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CANADIAN CONTRACT RECORD

A Weekly Journal of Engineering, Public Works, Tenders, Advance Information and Municipal Progress

"TENDERS" AND "FOR SALE" ADVERTISEMENTS PAGE 22

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BRITISH TRADE WITH CANADA.

That Canada is experiencing a period of phenomenal growth is realized not only on the American continent but also across the water, particularly by those firms who have been angling — often with meagre returns— for a share of Canadian trade. The subject is thus discussed in a recent issue of "The Electrical Magazine," London.

Experience proves that where this country is in competition with the foreigners for Canadian orders, the most frequent cause of the settlement away from the British house is on the score of delivery. This is a point which cannot be emphasized too strongly. It would seem that—and particularly for the smaller classes of machinery and supplies — a Canadian stock or even a branch works is essential for the British manufacturer to maintain a continuous profitable business in the Dominion.

From time to time we receive enquiries from readers as to the advisability of the formation of branch factories in Canada. We can here state definitely that in the great majority of cases the establishment of such branches will prove highly successful.

It is difficult to the stay-at-home Englishman to realize the immense rate at which civilization and urban conditions are advancing in Canada; perhaps the quickest way to grasp the real progress made is to compare an up-to-date map of the country with one of ten or even five years ago. One is inclined to regret the pains of having mastered geography at school — there is so much regarding this Dominion of Canada to be unlearned.

Returning now to the subject of Canadian branch works, we see that the great progress made is but the very small beginning in a vast territory in the further making and maintenance of which an unlimited scope for labor exists for many generations to come. In the course of correspondence with manufacturers we have noticed not infrequently the expressed disposition to postpone active work in Canada "until the country is further developed and offers a more extended market." Surely this is an unreasonable attitude to adopt, and the more one considers the matter in detail the more impossible does it become to justify it.

The towns springing up on every hand are not mere settlements or camps — they are permanent institutions for which nothing will do which is less than the very best and latest in equipment and arrangement. The most advanced practice in civil and municipal engineering is followed. In this systematic building up of towns and cities there is brought to bear, from the beginning, a full sense of the financial or business side of municipal management. In the pursuance of this policy it is a fact that rising Canadian towns welcome the advent of factories into their midst; and, lest any misapprehension as to motive should arise, let us hasten to say that they offer substantial inducements to the manufacturer in the shape of remission of taxes, or cheap land, or even financial support to the contemplated works venture. The fact is that these manufactories are wanted by the country for the sake of their output; the importing of goods, with the consequent delay and high ruling prices, hampers the Canadian. Factories will continue to be started at an ever-increasing rate, and the municipal owners know the immense value of labor-employing concerns to any surrounding or adjacent township: hence this competition for the manufacturer's favor.

General transport facilities by railroad, tramroad and canal already exist in a very complete form, and the active work of extending this essential proceeds without abatement. Capital is readily found for the furtherance of personal enterprise in the manufacturing field; there are partnerships entered into regularly between the experienced British manufacturing man and his moneyed colonial brother. In short, there is everything to be said in favor of the British firm establishing a Canadian works centre. Morever, as will have been gathered, there is also great certainty in the successful outcome of individual enterprise in works ownership. This latter phase is one to which the young engineers of this country should give the closest consideration; Canada undoubtedly offers much to the well-skilled engineer, and in this trade, as in many others, it gives a full answer to the oft-asked question, "What shall we do with our boys?"

CO-OPERATIVE EMPLOYMENT.

In an article on the relations between labor and capital, by L. V. Makovski, in "Potential Riches of British Columbia," some interesting observations are made by the author on the subject of the possibility of securing more harmonious relations between labor and capital. "At present," says he, "when trouble threatens between employer and employed the union steps in and sends a delegate to the employer. This delegate is often a man of no education, and yet is entrusted with a mission requiring high diplomacy. Is it to be wondered that the employer resents such interference, and determines only to yield the demands made if forced to do so? Whereas if his employes requested that a meeting might be held to discuss the position, and from that meeting a committee of employers and employes could be formed to find a satisfactory solution of the difficulty, the employer would feel that he was being fairly treated and the employes would realize that their intests were in safe hands.

"This leads naturally to the second question. Is co-operation feasible?

"The very fact of mutual interests being amicably discussed would lead insensibly to co-operation. From the employe feeling he had a practical interest, it would be but a short step to wishing for a monetary interest in his employer's business. The more interest his employes showed in his business the more interest the employer would be likely to give them. Co-operation is not a very difficult problem to solve where the employe looks on his 'job' as a permanence. Co-operation would undoubtedly solve much of the present labor difficulty. It gives a man a stake in his work. It could be supplied in varying forms to almost any trade. A system of bonuses is not at all on the same level as true co-operation, unless the bonuses given are in direct ratio to the profits earned. Perhaps the finest example of co-operation and its effects is shown by the South Metropolitan Gas Company, in London, England, where the workmen not only have a direct share in the profits earned, but are represented on the board by directors selected from among themselves.

"It would appear a great problem to introduce a system of co-operation in a lumber mill, for instance. But such a problem, though difficult, would not be impossible of solution. It might take a considerable time to work it out successfully, but the increased efficiency of the mill, and the immunity it would enjoy from labor complications, would amply repay the time and trouble taken. It is a matter of study and patience on the part of the employer, and of an honest effort on the part of the employe. Let labor as an organized body turn its attention towards this problem of co-operation, and a great deal of the bitterness at present apparent between labor and capital would disappear naturally. Broadly speaking, co-operation should be based on:

"1. A certain percentage of the net profits earned by the business.

"2. The sum thus set aside should be divided among the employes.

"(a) In ratio to the wages earned by each employe.

"(b) Plus an extra percentage according to the length of service.

"(3) The direct representation of the employes in the management of the business.

"Many things have contributed toward the great unrest and the strained relations now existing between labor and capital on the American continent, and the difficulty is that it is impossible to place a finger on any special act and diagnose the disease which has caused the irritation. It has been a succession of small ailments which have poisoned the health of the whole body."

LABOR MAKES REQUESTS.

A deputation representing the Trades and Labor Congress of Canada waited on Sir Wilfrid Laurier and Hon. Rodolphe Lemieux on Friday last to present a number of requests for legislative action in the interests of the laboring classes. The deputation was composed of Messrs. Alphonse Verville, M.P., president of the Congress; Jas. Simpson, vice-president; P. M. Draper, secretary, and J. G. O'Donoughue, solicitor.

Among the requests urged were the appointment of a Cabinet Minister to devote his whole time to the work of the Labor Department; a Dominion workers' compensation act to apply to railways; an eight-hour day bill; increased pay for letter carriers and telephone operators; a Government system of old-age pensions; amendments to the Lemieux Act so as to shut out strikebreakers during investigation by the Board of Conciliation; abolition of the bonus system to all immigrants; exclusive of Hindoo immigrants, and the adoption of an adequate policy of land for the settler, and not for the speculator.

In reply to the deputation Sir Wilfrid Laurier and Hon. Mr. Lemieux promised to give careful consideration to all the matters brought to their attention.

In regard to Oriental immigration the Premier noted that the Hindoos were now practically shut out, under the recent immigration regulations, while the Japanese question was satisfactorily settled. As to the appointment of a Minister of Labor, he thought the Department was now being most efficiently looked after, but if the Cabinet was increased then the Labor Department should have a Minister who could devote his whole time to the work of the Department. The Government, continued Sir Wilfrid, were considering the question of investigating by Royal Commission the needs of technical education in Canada.

THE WIDTH OF ROADWAYS.

The width of roadways was discussed recently in a paper read before the League of Iowa Municipalities by Mr. Andrew Rosewater, city engineer of Omaha, who believes that a great waste of money is caused in many cities by unnecessary width of paving. On the average, cities have about 20 miles of street per square mile of area, which, if 30 feet wide, would mean over 350,000 square yards of pavement. At $2 per square yard this means an expenditure of $700,000. Traffic on residence streets is much less than is generally supposed, the heaviest in Omaha probably not exceeding a given block.

