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# CANADIAN CONTRACT RECORD

A WEEKLY JOURNAL OF

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.

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DECEMBER 17, 1896

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## TO CONTRACTORS

Tenders will be received by the Architect, Mr. G. W. Gouinlock, 53 King Street East, Toronto, up to 12 O'CLOCK, NOON, ON MONDAY, 23 DECEMBER, for the following tenders in connection with the erection of the "Temple Building," cor. Bay and Richmond Streets, Toronto, viz.

PLUMBING, STEAM-HEATING, Etc., ELECTRIC MOTORS and WIRING, ELEVATORS, Etc.

Plans and specifications may be seen on and Monday, the 14th inst., at the offices of Geo. W. Gouinlock, Architect, 53 King Street East.  
The lowest or any tender not necessarily accepted.

ORONHYATEKHA, S.C.R., I.O.F.

## CONTRACTS OPEN.

LEAMINGTON, ONT.—John Nigle expects to build a new hotel here.

VIOLET HILL, ONT.—Robert Brinkman intends adding a shingle mill.

ST. JOHN, N. B.—The elevator at Carleton will be rebuilt next summer.

PARIS, ONT.—The council will probably appropriate the sum of \$5,000 for improving the streets.

PARRSBORO, N. S.—The question of lighting the town by electricity is now under consideration.

WALLACEBURG, ONT.—P. Forbes and H. Gillaid have made a proposition to erect a skating rink, 160 x 50 feet.

LACHUTE, QUE.—A sewerage system for the town is being considered. The cost is estimated at about \$150,000.

COWANSVILLE, QUE.—The ratepayers have approved of a by-law to borrow \$20,000 for a system of waterworks.

PARRY SOUND, ONT.—A project has been mooted to construct an electric railway from this place to Ahmic Harbor.

COLLINGWOOD, ONT.—A second engineer for the electric light plant in wanted. Address Thos. Bassett, superintendent.

LONDON, ONT.—Walter Gould will build a \$1,000 storey and a half brick house on Lorne avenue, near Adelaide.

GUELPH, ONT.—The by-law to provide funds for purchasing an electric light plant will be submitted to the ratepayers.

PORT STANLEY, ONT.—The Port Stanley Elevator Co., Ltd., will build a passenger elevator on the cliff at this place.

ST. THOMAS, ONT.—Messrs. Hoffman & McLellan, of Berlin, are negotiating for the purchase of the St. Thomas street railway.

PERTH, ONT.—A drainage scheme to reclaim about 1,000 acres is under consideration. The cost will be nearly \$10,000.

ST. CATHARINES, ONT.—The time for the reception of tenders for supplies for the Welland canal is extended until the 2nd of January.

BEACHBURG, ONT.—Tenders for erecting a new agricultural hall are asked until the 2nd of January. Address John Brown, secretary Agricultural Society.

PEMBROKE, ONT.—The government will be asked to grant financial assistance towards constructing a bridge across the Pettewawa river in Pettewawa township.

CHATHAM, ONT.—The City Council have decided to submit a by-law to the ratepayers providing for the expenditure of \$15,000 for a civic electric light plant.

BERLIN, ONT.—Only one tender was received for the construction of the G. T. R. depot. The work will likely be deferred until the spring, when new tenders will be invited.

ESQUIMALT, B. C.—Tenders will be received until noon, the 28th inst., for the

construction of a scow, fitted as a water tank, to carry 35 tons of water. Address R. Stuart, Belmont.

ASHBURNHAM, ONT.—The Ashburnham Council and the Water Company had a conference recently regarding the extension of the waterworks system to the village. No definite action was taken.

CHELSEA, ONT.—Tenders will be received until noon of Saturday, the 19th inst., for the erection of a residence for Rev. Father Poulin, P. P. Plans, etc., may be seen at the planing mills, corner Murray and Friel streets.

L'ASSOMPTION, QUE.—Plans are being prepared by J. Alcide Chausse, architect, of Montreal, for a new presbytery and repairs to the vestry and church. Tenders will be called for within a month and the work will be commenced early next spring.

ST. GABRIEL DE BRANDON, QUE.—Laroque & Renault, of Joliette, are erecting a large saw mill here, and intend building another at Lake Maskinonge. The Montreal and Lake Maskinonge railway will build a railway one mile in length to connect with this mill.

SPRINGHILL, N. S.—The ratepayers of the town voted unanimously in favor of the construction of a waterworks system on the 4th inst. A plan by gravitation has been adopted, which will cost \$100,000. Two thousand tons of straight metal pipe, 10", 12" and 14", will be required, besides specials and small service piping.

