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# CANADIAN CONTRACT RECORD

A WEEKLY JOURNAL OF THE PUBLIC WORKS OF CANADA

PUBLIC WORKS • TENDERS • ADVANCE INFORMATION • AND MUNICIPAL PROGRESS

EVERY THURSDAY

This paper reaches every week the Town and City Clerks, Town and City Engineers, County Clerks and County Engineers, Purchasers of Municipal Debentures and leading Contractors in all lines throughout Canada.

VOL. 7.

SEPTEMBER 24, 1896

No. 34.

## THE CANADIAN CONTRACT RECORD,

PUBLISHED EVERY THURSDAY

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## Notice to Contractors

### Canadian Contractor's Hand-Book

A new and thoroughly revised edition of the *Canadian Contractor's Hand-Book*, consisting of 150 pages of the most carefully selected material, is now ready, and will be sent post-paid to any address in Canada on receipt of price. This book should be in the hands of every architect, builder and contractor who desires to have readily accessible and properly authenticated information on a wide variety of subjects adapted to his daily requirements.

Price, \$1.50; to subscribers of the CANADIAN ARCHITECT AND BUILDER, \$1.00. Address

G. H. MORTIMER, Publisher,  
Confederation Life Building, TORONTO.

## TENDERS FOR DRAINS

Sealed proposals, endorsed "Tender for Drains," addressed to the undersigned, will be received up to 12 o'clock, noon, on THURSDAY, THE 15TH DAY OF OCTOBER, 1896, for the construction of eight inch tile drains:

On Collier and Mulcaster streets, a distance of about 850 feet.

On Mary Street, from Ross Street to Elizabeth Street, a distance of about 1,041 feet.

On Mulcaster and James Streets, a distance of about 1,135 feet.

Plans and specifications may be seen and forms of tender obtained by applying to the undersigned at his office in Barrie.

A deposit of \$200.00 (marked cheque or otherwise) require to be sent in with the tender.

The lowest or any tender not necessarily accepted.

HENRY BIRD,  
Town Clerk.

Barrie, 19th Sept., 1896.



## ADDITIONS TO BAY STREET FIRE HALL

Tenders addressed to the "Chairman of the Board of Control, City Hall, Toronto," will be received through registered post up to noon on THURSDAY, THE 15TH DAY OF OCTOBER NEXT, for the several works required in connection with the enlargement and re-arrangement of the Bay Street Fire Hall.

The works are as follows: (a) Excavation, drains, masonry, brickwork and cut-tone; (b) carpenter and joiner's work; (c) plasterer's work; (d) galvanized iron and roofing; (e) wrought and cast iron work; (f) painting and glazing; (g) plumbing and gas fitting.

Plans and specifications may be seen and all further information obtained upon application at the office of Messrs. Strickland & Symons, Architects, 35 Adelaide Street East, Toronto.

Tenders must be accompanied by a marked cheque or cash deposit equal to 5% of the amount thereof, and must bear the bona fide signatures of the contractor and two responsible persons who will act as sureties for the due fulfilment of the tender.

The lowest or any tender not necessarily accepted.

R. J. FLEMING, Mayor,  
Chairman Board of Control.

WILLIAM BURNS,  
Chairman Property Committee.  
City Hall, Toronto, Sept. 19th, 1896.



## NOTICE TO PLUMBERS AND STEAMFITTERS

Tenders addressed to the "Chairman of the Board of Control, City Hall, Toronto," will be received through registered post up to noon on

THURSDAY, OCTOBER 8TH, 1896,

For carrying out the necessary works in connection with the Steamfitting, Ventilating, Plumbing, Gasfitting and Electric Wiring, etc., in connection with the erection of the new Municipal Buildings now in course of erection on Queen-street west in this City.

Plans and specifications and form of contract may be seen and forms of tender and all other information obtained upon application at the office of E. J. Lennox, Architect, corner King and Yonge streets, Toronto.

Each and every tender must comply with the terms of the specifications and this advertisement, and be accompanied by a marked cheque, made payable to the order of the City Treasurer, Toronto, equal to 2 1/2 per cent. of the amount of the tender.

Tenders must be on forms supplied by the architect, which provides for the bona fide signatures of the contractor and his sureties, or they will be ruled out as informal.

The lowest or any tender not necessarily accepted.

R. J. FLEMING Mayor,  
Chairman Board of Control.

WILLIAM BURNS,  
Chairman Property Committee.  
City Hall, Toronto, Sept. 19, 1896.

## TENDERS

Separate Tenders will be received up to the 28TH SEPTEMBER, 1896, at the office of the undersigned, where plans and specifications may be seen, for the required heating, ventilating—sanitary system—concreting and mason work to the Male Ward of the County of Simcoe Gaol, Barrie, Ont.

Plans and specifications may be seen on and after the 21st inst.

The lowest or any tender not necessarily accepted.

EDEN SMITH & EUSTACE BIRD,  
Architects,  
Bank of Commerce Building, Barrie.

## HUNTSVILLE, ONT.

## WATERWORKS AND ELECTRIC LIGHT

### NOTICE TO CONTRACTORS

Sealed Tenders, addressed to the Village Clerk, Huntsville, and endorsed "Tender for Waterworks and Electric Light," will be received until 7:30 p. m. on SATURDAY, OCTOBER 3RD, 1896, for the construction of a system of Waterworks and Electric Light as follows:

1. Power Station.
2. Pumping Machinery.
3. Boilers.
4. Valves, Valve Boxes and Hydrants.
5. Cast Iron Pipe and Special Castings.
6. Trenching and Pipe Laying.
7. Reservoir and Gate House.
8. Dynamo, Engine, Switchboard, etc.
9. Wiring.
10. Bulk Sum Bid.

