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CANADIAN CONTRACT RECORD

A WEEKLY JOURNAL OF PUBLIC WORKS, TENDERS, ADVANCE INFORMATION AND MUNICIPAL PROGRESS

EVERY WEDNESDAY

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. 9. JUNE 22, 1898 No. 21.

THE CANADIAN CONTRACT RECORD,
PUBLISHED EVERY WEDNESDAY

As in Intermediate Edition of the "Canadian Architect and Builder."

Subscription price of "Canadian Architect and Builder" (including "Canadian Contract Record"), \$2 per annum, payable in advance.

G. H. MORTIMER, Publisher,
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Telephone 2362.

Information solicited from any part of the Dominion regarding contracts open to tender.

Advertising Rates on application.
New York Life Insurance Building, Montreal.
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WATERWORKS

Listowel, Ont.

Scaled tenders, addressed to the undersigned, will be received by this Corporation up to 8 p.m. of

Wednesday, the 29th June, 1898

Separate or bulk tenders wanted, covering all material and labor complete, for POWER HOUSE, STEAM BOILER, ELEVATED STORAGE TANK, WATER MAINS, VALVES, HYDRANTS, &c.

Full particulars can be had and plans and specifications seen at Listowel, or at the head office of the Consulting Chief Engineer, JOHN GALT, C.E. and M.E., Canada Life Building, Toronto.

Marked bank cheque, payable to the Corporation, for 6 per cent. of tender, must accompany bid.

The lowest or any tender not necessarily accepted.

L. 277 W. E. BINNING, Town Clerk.

TENDERS

FOR

Concrete Sidewalks

Tenders addressed "Adam Dawson, Esq., Chairman Street and Bridge Committee, Peterborough" will be received at this office up to 4 o'clock p.m. on **MONDAY, JULY 27th, 1898**, for about 5,000 lineal feet of Granolithic or Cement Sidewalks. Specifications and forms of tender may be obtained from S. Belcher, Esq., Town Engineer. Tenders must bear bona fide signatures of the contractors and their sureties. A deposit in the form of a marked cheque, payable to the order of the Town Treasurer, for the sum of 5 per cent. on the value of the work tendered for, must accompany each tender. The lowest or any tender not necessarily accepted.

S. R. ARMSTRONG, Town Clerk.
Town Clerk's Office, Peterborough,
June 22nd, 1898.

SEALED TENDERS

Pair of Houses in Isabella Street.

Plans and specifications may be seen at the office of the architect, to whom tenders are to be addressed. The lowest or any tender not necessarily accepted.

F. S. BAKER, Architect,
90 Yonge Street, Toronto.

Toronto Public Schools

TO BUILDERS AND CONTRACTORS

Scaled tenders, whole or separate, will be received, addressed to the undersigned, up to

MONDAY AT 10 A.M., JUNE 29th, 1898,

for the several works required for the enlargement of the following schools:—

BROCK AVE., CLINTON STREET, DUFFERIN,	DEWSON STREET, GIVENS STREET, RYERSON.
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Also for the usual midsummer REPAIRS, ALTERATIONS AND IMPROVEMENTS in all trades at various other schools.

Plans and specifications may be seen and all information obtained at the office of the Superintendent of Buildings, Mr. C. H. Bishop, on and after Monday, the 20th inst., between the hours of 8 a.m. and 5 p.m., including Saturday.

Each tender must be accompanied by the deposit mentioned in the said specifications and forms of tender. The lowest or any tender will not necessarily be accepted.

JAMES BURNS,
Chairman of Property Committee.

TENDERS

FOR

STEEL BRIDGE

Addressed to the undersigned, will be received until 12 o'clock noon,

July 1st, 1898,

for the erection of a STEEL BRIDGE over Fairchild's Creek, in the Township of Brantford, 100 feet c. to c., with fourteen-foot roadway.

Also TWO STONE ABUTMENTS.

Separate tenders required, one for the Bridge and one for Abutments, also for whole work.

Contractors also requested to state difference in price if they furnish stone or if furnished by Council.

Specifications and full particulars may be had at the office of John Fair, Township Engineer, Brantford.

R. M. WILSON, Clerk Tp. Brantford,
Brantford, Ont.

TENDERS WANTED

STEEL BRIDGE IN LINDSAY

Tenders will be received by the undersigned until **JUNE 30th INSTANT**, for a Steel Superstructure to be placed on the stone piers of the Lindsay Street Bridge, on plans and specifications to be submitted by the tenderer.

Bridge to consist of two spans of about fifty feet each in length, width of roadway 17 feet, and sidewalk about five and one-half feet.

Tenders must be accompanied by a marked cheque for ten per cent. of amount of tender, payable at a chartered bank in Lindsay.

F. KNOWLSON, Town Clerk,
Lindsay, Ont.

CITY OF WINNIPEG

WATERWORKS

Proposals, addressed to W. C. Bell, Chairman Fire, Water and Light Committee, Winnipeg, Man., will be received at the office of the undersigned up to 8 30 o'clock on

MONDAY EVENING, THE 25th DAY OF JULY, 1898,

FOR THE

Construction and Supply of a System of Wells and Pumping Plant

for the supply of 4,000,000 gallons of water daily to the reservoirs of the City.