Many residence streets which several years ago were made 40 feet between curbs have later been reduced to 30 and even 20 feet without any objectionable results, but with a very large saving in cost for paving. One of the chief objections raised against the 20 foot roadways was that teams could not turn round in them, and that nothing less than 30 feet would permit of the turning around of a fire engine, but in reply Mr. Rosewater stated that for such traffic as used residence streets it would be no great hardship to travel a block to the nearest intersecting street. He did not advocate decreasing the total width of residence streets, but would assign 50 feet as a minimum width and would prefer a width nearer 100 feet; the space not occupied by either street or sidewalk paving to be sodded, planted to trees and treated as parkways.

The Heating *and* Ventilating *of* Stores

The commercial value of a comfortable atmosphere in large retail stores is being recognized by the owners of such establishments in the improved health and more energetic demeanor of employes, to say nothing of the greater attractiveness and comfort of a well-warmed and ventilated store to customers. The additional expense of such a system may be charged up to good advertising in most cases without considering the greater comfort of employes, if one wishes to look at it from that standpoint.

The common method of warming this type of building has been by the use of direct steam, and this system is still used to a great extent in stores of small and medium size, and especially in buildings where the first floor is devoted to stores and the upper floors to offices.

In cases of this kind cast iron radiators are placed along the outer walls, care being given to the matter of avoiding fixtures as well as to the best location for heating. In city blocks the exposed walls are usually at the front and rear only, the side walls being protected by adjoining buildings.

Show windows are usually kept free from radiation on account of appearance, unless the nature of the goods displayed is such as to require a comparatively high temperature.

Radiators, instead of being placed in the window spaces, are located against the building wall just inside

TABLE

Nominal Size of Fan	Diameter of Wheel	Revolutions per Minute	Cubic Feet of Air per Minute	H.P of Motor
60	3 feet	390	4,500	2
70	3½ "	330	6,000	3
80	4 "	290	8,000	3
90	4½ "	260	11,000	4
100	5 "	230	12,500	4
110	5½ "	210	16,000	6
120	6 "	195	22,000	7
140	7 "	170	30,000	9
160	8 "	150	35,000	10
180	9 "	130	50,000	13
200	10 "	120	60,000	16

$$S = \frac{C \times T}{55 \times E}, \text{ in which}$$

S = square feet of surface in main coil,
C = cubic feet of air warmed per hour,
T = degrees rise in temperature,
E = efficiency.

TABLE 2

(Velocity of Air Through Heater 800 Feet per Minute)

Rows of Pipe Deep	Temperature to Which Air Will Be Raised From Zero		Efficiency of Heating Surface in Heat Units Per Sq. F. Per Hour	
	Steam Pressure in Heater		Steam Pressure in Heater	
	5 Lbs.	20 Lbs.	5 Lbs.	20 Lbs
4	30°	35°	1,600	1,800
6	50°	55°	1,600	1,800
8	65°	70°	1,500	1,650
10	80°	90°	1,500	1,650
12	95°	105°	1,500	1,650
14	105°	120°	1,400	1,500
16	120°	130°	1,400	1,500
18	130°	140°	1,300	1,400
20	140°	150°	1,300	1,400

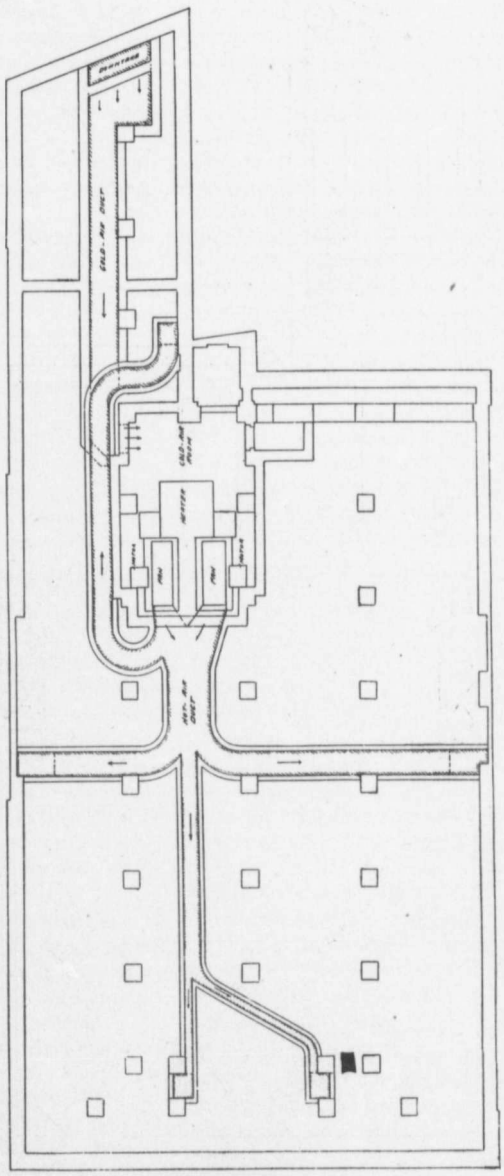


Fig. 1.—Plan of Sub-Basement.

of the windows, or a low type is placed in front of the broad ledge or sill, but not projecting above it. In older buildings it is common to find circulation coils along the walls and also supported upon counter fronts. This gives an unsightly appearance, although the cast iron wall radiator may sometimes be used to advantage in this way without interfering with the architectural effect to any great extent.

This arrangement is not usually necessary except in the case of counters which are carried across in front of an entrance or for a short distance along the fronts of the counters, forming a central aisle in front of an entrance. Even in cases of this kind it is often possible to bank the heating surface at each side of the entrance, and by supplying a generous amount of radiation in the vestibule to offset the effects of cold drafts through the doors. The cooling effect of skylights or of large windows starting at some distance above the floor is best over-

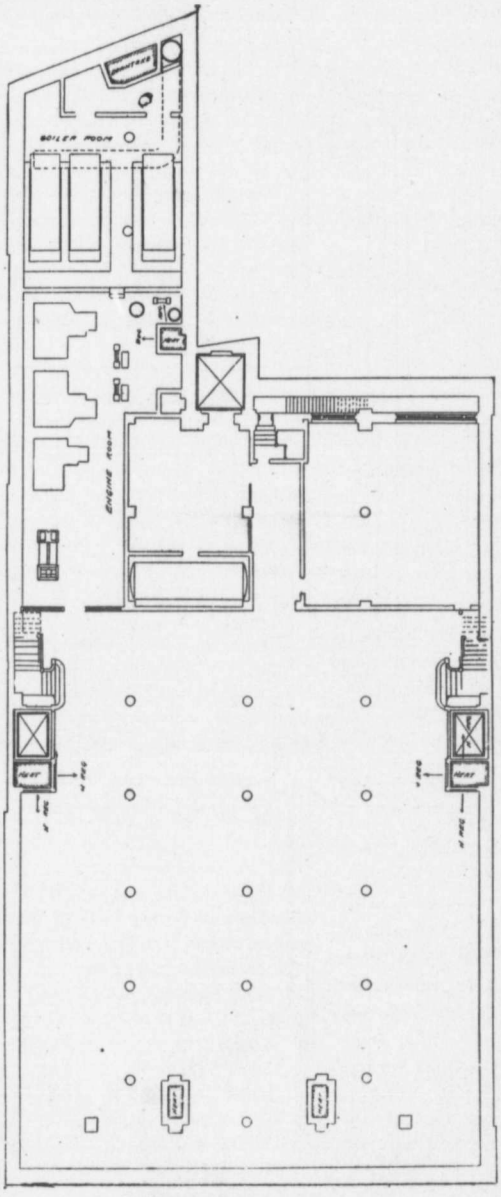


FIG. 1.—BASEMENT FLOOR.