Plans and specifications may be seen at the Court House, Huntsville, Ont., or at the office of the Engineer, on and after Monday, September 14th, 1896.

A marked cheque equal to 2% of the value of the work tendered for must accompany each and every tender.

The council does not bind itself to accept the lowest tender, and reserves the right to reject any or all tenders.

F. L. HOWLAND, M. D., Reeve.  
W. M. RUMSEY, Village Clerk.

VAUGHAN M. ROBERTS,  
Civil Engineer, St. Catharines, Ont.

Dated Huntsville, Sept. 3rd, 1896.

### BUSINESS NOTES.

Gamelin & Huot, architects, Montreal, have dissolved partnership.

Truswell & Goettsche, brickmakers, have opened at Trail, B. C.

Fournier & Benoit, architects, Montreal, have formed a partnership.

C. C. Smith & Co., contractors, Sherbrooke, have dissolved partnership.

F. H. Ross & Co., painters, Victoria, B. C., have sold out to J. W. Mellor.

Vanstone, Shotton & Co., plumbers, Kamloops, B. C., have been succeeded by Shotton & Mead.

The Whitby branch of the business of Barnabas Gibson, contractor, Whitby and Toronto, is said to be in financial difficulties.

## CONTRACTS OPEN.

GRANBY, QUE.—The installation of an electric light plant is being agitated.

NORTH BAY, ONT.—The citizens are urging the necessity of street lighting.

PARRSBORO, N. S.—The corner stone of the Methodist church was laid last week.

SUSSEX, N. B.—The Sussex Water and Electric Light Company has been organized.

BUCKINGHAM, QUE.—Ross Brothers will place an electric light plant in their new saw mill.

ROSSLAND, B. C.—It is thought that many brick residences will be erected here next spring.

GUELPH, ONT.—Plans are prepared for the construction of a reservoir and reel tower at the O. A. College.

COMBER, ONT.—Pettis Bros' hoop and stove mill, four miles from here, was wrecked by a boiler explosion.

KINGSTON, ONT.—The question of improving the fortifications here is under consideration by the government.

BELLEVILLE, ONT.—Tenders are wanted by the School Board for 150 tons of soft coal. Address W. J. Diamond, sec.-treasurer.

SPRINGHILL, N. S.—A survey of the possible water supply has been made and a waterworks system will probably be constructed at once.

NIAGARA FALLS, ONT.—A Toronto syndicate propose purchasing the street railway charter here and will convert the road into an electric line.

MURRAY BAY, QUE.—An American syndicate has purchased fifty acres of land here with the intention of erecting a number of summer residences thereon.

ARNPRIOR, ONT.—Mr. James Morris, C. E., estimates that it will cost \$21,000 to put in a system of sewerage. He has made a lengthy report to the Council.

TILSONBURG, ONT.—The tenders for the new town and fire hall were found to be too high, and the building will be reduced in size and new plans asked for.

CHATHAM, N. B.—Plans are being prepared by G. E. Fairweather, architect, of St. John, for the proposed engine house, lock-up and town offices on the present site of the No. 2 engine house.

CORNWALL, ONT.—It is proposed to build a covered skating rink 240x90 feet, with concert hall above and raised bicycle track around the outside edge. The structure is to cost \$6,000.

ORILLIA, ONT.—G. E. Grant, Town Clerk, will receive tenders until Saturday, the 3rd of October, for an electric fire alarm system, consisting of seven alarm boxes and automatic striker.

SHERBROOKE, QUE.—Tenders will be received by Wm. Griffith up to Wednesday, the 30th inst., for the delivery of about 5000 yards of 3, 4, 5, and 6 feet flag stone, during the summer of 1897.

LONDON, ONT.—Mr. J. M. Moore, superintendent of waterworks, has been instructed to prepare an estimate of the probable cost of an auxiliary pumping plant, to be located at the river.

WOODSTOCK, N. B.—Tenders for furnishing materials and constructing wharf at the pumping station are invited by A. E. Jones, Chairman Waterworks Committee, until the 5th of October.

NEW WESTMINSTER, B. C.—Messrs. Marshall, Sinclair and T. S. Annandale have been appointed by the Board of Trade to look into the matter of the proposed establishment of a flour mill in this city.

TORONTO JUNCTION, ONT.—Joseph Barrett has made a proposition to take over the lighting plant and furnish lights to the town. In connection therewith, there is a project to erect a large

factory at the corner of Keele and Vine streets.

BARRIE, ONT.—Eden Smith and Eustace Bird, architects, will receive tenders until the 28th inst. for heating, ventilating, sanitary system, concreting and mason work to the male ward of the county jail in this town.

REVELSTOKE, B. C.—The Revelstoke Water Works, Light and Power Co. will seek incorporation at the next session of the provincial legislature, Messrs. W. Cowan, J. Abrahamson, W. M. Brown and T. Downs being the promoters.

