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CANADIAN CONTRACT RECORD

A WEEKLY JOURNAL OF PUBLIC WORKS

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.

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HARDWOOD FINISH

Tenders will be received by the undersigned up to
NOON ON DECEMBER 10TH,
for the Hardwood Finish of a large House.
The lowest or any tender not necessarily accepted.

S. G. CURRY,
50 Yonge St., Toronto.



Tenders for Fittings NEW CITY BUILDINGS

Separate tenders will be received, by registered post only, addressed to the Chairman of the Board of Control, City Hall, Toronto, up to noon on

THURSDAY, DECEMBER 8TH, 1898,

for the Office Fittings, including Counters, Partitions, etc., required for the City Engineer's, Street Commissioner's, Medical Health, Park Commissioner's, City Treasurer's, Waterworks, City Commissioner's, City Clerk's and City Solicitor's departments in the new City Buildings, as follows:

1. For Carpenter's and Joiner's Work.
2. For Oil Finishing, Varnishing and Glazing Work.

Plans and specifications and forms of city contract may be seen, and forms of tender and all necessary information may be obtained upon application at the office of Mr. E. J. Lennox, Architect, corner of King and Yonge streets, Toronto, on and after Thursday next, the 1st prox.

Tenders must be on forms supplied by the architect and be accompanied by a marked cheque or cash deposit equal to 2½ per cent. on the amount thereof. Tenders must also bear the bona fide signatures of the party tendering and his sureties, and must comply in every particular with the terms of the advertisement. Should any person or persons whose tender is accepted fail to give security satisfactory to the City Treasurer for the due fulfilment thereof, his or their deposit will be forfeited to the city.

The deposits of unsuccessful tenderers will be returned. The lowest or any tender not necessarily accepted.

JOHN SHAW (Mayor),
Chairman Board of Control,

City Hall, Toronto, Nov. 25th, 1898.

FOR SALE HYDRAULIC ELEVATOR

Complete and only short time in use. Made by McDonald & Co., Limited. Cylinders about 15 inches in diameter and 24 feet long, in sections of 6 ft long. Can be seen in cellars of Metropolitan Building by applying to Janitor. No reasonable offer refused.

FORSYTH, SUTCLIFFE & CO.,
Wholesale Druggists,
192 and 194 Hollis street, Halifax, N.S.

P. S. The room taken by this machinery in cellars is now required, hence the above offer. F. S. & CO.



TENDERS FOR WINDOW BLINDS NEW CITY BUILDINGS

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

Wednesday, Dec. 7th, 1898,

for Window Blinds, including Fittings, Erecting, etc., complete, for the new City Buildings.

Each tenderer will be required to send in a sample or samples of blinds proposed, along with their own specifications (which are to be typewritten); said samples and specifications will be submitted to Mr. E. J. Lennox, Architect, for approval as to completeness and quality of work and adaptability for the building.

Each tenderer will be required to include in his estimate (which must be a lump sum) the work of supplying and erecting the blinds for the whole of the windows throughout the building on the ground, first, second, third, fourth and attic floors, including all gable, dormer and tower-room windows.

Tenders must be on forms supplied by the architect, and be accompanied by a marked cheque or cash deposit equal to 2½ per cent. on the amount thereof. Tenders must also bear the bona fide signatures of the party tendering and his sureties, and must comply in every particular with the terms of the advertisement.

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JOHN SHAW (Mayor),
Chairman Board of Control.

City Hall, Toronto, November 25th, 1898.

CONTRACTS OPEN.

SHELburne, N.S.—Mr. Bower is preparing to erect a trunk factory.

BURLINGTON, ONT.—R. G. Baxter will probably erect a new flour mill.

GUELPH, ONT.—The purchase of a hook and ladder truck has been decided upon by the city council.

ABBOTTSFORD, B. C.—Tenders have been taken on the erection of a municipal hall. John Ball is clerk.

WHITE LAKE, ONT.—The new Presbyterian church to be built here next spring will cost about \$2,400.

COBOURG, ONT.—J. B. McColl, of the Columbia Hotel, contemplates building a large addition at an early date.

RAT PORTAGE, ONT.—The congregation of Notre Dame church have decided to procure new hardwood pews.

PETERBORO, ONT.—There is some

talk of an electric railway being constructed to the neighboring villages.

ARTHUR, ONT.—It is stated that the full amount has been subscribed for building a new Presbyterian church.

HARTLAND, N. B.—A committee has been appointed to procure plans for a new school house, to be built immediately.

CHATHAM, N. B.—Mr. Coffin, C. E., will shortly submit to the town council plans for waterworks and sewerage systems.

COLLINGWOOD, ONT.—The question of improving the harbor is under consideration by the council and Board of Trade.

OWEN SOUND, ONT.—J. C. Forster, architect, has just taken tenders on the erection of a residence for A. W. Ford.

ORWELL COVE, P. E. I.—Tenders are asked by Neil A. Gillis up to December 15th for the building of a school house here.

INGERSOLI, ONT.—A special committee has recommended to the town council that a fire hall be erected, at a cost of \$2,500.