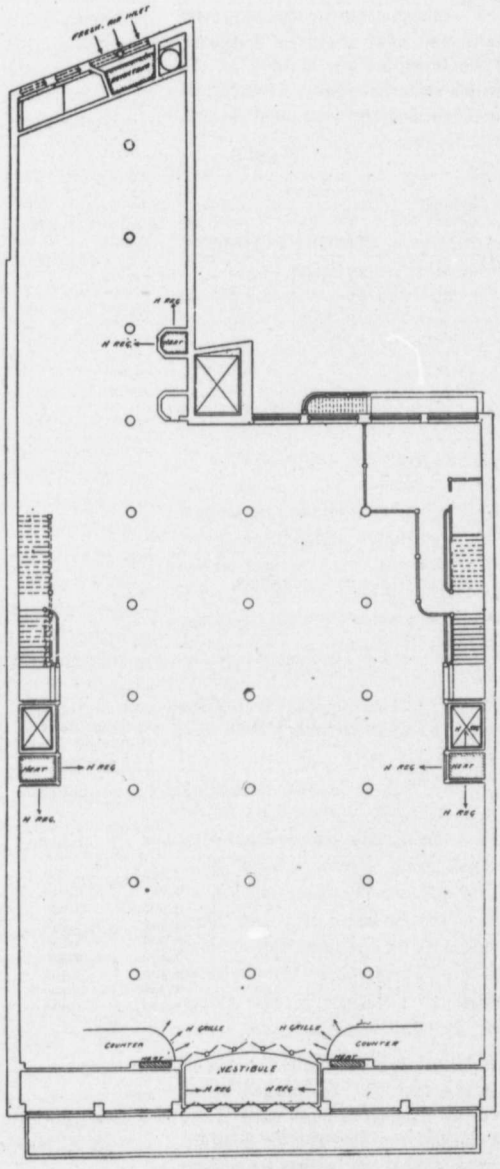


FIG. 3.—MAIN FLOOR.

come by placing a certain amount of heating surface just below them and so counteracting the falling currents of cool air before they reach the floor. In the case of a skylight three or four lines of 1-inch pipe around the inside perimeter will usually be found sufficient for this purpose. While direct radiation may give satisfactory results so far as the warming of a building is concerned, it does not provide fresh air for ventilation. In stores where the cubic contents of the rooms are large compared with the average number of occupants, very satisfactory results are often obtained by the inleakage of fresh air around windows and through the opening of doors, but in modern city stores of large size artificial ventilation should always be provided by means of fans. The heating may be done independently of the ventilation by means of direct radiation, or they may be combined in the form of hot-blast heating. The latter arrangement may generally be made the most satisfactory, especially if supplemented by a certain amount of direct surface or secondary indirects placed at the most exposed locations upon the lower floors.

When the air is delivered to the whole building at the same temperature the upper floors are very likely to become overheated, while the lower ones are only comfortable. This is sometimes overcome by reducing or cutting off entirely the warm air supply to the upper part of the building, depending upon the warm air rising from below. This arrangement may be made to work very well if the elevator shafts and stairways are large and open, and the full air supply for the whole building is delivered through the registers on the lower floors.

In designing a system of this kind, provision should be made for supplying the required amount of air to each floor, and all regulation as to the requirements of the different floors be made by the closing of registers or dampers.

A better way is to provide supplementary radiation for the lower floors and then supply air to the buildings at the temperature required for the upper storeys and depend upon the supplementary heaters to make up the deficiency on the lower storeys. When this is done the supplementary heaters should be arranged for automatic temperature regulation. The temperature of the general air supply of the building can usually be regulated with sufficient accuracy by the engineer after a little experience, although automatic means may be employed if desired.

In proportioning the heating surface for protection against exposed glass and walls the ratio may be made about one square foot of heating surface for each four or five feet of glass, and the same amount for each ten or twelve feet of wall surface of average thickness and good construction.

When hot blast heating is used, the air supply may be based on a change of the entire contents of the building once in every twelve minutes for the average city store, although in special departments where the space is large in proportion to the number of occupants it may be better to base the air volume on the number of occupants rather than the cubic contents, giving in this case about thirty cubic feet per minute per person for the average number occupying the room.

Table 1 gives the size and approximate speed of fans of different diameters to furnish given quantities of fresh air under the usual conditions to be overcome in this class of work. The last column in the table gives the approximate horse-power of motor necessary for driving the fan at the given speed.

The size of the main heater may be computed either from the air volume and the required rise in temperature of the air or it may be based upon the cubic contents of the building.

Table 2 gives the number of rows of pipe required under different temperature conditions, and also the corresponding efficiency in heat units per square foot of heating surface per hour. The square feet of heating surface required in any given case may be found by the equation,

When the size of the heater is based on the cubic contents of the building there should be provided one linear foot of 1-inch pipe for approximately each 75 cubic feet of space to be warmed. The arrangement of the ducts, flues and other parts of the system will depend largely upon circumstances in each case. The fan and heater are located either in the basement or sub-basement, as conditions may require. Unless an air filter or washer is used the supply should be taken from an elevation of at least one or two stones to avoid carrying in surface dirt. Oftentimes a higher elevation of inlet is a disadvantage, as it is more liable to catch the soot from surrounding chimneys. In locating the fresh air inlet the premises should be carefully examined in order to avoid so far as possible objectionable surroundings. The air shaft or downtake and its connection may be of brick, concrete or galvanized iron, as most convenient. The first two are more durable, but iron is lighter and less expensive to construct. The size of this airway should be such that the velocity of air through it will not exceed about 1,000 feet per minute.

The distributing ducts may be of the same material as the intake. If carried underground, as is often the case, they should be of brick or concrete, but when run at the basement ceiling galvanized iron is the best material. Velocities here may be 1,000 to 1,200 feet in the main ducts, 800 to 1,000 in the branches, and 600 to 700 in the uptakes. Higher velocities may be employed in the uptakes if the inlet registers are backed with perforated metal or wire gauze to reduce the velocity into the rooms, which should not exceed 300 feet per minute unless special diffusers are provided in front of the registers, in which case velocities as high as 400 to 450 feet may be allowed.

Uptakes and registers should be located with reference to throwing the warm air toward cold walls and other exposed points, and should be sufficient in number to give a pretty even distribution of the air.

Discharge ventilation is not usually required in buildings of this kind, as the plenum effect of the fan is generally strong enough to produce sufficient outward leakage to care for this.

To illustrate up-to-date store warming, an example is taken of a new building recently erected in Chicago. It is 6 storeys in height, with a frontage of 100 feet and depth of 140 feet, and contains approximately 1,500,000 cubic feet of space. It is heated and ventilated throughout by a forced circulation of warm air, the fans having a capacity of over 125,000 cubic feet per minute. Two steel plate fans are provided, each 9 feet in diameter, and the air is warmed by passing through a pipe heater containing about 20,000 linear feet of 1-inch pipe. Fig. 1 shows a plan of the subbasement, which contains the fans and heater and the air-distributing ducts. The apparatus is located in a walled pit or room near the centre of the building. Fresh air is taken in above the first storey level and carried downward through a masonry flue at the rear of the building, as shown. This downtake is connected with the cold air room by means of an underground duct of the same construction. The distributing ducts connecting the fans with the uptakes are of masonry and run beneath the basement floor, thus saving valuable space for other purposes. Fig. 2 is the basement floor and shows the uptakes supplying warm air to the building. Three of these, the two adjacent to the elevators and one in the rear, pass upward through the entire building and supply air to each of the different floors through registers, as shown. The two uptakes near the front of the buildings are for warming the vestibule and preventing cold drafts at the entrance doors. The boiler and engine rooms, elevator tanks, etc., are located upon this floor, as shown.

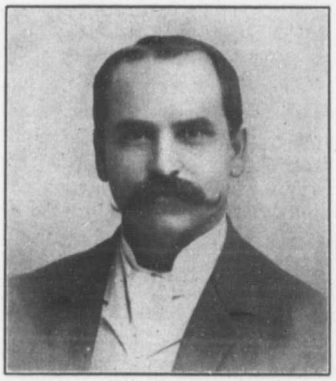
Fig. 3 shows the main floor and illustrates the air distribution to different parts of the room. The vestibule is warmed by hot air introduced through registers at each side. Registers are also provided in the large show windows on either side of the vestibule, but are used only on special occasions.

The method of introducing warm air at each side of the entrance is through grilles in the curved ends of the counters. Under each of these counters is a duct of sheet metal fronted by bars of polished brass, and backed by asbestos to prevent the heat from warping the counters or injuring the stock—Engineering Review.

OBITUARY.