PORT ARTHUR, ONT.—A deputation from this city went to Ottawa last week and requested the government to grant aid to the Ontario and Remy River Railway, to the extent of \$3,200 per mile for 150 miles. No assistance will be given at this session of parliament.

ST. HYACINTHE, QUE.—The St. Hyacinthe City and Granby Railway Company will seek incorporation at the next session of parliament. to build a steam or electric railway from Brigham, in the county of Brome, to St. Hyacinthe, with branch lines. The capital stock of the company is \$100,000, and among the promoters are Paul F. Payan and Maurice St. Jacques.

VICTORIA, B. C.—The erection of new quarters for the W. C. T. U. refuge home is under consideration.—The Provincial government having been applied to for a grant towards the cost of erecting a new bridge across the Arm, The Deputy Provincial Secretary has requested the city council to give an estimate of the probable cost and to furnish information as to the location of the proposed new bridge.

ST. JOHN, N. B.—The Board of Management have recommended the expenditure of the following sums for sewerage and water extensions: Prospect and Pine street, \$3,300; Burpee avenue, \$2,650; St. James (west), \$750; Strait Shore road, (sewer extension), \$1,400, (providing the right of way can be obtained); Wright street, (sewerage extension), \$2,700; Prince street, (sewerage extension), \$360.

HAMILTON, ONT.—The City Engineer has recommended the building of pipe sewers on Morden and Wellesley streets.—William & Walter Stewart, architects, are engaged on the plans for the buildings for the sewage disposal works, and tenders will be invited on Saturday next. The main building will be a two-storey structure 56x36 feet, and the boiler and coal house, one storey, will be 46x25 feet. The smoke stack will be 85 feet high.

FORT ERIE, ONT.—The Mather Bridge and Power Co., which is seeking incorporation, proposes to construct a bridge across the Niagara river from this place. In the centre of the structure it is intended to place an immense paddle wheel, with which it is intended to generate electricity. The promoters of the company are Hon. R. Harcourt, Thos. D. Cowper, of Weland; Alonzo C. Mather, of Chicago; Samuel Lount, of Barrie; John Fleet and G. H. Bertram, of Toronto.

WINNIPEG, MAN.—Tenders are invited until noon of Saturday, the 26th inst., for the excavation of a ditch five miles long, in Township 15, between ranges 8 and 9, (Westbourne), containing approximately about 30,000 cubic yards of earthwork. Address Robert Watson, Minister of Public Works.—The contract with the present company for a water supply expires in three years, and the City Council is considering whether to purchase the plant or put in a new system. The estimated cost of the latter is \$750,000.

QUEBEC, QUE.—The Council of the Board of Trade has resolved to petition the Federal government for an extension of the graving dock at St. Joseph of Levis, to accommodate the largest steamships that are now plying and that may be running later on between Canada and

Europe.—W. D. Baillarge, Assistant City Inspector, will receive tenders until Wednesday, the 30th inst., for the masonry, wood and iron work of a swing bridge to be erected over river St. Charles. Plans may be seen at the office of the City Engineer.

PETERBORO', ONT.—Mr. J. M. Campbell, of Kingston, is preparing plans and specifications for the station and plant for the Auburn Light & Power Company.—A deputation from the City Council have visited many large cities for the purpose of reporting on the most suitable pavement to be constructed in this town. The report will shortly be presented to Council.—The Council has under consideration the installation of a plant for electric street lighting, and unless an agreement is reached with local companies, steps in that direction will be taken at once.

VANCOUVER, B. C.—Mr. G. Griffith, secretary-treasurer of the Vancouver Marine Railway Company, states that it is proposed to construct a marine railway, capable of handling vessels up to 3,000 tons dead weight, for cleaning, repairing and refitting purposes. It will erect a plant and appliances capable of doing all repairs to vessels as well as building ships or vessels. The capital of the company is to be \$500,000, and its local officials are as follows: President, Mr. Robert Hamilton; vice-president, Mr. W. H. Armstrong; secretary-treasurer, Mr. G. Griffith.

OTTAWA, ONT.—A deputation has requested a provincial grant to build a granolithic sidewalk around the Normal school property, also a grant of \$500 to assist in making a survey of the Ottawa and Georgian Bay canal.—The increase in the school attendance has made it imperative to increase the accommodation, and steps will shortly be taken either to enlarge the present buildings or erect new ones.—Incorporation is asked for the Canadian Electric Light & Power Company, which proposes to build an electric railway from Cobourg, via Port Hope, Toronto and Hamilton to Suspension Bridge, with branch lines.

MONTREAL, QUE.—The Drummond County Railway are asking for power to extend their line from St. Hyacinthe to Montreal, and to build a bridge from St. Lambert to Montreal.—The City Surveyor has submitted a report to the Finance Committee recommending the construction of a number of drains, at a cost of \$80,000. The drains are urgently needed, but the committee has no funds.—An appropriation of \$2,000 has been asked for renovating No. 7 fire station.—Chs. Lafond & Bros., architects, are preparing plans and specifications for a 3 storey house to be erected on St. Denis street for J. A. Robin.—C. St. Jean, architect, is preparing plans for a church and sacristy to be erected at St. Sauver des Monts.—J. H. Macduff is inviting tenders for four cottages to be erected on Clandeboye street, Westmount, for Macduff & Co.—Building permits have been granted as follows: One house, 49x36 feet, two stories, on Malborough street for T. Murphy—masonry, T. Leclair; carpenter and joiner's work, Jos. Lafleur; brick, Auguste Racette. One house on Mountain street, stone and brick, for Wm. Robb—architects, Brown, McVicar & Heriot; masonry, Geo. Nicholson. Probable cost \$6,000. One house on Lafontaine street, for O. Masson—J. A. Chausse, architect; masonry, T. Viau; carpenter and joiner's work, O. Masson. One house on Congregation street, Point St. Charles, for Mde. P. Shotton—architect, George Sleep; masonry, John Quinlan. Two lodging houses, 128x25 ft., pressed brick, probable cost \$14,000—proprietor, H. B. Ames; architect, R. Findlay; masons, Heggie & Stewart; carpenter and joiners, D. M. Long; brick-