SEAFORTH, ONT.—The County Engineer has reported that Tiplady's bridge should be 25 feet in length. It is also recommended that Bannockburn bridge be built of iron or steel. Provided the adjoining county pay half the cost, the road and bridge committee has recommended that the bridge on the boundary of Usborne and Biddulph be rebuilt.

QUEBEC, QUE.—Several new mills are likely to be erected in the Lake St. John region.—It is probable that extensive repairs will be made to the citadel.—David Ouellet, architect, is preparing plans for a new church to be erected for St. James of Causapsal (Metapedia) parish. The same architect is calling for tenders for the finishing of St. Sebastien church of Aylmer, Beauce.

ROSSLAND, B. C.—A company composed of Tacoma and Butte men has been organized here, under the style of the Lion Brewing Company, with a capital stock of \$100,000. They propose erecting a brewery.—Among the improvements which will be at once undertaken by the Nelson and Fort Sheppard Railway Company will be the construction of a substantial wagon bridge across Centre Star gulch, at a cost of \$6,000.

ALEXANDRIA, ONT.—Work on the Dominion reformatory continues at a standstill. There will be nothing done until the Minister of Public Works has an opportunity of deciding whether it be ad-

visible to proceed with the present structure or build smaller institutions in different parts of the country. According to the arrangements which the late government entered into, there would be an expense of \$800,000 at least for the erection of the buildings.

**HAMILTON, ONT.**—The Sewers Committee have decided to proceed with the construction of a sewer on King street, a short distance east of the T. H. and B. bridge, at a cost of \$860.—The City Engineer has recommended that a brick sewer be built on Aberdeen avenue, between Garth & Locke streets, at a cost of \$3,250. A syndicate, of which Mr. E. B. Osler is at the head, is said to be endeavoring to secure control of the Hamilton, Grimsby and Beamsville railway, the Hamilton and Dundas road, and the Hamilton Electric Radial railway.

**WINNIPEG, MAN.**—Plans are being prepared for the erection of a new storage warehouse for J. Y. Griffin & Co., pork packers.—On Tuesday last the ratepayers voted on by-laws to provide the following sums: Water works, \$650,000; gas works, \$325,000; electric lighting, \$75,000.—A company to be known as the Caniff Prairie Fire and Guard Company has been formed here for the purpose of manufacturing the Caniff fire machine. The capital stock is \$16,000.—The Ogilvie Milling Co. are having plans prepared for a 750,000 bushel elevator to be erected on their property at Point Douglas.—An eastern syndicate are said to be considering the erection of a large office building on Main street. The names have not yet been made public.—J. A. Macdonnell, Chief Engineer of the Public Works Department, has surveyed a site for a bridge over the Assiniboine river between Birtle and Moosomin. The cost will be about \$1,800.

**VANCOUVER, B. C.**—The projectors of the proposed smelter have wired to Vancouver from England that the necessary money to build the smelter has been raised, and that the smelter would assuredly be built.—The following mining companies were incorporated last week: Albion Gold Mining Company, headquarters Vancouver, capital \$5,000,000; Big Buck Mining Company, of Rossland, capital \$1,000,000; Burrard Mining Association of Vancouver, capital \$50,000; Cameronian Gold and Silver Mining Company, of Sandon, capital \$850,000; Cariboo Milling, Mining and Smelting Company, of Spokane Falls, capital, \$800,000; Pine Mountain Gold Mining Company, of Vancouver, capital \$1,000,000; Ibex Mining Company, Rossland, capital, \$1,000,000; Kootenay Brewing, Malt and Distilling Co., of Trail, capital, \$50,000; Noonday Mining Company, of Rossland, capital \$1,000,000; Sault Ste Marie Gold Mining Company, of Rossland, capital \$1,000,000; Slocan Development Company, of Rossland, capital, \$1,000,000; Trail-Bear Creek Gold Mining Company, of Rossland, capital, \$1,000,000; Yale Hamestake Gold and Silver Mining Company, of Vancouver, capital \$400,000.