Information and specifications may be obtained from H. N. Ruttan, City Engineer.

C. J. BROWN,
City Clerk,

CITY OF WINNIPEG

Tenders for the Supply of Cast Iron Pipe, Specials, Hydrants, &c., for the Purpose of a Waterworks System.

Scaled tenders, addressed to W. C. Bell, Esq., Chairman of the Committee on Fire, Water and Light of the City of Winnipeg, for the supply of the Cast Iron Pipe, Specials, Hydrants, Valves, &c., required for the establishment of a Waterworks System in the City of Winnipeg, will be received at the office of the undersigned up to 8.30 p.m. on

Monday, 8th August, 1898.

Specifications, bills of quantities, &c., may be obtained on application at the office of the City Engineer, Civic Offices, Winnipeg.

The lowest or any tender not necessarily accepted.

C. J. BROWN, City Clerk,
City Clerk's Office, Winnipeg, June 21st, 1898.

TENDERS

FOR

GRANOLITHIC WALKS

Tenders will be received by registered post only, addressed to R. H. McKay, Chairman of Streets Committee, Walkerton, up to 4 o'clock p.m. on **SATURDAY, JULY 24th, 1898**, for the construction of Granolithic Walks on the following streets:—

Durham Street North, about 390 feet long, 10 feet wide. Durham Street South, about 924 feet long, 10 feet wide, also street crossings: Colborne Street, West Side, about 334 feet long, 4 feet wide; Gibson Street, East Side, about 600 feet long, 4 feet wide; Jackson Street, East Side, about 990 feet long, 5 feet wide; Jackson Street, West Side, about 1155 feet long, 5 feet wide, and street crossings.

Specifications may be seen and forms of tender obtained at the Town Clerk's Office, Walkerton. A deposit in the form of a marked cheque, payable to the order of the Town Treasurer, for the sum of 10 1/2 per cent. of the value of the work tendered for, must accompany each and every tender, otherwise they will not be entertained. Tenders must bear the bona fide signatures of the contractor and his sureties, or they will be ruled out as informal.

The lowest, or part of, or any tender not necessarily accepted.

W. S. GOULD, Town Clerk,
Walkerton, Ont., June 21st, 1898.

Total \$ 26 00

CONTRACTS OPEN.

YARKER, ONT.—John Carroll will erect a new residence.

ETORA, ONT.—The County Council has decided to erect a new iron bridge.

OWEN SOUND, ONT.—Granolithic sidewalks will be laid on several streets.

GLENBORO, MAN.—The citizens are agitating for the erection of a fire hall.

ST. GEORGE, N.B.—J. S. Clark is erecting a factory, 85 x 50 feet, and two stories high.

DESERONTO, ONT.—The Rathbun Co. are preparing to rebuild their terra cotta works.

DUNDAS, ONT.—It is probable that George Case will build a new hotel on King street.

PARRY SOUND, ONT.—Fred. Walton is excavating for a residence to be built on Church street.

SOURIS, MAN.—McCulloch & Hernoc have made arrangements to erect a large flour mill here.

GLADSTONE, MAN.—The by-law to raise \$5,000 for school purposes was carried last week.

SUTTON, QUE.—The village will borrow \$13,000 for the construction of a waterworks system.

LOUISVILLE, QUE.—The town council have decided to establish a municipal wine and cider factory.

OSNABURCK CENTRE, ONT.—William Warner is building a new house, corner Church and Snow streets.

LEVIS, QUE.—It is proposed to build reservoir, etc., to provide for a water supply. J. E. Kay is mayor.

GALT, ONT.—The McEachren Heating & Ventilating Co. has invited tenders for a stone addition to its factory.

PARKHILL, ONT.—H. C. Baird & Co. are considering the question of installing an incandescent lighting system.

SFAFORTH, ONT.—Tenders are wanted by July 6th for a clock to be placed in the town hall tower. Wm. Elliott, town clerk.

MOULINETTE, ONT.—R. W. Samwell, rector Christ Church, will receive tenders up to June 30th for the building of a hall.

JOLIETTE, QUE.—Tenders for the purchase of \$25,000 of debentures will be received by A. L. Marsolais up to June 27th.

BROCKVILLE, ONT.—The city purposes constructing sewers on Wall, Wellington, Blake and Murray streets, to cost about \$5,000.

CARBERRY, MAN.—James Kilnes purposes erecting two brick stores. It is also expected that a flour mill will be built this year.

VICTORIA, B. C.—Tenders have been invited for the new warehouse to be erected on Hastings streets for E. I. Prior & Co.

AYLMER, QUE.—It is probable that a fire alarm system will be installed.—P. G. Nash intends building three residences on Main street.

BEFTON, ONT.—H. B. Hunt, late of the Goldie & McCulloch Co., Galt, has purchased a site here and intends erecting a flour mill thereon.

RAT PORTAGE, ONT.—Mr. Hilliard has made arrangements to rebuild the opera house, providing certain concessions are given by the town.

ST. THOMAS, ONT.—The city engineer has been instructed to invite tenders up to Monday, July 4th, for the brick paving of Talbot street.