layer, Wm. McArthur Two houses for Eugene Dubois on Berri street—masonry, Marseille Paquette; carpenter and joiner's work, N. Deslauriers. One house, corner Beaver Hall Hill and Latour street, for Mde. D. McIntyre.—architect, Edw. Maxwell; estimated cost \$28,000. Two residences on Montcalm street for Ant. Balle.

TORONTO, ONT.—The property owners on Spencer avenue have decided to adhere to their original resolution to have a brick pavement constructed.—The City Council will consider the question of renewing pavements at an early date. There are upwards of one hundred miles of cedar block pavements in the city, of which the greater part is worn out.—The City Council have appointed a deputation to petition the C. P. R. to build a new station at the subway.—The Public Works Department at Ottawa has asked the city engineer to forward his plans for the Island groynes for inspection.—The Board of Control has been instructed to advertise for tenders for a new steam heating boiler for the jail. The cost will be \$2,100.—The Council have passed the by-law authorizing the issue of debentures to the amount of \$1,300,000 for widening the Queen street subway.—A proposition is under consideration by the city council to construct a bridge from the Queen's wharf to the Island, crossing at the western channel. The city engineer and Mr. Kivas Tulley, engineer for the Harbor Commissioners, recently examined the proposed location, and in all probability a swing bridge will be recommended, which will cost about \$40,000. A by-law will likely be submitted at the January elections.—At the next meeting of the Works Committee the City Engineer will recommend a number of pavements, including an asphalt pavement on McCaul street.—The Board of the House of Industry, at a meeting on Tuesday last, decided to expend the sum of \$15,000 in enlarging the present building for the better accommodation of the aged poor.—F. H. Herbert, architect, 9 Toronto street, reports the following new work on hand. Detached residence, east side Bedford road, for Mr. A. Hill, to cost \$10,000; residence, west side Walmer road, for Rev'd. Thos. Goldsmith, to cost \$4,000, also altering and remodelling store at 487 Parliament street for Mr. Charles Meech. The same architect is also preparing plans for a large residence in Rosedale and for making alterations to residence, No. 6 Classic ave., for Mr. R. L. Gibson.—Building permits have been granted as follows. Mrs. C. F. Nason, 2 storey and attic bk. villa, 1540 King st. w., cost \$3,000; Robertson Bros., 2 storey bk. storehouse, rear of factory, Queen st. e., cost \$3,200.

#### FIRES.

The Moncton Sugar Refinery at Moncton, N. B., owned by the Acadia Sugar Combine, was totally destroyed by fire on the 20th inst., involving a loss of about \$200,000.—The building and plant of the Palmerston Electric Light Company, Palmerston, Ont., was destroyed by fire last week. The owners are C. & W. M. Anderson. Insurance \$1,600.—A disastrous fire occurred at Simcoe, Ont., on the 21st inst. The losers are: J. C. Hill, livery stable; A. Hiller, stables; Chas. Eaid, office and stables; Wm. Burt, residence, and the Salvation Army barracks.—Captain Walter Smith's store at Barrington, N. S., was destroyed by fire recently. Loss \$4,000; no insurance.—The house of Adam McLeod, Oter Brook, N. S., has been burned.

#### CONTRACTS AWARDED.

FREDERICTON, N. B.—Willard Kitchen has been awarded the contract for repairs to the parliament buildings. The price is understood to be in the vicinity of \$5,000.

PRESCOTT, ONT.—The town has disposed of \$11,000 of debentures to G. A. Stimson & Co., of Toronto.

SOURIS, MAN.—The contract for the work on McKellar's ravine has been awarded to Thos. Ryan, of Oak Lake.

PRINCE ALBERT, N. W. T.—Kelly Bros., of Winnipeg, have secured the contract for the new court house here.

HAMILTON, ONT. Malcolm & Souter are building new fixtures in Hamilton's drug store, corner James and King streets.

MANIWAKI, QUE.—The contract for building the new iron bridge across the Desert river here has been awarded to Jos. Bourque, of Hull.

GODERICH, ONT.—The town have awarded the Rogers Electrical Company, of London, the contract for the installation of five hundred incandescent lights.

GALT, ONT.—The contract for the mason work in connection with the addition to the foundry of the MacGiegor, Gourlay Company has been awarded to George H. Thomas.

COLLINGWOOD, ONT.—The Municipal Council let the contract for laying several thousand yards of cement sidewalk to the Silica Barytic Stone Co., of Ingersoll. Work to be done this fall.

ST. JOHN, N. B.—The tender of R. B. & P. Smith, of Fredericton Junction, N. B., has been accepted for the supply of timber and lumber required for the extension of the warehouse at Sand Point.