**OTTAWA, ONT.**—A business block will be erected on the vacant property, corner Sussex and Rideau streets, owned by Senator Clemow.—A proposal has been made that a monument be erected in this city in honor of the sixtieth anniversary of Queen Victoria's ascension to the throne.—The Department of Railways and Canals is preparing to call for tenders for the deepening of the Galops canal and the North channel. The terms will very shortly be advertised.—At the last meeting of the City Council a motion was passed that the finance committee be instructed to bring in a by-law providing for a main trunk sewer and the expenditure of \$50,000 under the power granted

the city by the Ontario legislature for the construction of the same.—The Department of Public Works are asking for tenders, addressed to E. F. E. Roy, secretary, until Thursday, the 31st inst., for the supplying and placing of three tubular boilers in the eastern block of the Parliament buildings, Ottawa. Plans and specifications may be seen at the above department.—The shareholders of the C. Ross Company, Limited, have decided unanimously to put up another building to replace the one destroyed by fire recently.—A number of persons were in the city recently in connection with the Baie des Chaleurs railway. The report of the two engineers who were deputed to go over the line is now under the consideration of the government. The railway is about 80 miles long and extends from Metapedia junction, on the Intercolonial railway, to Paspeblac, in Bonaventure county. It is ultimately intended to build to Gaspé Basin, 120 miles further east.

**TORONTO, ONT.**—The prospectus has been issued of the Toronto Modern Hotel Company, Limited, with a capital of \$300,000. The project includes the erection of a building of six stories and basement, with laundry, barber shop, bakery, grocery, restaurants, auditoriums, etc. A central site has been selected. C. C. Beckett, of 96 Wood street, is the promoter.—Regarding the proposition to construct another foot bridge across the Don, between Queen and Gerrard streets, the City Engineer has reported that the bridge should be suitable to carry teams as well as foot passengers. The opinion is also expressed that, as it will be necessary in the near future to construct a new bridge across the Don at Queen street, the present bridge might be utilized to advantage by being moved northwards to the locality referred to.—The mayor is advocating the construction of a bridge from the Queen's wharf across the bay to the island. Mr. Sankey, surveyor, last week made an inspection of the proposed location, with a view of estimating the cost of construction.—Sufficiently signed petitions have been received against the construction of the proposed asphalt pavement on Queen street, from Yonge to Bathurst, also the concrete pavement on the south side of Bloor street, from Yonge to Jarvis.—The City Engineer has reported that the cost of a brick pavement on concrete 30 feet wide is \$31,000 per mile, and of macadam, such as Beverley street, \$23,200. Owing to the large number of streets requiring new pavements, a committee on local improvements has recommended that the city pay one-third of the cost of all pavements, and also assume one-third the annual charges upon streets where the life of the existing pavements has not expired. A recommendation with regard to new pavements is also made, establishing a standard pavement.—Residents of Huntley street have petitioned for a brick or asphalt pavement.

**MONTREAL, QUE.**—The Town Engineer of St. Henri has reported on the construction of a road between St. Henri and Westmount. The cost is placed at \$10,000.—Plans are said to be in course of construction for a new elevator, with a capacity of 500,000 bushels, to be erected next spring by the Ogilvie Milling Co. on the Gould property.—The Temple Investment and Loan Company has been organized here, the directors being Senator George A. Cox and Mr. John W. Flavelle, of Toronto, Messrs. John Torrance, Frederick Fairman and James McBride, of this city. The application asks that the company be allowed to construct and maintain tramways, electric roads, and electric lighting systems.—The congregation of the Church of the Advent, Westmount, will commence the erection of new edifice next spring, the architects

which are Cox & Amos. The seating capacity will accommodate 600 persons, and the materials will consist of red pressed brick on the exterior, with buff sandstone dressings. The spire will be constructed entirely of stone. The flooring will be of pine and the passage ways will be paved with encaustic tiles. The heating will be by hot water, and the lighting by gas and electricity. A special system of ventilation will be adopted.—It is stated that the owners of the Barron block site do not intend to rebuild, but that the property will be offered for sale.—A deputation from this city last week interviewed the government at Quebec requesting a grant towards building the proposed bridge from Longueuil to De Lorimer ave. The structure will be 10,000 feet in length and 153 feet 3 inches above the water. The cost is estimated at \$8,000,000, of which \$6,000,000 is for the bridge proper, and \$2,000,000 for an elevated road from the Montreal bank of the river to the terminus on De Lorimer avenue. There will be two railway tracks, two electric tracks, two tracks for vehicles and two foot paths.—The scheme to construct a viaduct from St. Henri to the Bonaventure depot has been revived, and an effort will be made to secure its construction. Plans for same have been prepared by Mr. Stuart Howard, C. E. The cost of the proposed viaduct, if built of stone, will be about \$971,700; if iron posts were used, \$926,081, and if constructed of trestle work, \$806,000, with an additional sum of \$92,000 for filling in the trestle work.—A communication has been received by the City Council from Francis Lapointe, architect, of Chicago, stating that a syndicate of capitalists would construct on Mount Royal park a steel tower 600 feet in height and 268 feet at its base, provided the city would grant a site. The tower would be built according to Mr. Lapointe's plans. The company is capitalized at \$300,000.—Theo. Daoust, architect, will call for tenders in a few days for two houses on Park avenue for Mde. J. E. Robidoux, also for one building, three stories, to be erected on St. Elizabeth street, St. Henry, for the Sisters of St. Anne. The proprietors are the School Commissioners of St. Henry.—J. Alcide Chausse, architect, is preparing plans for reparations of L'Assomption church, also for the reconstruction of the sacristy and new manse for the same place.—Building permits have been granted as follows: One house, two stories, 30x46 feet, stone and brick, on Esplanade street, for Chs. Gratton; architect, L. R. Montbriand; contractors, masonry, Chapleau & Lemay; carpentry, Max. Papineau.

