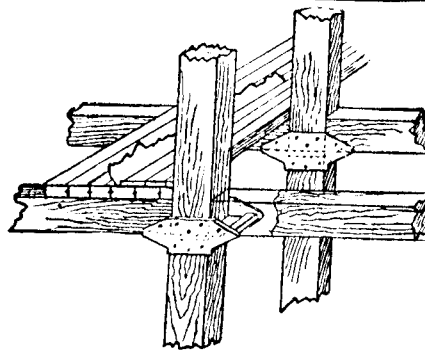
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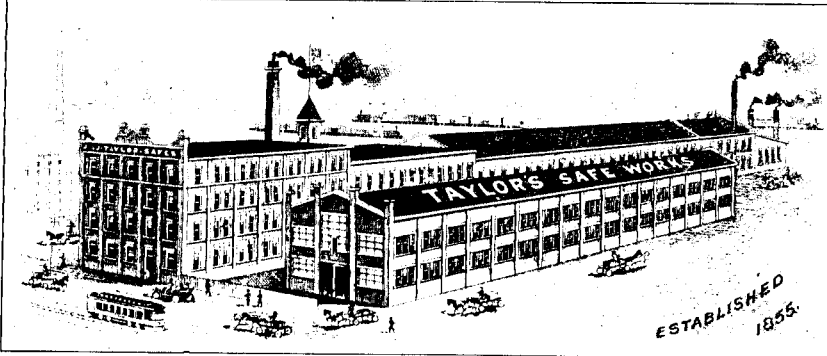
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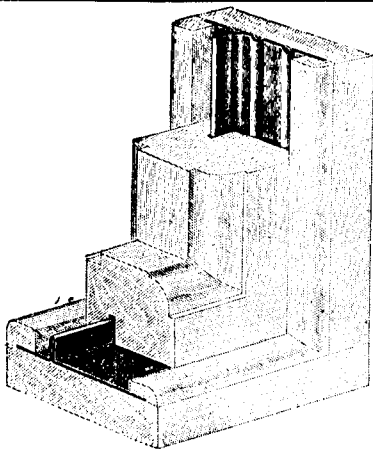
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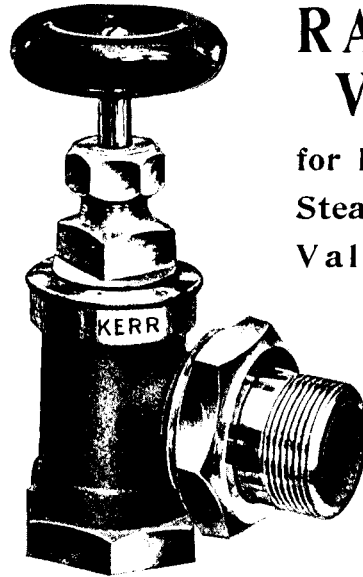
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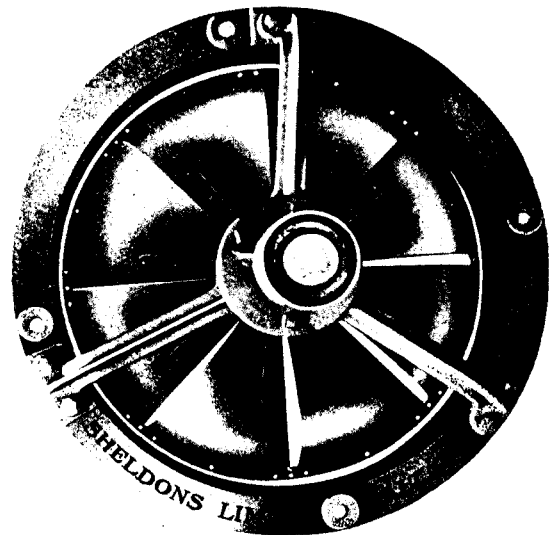