DAUPHIN, MAN.—Cade & Gable, of Treherne, purpose establishing a flour mill here, and have asked for a free site and exemption from taxation.

RIMOUSKI, QUE.—Rev. Canon Bouillon is preparing plans for enlarging the

cathedral here and also for the completion of the interior decorations.

KEMPIVILLE, ONT.—The ratepayers have sanctioned a loan of \$10,000 for the purpose of extending matured debentures and making repairs to streets.

NEWMARKET, ONT.—The William Cane & Son Manufacturing Company have sold their electric light plant, and will replace it with a new system.

CALGARY, N.W.T.—A by-law to grant a bonus of \$25,000 to the C.P.R. for the purpose of establishing repair shops here was carried by the ratepayers last week.

MEDICINE HAT, N.W.T.—Francis F. Fatt, secretary-treasurer of the municipality, will receive tenders up to July 14th for the purchase of \$5,500 of debentures.

TORONTO JUNCTION, ONT.—Charles F. Wright, of Dundas street, will build a brick residence on High Park avenue, from plans prepared by Simpson & Ellis, architects, Toronto.

SHERBROOKE, QUE.—The Catholic School Commissioners have decided to erect a new school in the east ward, to cost \$8,000. Plans for same will be invited.

BRANTFORD, ONT.—The city council have decided to put in a furnace in the city hall, and tenders for the work will be asked.—It is proposed to build an addition to the fire hall.

PICTON, ONT.—Power & Son, architects, of Kingston, will superintend the erection of the new edifice for the First Methodist church congregation; estimated cost \$22,000.

MEAFORD, ONT.—Tenders for the erection of a brick school house at the Presbyterian church will be received up to June 29th. Plans by J. C. Forster, architect, of Owen Sound.

ASHCROFT, B. C.—The Ashcroft Water Light & Power Co. will erect a power house on the Bonaparte river, about three miles from this place, and install an electric light and power plant.

SUMMERSIDE, P. E. I.—We are informed that the introduction of sewerage and waterworks systems has been postponed, although it is thought that the work will be carried out before long.

BRIEN, ONT.—Mr. Knechtel has prepared plans for alterations to the high school building in this town, to cost \$3,200; plumbing system and hot water heating apparatus included.

WATERLOO, ONT.—The Berlin Waterworks Co. propose to establish a number of artesian wells in this town for the purposes of a water supply, and are now taking tenders on the work.

STRATFORD, ONT.—E. W. Whitworth & Co., of Liverpool, England, was in the city recently with a view to establishing a factory here. Should the scheme be proceeded with, buildings to cost \$50,000 will be erected.

PERTH, ONT.—William McDiarmid has decided to rebuild, and will put up a brick block two storeys and basement, with fireproof walls.—It is proposed to construct a permanent sewer on Drummond street.

VANCOUVER, B. C.—Edward J. Howell, of London, England, representing the Vancouver Smelting Co., states that the company are now considering the erection of a smelter at a suitable point in British Columbia.

OSHAWA, ONT.—The Ontario Malleable Iron Co. has commenced the erection of a new building, brick, stone foundation, 150 x 200 feet.—It is understood that an extension will be built to the Bishop Bethune College.

BROOKE, ONT.—Tenders for the construction of the Durham Creek drain will be received by Benjamin Richardson, commissioner, up to Monday, July 11th.

The tenders will be opened at the council meeting to be held at Alvinston on that date.

ROSSLAND, B. C.—Tenders close June 30th for the purchase of \$35,000 of debentures. W. McQueen, city clerk.—F. C. Gamble, provincial engineer, has selected a site for the new court house, which will be of frame, two storeys, cost \$6,000.

BRANDON, MAN.—R. E. A. Leech, Secretary Trustee Board of the Methodist church, is taking tenders this week for the erection of the basement walls, stone and brick, for the new church. The architect is W. H. Shillinglaw, of this place.

WILKESPORT, ONT.—Ora Bishop will receive tenders up to June 30th for the construction of the McCoy drain, in the township of Sombra. Plans at engineer's office in this village.—The Sombra council will build a bridge over the Becher drain.

CHATHAM, N. B.—It is proposed to erect at an early date a new high school building, containing ten school rooms and an assembly room, cost \$20,000. It is also proposed to build a wing to the lower school house, for which tenders will be asked at once.

LONDON, ONT.—The city council has appointed a deputation to visit Berlin and Hamilton to inspect the sewage disposal system in vogue at these places.—Tenders for building an annex to the main building of the Western Fair Association will be accepted up to June 25th. Thomas Browne, secretary.

FRURO, N. S.—H. H. Eaton, Chairman of Committee, will receive tenders up to August 1st for constructing fire escapes and putting in new door at the jail.—Plans are being prepared for the enlargement and improvement of the Brunswick street Methodist church.

SAULT STE. MARIE, ONT.—It is said that a Mr. Eveden, of Bournemouth, England, will establish an extensive shingle mill on Camp D'Or Island, near this place.—It is rumored that the Sault Ste. Marie Pulp & Paper Co. contemplate building a nickel refinery at this place, to cost \$1,000,000.