#### FIRES.

Goggins' mill at Penobscus, N. B., has been burned. Loss, \$3,000; no insurance.—Beauchemin & Fils' agricultural implement factory at Sorel, Que., was damaged by fire on Saturday last to the extent of \$10,000.—Parker's rink at Hantsport, N. S., was destroyed by fire last week. The loss is \$2,400, partially covered by insurance.—Cloy's large ship chandlery at Thorold, Ont., was burned on the 11th inst. The total loss is \$3,400.—The sacristy adjoining the Basilica at Quebec, and the St. Louis chapel, were damaged by fire to the extent of \$30,000, covered by insurance.—The residence of Wm. Thorndyke at Wesleyville, Ont., has been burned. Loss, \$2,650; insured.

#### CONTRACTS AWARDED.

**ST. JOHN, N. B.**—Tenders for the construction of cattle sheds were received by the Harbor Improvement Committee as follows: Adams & Belyea, \$1.33 per lineal foot for the sheds, \$1.10 for the ramps, \$2.50 for the tanks, (accepted);

D. W. Clark & Son, \$1.89 for the sheds, \$19 each for the ramps, \$45 each for the large tanks and \$35 for the small tanks; Charles Watters, \$1,790 for the complete work.

LONDON, ONT.—McBride & Faircombe, architects, have let contracts as follows for alterations to the Higgins' block: carpentry, Jones Bros., brickwork, Everett & Sing.

ROSSLAND, B. C.—The contract for the construction of the new railway from Trail to Robson has been awarded to a firm of Butte contractors. The price is said to be \$580,000.

HAMILTON, ONT.—Tenders were received as follows for the purchase of \$85,000 of sewage disposal debentures: City and District Bank, Montreal, 101; O'Hara & Company, Toronto, \$86,551.50; George A. Stimson, Toronto, \$86,105; Stuart Strathly, on behalf of the Traders' Bank, \$86,811.25, (accepted.)

HALIFAX, N. S.—Tenders for a city loan of \$22,000 at 4 per cent. were received as follows: H. O'Hara & Co., Toronto, \$22,215; G. A. Stimson & Co., Toronto, \$22,033; J. A. Meldrum, Toronto, \$22,112; J. C. Mackintosh, Halifax, \$22,661.11; Bank of B. N. A., \$22,757 (accepted.)

GUELPH, ONT.—Alterations will be made to the Bank of Commerce. The contractors are: Interior fittings, Burr Bros.; stonework, Dunbar & McCann; plasterer, J. J. Mahoney; carpentry, A. Bruce & Son.—Geo. R. Bruce, architect, has let to D. Keleher the contract for building a two-story brick house, 22 x 40 ft., on Cambridge street, for W. A. Reid.

QUEBEC, QUE.—The carpenter and joiner's work for the interior of Somerset church, Quebec, has been awarded to Messrs. Piquet & Godbout, of St. Hyacinthe, at the price of \$17,000.—The church of St. Malachie is to be altered and decorated. The work has been given to Blais & Gignace. D. Ouellet is the architect.—Thos Raymond, architect, has let the contract for the construction of a stone church at Montmorency Falls, to Joseph Couture, of Notre Dame of Levis. The church is to cost \$17,000, and be completed in two years.

TORONTO, ONT.—The Gurney Foundry Co. have been awarded the contract for heating the Bay street fire hall, at a cost of \$699 12.—Contracts for the material for the front street man were awarded by the Board of Control as follows: Gartshore & Company, 275 24-in. pipes, at \$44 each; Matthew Warnock, 3 valves, \$528; McQuillan & Company, 24 x 12 reducer, \$68; eight 12 x 24 double, \$60 each; and one 12 x 24, single, \$65.—The Polson Iron Works have been awarded the contract to manufacture for the new municipal buildings three patent Hume safety steam boilers of 150 horse power each and one of 250 horse power, also four horizontal multi-tubular boilers of 70 horse power each, making a total of 1,000 horse power. This firm also have the order for all the smoke connections and tank work in the building. We understand the price is in the neighborhood of \$10,000.