WINDSOR, N. S.—A public meeting has been called to consider the question of purchasing an electric plant for street lighting.

CASTER, ONT.—B. J. Guest is considering a proposal to utilize the water of a creek near here for the development of electricity.

WATERLOO, ONT.—A. Bauer, of the Waterloo shoddy mills, will probably build an addition to his factory in the near future.

TRURO, N. S.—A proposition to build a pulp mill at Farm Lake is believed to be under consideration. Truro capitalists are interested.

ST. THOMAS, ONT.—Jas. A. Bell, city engineer, wants tenders by Friday, December 2nd, for constructing a sewer on Owaisa street.

SIMCOE, ONT.—At the forthcoming municipal elections a plebiscite will be taken on the erection of a house of refuge for the county of Grey.

PORTAGE LA PRAIRIE, MAN.—The Dominion Elevator Company contemplate erecting a drying machine in connection with their elevators here.

SHERBROOKE, QUE.—Tenders for lighting the streets by electricity are invited by C. W. Cate, chairman Lighting Committee, up to December 15th.

BANCROFT, ONT.—The municipality will be asked to vote a bonus of \$2,500 for a branch of the Central Ontario Railway from Ormsby to this place.

GALT, ONT.—The council has decided to submit a by-law to the ratepayers on December 17th to raise \$67,750 to purchase the gas and electric light plants.

CHATHAM, ONT.—It is the intention of W. H. Tyghe, whose evaporator works were recently seriously damaged by fire, to erect a substantial brick structure next spring.

WOODSTOCK, ONT.—Alderman Berry has introduced a by-law in council to provide for building a fire hall, the by-law to be submitted to the electors at the municipal election.

BELLEVILLE, ONT.—By-laws to grant bonuses to the Mitchell-Abbott Iron and Steel Company and the Belleville Brussels Carpet Company were carried by the ratepayers on November 22nd.

AMHERSTBURG, ONT.—It is the purpose of the council to construct silex pavements on several streets, at a cost of about \$5,000. Particulars may be obtained from J. H. C. Leggatt, town clerk.

BAIE VERTE, N. B.—C. E. Ripley, of Seal Cove, Grand Manan, has completed the purchase of three acres of land on the bay shore, on which he will build a large fish smoking and packing establishment.

ASHCROFT, B. C.—A company, represented by Dennis Murphy, of this place, proposes supplying West Yale with electric power, light and heat, utilizing the water of the Thompson and Bonaparte rivers.

PORT COLBORNE, ONT.—Plans are being prepared by S. W. Dickinson, of Humberstone, for a residence to be built in this town by J. J. Dickinson, to cost \$2,000. Work will be commenced immediately.

PARRY SOUND, ONT.—At a recent meeting of the Board of Trade, a committee was appointed to secure information as to the cost of constructing an electric railway to connect Parry Sound and Depot Harbor.

WILLIAMSTOWN, ONT.—Proposals are asked by G. H. MacGillivray, municipal clerk, up to December 14th, for the purchase of \$5,000 of debentures, bearing interest at 4 per cent. per annum and payable in fifteen years.

DANVILLE, QUE.—A scheme is on foot to build a large hotel, to contain 175 rooms. Mayor Foster has expressed himself in favor of the project, and it is probable that a joint stock company will be formed for the purpose.

CHARLOTTETOWN, P. E. I. Richard Smith, secretary Provincial Public Works, invites tenders by December 21st for the construction of a bridge at Alberry Plains, near McMillan's Mills. Plans at Government Engineer's office, this city.

PEMBROKE, ONT. The special committee on sewerage has recommended that a by-law be prepared to raise the necessary funds for the construction of a sewerage system, in accordance with plans prepared by J. L. Morris, C.E.

GRAVENHURST, ONT. Plans have been prepared for a bank building for Mr. Hamer, to be brick, with interior hardwood fittings and finish, and to be heated by hot air. The banking apartments, with vaults, will be situated on the ground floor.

VICTORIA, B. C.—The Victoria-Yukon Company, which recently established a saw mill at Lake Bennett, intend making extensive improvements in the near future. It is said that a number of steamers will also be built by this company.

WINNIPEG, MAN.—It is reported that the Canadian Pacific Railway Company have purchased a large block of land in the centre of the city, with a view to the erection thereon of a new station building, the present depot to be used as freight offices.

RICHIBUCTO, N. B.—It is understood that the government purpose making improvements to the harbor here.—There is believed to be a good prospect of the proposed pulp mill being proceeded with, encouragement having been received from British capitalists.

ST. CATHARINES, ONT.—It is said that two houses will be built on Ontario street

next spring.—The Niagara Falls and Ontario Railway Company is seeking incorporation, to acquire the St. Catharines and Niagara Central Railway and extend it to Port Dalhousie and Hamilton.

HAMILTON, ONT.—A. W. Peene, architect, has been granted a permit for a two-storey brick residence on the east side of Bay street, for T. G. Leather, to cost \$2,700.—David Henry has secured a building permit for a two-storey brick dwelling on Ontario ave., to cost \$1,500.