WINDSOR, ONT.—George A. Goodman has secured the contract for the construction of the new street railway barns and power house on London street. The building is to be of brick, 165x65 feet, and will cost \$7,000.

NANAIMO, B. C.—A. E. Lambert has been awarded by the Lands and Works Department the contract for the construction of a truss bridge across the Nanaimo river, on the original Victoria-Nanaimo road. The bridge is to be 180 feet long and 15 feet wide.

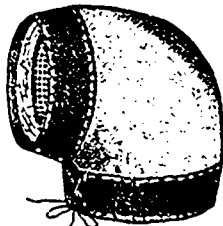
TORONTO, ONT.—Two tenders were received by the Board of Works for piling and filling over conduit south of Hanlan's Point. The offer of McNamee & Simpson at \$4,890, has been accepted. For the construction of a wooden bridge over the Don at Riverdale Park five offers were submitted, as follows. No. 1, \$775; No. 2, \$1,090, No. 3, \$787, No. 4, \$782. Tender No. 1 was accepted, the contractor being J. P. Hamblin, 62 Denison ave.—The County Councils of York and Peel have awarded the contract for rebuilding the bridge over the Etobicoke river near Burnhamthorpe to the Central Bridge Company, of Peterboro, at \$750.

MONTREAL, QUE.—L. R. Montbriand, architect, has awarded the contracts as follows for one cottage, three stories, on Esplanade street for Chs. Gratton: masonry, Chapleau & Lemay; carpenter

and joiner's work, not let; brick, Chapleau & Lemay.—V. Lacombe, architect, has awarded the contract for a building on Lagacheiere street, three stories, for Ernest Belanger, all trades, to Aug. Messier.—Chs. Lafond & Bros. have let the contract for a building, three stories, on St. Denis street, for Vitalien Pauze to Jos. A. Labelle.—Brown, McVicar & Heriot, architects, have awarded the following contracts for one building on Mountain street, three stories, for Wm. Robb: Masonry, Geo. Nicholson; carpenter and joiner's work, W. McDonald; roofing, Montreal Roofing Co.; plumbing and heating, J. Ballantyne; brick, Thos. Wand; plastering, Decary & Son; painting and glazing, Alex. Craig; iron work, Dominion Bridge Co.—Edward Maxwell, architect, has let the contract for one building, corner of Beaver Hall Hill and Latour street, five stories, as follows: Masonry, J. H. Hutchison; carpenter and joiner's work, Jas. Shearer & Co.; roofing, Campbell & Gilday; plumbing and heating, Gardner & Egan; brick, A. Cowen; plastering, J. Lefebvre; painting and glazing, Thomas Bros.; proprietor, Mde. D. McIntyre. Same architect has awarded contracts as follows for one school on Western ave., Westmount, three stories, for the school commissioners of Westmount: Masonry, T. Lewis; carpenter and joiner's work, R. Sharp; roofing, Campbell & Gilday; plumbing, Garth & Co.; heating, Smead Dowd Co.; brick, O. Deguise; plastering, J. Lefebvre; painting and glazing, N. Belaire; iron work, Dominion Bridge Co.

#### PILE DRIVING THROUGH STONE.

In a paper recently read before the American Society of Civil Engineers, Prof. W. H. Burr described some experimental pile driving through new stone-filled crib work. Nineteen piles were driven. The crib was 35 feet deep, and the piles from 52 to 60 feet long, were shod with chilled cast iron points, held on by straps spiked to the pole. The hammer used in the driving weighed 3,500 lbs., and the greatest number of blows was 350. There was no difficulty whatever in driving the piles, and there were no failures. In the discussion following the reading of the paper several other gentlemen gave particulars of pile driving through loose rock. The shoe used in the work of the New York department is conical, the angle of the cone being about 60 degrees. The base of the cone is flat, and it is secured to the cone by a pin cast as part of the shoe and let into the end of the pile. This type of shoe is said to have proved very satisfactory in practice.



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# BRIDGE BUILDERS

BELLEVILLE, ONT.

**A CHINESE PILE DRIVER.**

Piles were being driven in one of the new buildings for a foundation for a punch. They were 8 inches in diameter and 14 feet long. The staging was bamboo, and so was the frame for the hammer, which was a round piece of cast iron, with a hole in the centre for a guide-rod.

Attached to the hammer blocks were twenty-seven ropes, carried up to the top of the frame and down on the outside, looking very much like the old-fashioned Maypole. Twenty-seven women had hold of the ends, and with a sing-song, all together, pulled down; up the rod, four feet, travelled the hammer; then, at a scream, all let go, and down it came on top the pile, which was unprotected by a band or ring. The women were paid 20 cents in gold per day. This Maypole driver is in general use throughout Japan and China.—F. F. Prentiss, in Cassier's Magazine for October.