In the death of Mr. Frederick W. Barrett, at Montreal on Sunday, January 26th, the manufacturing and contracting fraternity in Canada loses a very active member. For the past fourteen years the late Mr. Barrett had been connected with Expanded Metal & Fireproofing and Luxfer Prism Companies, Toronto. He was about 51 years of age, having been born in Port Hope, where his father was the late Mr. William Barrett, well remembered in that section.

Mr. Barrett was graduated from Victoria University, and later was admitted as a member of the Upper Canada Law Society. After a brief period of practice at London, Mr. Barrett jointed the management of the Polson Company, being prominent in connection with that firm's shipbuilding enterprise in Owen Sound. Subsequently he entered the legal firm of Messrs. Horn & Barrett, in this city, a combination of forces which did not terminate when Mr. Horn launched the Luxfer Prism Company, and later the Expanded Metal & Fireproofing Company.



The Late F. W. Barrett.

Mr. Barrett married the only daughter of Mr. Wightman, druggist, of Owen Sound, by whom he is survived, there being no children.

The funeral was held in Owen Sound on Wednesday, a special train from Toronto conveying many of the office and factory staffs of the two companies, together with a number of family friends and relatives.

The deceased was very widely known throughout the Dominion and will be greatly missed. He was a member of the National Club, the Canadian Manufacturers' Association, and other influential bodies.

Mr. R. C. Hulme, city engineer and manager of the waterworks department of Belleville, was, Tuesday morning, the victim of a palalytic stroke, which proved fatal on Wednesday last. Deceased was 72 years old, being an Englishman by birth. He was an ex-alderman of the city and ex-lieutenant-colonel of the 15th Regiment, a prominent Mason and a member of the Sons of England. Three sons of the deceased survive him, one in the Yukon, and one daughter. Mrs. Hulme died a short time ago. Deceased had for a number of years been an official of the city, and was highly respected.

CONTRACTOR SCORES VICTORY.

A contractor has just secured a verdict against a company which offered certain buildings for sale at auction, and the auctioneer refused to entertain his bid, but accepted a lower bidder, regarding the higher bid as not made in good faith. The plaintiff being a contractor, claimed damages in the sum of the difference between his bid and the actual value of the property when made over for structural purposes. He was given a verdict of $1,000 damages. It is claimed that this decision, if maintained in the higher courts, will work a general change of methods of conducting such auctions.—Improvement Bulletin.

A MODEL CITY.

It is the intention of the Grand Trunk Pacific to make a model city of Prince Rupert, the Pacific coast terminus of the great transcontinental road, now being built, and with this end in view two Boston landscape architects are on the way to the site of the new place. Messrs. Brett and Hall, the architects, will spend some six or eight weeks on the ground, and conditions, in order that they may be able to present a report on their return.

C. S. C. E. Hold Annual Meeting

Last week in Montreal there was held the twenty-second annual meeting of the Canadian Society of Civil Engineers. Over 400 members and delegates were present. The convention opened on Tuesday with an address by Mr. McLea Walbank, in which some strong criticism of municipal ownership was included, conditions prevailing in Glasgow being instanced as a timely example of the undesirability of that practice being pursued in this country.

"Wages in Glasgow," said Mr. McLea Walbank, "are less than half those paid in this country. Conductors on street cars in Glasgow are paid 93 cents per day for the first year, and $1.04 the third year, while conductors on street cars in New York are paid $2 the first year, and $2.25 after that. The average wages for the railroad men in Glasgow are 78 cents per day, while in New York they are $1.88. Here we have a difference of more than 100 per cent. in wages alone."

"Anyone who has traveled over the street railroads in Glasgow," said Mr. Walbank, "must know" perfectly well that the whole equipment and accommodations are antiquated and behind the day, while the service furnished there would not be tolerated in any city in the United States. We are also told that the profits or revenue from the street railway in Glasgow is so large that it pays all the expenses of the Government, while in fact the roads are not operated for the purpose of producing a revenue to meet current expenses of the municipality. Instead of there being no taxes in Glasgow they are more burdensome than in this county.

"Rents are taxed 12 1-2 cents on every dollar that a man pays, and the owner of the property has to pay the same amount of tax. Besides this, license taxes are levied. You pay a tax for every servant you employ in the house, also on every horse and carriage; in fact, you cannot turn round without running against the tax collector.

"The Institute of English Bankers a short time ago attributed the widespread depression that existed in England at the time to the engagement in municipal trading. They pointed out that it has been productive of many evils, such as the elimination of personal initiative and enterprise, evasion of the natural laws of commerce, and the creation of a favored class of labor. It had brought corruption in politics, and practically eliminated in many directions any further attempts to engage in private industry."

The question of capital and labor, with reference to the recent financial panic, was then discussed. Mr. Walbank recognized that in some points the corporations were to blame, but he deprecated the wholesale condemnation of these institutions. Was it to be forgotten, he asked, that from these sources the people at large had derived hospitals, colleges, museums, special chairs of learning, and other boons too numerous to mention?

DEAN GALBRAITH, SCHOOL OF SCIENCE, TORONTO, PRESIDENT C.S.C.E.

"I think that a close examination," said Mr. Walbank, "of most gas, electric and public utility companies will reveal the fact that the public and taxpayers in general derive more benefit than do the ordinary shareholders, whose money has made them possible."

On Wednesday evening the annual banquet of the Association was held at the Windsor Hotel, with 150 members and guests present. The election of officers on Thursday resulted in School of Practical Science, Toronto, as president. The other officers are: First vice-president, W. F. Tye, Montreal; second vice-president, H. M. McLeod, Winnipeg; third vice-president, G. H. Duggan, Sydney, N. S. Council—F. S. Busteed, Vancouver; N. J. Ker, Ottawa; R. W. Leonard, St. Catharines; A. H. Mitchell, Toronto; J. E. Schwitzer, Winnipeg; Roderick McColl, Halifax; A. A. Dion, Ottawa; A. E. Doucette, Quebec; W. R. Butler, Kingston; F. P. Gutelius, Montreal; H. H. Holgate, Montreal; R. S. Kelsch, Montreal; R. J. Durley, Montreal; C. M. Odell, Glace Bay, N.S.; W. H. Breithaupt, Berlin, Ont.; J. B. Porter, Montreal; J. G. Kerry, Toronto; F. W. Robb, Amherst, N.S.; T. H. Wicksteed, Montreal; Wm. Kennedy, jr., Montreal. Nominating Committee, Messrs. Rust, Ker and Dill, Toronto; Messrs. Lordly and Monserrat, Montreal; W. Dodard, N.S.

"CAISSON" DISEASE.

The growth of modern engineering and submarine work has brought into existence a new ailment which is called caisson disease. It is pointed out that those specially liable to this disease are stout men and men over forty years of age. The disease is due to the absorption of atmospheric air by the blood when exposed to pressure. Bubbles of air have been found in the veins of men who died from the disease. Nearly all divers who are able to continue at their work with immunity from the disease are thin men. The danger of contracting the disease is diminished by bringing divers to the surface very slowly.

ELECTRIC SMOKE ABATING.

Electric filtration is the idea of an English engineer, and is based on the discovery that a body positively electrified by 100 volts or more will become covered with soot in a single day in a smoky atmosphere, while a negatively charged body remains clean. Inserting a sheet of wire gauze in the intake flue of a ventilating system and electrifying it by connecting to a 250 volt supply main, the gauze extracted a large quantity of soot from the air.

Contracts Department

News of Special Interest to Contractors, Engineers, Manufacturers and Dealers in Building Supplies.

CONTRACTS OPEN.

Brandon, Man.

Tenders are invited by Harry Brown, City Clerk, up to February 20th for the construction of a bridge over the Assiniboine river, separate bids to be submitted for reinforced concrete and steel construction respectively. Further particulars and specifications on application.

Brantford, Ont.

The Ham & Nott factory is to be enlarged at a cost of $40,000.

John H. Hall & Sons, the machinery firm, will likely build additions to their works.

J. R. Balsom, of Toronto, has asked the council for inducements to establish a big glass factory here.

Chesley, Ont.