ST. JOHN, N. B.—Mr. R. C. John Dunn, architect, has been instructed to prepare plans for a new school house to be built at Chatham, to be brick or stone, with ten class rooms and an assembly room.—Some of the aldermen maintain that the sewers of the city should be extended.

EDMONTON, N. W. T.—The erection of a market is now under consideration by the council.—The Edmonton District Railway Company will apply at the next session of the Dominion Parliament for power to build through the Yellow Head or Peace River Pass to the Yukon district.

PHILLIPSBURG, QUE.—Among the buildings projected for next spring are a \$10,000 hotel to replace the Lakeview House, a new station on the water front, and several additions to residences. It is also probable that the council will purchase a fire engine and other apparatus to improve the fire protection.

LISTOWEL, ONT.—W. E. Binning, town clerk, invites tenders up to Monday, December 5th, for the purchase of \$6,333.99 of local improvement debentures.—Extensive alterations are being made to J. M. Gunther's store for a branch of the Imperial Bank, the improvements to include a stone front, fire and burglar proof vault, interior fittings of modern design, etc. Luxfer prisms will be used for lighting. The resident architect is Mr. W. E. Binning.

QUEBEC, QUE.—Plans are in course of preparation for a new block to be erected on the site of the Grand Trunk ticket office.—A steeple will be built next spring on the church of St. Ann of Chicoutimi. David Ouellet, architect, of this city, is preparing the plans and specifications for same; cost about \$2,000. The curate is Rev. Father L. N. Lemieux.—The city has decided to apply to the legislature for power to issue debentures for \$250,000, to be expended in constructing asphalt and other pavements.

WINDSOR, ONT.—The Stomburg-Carison Telephone Mfg. Co., of Chicago, have notified the council that they are about to start a branch factory in Canada.—The township of North Gosfield desires to enlarge the ninth concession drain in that township, and to construct a new outlet for the same in the township of Colchester North. William Newman, C. E., of this place, has made the necessary plans for the work, but the reeve of Colchester North has protested against the scheme, and the question will be decided by the courts.

LONDON, ONT.—At the last council meeting, Ald. Douglas moved that a by-law be submitted to the ratepayers to provide \$75,000 for building a permanent breakwater around West London. The motion was lost. Three money by-laws were presented to the council, one for \$56,000, representing the debenture debt of West London, one for \$6,300 for the North End school, and a third for \$8,000 for Collegiate Institute addition.—The Kirk-Latty Mfg. Co., of Cleveland, Ohio, purpose establishing a nail and tack factory in Canada, and have inquired as to the inducements which this city would offer.

OTTAWA, ONT.—An addition will likely be made to the drill hall in this city, to provide accommodation for the Princess

Louise Dragoon Guards.—An effort is being made to secure the erection of a county collegiate institute.—The board of management of the Home for Friendless Women have under consideration the erection of a new building or the purchase of an existing building and remodelling it.—Mr. J. E. Askwith believes that a solution of the Rideau river floods problem would be to deepen the river by dredging.—The Ottawa Saw Works Company purpose improving their facilities for saw making.

VANCOUVER, B. C.—The British Columbia Electric Railway Co. will commence work at once on their new power house. The car shops will be removed to another site. A proposal is under consideration to build a branch line railway along Davie street to English Bay.—McPhillips & Williams, of this city, are seeking a charter for a railway from Lytton, on the C.P.R., to Quesnelle. The Kitimaat Railway Company also ask power from the government to build a railway from the north end of Kitimaat Inlet to the Copper river, Telegraph trail, Babine lake, and Germansen creek.—Mackenzie Bros. will probably build a new vessel.

MONTREAL, QUE.—The city council has given notice of its intention to construct sewers on the following streets: Champlain street, from end of existing sewer northward; Rivard street, from Dupalais street to St. Louis street.—At the last meeting of the Road Committee, the question of a site for the overhead bridge from Notre Dame street to the depot, which the railway company is obliged to build, was considered. Nothing definite was decided upon.—Rolland Bros., manufacturers of cabinet hardware, upholstery goods, etc., will probably remove to Loxton Falls, where they will occupy the mills owned by Shaw, Cassils & Co. Improvements thereto will likely be made.

NEW WESTMINSTER, B. C.—The Breckman & Kerr Milling Company will immediately commence the construction of a new wharf and large corrugated iron warehouse and office building.—Collier Bros., proprietors of the Central Hotel, announce their intention to erect a brick building next spring.—The congregation of Holy Trinity Cathedral have decided to rebuild on the old site.—The company formed to build a new opera house, corner Lorne and Victoria streets, have made arrangements to commence work at once.—The New Westminster Creamery Co. has completed arrangements for building new premises.—Mr. Swainson, of the Eickhoff House, will build a three-story brick block on the site of his present hotel. Work will commence about the beginning of the new year.