**FAULTS IN GENERAL CONTRACTING.**

One of the conditions involved by the system of general contracting, says Carpentry and Building, or the letting of an entire contract to one man, is that the obligation for payment to the sub-contractors rests with the general contractor. When a general contractor takes an entire contract he becomes liable to all sub-contractors for their share of the work. In other words, for the purpose of the contract he assumes the position of owner to the sub-contractor. It is frequently the case under this system that a general contractor takes a job without sufficient capital to carry it through, depending upon payment by owner as the work proceeds, for the money wherewith to pay the sub-contractors. This condition of affairs so places the sub-contractor that if the portion of work being done by the general contractor, as the carpentering, for example, is unsatisfactory to the owner, the latter can delay payment, and all the sub-contractors are compelled to wait for their money until the difference between the general contractor and the owner is settled. Again, if the plumbing work is unsatisfactory to the owner the general

contractor becomes responsible, and the owner may delay payment until the fault is rectified. In this case all other sub-contractors, whose work may be perfectly satisfactory, are compelled to wait for their money until a fault, in no wise their own, is corrected. The fault is not so much in the system as in the manner in which it is practiced. Every contractor who takes an entire contract should, in justice to himself and as a proper protection to the sub-contractors, be possessed of sufficient capital to pay the sub-contractors when their accounts are due, regardless of any conditions that may exist between himself and the owner. Contractors lacking the requisite amount of

capital should resist the demand of the owner that all parts of the work be included in one contract.

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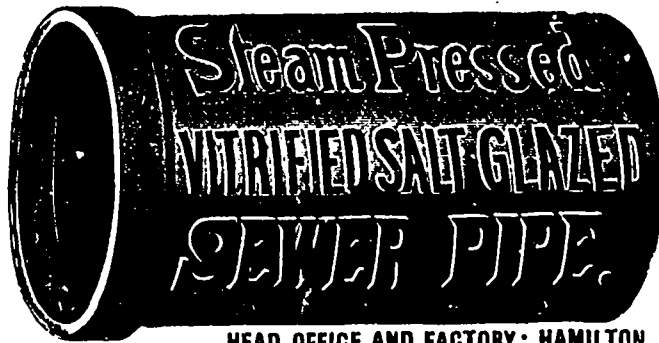
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# MUNICIPAL DEPARTMENT

## HYGIENIC VIEW OF WOOD PAVING.

The following communication was sent to the Society of Sanitary Engineers and Architects of France by Mr. A. Petsch, engineer for bridges and roads, and is printed in L'Echo Forester :

The sanitary condition of cities is influenced in an important manner by the care given to the highways and by the nature of the adopted covering. Public opinion takes account of these matters and the question is often asked if wood paving is a covering consistent with hygienic requirements? In Paris there are about 1,000,000 square metres of wood paving. On this surface one hundred thousand metres have been laid expressly for the property owners along the river, at a cost of 450,000 francs.

The preference of the people is thus indisputable. Is this fact sufficiently reflected on, and does it not indicate a danger to the public health?

A few pages of a work on wood paving answers partly this question. From the beginning, wood paving has been criticized by certain hygienists, and it is not at all their fault, nor that of the contractors who willingly make themselves their echo, if the infatuation of the public has not changed into aversion.

In 1872, in the report on the application of science and art to street paving and street cleansing of the metropolis, the general board of health of London, Eng., declared that wood is a material which ought to be removed for covering streets, as the surface of the roads ought to be impervious. \* \* \* Hygiene is absolutely opposed to its employment for reasons which the municipality slights in its dangerous ignorance of sanitary science. Wood is porous, is composed of bundles of fibres, it absorbs and retains water and especially putrescible fluids.

In 1878, Doctor Raymond, an inspector of public hygiene in New York, attributed the dreadful havoc made by the yellow fever at that time in New Orleans to the miasma spread by the wood paving.

In 1882 (when there hardly existed any wood paving in Paris), The Review of Hygiene took the ground that the reason of the unhealthfulness of wood paving seems no less than the impregnation of a body as porous as wood through muddy liquid charged with organic matter, the urine of horses and diluted dung. The wood itself also contains a certain quantity of albuminous matter, soluble, very fermentative and consequently dangerous. In addition, one is often blinded by dust formed of fragments of woody fibres and other injurious substances, and orphalmia is frequently bred by this cause of irritation.

In 1884, at the meeting of the associa-

tion of English civil engineers, a director of an asphalt company declared that wood paving was excellent for two or three years, but from that time it looked like an old tooth brush and gave off pestilential emanations through the heat of the sun.

Again in the same year, a report, written by a committee of physicians and scientists, was read before an important gathering, which contained the most serious accusations against wood paving. It said that wood ought not to be used for paving with any feeling of security until there is found a means to make it absolutely impervious to humidity and to suppress the dismemberment of its fibres, which conditions are not yet fulfilled.

Doctor Sedgwick Saunders, a physician to the board of health of the city, at the same time recommended sprinkling with antiseptic liquids, and stated as his opinion that wood paving is the most anti-hygienic street covering that man has invented. In certain roads the disinfection ought to be used twice a day as the organic matters infiltrate into the joints, decompose there and spread unhealthy odors. These and similar arguments are reproduced periodically in terms differing very little and can be summed in the following: The wood produces, when dry, a fine dust composed of pulverized fibres which is carried about in the atmosphere and from there into respiratory organs. The wood becoming every day more spongy, absorbs the liquids spread on the surface, not only rain water, but water from the household, horse urine and generally all the impurities of the street. These liquids introduced into the pores of the wood there lodge putrescible matters to which they serve as vehicles. These impure matters penetrate by the opening of these joints to the foundation, where they settle and form a pestilential hearth.