MONTREAL, QUE.—The Harbor Commissioners have awarded a contract for macadamizing stone of from 800 to 1200 toises to the Constructing & Paving Company.—The contract for the placing of the interlocking system of switches and signals at Junction Cut, on the Toronto, Hamilton & Buffalo Railway, has been awarded to the Canadian Switch & Spring Company of this city.—Theo. Daoust, architect, has awarded the following contracts: Two houses, three stories, Summer-Hill street, for Dame N. Deslauriers—masonry, Latreille Bros.; carpenter and joiner's work, W. Barit; roofing, plumb-

ing and heating, P. Lectere & Son; brick, Jos. Beland. Two houses, four stories, on Pure street, St. Henry, for L. Robert—masonry, Jos. Pladeau; carpenter and joiner's work, N. Mongeau; brick, Jos. Legault. Two houses, four stories, on Agnes street, St. Henry, forming four tenements, for Jos. Jacob—masonry, G. Guilbault; carpenter and joiner's work, Jos. Jacob; brick, Jos. Paquette. One house, three stories, forming three tenements, for D. Z. Bessette—masonry, G. Guilbault; brick, Jos. Paquette; plastering, S. Gamelin; painting and glazing, Nap. St. Charles; roofing and plumbing, Drapeau, Sauvignac & Co.

#### BUSINESS NOTES.

J. Desjardins & Co., plasterers, Montreal, are reported to have assigned.

Howard Leamy & Murphy, railway contractors, of Montreal, are said to be in financial difficulties.

L. Goulet & Co., of Montreal, Theo. Goulet and Chas. Lafond have formed a partnership.

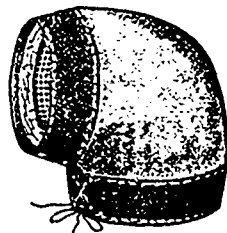
#### LAYING OUT LARGE CAST IRON PIPE.

There is a vast difference between running the service pipes to the building and the service pipes of a water works system through a street, says a writer in the Metal Worker. I recently had the opportunity of watching the work of laying some 20-inch cast iron pipes which were to be subjected to a pressure of 80 pounds to the square inch. The trenches for the pipe were dug about 5 feet deep, in order to have them below the frost line and to avoid any possibility of the water being frozen in a case of a prolonged cold spell. Where the joint was to be made between two sections of the pipe the trench was made both wider and deeper, in order to give the workmen a chance to work. Two heavy pieces of oak timber were laid across the trench at a distance apart slightly less than the length of the pipe. The pipe was then rolled on to these timbers over the trench. A derrick was then used in connection with a sling around the pipe to raise the pipe from the timbers, after which the timbers were removed and the pipe gradually lowered into the trench. If the sling was not placed so as to balance the pipe a workman would stand on the pipe so as to aid in balancing it and guide it into position. In order to get the spigot end of the pipe home into the hub, the sling was slipped along the pipe away from the joint, so

that when it was lifted it would have a tendency to swing the pipe into the joint. Under the hub end a large flat stone was placed to support the pipe, and was bedded just deep enough to secure the pitch desired in the line of pipe. While this portion of the work was being done another workman was attending to the melting of the lead in a furnace and to making a clay gasket. This gasket was made by using a stout rope bedded in the center of a body of potter's clay, this clay being used on account of its toughness and pliability. This gasket was made about 2½ inches in diameter.

After the pipe was inserted in the hub, the workman drove a chisel between the hub and the pipe on each side below the center, in order to adjust the pipe in the center of the hub, and after raising it to the desired position small pieces of lead were placed in the joint to hold the pipe. When this was done the bottom of the joint in some cases was caulked with oakum to prevent the lead running through into the pipe. In other cases the inside of the pipe was packed at the joint with potter's clay, which was made in rolls about 1¼ inches in diameter. After the pipe was ready to receive the clay gasket, one workman sat on top of the pipe and passed the lower end of the gasket carefully down to another workman, who reached under the pipe and carefully raised it up on the other side as it was lowered. The clay was then forced up against the hub and packed in tight, both round the pipe and against the hub, leaving a space on top of the pipe into which the lead could be poured. The pipes being 20 inches in diameter, the workmen found no difficulty in crawling into the pipe to place the clay packing on the inside, and also to watch to see if the lead burst through when it was poured into the joint from the outside. The lead having already been melted in the furnace, a sufficient quantity was poured into a small kettle and passed down to the workman in the trench, who had a hoop both in a bail of the lead pot and in an eye in the side of the pot so that he could guide the stream through the opening provided to receive the molten lead. When the joint was poured full and the workman on the inside had given notice that no breaks had occurred,

(Concluded on Page 4.)