TORONTO, ONT.—It is the intention of the Confederation Life Association to make alterations to their building, substituting steel columns for some of the stone piers. It is probable that the large McWillie store will be divided into smaller stores and offices. The work is in the hands of Mr. J. Wilson Gray, architect.—Mr. W. E. Massey has donated the sum of \$2,500 to build an experimental laboratory at the Gravenhurst sanatorium.—The city wants tenders by December 8th for partitions, counters, fittings, window blinds, etc., required for the new municipal buildings.—It is understood that the Mimico Electric Railway Company have definitely decided to extend their railway to the Long Branch ranges, and probably to Lorne Park.—Exhaustive reports on improvements to the Toronto harbor have been completed by Mr. Kivas Tully, Mr. Postlethwaite, and others. Mr. Tully reports that the southern portion of the piers of the eastern channel be extended to eighteen feet below the datum gauge at the Queen's wharf, and that the channel between them be dredged to that

depth; that the Don river be diverted across McNamee's cut into the deep water, and a dam constructed across the river; and that a trunk sewer be constructed from Bathurst street, along the line of Front street, east of the Don.—The directors of the Industrial Exhibition Association state that \$50,000 is required for improvements, including the enlargement of the main building and the erection of a new implement hall.—The trustees of the proposed Citizens' Sanitorium and Hospital for Consumptives will ask the city council to submit, at the forthcoming municipal elections, a by-law providing the sum of \$20,000 for the purpose of building a suitable hospital.—The city council has given notice of its intention to construct a twelve-inch tile pipe sewer on Amelia street, at a cost of \$346, also the following roadways: 24-foot brick pavement on Crawford street, from Arthur street to the northern terminus of Crawford street, cost \$8,653; 24-foot brick pavement on Division street, from Spadina ave. to Huron street, cost \$2,307; 21-foot macadam roadway on First ave., from Broadview to Logan ave., cost \$8,598; 21-foot gravel roadway on Colahie street, from Beaconsfield ave. to Gladstone ave., cost \$624; 33-foot macadam roadway on Wilton ave., from Yonge to Jarvis street, cost \$4,977.

FIRES.

Recent fires included the following: Stevens Manufacturing Company's building at London, Ont., partially destroyed, loss \$8,000, covered by insurance.—Grant's hall at Ottawa, Ont., a building used for theatrical and commercial purposes, damaged to the extent of \$10,000.—Mr. Buckner's planing mill at Orrville, Ont., totally destroyed; loss \$2,000, no insurance.—Residence of Charles James at Peterboro', Ont., totally destroyed.—Residence of E. G. Christie at Waterford, Ont.; loss \$1,500.—Tighe's evaporating works at Chatham, Ont., including three dry kilns; damage, \$6,000.—Ward's fanning mill, shop and sheds, at Catarqui, Que.—Dwelling of R. Bentress at Bobcaygeon, Ont.—Brick residence of John Cooney, at Peterboro', Ont.; insurance, \$1,300.

CONTRACTS AWARDED.

BROCKVILLE, ONT.—The lumber for the new skating rink will be supplied by Peter McLaren.

SOMBRA, ONT.—James Green has been awarded the contract of building a residence for L. V. Burnham.

ST. JOHNS, QUE.—The contract for a hot water system of heating for the barracks here has been let to E. Morel.

PERTH, ONT.—John Dittick has secured the contract of installing a hot water system in the residence of John A. McLaren.

FREDERICTON, N. B.—W. J. McCormick has let the contract for the erection of a new residence on Charlotte street to Harry Clark.

VANCOUVER, B. C.—The tender of Mowat & McKeen, for the construction of sewers in the west end, has been accepted by the city council.

CHATHAM, N. B.—The Dominion Pulp Co. have closed a contract with E. Leonard & Sons, of London, Ont., for a large digester for their pulp mill.

ST. JOHN, N. B.—Mr. Gilliland, of Rothesay, has secured the contract of building a station for the Intercolonial Railway.—James McDade has been awarded the contract for the galvanizing iron work on the Charles S. Phillip's block and the J. & A. McMillan building.

OWEN SOUND, ONT.—Five tenders were received for an electric fire alarm system, from Parker & Co., Owen Sound; Rodgers Electric Co., Toronto; George

Scott, Oshawa; Alex. Anderson, Toronto, and the Bell Telephone Co. The tender of Alex. Anderson, at \$1,225, has been recommended for acceptance.

WATERLOO, ONT.—The lumber for the Waterloo Mfg. Co.'s new warehouse is being supplied by the Snider Lumber Co., of Gravenhurst.—The J. B. Snider Co. last week shipped a car load of office desks to Liverpool. They have also received a contract for church furniture for an Episcopal church at Cape Town, South Africa.

NEW WESTMINSTER, B. C.—The contract for the new Trapp block, corner Columbia and Lorne street, is understood to have been awarded. It will be a brick structure, two storeys high.—The contract for the new market building has been let to James Layfield, at the price of \$3,000. The iron roofing will be supplied by T. J. Trapp.—Coughlin & Co., of Victoria, are the successful contractors for the construction of the new building in this city for the Bank of British Columbia.

A PRACTICAL APPLICATION OF GLASS BRICKS.