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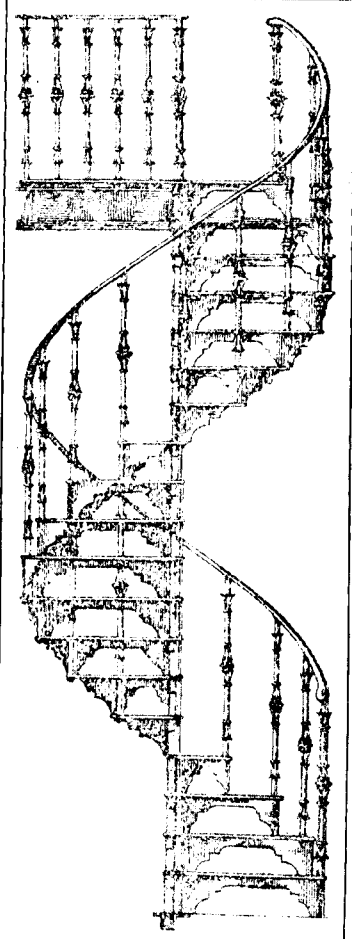
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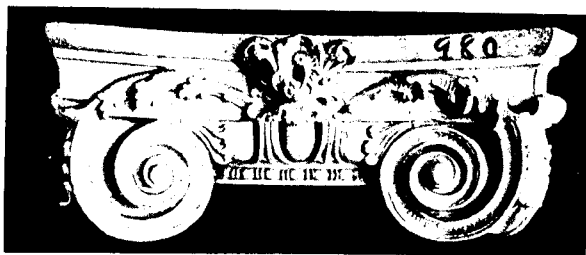
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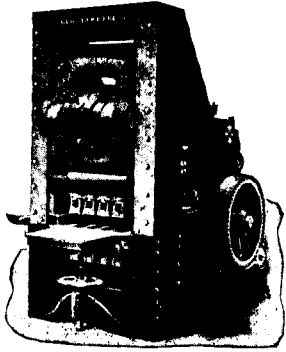
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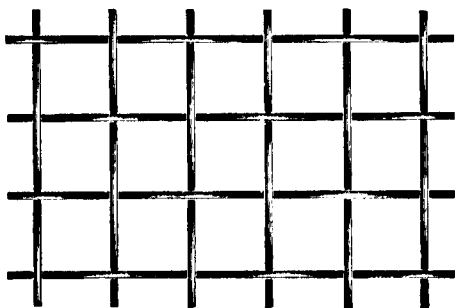
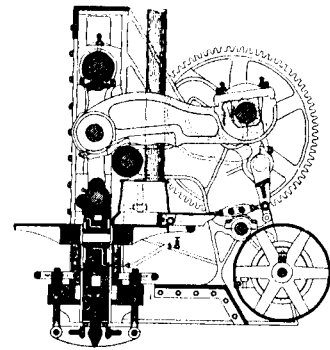
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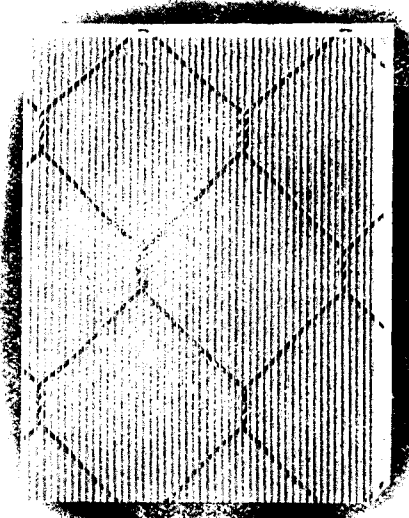