FREDERICTON, N. B.—The Fredericton Bridge Co. have decided to erect a new station at the Fredericton end of the bridge.—The proposed improvements to the pumping station, including new boiler, have been approved of, and the work will proceed forthwith.—Aaron Smith is preparing to erect a residence on Westmoreland street.

BRUCEFIELD, ONT.—At a recent meeting of the council it was decided to proceed at once with the construction of the Broadfoot Creek drain. The length of digging will be five miles, and the estimated cost \$3,253. Funds for carrying out the work will be borrowed under the Municipal Drainage Act.

SIMCOE, ONT.—The county council have decided to build a wing to the County Home, at a cost of \$4,500. Tenders for this addition, including plumbing and heating, will be received by Oliver Austin up to June 30th. Plans at office of C. O. Fairchild, county engineer.—The town council is now considering the question of building a new town hall.

HULL, QUE.—Joseph Bourque, whose planing mill was burned recently, will rebuild on a larger scale.—It has been decided by the council to prepare a by-law for the construction of a permanent pavement on north side of Main street, and on Duke street, from Main to Inkerman streets, also for the construction of such other improvements as may be recommended by the Streets Committee.

KINGSTON, ONT.—The Fire, Water and Light Committee will ask for new tenders for repairs to No. 2 fire hall.—A new barracks for a battery will likely be built at Barricfield.—Power & Son, archi-

pects, want tenders by noon to-morrow (Wednesday) for additions and alterations to No. 7 Vaughn terrace, and by 6 p.m. to-morrow for improvements to residence of L. L. Henderson, corner Bagot and West streets.

WINNIPEG, MAN.—The Toronto Type Foundry Co. has purchased a three-story brick structure on Owen street, and will remodel the interior to meet their conveniences.—The Fire, Water and Light Committee of the City Council has appointed a sub-committee to report on the plans received for the new fire hall.—The C.P.R. is now arranging the details of the new offices of the company, which will be located in the Caldwell block.

ST. JOHN, N. B.—Tenders are being taken for building the new Presbyterian church on Douglas avenue, from plans by A. B. Pickett, 42 Princess street. Mr. Pickett is also preparing plans for the enlargement of St. James church Sunday school building, for which tenders will be invited this week.—The Common Council has directed the Safety Board to make arrangements for lighting the city at the expiration of the present contract.

CHARLOTTETOWN, P.E.I.—C. P. Chappell, architect, has made plans for the following: Departmental store, brick and stone, at Summerside, for Sinclair & Stewart; Methodist church at North Wiltshire; alterations to residence and store for J. H. Bell; warehouse for the city of Charlottetown. Tenders are now being called for a Jubilee hospital, cost \$20,000, brick and stone.—The plans of C. B. Chappell have been accepted for the new P.E.I. hospital; estimated cost \$20,000.

BELLEVILLE, ONT.—A by-law will be submitted to the electors providing for a bonus of \$50,000 to secure the proposed rolling mill and nail and spike factory of the Thames Iron Works, of Norwich, Conn.—In connection with the proposed roadway to Victoria Park, it was stated at last council meeting that a 40 foot span iron bridge, with roadway, would cost \$1,562, and a 60 foot span bridge \$1,897. It is probable that the work will be proceeded with. A communication was read from the council of Faraday asking that a bridge near L'Amble be either repaired or reconstructed.

QUEBEC, QUE.—A considerable sum of money will be spent in the districts of Lake St. John and Chicoutimi, the following work being projected; Wharf at St. Alexis, cost \$4,000; dredging at Lake St. John, \$10,000; wharf at Point Esquimaux, \$1,500; improvements at St. Fulgence, \$1,500; repairs to wharf at St. Alphonse, \$2,000; dredging the Saguenay at Chicoutimi, \$5,000; continuation of the telegraphic service on north shore of St. Lawrence, \$20,000.—It has been decided to reconstruct the R. C. church at Somerset, from plans prepared by Tanguay & Vallee, architects, of this city.

MONTREAL, QUE.—Senator James O'Brien has donated \$1,600 towards the building fund of the Catholic high school for English speaking boys.—An addition, five storeys, 49x30 feet, will be made to the Royal Victoria hospital, at a cost of \$16,000.—Residents of Pine avenue have petitioned for a drain, the cost of building which is estimated at \$1,600.—The rebuilding of the western abattoir on the old site has been decided upon. The company have decided to build a thoroughly modern and up-to-date building.—The Canadian Pacific Ry. has practically decided upon building an addition to the present Windsor street depot, at an estimated cost of a quarter of a million dollars.—The Grand Trunk Railway Company, anxious to proceed at once with the erection of their new general offices on McGill street, have requested the city to complete at once an interim agreement providing for the taking over

at once of the site. The company hopes to begin the work of preparing the site next month.