Some few years ago Dr. Van Heyden, of Japan, experimented with hollow glass blocks, or bricks, of which he had a small house built; but this proved a failure, partly because the windows and doors were similar to those in ordinary buildings, and the glass bricks contained enclosed air, and partly because various requisites of a healthy dwelling were not provided. A primary essential of a house is light, but, generally speaking, light of a sufficient amount is accompanied in hot climates by a superfluous degree of warmth. Dr. Van Heyden used in the construction of his novel dwelling house hollow boxes made of glass, which could be filled with a solution of alum, and made both air and water tight. These boxes were made a little over a yard broad, and about 24 in. high, by fixing glass panes, one-third of an inch thick, in an iron frame, and then screwing them together. The interstices between the rows of boxes were filled with felt, covered with thin boards; the flat roof permitted a similar arrangement. Dr. Van Heyden thinks that, for different reasons, the glass boxes might be of larger dimensions, the panes with which they are formed being proportionately thicker, in order the better to stand the pressure of the fluid contained in them. The boxes successfully resisted the influence of heat and cold, as well as shocks of earthquake.

It will be seen that a house built in this fashion, without doors or windows, is practically a large hollow box. The panes being of rough plate glass, persons outside cannot see into the interior, though light is freely admitted on every side; while people in the house can readily look out upon external objects by substituting polished glass for the rough panes at suitable positions, so as to form windows. As regards ordinary doors, they were not requisite, as Dr. Van Heyden made the entrances by a staircase and lift leading from a room sunk below the house. This room is lighted through four glass boxes let into the corners of the floor of the sunlit apartment situated above it. This floor is made of a double set of planks, with a thick layer of sawdust interposed be-

tween the two sets of planks, the upper set is painted and varnished to form the floor of the living room, while the lower, whitewashed, is a suitable ceiling for the sunken room. At night the rooms are illuminated by electric lamps, which give off heat and do not vitiate the air as gas would do.

Dr. Van Heyden does not forget to take into consideration that in winter the solution in the glass boxes might freeze, even in Japan, and that it would be certain to do so if such a house were built in a colder country. To provide against this contingency the whole building is surrounded by a covering of common window-glass set in wooden frames, the house is thus enveloped in air, which is a bad conductor of heat; while the air space can be readily warmed if necessary. Ventilation is arranged for in a simple manner by carrying the iron pillars somewhat higher than the walls of the rooms, leaving a space corresponding with what is usually called the moulding. This free space opens into a groove covered with ordinary window glass, and running round part of the building; from it a tube conveys the air away from the house. One advantage derived from living in such a dwelling is of no small importance in hot climates during summer—namely, perfect freedom from mosquitoes and other tormenting insects, which easily obtain an entrance into an ordinary house through the doorways and windows. Dr. Van Heyden is not so blind an enthusiast as to expect his example to be universally followed, but he has, at any rate, the satisfaction and credit of directing the attention, not only of the Japanese, but of the inhabitants of other countries, to the feasibility of using other materials in house construction than those commonly employed.

IMITATION BLACK MARBLE.

A black marble of similar character to that exported from Belgium—the latter product being simply prepared slate—may be produced in the following manner: The slate suitable for such purpose is first well and smoothly polished with a sandstone, so that no visible impression is made on it with a chisel—this being rough—after which it is polished finely with artificial pumice stone, and finally finished with extremely light natural pumice stone, the surface now presenting a velvet-like, soft appearance. After being allowed to dry, and the surface being thoroughly heated, the finely polished surface is impregnated with a mixture, heated, of oil and fine lampblack. This is allowed to remain twelve hours; and, according to whether the slate used is more or less gray, the process is repeated until the gray appearance is lost. Polishing thoroughly with emery on a linen rag follows, and the finishing polish is with tin ashes, to which is added some lampblack. A finish being made thus, wax dissolved in turpentine, with some lampblack, is spread on the polished plate, warmed again, which after a while is rubbed off vigorously with a clean linen rag. Treated thus, the slate has a deep black appearance like black marble, the polish being just as durable as the latter.

MOVING A TALL STEEL STACK.

The smokestack of the Meriden Curtainixture Company's factory at Meriden, Conn., is a riveted steel cylinder 4 feet in diameter, $\frac{3}{8}$ of an inch thick, 100 feet high, and weighs about 22,000 pounds. It was thrown out of plumb nearly a foot by the settlement of its base, and with the operation of bringing it back to a vertical position it was moved horizontally about 15 feet. The base plate is of thin cast iron $5\frac{1}{2}$ feet square, with a circular flange 2 inches high inside the stack. The rest of the plate inside the stack is cut away, leaving the base weak. The stack stood about 16 feet above the ground, on a pair of 72-inch horizontal boilers with an 8-inch wall between them under its center. The leaning of the stack was due to a settlement of one of the boilers.