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the gasket was removed from the outside and the clay from the inside.

The work of calking was then begun. The first tool used was an ordinary cold chisel, which partially drove the lead away from the pipe, after which three different sizes of calking tools were used to drive the lead tightly into the joint. It can readily be seen that calking the side and top of the pipe would be comparatively easy, but it is just as necessary that the under side of the pipe should be calked tight, and that it is much more difficult work. It was accomplished by two workmen, both lying alongside of the pipe on opposite sides, and each clasping the other's arm. The one held the chisel and different calking tools while the other used the hammer. By this means the work is made comparatively easy and a strong, safe joint is secured.

**CRUSHING STRENGTH OF STONE.**

The universal custom in determining the stability of the stone to resist pressure is to test the comparative resistance of small cubes. The results obtained by testing small specimens of stone are very useful in determining the relative strength of different kinds of stone, but such results are of no value in determining the ultimate strength of the same stone when built into a masonry structure. The strength of a mass of masonry depends on the strength of the stone, on the size of the blocks, on the accuracy of the dressing, on the proportion of headers to stretchers and on the strength of the mortar. A variation in one of these items may greatly change the strength of the masonry. The importance of the mortar as affecting the strength of masonry to resist direct compression is generally overlooked. The mortar acts as a cushion between the blocks of stone, and if it has insufficient strength it will squeeze out laterally and cause a tensile strain; therefore, weak mortar causes the stone to fail by tension instead of by compression. Stone is several times stronger to resist compression than tension, and hence, where great strength is required it

is necessary that the mortar should be of the best.—Stone.

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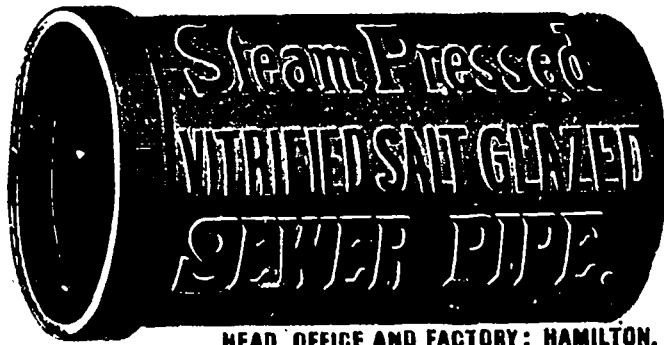
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# MUNICIPAL DEPARTMENT

## UTILIZATION OF DUST.

Shoreditch is going to lead the way in one branch of municipal enterprise, and that is the economical disposal of ash-bin refuse. Through the kindness of Mr. H. E. Kershaw, the chairman of the Electric Lighting Committee of the Shoreditch Vestry (writes one of our representatives), I have had the opportunity of becoming acquainted with the grand new scheme which is to utilize the dust of Shoreditch by making it produce light and motive power. The vestry has to dispose of 20,000 tons of dust and ash-bin refuse annually, and the contract for its removal is now let at 3s. 5d. per ton, which means that the vestry has to pay considerably over £3,000 every year to somebody to take it away. A good many local authorities have put up destructors, which burn up the dust, but Shoreditch is coming forward with a scheme which is going to utilize the furnaces to generate electricity for motive power and light. The vestry has purchased a good site in the middle of the borough, on which will be placed the electric generating station, the new baths and wash-houses, and the free library. The furnaces which burn up the dust will heat boilers, which will in their turn supply steam to engines of 2,400 horse power, and these will work the dynamos for creating the electricity, which will be distributed all over the parish in the form of electric light and motive power. And, finally, the exhaust steam will heat the water in the baths and washhouses, and so save an expenditure of £500 a year in coal.