HAMILTON, ONT.—W. W. Lachance, architect, has completed plans for a factory building for E. T. Wright & Co., a two storey addition to school building at Stoney Creek, Saltfleet, and an office building and steel coal shed for Hemming & Marshall.—T. Beasley, city clerk, has invited tenders for the erection of a brick weigh house and an addition to the John street market weigh house, from plans by A. W. Peene, architect. The city clerk will also receive tenders until noon to-morrow, for a supply of meters required by the Waterworks Department.—Charles Mills, architect, is preparing plans for a four storey building to be erected on McNab street for the Hamilton Coffee & Spice Co.—A special committee of the city council has decided to engage an expert to report on the question of the purchase of a municipal electric lighting plant.—Building permits have been granted as follows: W. W. Lachance, coal shed for Hemming & Marshall, corner Walnut & O'Reilly streets, cost \$1,300; Charles Mills, architect, alterations to 405-415 King street east, cost \$800; St. Lawrence parish, presbytery on Mary street, cost \$4,000; S. McPhie, double brick house, corner of Victoria avenue and King William streets, for Mrs. S. Birely, cost \$2,600.—The annual meeting of the shareholders of the Hamilton, Chedoke & Ancaster Electric Railway Co. was held on Saturday last. It was stated that about \$30,000 of stock had been disposed of, and that the construction of the road would be commenced at an early date.—Charles Mills, architect, wants separate tenders by noon of June 25th, for the erection of the following buildings for Honorable W. E. Santord: Six semi-detached residences, one large detached residence, two semi-detached dwellings, one single dwelling, alterations of a building, slating four residences, and outside painting of four dwellings.—The Sewers Committee will advertise at once for tenders for sewer pipes.

OTTAWA, ONT.—Rev. Canon Bouillon has prepared plans for an addition to be built to the building recently purchased by the Sisters of the Precious Blood from the McKay estate. It will be of wood, and will contain a dormitory and chapel.—E. F. E. Roy, secretary Department of Public Works, will receive tenders up to Friday, July 15th, for completing the harbor and river work in course of construction at Goderich, Ont. Plans at

office of town clerk, Goderich, H. N. Gray, Confederation Life Building, Toronto, and at above department.—The county council has decided to ask the government to build a bridge over the Rideau Canal to connect the village of Ottawa East with the city.—A deputation has requested the county council to rebuild the bridge at Burrutt's Rapids. The proposed structure will be 100 feet in length, with 50 feet span, cost \$1,500.—E. L. Horwood, architect, is preparing plans for a brick and stone residence for Fred Henry, to be erected at Skead's Mills, cost \$20,000.—M. C. Edey, architect, has taken tenders on the carpenter work of warehouse for G. M. Garland, corner Queen and O'Conner streets.—Tenders are wanted by the Department of Public Works up to 28th inst. for electric wiring at drill hall at Halifax, N.S.—The city clerk has given notice that debentures to the amount of \$50,000, for public school purposes, will shortly be offered for sale.—Tenders closed on Monday last for the new fire station in St. George ward, from plans by F. J. Alexander, architect.—L. K. Jones, secretary Department of Railways and Canals, invites tenders up to July 4th for the construction of stoney sluices or valves for lock weirs in connection with the Soulanges Canal.—Building permits have been issued as follows: E. A. Parson, brick veneered dwelling, Theodore street, cost \$2,000; F. G. Sanderson, brick veneered dwelling, 22 Gilmour street, cost \$3,200; L. O. Jolly, row of three houses, brick veneered, 9 Lloyd street, cost \$2,500.

TORONTO, ONT.—At a meeting of the county council held last week, the Property Committee reported a recommendation that a new steel bridge be built between York and Peel counties.—The city engineer has recommended a brick pavement on Nassau street, from Lippincott to Bellevue avenue.—The Public School Board invites tenders up to June 27th for the enlargement of the following schools: Brock avenue, Clinton street, Dufferin, Dewson street, Given street and Ryerson, also for midsummer repairs and alterations at various schools.—The General Assembly of the Presbyterian church of Canada has decided that the Cowan avenue congregation must make arrangements for removal to another site.—Mr. F. H. Herbert, architect, is this week taking tenders for a detached residence to be erected on Delaware avenue.—E. J. Lennox, architect, will award contracts this week for extensive alterations to the Musee building on Yonge street, for a store front, and for alterations and addi-

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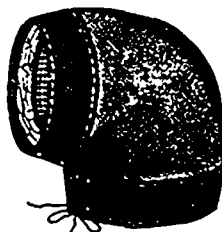
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MONTREAL WINNIPEG

tions to the House of Industry.—Simpson & Ellis, architects, are preparing plans for a new residence for Chas. Wright, Toronto Junction.—The Separate School Board wants tenders by Monday next, 27th inst., for a brick school building on Caer Howell street, and for sundry repairs in connection with the various schools, including carpentry, painting, glazing, kalsomning, re-slating blackboards and plumbing. Plans of school on application to the architect, Mr. A. W. Holmes, in the office of Mr. J. W. Siddall, Janes building. Specifications for repairs at 28th Duke street.—The question of arranging for the carpets, furniture and fixtures for the new city buildings was discussed by the Board of Control on Monday last, and the architect received instructions to prepare designs for the mantels, partitions and counters for the various departmental offices, also for fittings for the court rooms, police court and council chamber. There was also some discussion regarding the specifications for an electric plant, the city engineer having recommended that a competent electrical engineer be engaged to design the plant.