The removal of the chimney was placed in charge of Mr. Frank W. Stiles, 112 Hanover Street, Meriden, a building mover. Ten braces were first riveted to the base plate, and the stack and the boiler, which had settled, was blocked on four jack screws. Two pairs of steel girders 28 feet long were placed underneath the base plate, and the stack was brought to a vertical position by jacks under each end of the girders. The girders extended from a wall about 2 feet outside of the boilers to a new brick foundation $5\frac{1}{2}$ feet square and 16 feet high, the intermediate distance being filled in with falsework to prevent springing while the stack was passing. Two yellow pine shoes $5\frac{1}{2}$ feet long were inserted between them and the base plate of the stack. The top of each shoe was beveled at the ends in a peculiar manner. At one side of each end the bevel began 18 inches from the end and on the other side 24 inches, so that when the two shoes were properly arranged they could take bearing only under the edge of the stack, and strains on the thin outer edges of the base plate were thus avoided. Iron brackets were clamped to the tops of the girders to serve as reaction pieces, and jack screws were set horizontally between them and the ends of the wooden shoes and base plate to push the stack along on the girders, which were lubricated with oil and soft soap. Each jack was worked by two men, who advanced the stack an eighth of an inch at every stroke and moved it to the new position in three hours. The guys that were already attached to the stack were considered too weak to be relied on, and no use was made of them in the moving, the base being kept so level that the stack was never more than 6 inches out of plumb. Much of the success of the work is attributed by Mr. Stiles to the peculiar form of the shoes he used. The girders were set, the stack moved, and the girders taken away by five men in two days.

HINTS FOR PAPERHANGERS.

Don't use long patterned wall paper in small rooms nor, a deep border with low ceilings.

After a room has been newly papered there should be ample opportunity given the paper to dry upon the walls before a fire is built in the apartment.

A paperhanger never ought to be without a screw-driver and hammer. All fittings—bell, gas, &c.—should be unscrewed and taken off temporarily, and not cut round.

When papering a small room it is well to remember that blue in all light shades makes a room look larger. Dark colours or papers with large patterns have the opposite effect.

Paper that is to be sized and varnished requires a very careful hanging, as the slightest defects show up. When applying the paper it is well to go to the trouble of using a roller, to make sure that the paper adheres to the wall in every part.

If a paper is a bad "matcher," take care that the best portion of the match is at eye level. Before cutting up paper for a room see if the pieces are all one tint; if not, use all one tint together on one side of the room and the other on the opposite side.

It is worthy of note that there has been a very decided change in public taste in wall decorations. Dados have practically "gone out," especially in halls and on staircases. The tendency at present is to use wide friezes, often of pronounced coloring, with a conventional filling in subdued tones. It must be said that the result of such combination is most satisfactory.

When papering and varnishing a kitchen do not forget that a very light paper on the ceiling, properly varnished, will greatly add to the good appearance as

well as to the sanitary completeness of the room.

Never paper a wall over old paper and paste. Always scrape down thoroughly. Old paper can be got off by dampening with saleratus and water. Then go over all the cracks of the wall with plaster of Paris, and finally put on a wash of a weak solution of carbolic acid.

DIAMONDS FOR CUTTING STONE.

The use of the diamond saw for cutting stone is facilitating the erection of the buildings for the exhibition of 1900 at Paris. This new circular saw is due to M. Felix Fromholt, a Parisian engineer. The diamonds which form the cutting teeth of the saw are common crystals, worth about 10s. a carat, and they are fixed in a steel disc over 6 feet in diameter, which is mounted on a spindle and revolved by steam power, like an ordinary circular saw. For sawing hard stones there are 200 diamonds in the cutting edge, and the speed is 300 turns a minute. It advances into the stone about a foot in that time. For soft stones the teeth are of steel, with diamonds at intervals of every five teeth, and at a speed of twelve turns a minute the saw advances about a yard in that time. The new saw has been at work in the workshops of the Champs Elysées for several months, and has given every satisfaction. It cuts and dresses the stone on all sides, and gives it sharp outlines. Moreover, it does so at one-eighth to one-tenth the cost of hand labor. A saw of this kind, with an alternative movement, sawing stones 4 feet to 6 feet high, is to be set up.

Matthew J. Barr and J. G. Anderson have registered a partnership as plumbers at Vancouver, B. C., under the name of Barr & Anderson.

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Thomas Lidstone and Alphonse Boileau have formed partnership in Montreal as builders, under the firm name of Lidstone, Boileau & Co.

According to report, the council of the town of Welland, Ont., has brought trouble upon itself by proceeding with the building of a sewer without serving notices of assessment upon the owners of the properties affected. The property owners have secured an injunction against the by-law authorizing the building of the sewer, and if the matter is pushed the councillors will probably be held personally liable for spending money without legal warrant.

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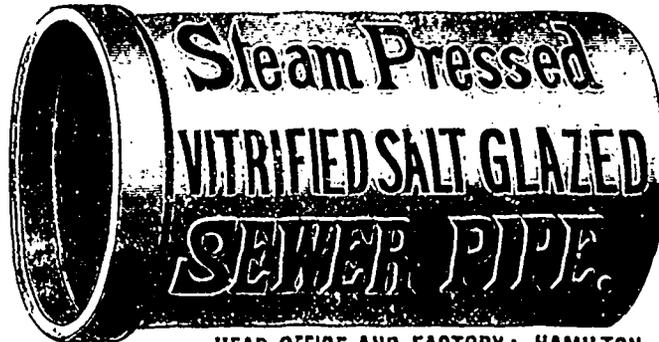
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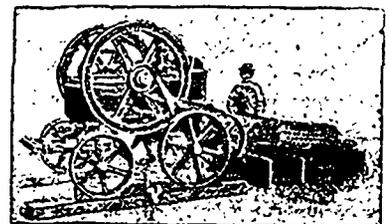
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MUNICIPAL DEPARTMENT

PROPOSED SEWAGE FARM.