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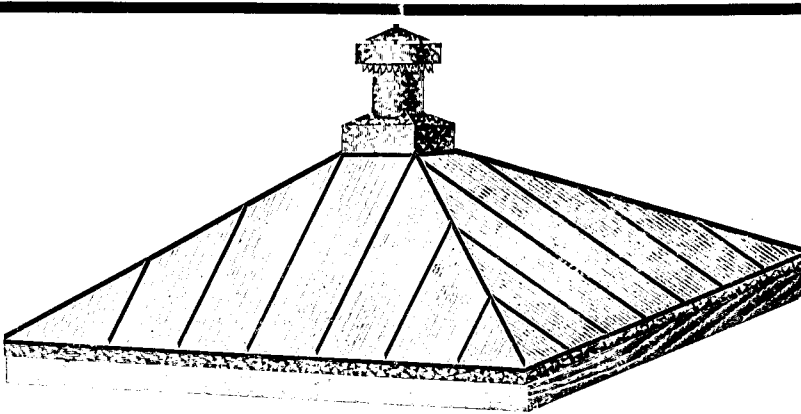
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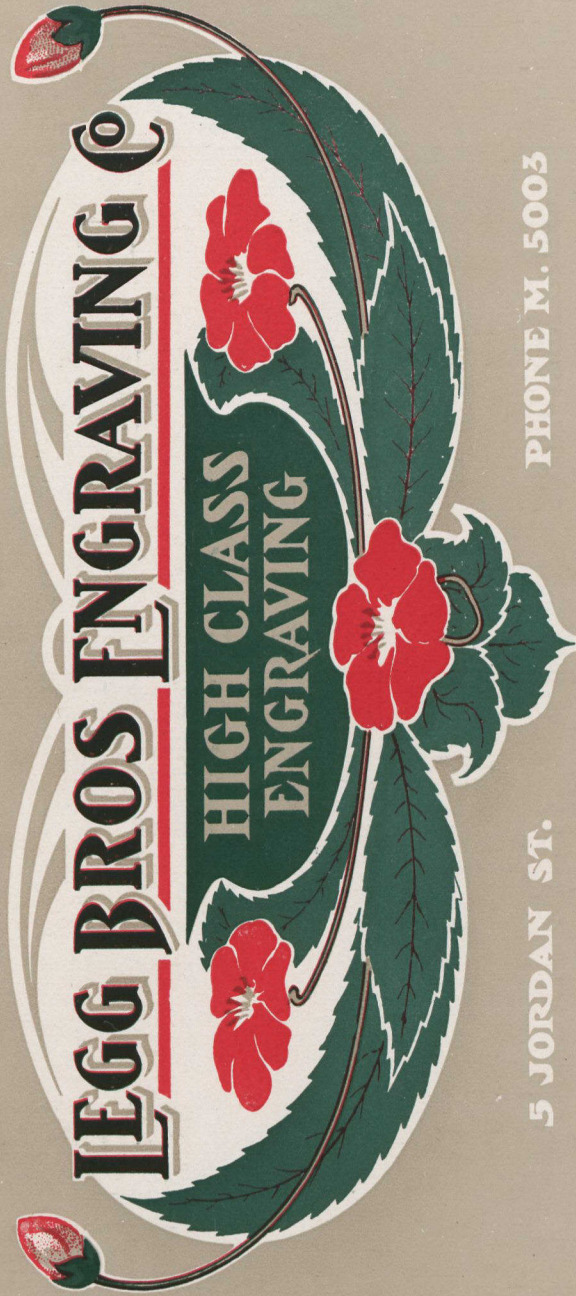
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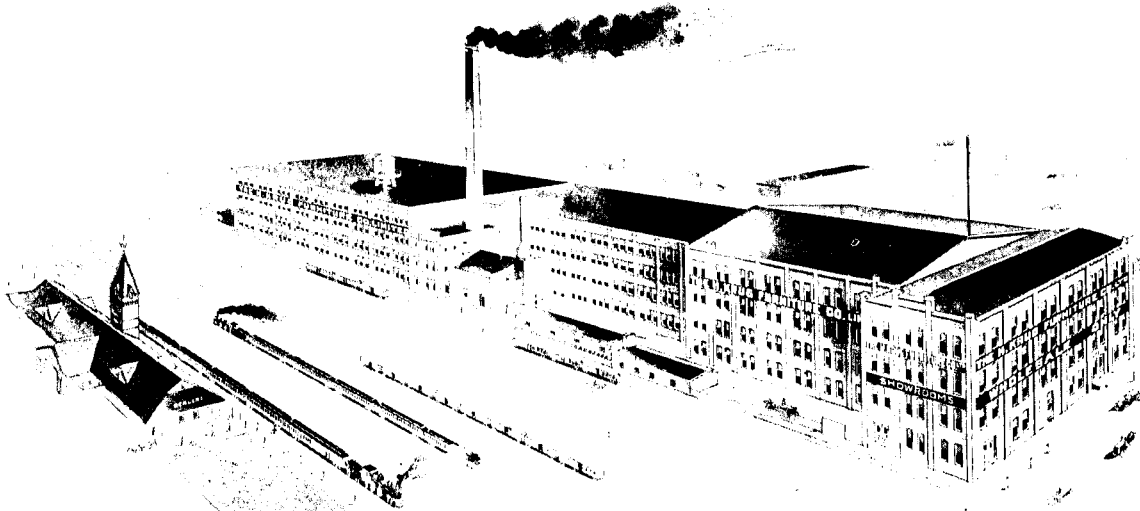
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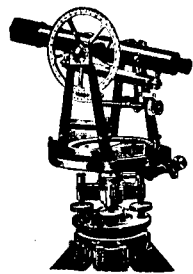
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