The city commissioner has issued the following building permits: Drs. Peters and Prinrose, pair semi-detached two storey and attic brick and stone dwellings, north side College street, near Elizabeth, cost \$12,000; Wilson Phillips, two storey and attic brick house, west side Bedford road, near Bernard avenue, cost \$3,000; College of Dental Surgeons, three-storey brick addition to the Dental college on College street, cost \$2,200; M. McLaughlin, 2 st. and attic bk. residence on South Drive, near Scarth road, cost \$3,500, J. C. Gibson, architect, W. J. Chick, builder; S. Clarke, 2 det. 2 st. and attic bk. houses, Howard ave., near Calendar st., cost \$5,000, Mrs. Reinhardt, alterations and bk. addition, 487 Jarvis, cost \$5,000, W. Baird, architect; Massey-Harris Co., 2 story stable, n.e. corner Shaw and King sts., cost \$1,500; Puchen & Co., 2 story acid factory, w. side Parliament, south of Esplanade, cost \$2,000.

FIRES.

The fires of the past week included the following: Residence of C. H. Widdifield at Picton, Ont.; damage, \$1,500.—Cheese and butter factory at St. Croix, county of Lothbiniere, Que.; totally destroyed.—Ten dwelling houses at Edmundston, N.B. The owners were Joseph Moreau, Mrs. Magloire Herbert (three dwellings), Alex. Sturgeon, Alphonse Cote, Henry Gagnon and T. Hever.—The Sherbrooke Yarn Mills and the Whitney Electrical Works at Sherbrooke, Que., gutted by fire; loss to the former, \$8,000.—Wray & Hawkshaw's large flour mill at Lucan, Ont., totally destroyed. The mill was recently remodelled and refitted with new machinery.—The hoisting and compressor house of the Asbestos & Asbestic Co., near Danville, Que.; loss heavy.—Warehouse of George D. Wood & Co. at Winnipeg, Man.; loss several thousand dollars.—The McDougall block, corner Cumming and Simpson st., Fort William.—Machine shop of Burley & Gallighan at Rat Portage, Ont.—Wagon shop of T. A. Crow, 619 Yonge street, Toronto; loss \$3,000; building owned by W. Doane.—Building at Belmont, Ont., owned by Archie McKellar.—The Oxbow Milling Company's flour mill at Oxbow, N. W. T., burned on June 20th, no insurance.

Please mention the CONTRACT RECORD when corresponding with advertisers.

CONTRACTS AWARDED.

NEEPAWA, MAN.—New school house: Jones & Fufce, contractors.

MAIDEN, ONT.—Residence for John Anderson: James Wilderspin, contractor.

MORNINGTON, ONT.—Digging Patterson drain: William Connolly and John Reid, contractors, \$823.

LONDON, ONT.—New block for George Sanson: R. & J. Jackson, of Petrolea, contractors; building to be of pressed brick, three storeys.

PRESTON, ONT.—The Canadian Office & School Furniture Co., have secured the contract for office fittings for Robinson, Little & Co.'s warehouse, London, Ont.

QUEBEC, QUE.—Asphalt paving of St. Louis and St. Joseph street: Sicily Asphaltum Co., contractors. According to agreement the company are to erect works in this city.

MONTREAL, QUE.—Contracts for water-works supplies have been let as follows: Lead pipe, James Robertson, \$98, Tin, B. J. Coghlan, \$15.98; pig lead, Montreal Rolling Mills, \$80.41; cast iron pipes, Montreal Pipe

and Foundry Co., \$33; special castings, P. Amesse, \$42.50; lumber, H. Lapointe & Co.

PERTH, ONT.—The contract for an iron bridge on the Centre road, Hihbert, has been let to A. Hill & Co.—The council of Logan township has accepted the tender of Nicholson & Bohan for digging the Nicholson drain; price \$1,921.

BARRIE, ONT.—Messrs. Kennedy & Co., architects, have let the contracts for S. Wesley's residence as follows: Stone work, Jas. Marshall; brickwork, Stapelton & Son; carpenter work, A. Rankin; painting, A. Brown; plumbing and heating, P. J. Moore; plastering, Wm. Ainty; steel ceiling, Douglas Bros.

WINNIPEG, MAN.—\$75,000 of debentures: A. S. Drummond, purchaser.—Tenders in connection with the new school buildings have been accepted as follows: School building on Bond street site, plans by S. Hooper, architect: Woods & Sutherland, general contractors, \$29,336; heating and ventilating apparatus, Smead Dowd Warming & Ventilating Co., \$2,465. School building on Pembina street: Woods & Sutherland, contractors, \$21,502; heating and ventilating apparatus,

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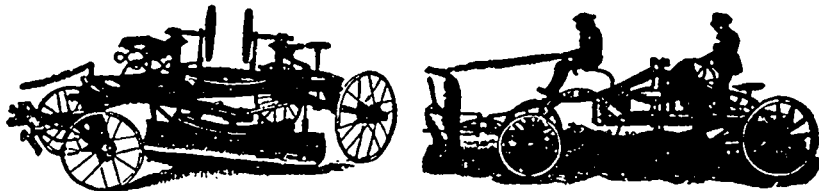
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Smead Dowd Co., \$2,380, J. H. G. Russe^l, architect. Three room building on Wellington street site: Woods & Sutherland, contractors, \$3,491.—Contracts for erection of Jubilee addition have been let as follows: Excavation, mason and brick work and plastering, Messrs. Kelly Bros. & Co., \$33,221; carpenter work, painting and tinning, Mr. John McLeod, \$17,842; heating, plumbing, ventilation, etc., Messrs. T. A. Irvine & Co., \$8,747.