Such is the main outline is the great scheme which the Shoreditch Vestry is carrying out. There comes in the question: How will it affect the ratepayers? From a careful and exhaustive report which has been drawn up by Mr. Mansfield Robinson on the whole scheme, I learn that the total annual expenditure, including interest and capital repayments, is estimated to reach £3,537. Against this must be put the savings in dust disposal, the receipts for motive power and light supplied to private customers, etc., which are put at £5,127, leaving a net annual profit of £1,590. But this estimate is based on the late contractor's price for disposing of dust, which was 3s. per ton. Since then the contract has been placed at 3s. 5d., so that prospects of profit are more favorable than Mr. Robinson puts them now. Thus it will be seen that without a farthing additional burden to the rates—in fact, in a prospect of a saving of £2,000 a year—the vestry will in forty-two years become possessed of a property which will be worth £100,000, unencumbered with debt. Already sufficient applications have been

received for power and light to warrant an extension of the original scheme. The London and Walthamstow Electric Railway have made an application for power, the price of which will be sufficient to pay the cost of working the present plant. And Shoreditch is a district of small industries, to which power is of great importance. At present gas engines are used, but the vestry proposes to supply electricity as a motive power, at a price which will be equivalent to gas at 1s. 6d. per thousand feet, the present price being 2s. 10d. And, moreover, the cost of a four-horse power electric dynamo and fittings is only £52, against £100 for a gas engine, while the former takes up less room and requires less fixing.

The furnaces and boilers are of the newest and best description, and are being erected by Messrs. Manlove, Alliatt & Co., of Nottingham, Messrs. Kincaid, Waller and Mannville being the engineers. The dust will be carted in and shot into hoppers, whence it will be conveyed by overhead tramways to the furnaces. Here it passes into the drying cells and is raked forward on to the fire-bars, where it is burnt by forced draught. But the most interesting thing about the present scheme is the system of thermal storage, by means of which the heat of the furnaces is stored up in the day time to be used at night when the electric lighting plant is in use. Every part of the plant is duplicated and in some cases triplicated, to provide against accidents and break-downs. The street lighting to be provided consists of fifty-seven arc lamps and thirty-six lamps of thirty-two candle-power. The streets to be lighted are Shoreditch High street, Great Eastern street, Old street, Curtain road, Rivington street, Bateman's row, Charlotte street, Garden walk, New Inn yard, Broadway, Holywell Lane, Bethnal-Green road and Commercial street. The arc lamps are so constructed that they burn a light of 1,200 candle-power until midnight, and then automatically switch this off and turn on two lights of thirty-two candle-power each.

A last addition to the scheme is one put forward by Mr. Mansfield Robinson. The decision in the King's Norton case has created something like a panic amongst local authorities, and Mr. Robinson has an idea that all the sewer gas in Shoreditch should be collected and passed through the furnaces of the dust destructor.—Daily Chronicle.

## SANDSTONE SLABS AS WATER FILTERS.

The importance of thorough filtration through sand is insisted upon by all advocates of purification of water by this system, and reference is frequently made to the beneficial employment of filters in the case of Altona in connection with the cholera outbreak at Hamburg, and to the immunity of this disease enjoyed by Berlin and Madgeburg from the same cause, in spite of the respective pollution of the Spree and the Saale by cholera patients. It is also generally recognized

that imperfect and improperly conducted sand filtration does not interest the disease germs, and cases are given where epidemics of cholera and typhoid fever have been ascribed to the careless management of the filter beds.

In consequence of the fact that the effective work of the sand filter is all done in the topmost layer of the fine sand, that impurities do not penetrate to a greater depth than a fraction of an inch, and that the deeper layers only serve to support the superficial sand, Mr. Fisher, the director of the Worms Water Works, conceived the idea of reducing the thickness of the fine sand and consolidating it into slabs in order to reduce the mass of the filter. He succeeded in producing slabs of artificial sandstone each three feet three inches square by three and nine-tenths inches thick by cementing together fine sand with a readily fusible silicate. These slabs were screwed together in pairs, having between them round the edges a layer of cement, so that a hollow space was formed, into the side of which a metal pipe was inserted. It has recently become possible to make the slabs all in one piece, and thus avoid the necessity of joining two slabs together. Any number of these filter cells can be placed together side by side in a vertical position, and the water surrounding them is forced into the central narrow place, the hydraulic head causing it to pass through the three-inch walls of the chamber.

Various methods of working the filter when the collecting pipe for the filtered water is above and below are given. The cells are grouped together with so-called batteries, and provision is made for isolating the producing of each battery for testing purposes. A series of experiments has been carried out on these sandstone filters as compared with ordinary sand filters, with the result that they are equally good as regards purity of the effluent and much superior if the yield for a given area is taken into account. The slabs are made by heating together at a temperature of 1,200 degrees centigrade fine sand from the Rhine and finely ground soda water bottle glass. The plant at Madgeburg, which consists of 720 cells and yields 792,000 gallons per diem, has given very satisfactory results. Smaller plants on this system are in operation at Kochan and Audermach and an experimental filter of sixty cells is being erected at the Berlin Water Works in Lake Mugget.—Providence Journal.