These arguments so often repeated, or drawn up a priori, or supported by probabilities, have never been demonstrated. And what are the facts? There has been immense and continued development of wood paved surface even in those cities where the attacks have been most violent. Is it blindness on the part of the municipalities, or on the part of the population which demands the new paving? At the metropolitan meeting (Jan., 1894), of engineers of cities and counties of England, all the members were unanimous in considering the contention of the hygienists as absolutely factitious and sentimental (Major Isaacs, engineer of Holborn; Tomkins, engineer of Marylebone; Masin of Saint Martin in the Fields; Bouinois, chief engineer of Liverpool, etc.); and according to these engineers if the local complaints sometimes have been raised with reason, they have only been justified through the poor work in paving or bad sprinkling.

In Paris, the opinion of the engineers is the same, that is to say very reassuring; certain quarters in the west, such as Marbeuf, are almost entirely paved with wood; their sanitary condition has been very satisfactory; and if it is recognized that this condition, superior to that of the

east, is due to other causes, it is also to be admitted that the establishment of wood paving has not interfered with the sanitary conditions and has not developed any epidemic.

## ONTARIO HEALTH OFFICERS.

The annual meeting of the Ontario Health Officers' Association was held at Niagara, Ont., on the 14th of September. The president, Dr. W. B. Hall, of Chatham, occupied the chair. There were also present:—Dr. P. H. Bryce, Secretary, Toronto; Ald Allan, Chairman of the Toronto Board of Health; Dr. Sheard, Medical Health Officer, Toronto; Drs. Cassidy and Kitchen, of the Provincial Board of Health; Major Patterson, Chairman of the Chatham Board of Health; Dr. Beaudry, Chief Inspector of the Quebec Board of Health; Dr. Wyatt Johnston, Analyst of the Quebec Board of Health; Mr. J. J. Mackenzie, Analyst of the Ontario Board of Health; Dr. Wardlaw, Galt; Dr. McCrimmon, Palermo; Dr. Griffin, Brantford; Dr. Robillard, Ottawa; Dr. Vaux, Brockville; Dr. Anderson, Dr. Chrysler and Dr. Avery, Niagara. A number of medical health officers from the United States were also present.

After the delegates had been welcomed by the Mayor and aldermen, Dr. J. J. Cassidy, who has been connected with the association since its inauguration some ten years ago, briefly reviewed the reforms which it had wrought in sanitary matters during its existence.

Dr. C. O. Probst, Secretary of the Ohio State Board of Health, read a paper on the "Impediments to Sanitary Progress." He was of the opinion that the public did not appreciate the efforts of the health officers, and in many cases looked upon any new sanitary law as an infringement upon their rights.

Mr. J. J. Mackenzie, the analyst of the Ontario Board of Health, dwelt at some length upon the work which his department had accomplished. He dealt particularly with epidemics in cities, and showed clearly how, by analysing water and food stuffs, a disease might be traced to its source.

Dr. P. H. Bryce explained the working of the law passed at the last session of the local legislature regarding registration. The results derived from the new law, he said, were eminently successful.

The Secretary-Treasurer submitted his report for the year, showing a good balance to the credit of the association, and it was decided not to charge any membership fee for the ensuing twelve months.

The election of officers was then proceeded with, resulting as follows:—President, Dr. C. Sheard, Toronto; Vice-Presidents, Dr. McCrimmon, Palermo, and Dr. J. J. Cassidy, Toronto; Secretary-Treasurer, Dr. J. J. Mackenzie, Toronto. Council, Dr. Wardlaw, Galt; Dr. Griffin, Brantford; Dr. Coventry, Windsor; Dr. Hutchison, London, and Dr. Bowman, Berlin.

In the evening a banquet was held, which was largely attended.