OTTAWA, ONT.—Pipe sewer on Sparks and Kent streets: P. Burns, successful tenderer. The tenders submitted were as follows: Thos. McLaughlin, earth \$8 per 100 feet, rock \$20, 6-inch side drains \$5, rock in side drains \$19, brick man-holes, \$40, cost \$4,325; A. F. Frood, earth \$5, rock \$40, 6-inch side drains \$3.50, brick man-holes, \$30, cost \$5,280; P. Burns, earth \$6.98, rock \$25, side drains, \$2.98, rock \$22, man holes, \$54.90, cost \$4,237.40.

CHARLOTTETOWN, P.E.I.—C. B. Chappell, architect, this place, has let contracts as follows: Addition to store for J. B. McDonald, brick and stone, Robert Griffin, contractor; foundry and machine shop for Bruce, Stewart & Co., engineers, etc., R. Griffin, contractor; residence for G. E. Hughes, H. & S. Lowe, contractors; residence for Pope Fletcher, W. W. Harper, contractor; Residence for Colin McNeil, Angus Martin, contractor; Prowse block, stores and offices, brick and stone, stone front, cost \$18,000, Parkman & Crabbe contractors.

TORONTO, ONT.—John E. Webb, contractor, has secured the contract for five storey warehouse on Wellington street west for John A. Carlaw, and for alterations to 92 Adelaide street east.—F. S. Baker, architect, 90 Yonge street, has let contracts as follows for a brick and stone residence: Masonry, Joseph Williams; carpentry, W. Nash; plastering, James Petrie & Co.; painting, Joseph McCausland; iron work, W. D. Hutson & Son; roofing, H. Williams & Co.; electric wiring and bells, Galvanic Battery Works; hot water heating and plumbing not let.—Mr. F. H. Herbert, architect, has awarded the contracts for safe deposit vaults and the whole of the ordinary vault work in connection with the erection of offices for the Trust & Guarantee Co. at 16-18 King street west, to the J. & J. Taylor Safe Works, of Toronto, and the whole of the interior fittings to the Chas. Rogers & Sons Company, Limited.

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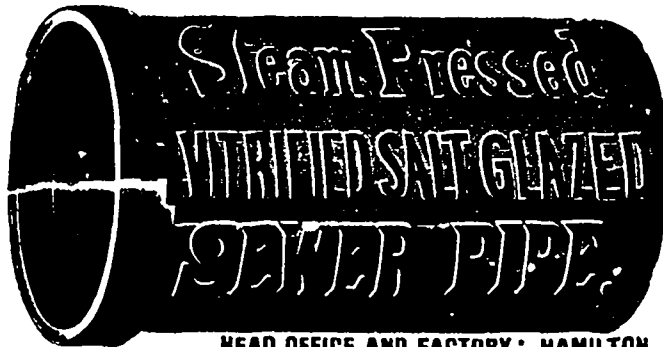
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MUNICIPAL DEPARTMENT

DISPOSAL OF SEWAGE.*

By P. H. BRUCE, M.A., M.D.

As you are aware, sewage varies notably in its composition according to its amount, depending upon whether the separate or continued system of sewerage exists. With the first, we deal practically only with sewage of an amount and composition definitely known; while in the combined, the amount of storm water becomes an important additional factor to be dealt with. Nowadays, when storm water is allowed to go into the sewers, it is common to arrange storm water overflows at the mouths of the local and main sewers, which will, when the sewage has reached a certain amount of dilution, allow an overflow to run into some water-course, where it may be considered a practically harmless pollution. By such methods, it at once becomes possible to arrange filtration plants for handling a definitely known amount of sewage.

Further, however, since in manufacturing towns different industries are carried on, each polluting with its wastes, as tannery refuse, pulp factory refuse, woolen factory refuse, gas liquors, chemical works, etc., it is apparent that if it hoped to have natural processes of organic decomposition carried on, and where it is found that certain wastes contain germicidal chemicals, it is apparent that such must either not be allowed entrance into the general sewerage system, or that they must be neutralized (as acids, for instance) before being allowed to be carried therein.

We therefore see that no rule of thumb method will suffice, if efficient sewage filtration is to be carried on, and hence the town or city engineer has need of a very notable range of scientific knowledge if he is going to do definitely good work.

With these preliminary remarks, we may now refer to some of the working details. In every case it is desirable by strainers to remove as much suspended matter as possible from the sewage, especially if sewage receives any organic or mineral matters. It is sometimes found quite practical, as in the sewage from private houses, institutions, or small towns, with the separate system, to allow paper or other suspended matters to pass directly on the receiving tank, or even the filters. As, however, a receiving tank of considerable capacity allows of a very notable sedimentation, and since it is always very easily ventilated, it is a notable economy to have it in any system arranged, if possible, at the end of the main sewer, thereby preventing the filter beds from being clogged by solid matters.