The city council of Montreal is considering the establishment of a sewage farm to dispose of the drainage of St. Denis ward. It has been recommended by the Road Committee that the contract for preparing and equipping the proposed farm be given to Mr. C. Janin, C.E., at \$16,000, the amount City Surveyor St. George estimates the work can be done for. This contract will include the making of all connections from the present sewage system and the placing of the farm in a condition to receive and dispose of the entire drainage of the ward.

This new method of disposing of sewage has been under the consideration of the Road Committee for some time past. It was first mooted by Mr. Janin, who has had considerable experience in France as a sanitary expert and in the equipment and operation of sewage farms. The committee, after hearing of Mr. Janin's scheme, instructed City Surveyor St. George to prepare plans and specifications showing the scheme as applied to the present drainage system of St. Denis ward, and the cost of its installation. After discussing these plans and specifications, the committee decided to recommend to council the adoption of the scheme as an experiment. If the experiment is successful, it is likely that the acreage of the proposed farm will be increased and the drainage from the other wards of the city disposed of in the same manner.

This is the first attempt ever made to operate a sewage farm in a climate as cold as that of Montreal during the winter months. This system of disposing of sewage has, however, been successfully operated by a number of cities in the State of Massachusetts, and it is the opinion of the city surveyor that there is no reason why the experiment should not be successful in Montreal. The advantage of the system is that it does away with the necessity of discharging the sewage of the city into the river, and turns the impurities, which now simply pollute the water about the wharves and harbor, into a valuable fertilizer. This is an important consideration for Montreal, for the construction of the outer guard wall of the harbor has converted the swift running water along the front of the wharves in the upper portion of the harbor into dead water, into which a number of the city sewers empty. The absence of current prevents this sewage discharge from being carried away, and it floats on the surface of the water and is deposited along the crib work of the docks, causing an effluvia which is a menace to the health of the city.

It is claimed for the sewage farm system that the impurities in the sewage are

applied to the fertilization of the soil, and the residuum of water not so used is by filtration, in passing through the soil into a system of sub-soil pipes, discharged into a natural water course in a perfectly pure condition.

St. Denis ward under the proposed plan will be drained by what is known as the separate system. The storm water collected by the street drains will be drained direct into a natural water course. The household sewage, on the other hand, will pass through a process of filtration at the sewage farm, before being discharged into a natural water course.

The pipes carrying the household sewage of the ward will be collected at a point on Belanger street, from where it will be conveyed in a large brick sewer to the sewage farm. The sewage will empty itself from the brick sewer into a receiving well underneath the tank house. This well will be ten feet long by eight feet wide, built of brick and covered with concrete, having a smooth and waterproof surface. From this receiving well the sewage will pass into distributing basins on either side through sluices, which will be furnished with valves, so that either one or both basins may be used, according to the volume of the sewage discharged. These two distributing basins will also be constructed of brick with waterproof concrete surface. From these two basins the sewage will pass through iron screens, made to stop rags and paper, into two other larger distributing chambers, each thirty feet long and fifteen feet wide, with an inclined bottom. From these chambers, which have a capacity of 11,250 gallons each, it will be discharged into a large conduit pipe running along the front of the tank house and extending across the farm. From this conduit pipe the sewage empties into longitudinal open trenches which extend lengthwise through the farm. These main trenches are intersected by a system of smaller trenches, which carry the sewage to the beds into which the surface of the farm is divided. These beds will be about fifty feet long and twenty feet wide. From these smaller trenches, which are furnished with sluice gates, the sewage can be discharged over the surface of the beds, the sludge depositing itself in the soil about the roots of the plants under cultivation, and the water not absorbed by the soil filters through into a system of filtrative or weeping pipes laid on with open joints five or

six feet under the surface of the ground.

These filtration or weeping pipes are placed from twenty to fifty feet apart all over the farm, varying according to the nature of the ground. The sewage water, after filtering through the soil into these weeping pipes, is discharged in a pure condition into open ditches along either side of the farm, from which it is drained into a natural water course at the lower end of the farm, by which it is carried into the Back river, descending the Sault au Recollet Rapids.

The object of the double distributing basins under the tank house is that the accumulation of rags, papers and other extraneous substances caught by the iron screens can be easily removed by closing the sluice gate from the receiving well, thus turning the flow of sewage into one basin only. The two larger distributing chambers are also supplied with shut-off valves, so that the discharge of sewage into the conduit pipe can be regulated. The outlets from the conduit pipe into the longitudinal farm trenches are also furnished with valves which control the discharge into the main drains. By this system of valves and sluice gates the sewage can be kept under perfect control, and distributed over the surface of as few or as many of the cultivation beds as may be desired.