Pavements made of granulated cork mixed with asphalt have proved successful after two years' trial in London and Vienna. They are never slippery, are odorless, and do not absorb moisture, besides being clean, elastic and lasting. Near the Great Eastern station in London, the wear in two years amounts to about one-eighth of an inch.

From the inception of the system of granolithic sidewalks in 1889 to 1895, there were 80,383 feet, or over fifteen miles, laid in Ottawa, at an actual cost of \$138,359.91. In 1896 the total length constructed amounted to 53,041 feet, or ten miles, being two-thirds of what had been done in the previous seven years. The cost amounted to \$65,514.56, showing a very considerable reduction in the cost as compared with previous years.

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Prices of Building Materials.

CONDITION OF THE MARKET.

TORONTO: The feature of the market this week has been a drop in the price of cut nails. Following the collapse of the nail combine in the United States, American manufacturers made a strong effort to capture Canadian trade, and at a meeting of Ontario manufacturers a reduction of 45 cents per keg was decided upon in order to meet the competition. The price is now \$2.30, with a rebate in car lots of 7 1/2 cents per keg. The lowering in price has not stimulated trade, there being little demand. Wire nails are more active. Cement jobbers are getting in their winter supplies, but few sales are effected. Iron pipe and galvanized iron are selling freely at firm quotations.

MONTREAL: No material change has taken place in the market. The general tone of business is perhaps slightly improved, and some lines are moving freely. Among these are iron pipe, galvanized iron and building paper. A fair business is also doing in fire-bricks and cement, at the advanced quotations. The stock of cement is larger than was at first anticipated, and will be ample for the winter's trade; consequently, values are likely to rule steady. Glass and paints and oils are dull and featureless.

LUMBER.

CAR OR CARGO LOTS.

Toronto. Montreal.

Table listing lumber prices for various types of wood, including clear picks, three uppers, Am ins., inch clear, and various mill runs. Columns show prices for Toronto and Montreal.

YARD QUOTATIONS.

Table listing yard quotations for mill cull boards, shipping cull boards, Hemlock scantling and joist, and various types of planks and cuttings.

B. M.

Table listing lumber prices for various types of wood, including flooring, sawn lath, Cedar, Red oak, White, Basswood, Cherry, White ash, Black Ash, Dressing sticks, Picks, and Three uppers.

Toronto. Montreal.

BRICK - M

Table listing brick prices for various types including Common Walling, Good Facing, Sewer, Pressed Brick, Red, Buff, Roman Red, and Ornamental.

SAND.

Table listing sand prices for Per Load of 1 1/4 Cubic Yards.

STONE.

Table listing stone prices for Common Rubble, Large flat Rubble, Foundation Blocks, Kent Freestone Quarries, River John, N. S., Freestone, New York Blue Stone, Granite, and various types of Freestone.

OHIO FREESTONE, FROM THE GRAPTON STONE CO.'S QUARRIES.

Table listing Ohio Freestone prices for various types including Buff Promiscuous, Blue Promiscuous, Sawed Ashlar, and various sizes of Freestone.

SLATE.

Table listing slate prices for Roofing and Terra Cotta Tile.

PAINTS. (In oil, lb.)

Table listing paint prices for various types including White lead, Red lead, Vermillion, Yellow ochre, Green chrome, Black lamp, Blue ultramarine, Oil, Putty, Whiting, Paris white, Litharge, Sienna, and Turpentine.

Toronto. Montreal.

CEMENT, LIMN, etc.

Table listing cement prices for various types including Portland Cements, Hydraulic Cements, and Keene's Coarse Whites.

HARDWARE.

Table listing hardware prices for Cut nails, Steel, CUT NAILS, FENCE AND CUT SPIKES, and various types of nails.

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

Table listing casing and box, flooring, shook and tobacco box nails prices for various sizes and types.

FINISHING NAILS.

Table listing finishing nails prices for various sizes and types.

SLATING NAILS.

Table listing slating nails prices for various sizes and types.

COMMON BARREL NAILS.

Table listing common barrel nails prices for various sizes and types.

CLINCH NAILS.

Table listing clinch nails prices for various sizes and types.

SHARP AND FLAT PRESSED NAILS.

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

STEEL WIRE NAILS.

Table listing steel wire nails prices for various sizes and types.

Iron Pipe:

Table listing iron pipe prices for various sizes and types.

Lead Pipe:

Table listing lead pipe prices for various sizes and types.

Galvanized Iron:

Table listing galvanized iron prices for various sizes and types.

Structural Iron:

Table listing structural iron prices for various sizes and types.