We are advised that in reply to the advertisement in this paper for a water works engineer a great many applications were received. The council decided to employ Herbert J. Bowman, C. E., of Berlin, senior member of the new firm of Bowman & Connor, consulting engineers. In another column will be found the call for tenders for supplies for the new water-works system.

Credit Forks, Ont.

Evershed & Vignoles, of London, England, are forming a company for the manufacture of sewer pipe, tiles and building bricks, and the plant will likely be located at this place. J. F. B. Vandeleur is the Canadian agent.

Essex, Ont.

J. W. Brien will receive tenders up to February 8th for the erection of a Methodist church in this town. Plans at office of Frank Brien, architect.

Fort Frances, Ont.

The plant of the Manitoba Peat Company will likely be rebuilt this spring.

Myers, Damm & Nord, of Minneapolis, on behalf of an American syndicate, are arranging to locate a sash and door factory in this town.

Fort William, Ont.

Amongst the improvements projected by the C. P. R. this season is the building of a large handling house, which it is said when completed will outclass all other similar structures in the world.

During the coming season, the main line of the C. P. R. between this town and Winnipeg, a distance of four hundred and twenty-five miles, is to be double tracked.

Tenders have just been taken by E. A. Morton, Secretary Treasurer, for additions to the Central and Ward one schools. Steam heating will be installed.

Granby, Que.

Extensions will be made to the electric light plant during the coming season.

Grand Forks, B. C.

A report is current that a permanent post office and customs house will be built here this season at a cost of $35,000.

Guelph, Ont.

Negotiations are being conducted by the city council with Harry Johnston, of Phelpston, with a view to the establishment of a brick factory in this city.

Halifax, N.S.

$25,000 is to be expended on new buildings this season by the Silliker Car Company.

A new Presbyterian church will be erected this season at a cost of $20,000. Construction will be put in hand immediately.

Hamilton, Ont.

Several prominent business men are getting together to form a company for the construction of an electric railway on the mountain.

Kamloops, B. C.

Dalton & Everleigh, architects, Vancouver, have just completed plans for a sanitarium to be erected near this town. Estimated cost $50,000.

London, Ont.

The Warren Paving Company's five year contract expires this year and it is expected that the Board of Works will take new tenders, the price of the Warren Company, $1.80 a yard, being thought somewhat high. There is some talk of establishing a city plant.

We are given to understand that McMahen & Granger have foregone the idea of removing to Toronto. A. T McMahen states that in all probability a five-storey warehouse will be erected by his firm on York street at a cost of $35,000.

The County Council have decided to rebuild the Guest bridge at a cost of $15,000.

Now that the new Askin street Sunday school has been completed the remodeling of the church will be put in hand. $25,000 will be expended on the work.

The Latter Day Saints are considering a project for the erection of a new church.

The Standard Implement Company, manufacturers of farm machinery, will erect a plant here early this season at a cost of $60,000.

A deputation from the Middlesex Law Association waited upon the county council the other day for the purpose of urging the immediate construction of a new courthouse or the remodeling of the present building, which they claim is insanitary, inconvenient and unsafe.

Medicine Hat, Alta.

On March 6th the ratepayers will vote on the following bylaws : $10,000 for market buildings, $25,000 for gas system extensions and $40,000 for waterworks extensions.

Sidewalk debentures amounting to $40,000 are to be placed on the market.

Michel, B. C.

Intimation has been received from G. S. Lindsey, president of the Crow's Nest Pass Coal Company, to the effect that a new tipple will be erected by his firm at a cost of $200,000.

Moncton, N.B.

The council are negotiating with Rhodes, Curry & Company, of Amherst, N.S., with a view to the establishment in this city of a steel foundry for the manufacture of railway appliances and steel castings.

Montreal, Que.

The Montreal Locomotive Works will carry out considerable extensions to their plant.

Nelson, B. C.

Architect Egg is preparing plans for a new house to be built by J. J. Camp-

bell in the spring on his ranch at the West Arm.

New Westminster, N.B.

Another gas plant will possibly be installed here. Attorney J.W. Whiteside has asked the council for the necessary authority and it is understood that if this is granted work will be commenced at once.

Nixteaux Falls, N.S.

The Londonderry Iron Foundry Company are contemplating the development of power at this place for the operation of their mines.

Notre Dame de Grace, Que.

The ratepayers have sanctioned a bylaw to authorize a loan of $275,000 for municipal improvements.

Ottawa, Ont.

The city council have been negotiating with an iron foundry and machinery firm with a view to their establishment in this city and a special committee have been appointed to try and close the matter.

If the Ottawa Improvement commisssion gets the parliamentary grant now being applied for it is intended to go on early in the spring with the new driveway from the experimental farm down to the islands in the Ottawa river. Plans have been prepared and the route surveyed. The islands will be artistically laid out and connected by means of ornamental bridges.

Work will shortly be commenced on the Ottawa Electric Railway Company's extension to the experimental farm.

Fred Gelinas, Secretary, Department of Public Works, invites tenders up to March 2nd for the construction of a new western entrance to the Toronto harbor, according to specifications at offices of J. G. Sing, Resident Engineer, Confederation Life Building, Toronto, H. J. Lamb, Resident Engineer, London, Ont., J. L. Michaud, Resident Engineer, Merchants' Bank Building, Montreal, and at the Department.

The Transcontinental Railway Commissioners will receive tenders up to March 10th for six additional sections of the line. Four sections, 189 miles, are in New Brunswick, and two sections, 175 miles, are in Ontario. Plans and specifications may be seen and further particulars obtained at office of Chief Enginee rof the Commissioners, this city; also at offices of the district engineers concerned, viz:—Guy C. Dunn, St. John, N. B.; A. E. Doucet, Quebec, P.Q.; John Aylen, Acting District Engineer, North Bay, Ont., and T. S. Armstrong, Nepigon, Ont.

Palmerston, Ont.

Galt & Smith, Toronto, are preparing plans for extensions to the waterworks to be carried out during the coming season at a cost of $35,000.

Picton, Ont.

Boulter's skating rink was practically demolished last Saturday in the collapse of the roof, brought about by the heavy weight of snow, and the loss is placed at $20,000. E. Spencer's new greenhouse swere also considerably damaged.

Quebec, Que.

The authorities at Ottawa are examining plans for the construction by the Dominion Government of a gas plant in this city. The proposed works will be located in the old Artillery park, aud the object of their erection is for the purpose of manufacturing and supplying gas to the Cartridge factory for both lighting, heating and operating purposes. If the plans are approved construction will be put in hand at an early date.

Revelstoke, B.C.

The Board of Trade have requested the Government to at once send the provincial engineer, F. C. Gamble, to this town to survey a site for the projected traffic bridge over the Columbia river and have asked that an appropriation for the work may be included in the season's estimates.

Saskatoon, Sask.

A large flour mill is to be erected in this town by the Wilson Leslie Company.

St. Henri, Que.

The Grand Trunk are contemplating considerable extensions to their system and have acquired property containing 19,200 square feet.

Sydney, N. S.

The Sydney Cement Company's plant is to be enlarged to include the manufacture of brick from slag.

St. Thomas, Ont.

At a meeting of the Elgin County Council it was practically decided to rebuild the following bridges in co-operation with the city: Lyndhurst bridge, at cost of $10,000; Ashery bridge, $10,000; Orwell bridge, $4-000 and Tillsonburg Junction bridge, $6,000.

Tillsonburg, Ont.

The town clerk wants figures from contractors and others on the cost of an electric light plant which the council are contemplating putting in.

Toronto, Ont.

The St. Michael's, Grace and Western hospitals have made renewed applications to the Board of Control for grants of $50,000 each for building purposes and have received the assurance of early consideration.

The overcrowding of the Parliament Buildings has called forth a suggestion in Government circles that a new legislative structure be built and it is possible that further developments will be in evidence during the next few months.

Galt & Smith, consulting engineers, this city, are preparing plans for extensions to the waterworks at Palmerston, Ont., to cost $35,000.

City Architect McCallum has just returned from a trip to the States, undertaken for the purpose of securing pointers on the heating apparatus of the new public bath house.