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Architects. Ontario Directory... 111
Quebec Directory... ii
Architectural Sculptors and Carvers. Beaumont, H... ii
Carroll, Robert... ii
Dom. Art Woodwork Company... v
Holbrook & Molling... i
Lamar & Metzger... ii
McCormack, W N... ii
Architectural Iron Works. Dominion Bridge Co. 1
Art Woodwork Dom. Art Woodwork Company... v
Southampton Mfg. Co. xi
Boiler Covering Mica Boiler Covering Co... 15
Bricks (Pressed) Beamsville Pressed Brick Co... i
Brockville Pressed Brick Co... v
Port Credit Pressed Brick Co... v
Builders' Supplies. Bremner, Alex... IV
Currie & Co., W&F.P. xii
Lawrence & Wiggin. IV
Maguire Bros... x
Montreal Directory... i
Ontario Lime Association... III
Rice Lewis & Son... IV
Toronto Directory... x
Building Stone Dealers. Credit Forks Mining & Mfg. Co... viii
Builders' Hardware. Gurney, Tilden Co... viii
Rice Lewis & Son... IV
Vokes Hardware Co... v
Church and School Furniture. Can. Office & School Furniture Co... v
Globe Furniture Co... vii
Creosote Stains. Cabot, Samuel... IV
Chimney Topping. Bremner, Alex... IV
Currie & Co., W&F.P. xii
Contractors' Plant and Machinery. Rice Lewis & Son... IV
Cements. Bremner, Alex... IV
Currie & Co., W&F.P. xii
Maguire Bros... i
Owen Sound Portland Cement Co... IV
Drawing Tables. Laughlin-Hough Drawing Table Co... II
Drain Pipe. Bremner, Alex... IV
Currie & Co., W&F.P. xii
Hamilton and Toronto Sewer Pipe Co... xii
Maguire Bros... i
Elevators. Fensom, John... I
Leitch & Turnbull... I
Miller Bros & Toms... vi
Electrical Engineer. Heathcote, W... ii
Engravers. Can. Photo-Eng Bureau... II
Fire Brick and Clay. Bremner, Alex... IV
Currie & Co., W&F.P. xii
Maguire Bros... i
Galvanized Iron Workers. Ormsby & Co., A. B. I
Granite. Brunet, Jos... III
Grates, Maniles, and Tiles. Holbrook & Mollington i
Rice Lewis & Son... IV
Rogers & Sons Co., Charles... ii
Heating. Clare Bros... iv
Gurney Foundry Co... ix
King & Son, Varden III
McClary Mfg. Co... xi
Ormsby & Co., A. B. I
Pease Furnace Co... iv
Toronto Radiator Mfg Co... iii
The James Smart Mfg. Co... xii
The Howard Furnace Co... vi
Interior Decoration. Castle & Son... viii
Elliott, W. H... vi
Lime. Currie & Co., W&F.P. xii
Mille Roches Lime Co., The... iv
Ontario Lime Association... III
Legal. Denton & Dods... viii
Machinery. Petrie, H. W... 150
Mortar Colors and Shingle Stains. Cabot, Samuel... IV
Maguire Bros... i
Muirhead, Andrew... i
Ornamental Plasterers. Hynes, W J... 150
Paints & Varnishes. Muirhead, Andrew... i
Painters. Gilmour & Casey... III
Montreal Directory... x
Toronto Directory... x
Plasterers. Hynes, W J... 150
Paints & Varnishes. Cottingham, Walter H v
Muirhead, Andrew... i
Parquet Floors. Elliott, W H... vi
Plate Glass. The Consolidated Plate Glass Co... ii
Prismatic Glass. Prismatic Glass Co... vii
Plumbers. Montreal Directory... x
Toronto Directory... x
Roofing Materials. Ormsby & Co., A B... I
Metallic Roofing Co... xii
Pedlar Metal Roofing Co... iv
Roof Snow Guards. Gunn, R A... IV
Reflectors. Friok, I. P... iv
Roofers. Ormsby & Co., A B... I
Montreal Directory... x
Toronto Directory... x
Sanitary Appliances. Dakin & Co., F. B... IV
Toronto Steel Clad Bath & Metal Co... vii
The Young & Bro. Co., Ltd... vii
Shingle Stains. Cabot, Samuel... IV
Stained and Decorative Glass. Castle & Son... viii
Dominion Glass Co... v
Horwood & Sons, H... v
McKenzie's Stained Glass Works... v
Longhurst, H... v
Lyon, N. T... v
Prismatic Glass Co... 150
Shingles and Siding. Metallic Roofing Co... xii
Ormsby & Co., A B... Pedlar Metal Roofing Co... iv
Soil Pipe. Toronto Foundry Co. 150
Wall Plaster. Albert Mfg. Co... II
Window Blinds. Semmens & Evel... xii

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CONDITION OF THE MARKET.

TORONTO: In most lines of builders' supplies a little more activity is apparent than existed a week ago, probably as the result of the approach of the winter season, when build-

MONTREAL: A feature of the market has been the lower quotations for Hamilton pig iron, which has been offered at \$17.75 per ton. Some Nova Scotia brands have been placed at \$16.50. It is stated that the United States manufacturers of wrought iron and steel pipe are about to form an organization, embracing the most extensive plants in America.

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Table listing lumber prices for various types of wood, including clear picks, three uppers, Am. ins., and various sizes of planks and shingles.

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Table listing building materials and their prices, including floorings, dressings, and various types of shingles.

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Table listing brick prices for various types such as Common Walling, Good Facing, Sewer, and Pressed Brick.

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Table listing sand prices per load of 1 1/2 cubic yards.

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Table listing stone prices for various types including Common Rubble, Large flat Rubble, Foundation Blocks, and various types of granite and freestone.

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Table listing Ohio freestone prices for various types such as Buff Promiscuous, Blue Promiscuous, and Sawed Ashlar.

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Table listing slate prices for various types including red, purple, and unflading green.

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Table listing paint prices for various types including White lead, Red lead, Green, and Black lamp.

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Table listing cement and lime prices for various types such as Portland Cements and German.

Portland Cements.—

Table listing Portland cement prices for various types including Newcastle, Belgian, English, and Canadian.

Hydraulic Cements.—

Table listing hydraulic cement prices for various types including Thorold, Queenston, Napanee, Hull, and Ontario.

HARDWARE.

Table listing hardware prices for cut nails and steel.

CUT NAILS, FENCE AND CUT SPIKES.

Table listing prices for cut nails and spikes in various sizes and quantities.

FINE BLUED NAILS.

Table listing prices for fine blued nails in various sizes.

CASING AND BOX, FLOORING, SHOOK AND TOBACCO BOX NAILS.

Table listing prices for casing and box nails in various sizes.

FINISHING NAILS.

Table listing prices for finishing nails in various sizes.

SLATING NAILS.

Table listing prices for slating nails in various sizes.

COMMON BARREL NAILS.

Table listing prices for common barrel nails in various sizes.

CLINCH NAILS.

Table listing prices for clinch nails in various sizes.

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Table listing prices for sharp and flat pressed nails in various sizes.

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Table listing prices for galvanized iron in various gauges.

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