A method which has merit is, that where the sewage is turned on to beds of graded quicksand, coke, polarite, or

granular hæmatite, as carbonate of iron, or of burnt clay, such as red brick dust (coarse). Some of the results of such beds as affording a rapid means of nitrification of organic matter are now well known.

In the last number of the Journal of the Sanitary Institute, England, a description is given of the method whereby 54,000 gallons of sewage is daily disposed of. The quantity dealt with was 371 times the contents of the tank; without removal the amount of sewage solids left on the beds was only 66½ cubic yards, of which but four per cent. was organic matter. Had this been dealt with as sewage before nitrification, there would have been 556 cubic yards to dispose of. In this case the filters were formed of cinders and coke breeze, of size which would pass through a half-inch mesh of the sieve.

Again, at the Lawrence Experimental Station, Massachusetts, a filter of twenty-six feet of sand was laid over ground with the usual under drains, and treated with tannery sewage 120,000 gallons per acre daily. This became soon clogged, owing to the amount of sludge accumulated on the filter. The matter was gelatinous and wet, but cracked when dry; when, however, the same sewage was treated on a coke filter two feet in depth, with 100,000 gallons daily, and flooded for two hours daily, much of the organic matter was removed, together with all the arsenic of the chemicals used, which had proved poisonous to the micro-organisms in the sand filter. This then was allowed to flow into the sand filter, and gave continuously a satisfactory effluent.

With the sewage from the pulp mills, it was similarly found that the chemicals prevented the nitrification organisms from breaking up the sewage. With, however, the use of the coke strainer, it was found that 100,000 gallons per acre daily could be filtered satisfactorily. Three hours in the sedimentary tank before application to the filter was further found to remove 30 per cent. with the addition of alum.

To account for the action of filters with different kinds of sewage, it must be remembered that the microbic life present in water, soil and air consists of a number of different micro-organisms. Thus as many as 35 different organisms were obtained from manufacturing sewages, while those mingled with city sewage had even more than others.

From what has been said in illustrating the methods of sewage filtration, it is apparent that while the methods must be varied to suit circumstances, yet the principles underlying efficient filtration, viz., that of the aeration of the materials of the filter, to the end of promoting nitrification, is the same in all cases. Taking advantage of this fact, the principle has been still further applied to sand or coke filtra-

tion, in which the natural provisions are supplemented by forced aeration. The following particulars are given from a pamphlet published by Col. George E. Waring, C.E., on "The Purification of Sewage by Forced Aeration." Described briefly, the mode of operations is as follows:

1. The sewage, after passing through suitable screens, which withhold large solids, as rags, paper, etc., flows slowly, horizontally, over a shallow bed (say six inches deep) of coarse broken stone, which serves to catch and retain the coarse floating particles. Three sets of such stones should be supplied, each with a capacity to receive the flow of a certain period, thereby allowing twice the time for recuperation that they are in use. When not in use, these filters drained expose the filter to oxidation, which speedily results in decomposition and cleansing of the filter.

2. The sewage leaving these stones, freed from coarser matters, passes to a straining tank filled with pure broken stone, coarse gravel, cinders or coke.

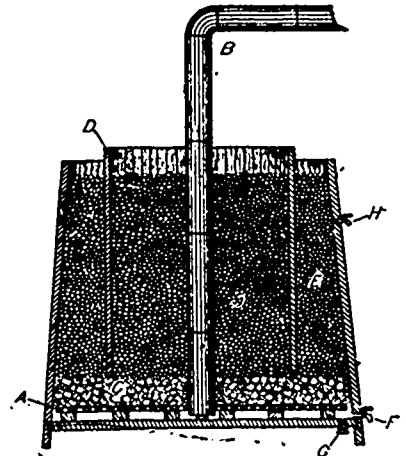


FIG. 1.

- A—False bottom.
- B—Pipe from blower.
- C—Broken stone.
- D—Diaphragm.
- E—Coarse gravel.

This tank (Fig. 1) has two compartments, divided by a diaphragm extending nearly to the bottom. The sewage passes down one and up through the other, overflowing at its top. The rate of flow must be slow enough for the sediment to deposit on the surface of the filter. From this tank, properly managed, the sewage goes as a clear opalescent fluid with a perceptible odor.

3. When such tank has been operated for a considerable time, its pores tend to become clogged at the surface especially, and filtration is slower. Then the sewage is turned to another tank similar; the emptied tank now is treated by air driven into the false bottom of the tank by a blower. Under these conditions bacterial oxidation is rapidly set up and the filter becomes clean. It is best to provide four of these tanks, each resting three times as long as in use. At Newport such filters run five months without renewal of materials, and were practically as clean and effective as at first.

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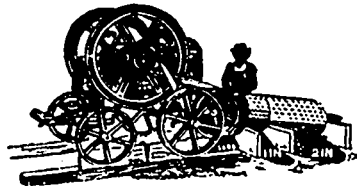
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