Tenders are invited by Fred Gelinas, Secretary, Department of Public Works, Ottawa, for the construction of a new western entrance to the harbor at this city. Specifications may be seen at office of J. G. Sing, Resident Engineer, Confederation Life Building,

Toronto Junction are considering the advisability of having a Carnegie library. The council have received information from the secretary to the effect that a $5,000 building will be erected provided that the town undertake its maintenance. The matter will likely be decided at a special meeting of the executive committee.

$70,000 is the sum recommended by property commissioner Harris in his report to the property committee to be raised for the erection of two new police stations in Divisions 3 and 5. The recommendation is supported by Chief Grassett, who says that in view of contemplated changes the buildings are absolutely necessary.

The Board of Control are considering the resources of the city in regard to the construction of a storm sewer to the Don to cost $200,000.

In connection with the proposed street railway route through the Old Fort, the board have decided to apply to the Legislature for power to issue debentures sufficient to meet the cost of a bridge over the tracks at Bathurst street, to lay the tracks to the Exhibition grounds and to construct a road through the Old Fort.

City Engineer Rust has recommended the construction of the following paving works: Bitulithic, Queen to Doel, $8,428; Doel to Gerrard, $9,116; Wickson avenue, Yonge to West end, $9,256; vitrfied block, Harbor street, Bay to Yonge, $9,604; asphalt, Herrick street, Bathurst to Markham,

$1,596; Sackville street, Queen to Gerrard, $15,580; Berkeley street, King to Duke, $2,264 and Bathurst street, King to Queen, $14,300.

S. H. Chapman, manager of the Ontario Wind Engine and Pump Company, has sold his property situated on the south east corner of St. Patrick street and Spadina avenue and it is understood that a large four storey factory, to cost $16,000, will be erected. Wickson & Greigg are the architects for the proposed building and Harry Barker, formerly of the H. Webb Company, is said to be interested in the purchase.

Commissioner Harris is asking for a sum of $61,500 for improvements and decorations at the City Hall. This sum includes $30,000 for the completion and furnishing of the Assembly room and $10,000 for the decoration of the offices.

The Massey-Harris Company are understood to be considering the installation of producer gas plants and engines.

Recent building permits include :— Wickson & Gregg, 2-storey brick factory, corner Spadina avenue and St. Patrick street, $16,000; Children's Aid Society, addition to dormitory, Simcoe street, $9,000; H. Hutson, 2-storey and attic brick dwelling, Dewson street, $4,000; H. Hutson, 2 pairs 2 storey and attic semi-detached brick dwellings, Dewson street, $12,000; A. Yake, 2-storey brick dwelling, Crawford street, $2,400.

Vancouver, B. C.

A deputation waited upon Dr. Young last week to urge the early construction of the Vancouver Model School. An initial appropriation of $40,000 for this work was placed in the estimates last session but the complete cost of the building will be nearly $75,000.

City Engineer Clement recently recommended to the Board of Works that the combined system of sewerage should be employed in the city in place of the separate system. This recommendation received the endorsement of the Board at a recent meeting with the result that the engineer has been instructed to report as to the cost of a survey of thoroughfares where trunk sewers will be required.

At a meeting of the school trustees of South Vancouver held at Collingwood a few days ago it was decided to relieve the crowding in East Vancouver by raising a sufficient sum of money to erect a new school building.

At the regular meeting of the Art, Historical and Scientific Association held last week the erection of a new museum building was discussed and schemes were considered for the raising of the necessary funds.

Additions will be made to the Salvation Army Metropole building at a cost of $1,500.

Loo Gee Wing has obtained a permit for the erection of a brick block on Dupont street to cost $12,000. Other permits include: T. A. Dunn, brick residence, Seymour street, $3,000; A. B. Murch, frame dwelling, Fourteenth avenue, $1,000; M. Gormey, frame dwelling, Burrard street, $2,000; F. Jensen, frame dwelling, Prior street, $1,500; Joseph Hombly, frame dwelling, Triumph street, $1,300; H. J. Sprott, frame dwelling, Second avenue, $6,000; John Wickham, frame tenement, Powell street, $5,000; Allan Bros., Pender street east, tenement house, $4,500; C. E. McKim, Nelson street, $3,500; J. Wilson, Second avenue, $1,800; T. Booker, Tenth avenue, $1,800; M. Atcheson, Pender street east, $1,800; W. Irwin, Pandora street, $1,000; A. Alexander, Eighth avenue, $1,000.

Victoria, B.C.

Recent building permits include M. G. Denny, residence, McClure street, $3,500 and George Calder, two semi-detached dwellings, Niagara street, $1,950.

The fire wardens will report to the city council as to the best methods of improving the fire protection as called for by Engineer Howe.

Windsor, Ont.

Stephen Lusted, City Clerk, will receive tenders up to February 12th for $76,985.35 ten year local improvement debentures in blocks of $3,849.93, $24,360.68 and $25,383.10, a total of $53,593.71, at 4½ per cent. interest, and $23,391.64 at 5 per cent. Further particulars sent on application.

Winnipeg, Man,

A movement is on foot to establish a children's hospital in the city and a public meeting has been called for the end of March when there will likely be further developments.

Early in the spring work will be started on a 3 storey building corner of Carlton street and Portage avenue for the Manitoba and Ontario Loan Company. Other large blocks are also contemplated for Portage avenue.

H. C. Stone, architect, has about completed plans for the erection of a large new theatre corner of Princess street and Notre Dame avenue. It is hoped to start excavation work in May and tenders will be called for at an early date.

CONTRACTS AWARDED.

Aylmer, Ont.

James Mae has received the contract for putting the conduit in from Baker's Wells at $10,650.

Battleford, Sask

W. J. Broley, of this city, has obtained the contract for the installation of the new power plant.

Hamilton, Ont.

The contract for the erection of the large addition to the Hamilton Steel & Iron Company's plant has been let to George E. Mills at $5,000.

FIRES.

Buildings of McCamis & Broughton, Arden, Man.; loss $10,000.

C. N. R. freight sheds, Humboldt, Man.; loss, $8,000.

Warehouse buildings of P. D. Dods & Company, E. F. Walters & Company and others, Montreal, Que.; loss $100,000.

Hotel building of Adams & Peers, Calgary, Alta·; building loss $4,000.

Property of Dominion Pressed Steel Company, Port Elgin, Ont.; loss not ascertained.

Caughill & Gillette's cider mill, St. Thomas, Ont.; loss $3,000.

American hotel, owned by Mrs. Joseph Church, Gananoque, Ont.; loss $2,000.

Buildings of Smith & Company and others, Truro, N.S.; loss $6,000.

C.P.R. warehouse, owned by the Molson estate, Montreal, Que.; loss $200,000.

NEW COMPANIES.

Time-Saver Coupler Company, Limited, Toronto, Ont., incorporated to manufacture and sell metal hose couplers, capital $50,000. Incorporators, Arthur Wedale, Richard Musgrave and H. E. Johnston, all of Toronto.

Standard Implement Company, Limited, London, Ont., incorporated, capital $5,000. Incorporators, J. B. Donald and C. P. Heal, both of London, Ont., E. C. Greenlee of Chicago, Ill., and others.

Collingwood Hardware, Limited, Collingwood, Ont., incorporated, capital, $40,000. Incorporators, W. D. White, F. W. Gregory, H. E. Breeze and F. White, all of Collingwood, Ont.

Standard Foundry & Manufacturing Company, Limited, Longueuil, Que., capital $95,000. Incorporators, M. Ameye, V. Martineau, J.B. Bissonette, all of Montreal, and others.

Canadian Packing Company, Limited, London, Ont., incorporated, capital $599,000. Incorporators, M. D. Fraser, E. Rechnitzer and A. Z. Dinge, all of London, Ont.

BUSINESS NOTES.

The Huntsville Engine Works Company have completed the purchase of the complete plant of the Huntsville Foundry & Machine Company.

The Yarmouth, N.S., Street Railway Company is to be taken over by the Yarmouth Electric Company now being formed.

An up-to-date line of plumbers' brass goods will shortly be turned out by the Sarnia Brass Works, Sarnia, Ont.