The tank house itself will be a modest building, 33 feet 6 inches wide and 42 feet 6 inches in length. The floor will contain a series of trap doors opening into the well, basins and chambers underneath. Owing to the limited amount of sewage which it is expected will be obtained from St. Denis ward alone, only ten acres of the farm will be prepared for use at the present time. Should the experiment prove successful, the city have an option for the purchase of property immediately adjoining of an extent sufficient to dispose of the drainage of the entire city.

Mr. Janin has offered to personally supervise the working of the farm after it is in operation, and supply all the labor and expense of operation, if the city will allow him to cultivate the farm for his own use and dispose of the products.

The death is announced of Sir John Fowler, a distinguished civil engineer, of London, England.

Mr. Newton J. Kerr, assistant in the City Engineer's Department, Toronto, has accepted the position of assistant city engineer of Ottawa.

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miscuous widths.....12 00	13 00			13 00
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up to 16 ft.....10 00	12 00			10 00
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up to 18 ft.....11 00	12 00	12 00		13 00
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Cedar for paving, per cord...		5 0'		5 00
Cedar for kerbing, 4 x 14,				
per M.....14 00				14 00
Scantling and joist, up to 16 ft				
" " " " 18 ft				
" " " " 20 ft				
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" " " " 36 ft				
" " " " 38 ft				
" " " " 40 ft				
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Putting up planks, 1x4 and				
thicker, dry.....25 00	28 00	25 00		30 00

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1 1/4 in. flooring, dressed, F.M.	34 00	36 00	28 00	37 00
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1 1/2 " " undressed, B.M.	18 00	19 00	18 00	19 00
1 " " " dressed.....18 00	20 00	18 00	22 00	25 00
1 " " " undressed.....12 00	15 00	12 00	15 00	18 00
Beaded sheering, dressed.....20 00	35 00	22 00	35 00	
Clapboarding, dressed.....14 00	8 00	12 00		
XXX sawn shingles, per M				
16 in.....2 40	2 35			3 00
XX sawn shingles.....1 60	1 50			
sawn lath, No. 1.....1 75	2 00	2 50		2 60
Cedar.....2 00		3 00		3 00
Red oak.....30 00	40 00	30 00		40 00
White.....37 00	45 00	35 00		55 00
Basswood, No. 1 and 2.....28 00	30 00	18 00		20 00
Cherry, No. 1 and 2.....70 00	90 00	70 00		80 00
White ash, No. 1 and 2.....24 00	35 00	30 00		35 00
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Table listing sand prices per load of 1 1/2 cubic yards.

STONE.

Table listing various stone types (Common Rubble, Large flat Rubble, Foundation Blocks, etc.) and their prices.

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Table listing Ohio freestone types (No. 1 Buff Promiscuous, No. 1 Buff Dimension, etc.) and their prices.

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The following are the quotations to builders for nails at Toronto and Montreal: Cut nails, 5 d & 6 d, per keg 1 80, Steel " " " " 1 90

CUT NAILS, FENCE AND CUT SPIKES. 40d, hot cut, per 100 lbs... 1 85, 10 to 20, hot cut... 1 90, 8d, 9d, " " " " 1 95, 6d, 7d, " " " " 2 00, 4d to 5d, " " " " 2 25, 3d, " " " " 2 40, 2d, " " " " 2 85

Cut spike, 10 cents per keg advance. Steel Nails, 10 c. per keg extra.

Iron Pipe: Iron pipe, 1/2 inch, per foot... 6c, 3/4 " " " " 7, 1 " " " " 8 1/2, 1 1/4 " " " " 12, 1 1/2 " " " " 17, 2 " " " " 24, 2 1/2 " " " " 30, 3 " " " " 43

Toronto, 65 per cent. discount. Montreal, 70 per cent. discount.

Lead Pipe: Lead pipe, per lb... 7c, Waste pipe, per lb... 7 1/2 cent. dis.

Galvanized Iron: Adam's-Mar's Best and Queen's Head: 16 to 24 gauge, per lb... 4 1/2 c, 20 gauge, " " " " 4 1/2 c, 28 " " " " 5 c, Gordon Crown: 16 to 24 gauge, per lb... 4 1/2 c, 20 gauge, " " " " 4 1/2 c, 28 " " " " 5 c. Note.—Cheaper grades about 1/2 c. per lb. less.

Structural Iron: Steel Beam, per 100 lbs... 2 75, channels, " " " " 2 85, angles, " " " " 2 50, tees, " " " " 2 80, plates, " " " " 2 55, Sheared steel bridge plate... 2 30

Toronto. Montreal.

Table listing various materials (Hull, Ontario, Keene's Coarse "Whites", Fire Bricks, etc.) and their prices in Toronto and Montreal.

The following are the quotations to builders for nails at Toronto and Montreal: Cut nails, 5 d & 6 d, per keg 1 80, Steel " " " " 1 90

CUT NAILS, FENCE AND CUT SPIKES. 40d, hot cut, per 100 lbs... 1 85, 10 to 20, hot cut... 1 90, 8d, 9d, " " " " 1 95, 6d, 7d, " " " " 2 00, 4d to 5d, " " " " 2 25, 3d, " " " " 2 40, 2d, " " " " 2 85

Cut spike, 10 cents per keg advance. Steel Nails, 10 c. per keg extra.

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