The Brandon, Man., city council have accepted the offer of J. Wilson Smith, Montreal, for $10,000 fire equipment debentures, 4½ per cent, due in forty years.

The National Portland Cement Company have declared a dividend of five per cent for the year ending December 31st, 1907.

CITY ENGINEERS MAKING CHANGES.

It is understood that H. N. Ruttan, City Engineer of Winnipeg, Man., has been offered a more lucrative post with John Arbuthnot, at Victoria, B. C., and that he will probably accept. There are also vacancies for city engineers at Calgary and Moose Jaw.

BUILDING NEWS.

It is not likely that any great amount of new construction work will be undertaken by the Grand Trunk Railway this year, but the work at present under way will be completed and the available money spent in keeping the rolling stock and equipment in first class shape.

The work on the St. Clair tunnel is one of the most important that the Grand Trunk has under way at the present. The cost is very heavy, but it will mean greater safety and greater facility for the handling of business and will enable the road to compete to far greater advantage with the American roads. The work has been under way for a long time and is now practically completed, and it is thought that the new system will be under operation within a short time. Large power houses have been built both on the American and Canadian sides and the wires are all strung. Six powerful electric locomotives have been ordered and the cost altogether will be in the neighborhood of $500,000. In every way though, the company regard the scheme as a great money saver for the future.

Building permits issued in Toronto during January represented a total sum of $474,453. The construction of one hundred and twenty-eight new buildings was entered upon in the course of the month.

Last week, the Minister of Public Works, Dr. Reaume, opened the new bridge over the Spanish river at Webbwood, Ont., in the Algoma district. The structure cost $18,000.

A London dispatch announces the dismissal of the appeal of the Quebec Improvement Company against the Quebec Bridge Company. The case has been going on since 1905, and involved an amount of $30,000 capital and interest claimed by the Improvement Compauy for right-of-way near the bridge approaches on the south shore. The bridge company contested, and lost the case in the lower court, but were sustained in the Court of Appeals. The Improvement Company appealed to the Privy Council but were unsuccessful.

Engineer St. Laurent of the Georgian Bay canal survey, has prepared a report in which the cost of canalizing the French river, from Georgian Bay to North Bay, a distance of 31 miles, is estimated at nearly fourteen millions. The plan contemplates a ship canal of the depth of 22 feet, and provides for the creation of three reaches between Georgian bay and Lake Nipissing, by means of locks and dams, lift of locks varying from 22 to 24 feet. A detailed report will be ready by March.

Late last summer the Standard Drain Pipe Company's plant, situated at Pippettown, New Glasgow, N.S., was completely wiped out by fire. The blow was a severe one to the company and it was feared to the town, as the works gave employment to a large staff of well paid men. With commendable promptness and enterprise, however, the Company ordered that the works be immediately rebuilt on the old site. In accordance, the work was started, and today a new and commodious set of buildings are erected on the spot. These buildings are absolutely the handwork of the employees, who were retained to erect the new structure without any reference to the nature of their previous employment. The new machinery is being installed, and in March the Company's products will again be on the market.

At a recent meeting of the Vancouver city council the new building bylaw came in for discussion. A clause that parapets must not exceed five feet in height was passed. A stipulation that there must be no entrance in a party wall more than 10 feet in height brought from several aldermen the opinion that this clause was framed to suit the underwriters and it was accordingly referred back. It was decided that all chimneys must go down to foundation levels and project at least four feat above the roof. The general impression was that starting chimneys from a post foundation was extremely dangerous. Chimneys must be lined with fire brick. In alll cases proper thimbles must be provided. Metallic stacks must be properly guyed. Hot air pipes from furnaces must be provided with asbestos shields, according to the bylaw drafted. There was some discussion over this and the clause, together with one referring to the protection of hot air registers, was also referred back.

TENDERS AND FOR SALE DEPARTMENT

TENDERS FOR

CITY SUPPLIES

Sealed tenders, endorsed "Tenders for Cement, or etc., ill be received by H. E. Gillis, City Clerk, Calgary, Alta., until March 1st. 1908, for the following materials:—
Cement
Pig Lead
Lead pipe
Cast iron water pipe
Corporation Cocks
Sewer pipe
Specifications may be obtained from the City Engineer. The lowest or any tender not necessarily accepted.

R. E. SPEAKMAN,
City Engineer.

Calgary, Alberta. Jan. 25th. 1908.

Wanted to Buy

New or second hand Locomotive Crane, Steam Derrick, self propellor, to be used on Standard Gauge track, for quick hoisting. To lift 2 tons at about 30ft. or 35ft. radius. Send full particulars. Address, P. O. Box 338, Montreal.

CHESLEY WATER WORKS

Tenders will be received until Feb. 29th. for Cast Iron Pipe, Hydrants, Valves, Lead, Water Tower.
For all information apply to

BOWMAN & CONNOR,
Consulting Engineers,
Court House, Berlin.

TENDERS

Office Commissioner, Public Works and Mines

Department Technical Education, Halifax, Nova Scotia.

Sealed tenders, marked "Tenders for Technical College" will be received at office of undersigned up to noon on MONDAY, FEBRUARY 17, 1908, for the erection of the

Nova Scotia Technical College,

in the city of Halifax.

Plans and Specifications can be seen at the office of Herbert E. Gates, Architect, Roy Building, Halifax, N.S. Each Tender must be accompanied by a Certified Cheque for 10% of the total amount of the Tender, as security for the performance of any contract entered into with the Department.

The Commissioner is not bound to accept any Tender.

C. P. CHISHOLM,
Commissioner Public Works & Mines.

TO ENGINEERS AND SURVEYORS.

FOR SALE

The instruments (consisting of Theodolite, level, chains, tapes, drawing instruments, etc.) maps, plans, fields-notes, engineering library, and practice of the late Augustine McDonell, Civil Engineer of Chatham, Ont An exceptionally good opening for a surveyor or engineer. Address:—F. J. A. McDonell,
P. O. Box 282 Chatham, Ont.

WELLAND CANAL.

TENDERS FOR SUPPLIES FOR THE YEAR 1908.

SEALED TENDERS for Supplies addressed to the Superintending Engineer, Welland Canal, St. Catharines, will be received until 16 o'clock on Monday, the 10th February, 1908, for the supply and delivery of various articles of Timber, Hardware, Castings, Fuel, Paints, Oils, etc., for use on the Welland Canal and its branches for the year 1908.

Specifications, forms of tender and other information may be obtained at the Superintending Engineer's Office St. Catherines on and after Tuesday, 21st January, 1908.

The lowest or any tender not necessarily accepted.

By Order,
L. K. JONES,
Secretary.

Department of Railways and Canals,
Ottawa, January 17th, 1908.

Newspapers inserting this advertisement without authority from the Department will not be paid for it.

Notice to Contractors

I have a patented construction process far ahead of any so far used. I require Contractor to work it up. The strongest and lightest buildings can be made. For particulars address, P. O. Box 1144, Montreal.

DUSTLESS ROADS.

In a contribution to "The Contract Journal," London, Mr. J. P. Jenkins makes the following suggestions regarding the construction of dustless roads:

It is, of course, well known that any dust preventer, if applied to the surface of a road, can only last for a comparatively short time. The material cannot penetrate a moderately hard stone when applied in this manner, although it is claimed that it penetrates a road to a depth of 2 in. If we look at the question from a theoretical and practical point of view we shall find that only the binding material has taken up the dust allayer. The reason is obvious. The ancient method of using soft materials is still almost universal. In some cases mud is even used, and, of course, absorbs the material applied to the surface quickly, leaving the stones themselves practically untreated.

To make a dustless road, all the material composing the road should be rendered dust-proof, or nearly so. That is, the residue after wear and tear should be moist, or, at least, too heavy to be blown about. It has occurred to me that if the metalling and binding material used for road-making and repairs is treated with, say, Messrs. Clare's dust preventer in a similar manner to that adopted in preparing tarred macadam, good results would be obtained and a cleaner and more sanitary surface maintained.

PLAN FOR DUSTLESS ROAD CONSTRUCTION.

It should be particularly noted that the use of mud for filling the interstices is not necessary; it is, in fact, worse than useless, since its presence is what we endeavor to avoid. One would hardly think it necessary to call attention to this matter, yet the writer's notice was drawn to an article in the "Sanitary Record" where the use of mud, scraped from the roads, was advocated. True, the author of the article referred to suggested that the heaps should be turned over occasionally, presumably to deodorize the mud. To put it mildly, sir, I say that the practice is a filthy and disgusting one; it may have been considered suitable 200 to 300 years ago, but would not be tolerated today.

The prevention of dust must be, to a great extent, looked at from a sanitary point of view. Not only is it unpleasant to motorists, but the general public are exposed to the risk of infection of many dread diseases in a much greater degree than formerly. Surely, then, some reform is necessary. If, as before pointed out, the use of dust allayers is only of temporary benefit, something more should be done to make our roads dustless. Also, good roads are absolutely essential for intercommunication, and for this purpose deserve greater attention than they have up to the present received.

The section given shows a layer of asphalt on the surface of an old road, or the foundation of a new one. The asphalt may be, say 2 in. thick, and

the treated material spread and consolidated in the same manner as described in the article above referred to, and in the same order. That mud sometimes squeezes through the metaling from beneath it, there can be no doubt. There is a particular piece of road in the writer's district the metaling of which (about 9 in. thick) is laid on ashes. Now, whenever we have a particularly wet season, the ashes, or, at least, black mud, the produce of ashes, makes its appearance. True, the road is subject to heavy traffic, yet it seems hardly possible that the surface of what would be generally considered a hard road is penetrated by material which formed its foundation.

As long as our great engineers and leading associations, having for their object the improvement of our roads, continue to experiment on roads badly constructed and inefficiently maintained in the old way, so shall we have to wait until they can be prevailed upon to start where our immediate predecessors left off.

THE DOUKHOBORS AS BRICK-MAKERS.

At Yorktown, Sask., a colony of Doukhobors have established a brick-making plant, which is one of the finest and most complete in Canada. The work is done under the supervision of an expert brickmaker, himself a Doukhobor, and the profits go to the community. The plant can turn out 50,000 bricks per day, although it has not yet been worked to its full capacity, and cost £10,000. A 50 horse-power steam engine, operated by six men and two boys, supplies the motive power, and the brickmaking machine, one of the newest and best on the market, has been specially imported from the United States.

A HOUSE WITHOUT A CHIMNEY.

Mr. F. M. Sinsabaugh, secretary and manager of the Carrollton Heat, Light & Power Company, of Carrollton, Ill., has just moved into a new house, which is entirely without a chimney or provision for any kind of fire in the house. The building of this new house without the chimney marks the beginning of an effort at Carrollton to obtain electric cooking customers. The rates for this business will be five cents per kw. hour.

The following quotation from a local Carrollton paper illustrates some of the publicity which the electric service is obtaining by virtue of Mr. Sinsabaugh's unusual house:

"A comfortable, wholly modern residence has been erected in Carrollton without so much as the sign of a chimney, either in or upon it. This is no smoke-consuming joke. The chimneyless house is a fact, but, so far as we can ascertain, it is the only one of its kind in the State of Illinois. F. M. Sinsabaugh is the man who thought he would like to live in a house without a flue. The idea was not entirely original, for many another man has hopelessly longed for the same thing while putting up the sitting room stove. But the other fellows were not so well fixed to put their wish into execution; Mr. Sinsabaugh is manager of the Carrollton Heat, Light & Power Company. The house will be heated by steam from the company's plant — as are many of the business houses on the square — and the cooking will be done exclusively by electricity. The house combines more features of the twentieth century home than perhaps any other in Greene County. Its cost will be about $3,500. Mr. Sinsabaugh has expressed, in a practical way, his own faith in the ability of the plant to keep his household comfortable and cook his meals. To build a chimneyless house is the strongest possible expression of confidence."

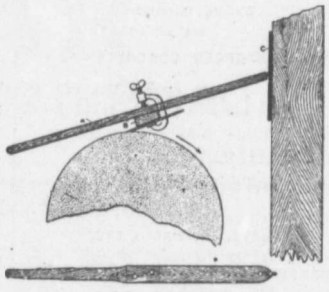
BRICK REQUIRED FOR WALLS OF VARIOUS THICKNESSES.

Number for each square foot of face of wall.

Thickness of wall.	
4-inch	7½
8-inch	15
12-inch	22½
16-inch	30
20-inch	37½
24-inch	45
28-inch	52½
32-inch	60
36-inch	67½
42-inch	75

A GOOD SUGGESTION FOR GRINDING TOOLS.

The common methods and appliances for grinding edged tools, as chisels and planers, in the ordinary shop are often far from satisfactory and devoid of proper results. It takes more skill than is possessed by the average workman to grind properly the cutting edge of a plane-iron or chisel, by holding the tool in his hands against the grinder without the aid of any other support or guide. Attachments for properly guiding the tool during the grinding process can be purchased, but they are usually put in the list of things "we can get along without." Workmen sometimes mount an emery wheel in a lathe or on a bench and, by the aid of the rests and



Steady Brace for Grinding Tools

some hand device for holding the tool, let the lathe do the work. Mr. Isaac P. Smithe, writing in Wood Craft," says this latter method is treacherous and risks the finely tempered edge of the tool to damage or destruction. He suggests the home-made device shown in the illustration for holding a plane-iron, chisel, spokeshave, iron, gouge, axe, or other edge tool, when grinding on a grindstone.

The bar A is made of 1 1-4 or 1 inch stock, about 2 1-2 inches wide and 3 1-2 feet long. The left-hand end (referring to the engraving) is shaped into a handle as indicated in the top view of the handle. Into the other end of the bar is driven a common screw turned home to the depth of the threads. The head of the screw is clipped off and the end of the shank filed rounding for a pivot.

The block B, 4 or 5 inches long, and the width of A, is screwed to it and

carries the tool to be ground. In this case the tool is a plane-iron clamped to the block with a thumb-screw. On to the post just back of the grindstone has been screwed a strip of 3-8 by 1 inch iron, into which has been drilled a series of holes part way through, one under the other, about 3-4 inch apart, and numbered. When the plane-iron has been clamped to the block so that the cutting edge is not more than 1 inch ahead of it, the pivot is set in any hole and the iron dropped on the stone. A few seconds of grinding will show the new bevel and if this should not be what is wanted, set the pivot in another hole and try again. Not more than one or two changes will usually be required. When the proper hole has been found, note its number.

With this device the stone may be turned by one hand and the tool man-

aged with the other. Even on a power-turned stone one hand is better than two. The tool may be turned over as many times as desired in the process of grinding to note its progress and it drops back on the same bevel when replaced. Should the pivot slip out of the hole, be sure and replace it in the same hole. The arrangement is rapid and accurate, and even in the hands of a boy it is quickly mastered and gives the best of resultes. With this device 30 2-inch plane-irons have been ground in less than an average of two minutes each, and many of them were in bad shape.

SET THE HOUSE HIGH.

It is always better, for many good reasons, to have your house stand as high as the land will permit; therefore, do not dig a deep cellar, but build up the foundation walls quite a distance above the ground. The earth taken from the cellar can be banked up and filled in on the outside of the foundation cellar walls. Possibly the house may at first appear very high from the ground, and look a trifle awkward, but as soon as the grading is made the height will not be noticeable, the only difference being that the building appears to far better advantage and of much more importance than if set low. Besides all this, when the foundations are high, they admit of larger cellar windows, and these mean a light cellar, which is very desirable.

Have as many cellar windows as can be made without lessening the strength of the foundation, and you will rejoice in a cheerful, light, dry cellar, often sunshiny, too, a cellar that can be kept clean and sweet with little effort, where plants may flourish in the sunshine of the windows, and where a box of growing parsley will be a joy of fresh green, ever ready for use. Such a cellar has been built, and is a decided success.

Of course, the cellar must have a nice, smooth, level, concrete floor, and if you can afford it, let the ceiling of the entire cellar be plastered, with the last coat as white as snow. The plaster adds warmth to the house, prevents possible mice from gnawing through to the first floor, keeps dust from sifting through to rooms above, and makes the cellar lighter and cleaner. — Journal of Modern Construction.