

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.

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CONTRACTS OPEN.

CARTHAGE, ONT.—It is proposed to build a new school here.

HARRISTON, ONT.—The Methodists will build a new church.

KINGSTON, ONT.—Selby & Youden intend to enlarge their foundry.

WINCHESTER, ONT.—Peter Brisbois will build a residence on May street.

SELKIRK, MAN.—The corporation may install a municipal electric light plant.

LONDESBORO, ONT.—L. Brown intends building a brick residence next summer.

BRISTOL, ONT.—It is proposed to build a new Roman Catholic church at this place.

ECHO BAY, ONT.—A Terrier & Co. propose building a large pork-packing factory.

MERRICKVILLE, ONT.—The Dominion Government will repair the dam at this place.

WELLAND, ONT.—The Baptist church congregation have decided to build a new edifice.

BRANTFORD, ONT.—Plans are being prepared for proposed alterations to the isolation hospital.

BROWNSVILLE, ONT.—J. Baxter and Isaac Holland intend building new residences in the spring.

SHERBROOKE, QUE.—The city council intend erecting a new fire station on Lansdowne street.

LINDSAY, ONT.—The by-law to provide \$20,000 for the building of roads was defeated last week.

WINDSOR, ONT.—E. S. Wible will shortly commence the erection of a residence on Victoria avenue.

ST. CUNEOUDE, QUE. The

council has decided to issue debentures to the amount of \$400,000.

KINGSVILLE, ONT.—It is expected that improved fire apparatus will be installed by the corporation.

SHANLY, ONT.—Tenders are asked by Andrew Doney up to 15th inst. for carpenter work of new school house.

DUNGANNON, ONT.—It has been decided to make alterations to the school building instead of building a new one.

ALMONTE, ONT.—Mr. Munro, architect, has prepared plans for new C.P.R. station to be built here next spring.

HULL, QUE.—The proposal to submit a by-law to raise \$25,000 for waterworks improvements was defeated in council last week.

PENETANGUISENE, ONT.—The Firstbrook Box Co. are preparing the site for a saw mill to be built at the head of the bay.

SYDNEY, N.S.—D. M. Curry, municipal clerk, has taken tenders for plastering and wood finish in connection with new county court house.

HINTONBURG, ONT.—The question of installing a municipal lighting plant will likely be taken up at an early meeting of the council.

VANCOUVER, B. C.—A. W. Brown will shortly commence the construction of a brick block at the corner of Hastings street and Columbia avenue.

SACKVILLE, N. B.—No plan of fire protection for the village has yet been decided upon. Another public meeting will be held at an early date.

LANARK, ONT.—T. Stafford, treasurer building committee, invites tenders up to January 31st for erection of a Catholic church in this town.

COOKSHIRE, QUE.—It is probable that a chemical factory will be established here. R. H. Pope and the Standard Chemical Co are interested.

COLLINGWOOD, ONT.—It is probable that the east ward school will be enlarged—The Dominion Government has been petitioned to build a drill hall in this town.

ATHENS, ONT.—On behalf of the building committee, A. W. Blanchard is asking for tenders up to 31st inst. for erection of a stone church. Plans at office of T. G. Stevens.

GUELPH, ONT.—In his inaugural address to the city council, the Mayor refers to the sewerage question and recommends that a septic tank system be installed. The sum of \$52,000 is available for sewerage purposes.

SAULT STE. MARIE, ONT.—It is understood that plans have been prepared for a new \$10,000 school to be erected in the New Settlement.—It is expected that the granolithic sidewalks

provided for in the street improvement by-law will not be built until next year.

HANOVER, ONT.—R. J. Bill intends building a residence this year.—H. Prast is having plans prepared for a residence to be built on the old church property.

BENMILLER, ONT.—A meeting of the ratepayers of the townships of Colborne and Goderich is being held here to-day to discuss the building of a bridge over the Maitland river.

BAYFIELD, ONT.—Bids are requested by James Donaldson up to February 15th for the erection of a brick Presbyterian church here, from plans by James A. Fowler, architect, of Goderich.

ELMIRA, ONT.—By a large majority the ratepayers have voted in favor of better fire protection. The council will decide whether to purchase a fire engine or construct a waterworks system.

WESTBOURNE, MAN.—A committee has been appointed to endeavor to arrange for the extension of the Canadian Northern Railway from Oakland to certain points on the White Mud river.

RENFREW, ONT.—A deputation from this vicinity will ask the Ontario Government for a subsidy for a railway from Mile Lake, on the Kingston and Pembroke Railway, via Pakenham to connect with the Canadian Pacific at Arnprior.

WIARTON, ONT.—Among the new industries to be established this year will be the beet sugar factory, two cement factories, flour mill, sash and door factory, two saw mills, and a large addition to the bobbin factory. The sash and door factory will be established by Pullyban's Bros., of St. Mary's.

WINNIPEG, MAN.—F. W. Thompson, manager of the Ogilvie Milling Co., stated in this city last week that preparations are under way to establish a plant which will furnish the city with electric light and power at half the present cost.

GRANBY, QUE.—Edward Bradford, who is engaged in the manufacture of sanitary plumbing fixtures in Connecticut, has made a proposition to establish an industry in this town if given some assistance by the council.

PEMBROKE, ONT.—A meeting was held at Desjardinsville last week at which the question of building a bridge across the Ottawa river connecting Allumette Island with this town was discussed. It is estimated that a suitable bridge would cost nearly \$1,000,000.

VICTORIA, B. C.—Tenders are invited by I. Woodgate, of Esquimalt, up to 21st inst., for blasting and removing rock to improve the water approach to H.M. Naval Yard.—F. M. Rattenbury has invited tenders for heating the new high school building with hot water.

HESPELER, ONT.—Two by-laws were carried here last week, one fixing the assessment of the Hespeler Skewer Co. at a stated figure and the other giving a site to H. B. Jardine & Co. on which to build an extension to their plant.

ARNPRIOR, ONT.—The proposition to establish a House of Refuge in Renfrew county was sanctioned by the ratepayers.—The by-law to issue debentures for the construction of a sewer on Daniel street was carried last week by a majority of one.

DALHOUSIE, N. B.—George Moffatt is building a new shingle mill.—A movement is under way on the Quebec side of the Restigouche river and Bay Chaleur towards the formation of a new Catholic diocese to be detached from Rimouski and the erection of a new church.

MONCTON, N.B.—The city council has decided to apply for legislation to issue bonds to the amount of \$90,000, of which \$75,000 is for waterworks improvements, \$5,000 for sewer outlet, \$5,000 for macadamizing, and \$5,000 for asphalt sidewalks.

OWEN SOUND, ONT.—Tenders are invited by J. C. Forster, architect, up to noon of 25th inst., for the erection of a stone church for the Baptist congregation.—The question of installing a new plant to provide increased pressure for the waterworks system is under consideration.

ROSSLAND, B.C.—It is said to be the intention of the Velvet Mines, Limited, to apply for a charter to construct an electric railway between Rossland and the Red Mountain Railroad, a distance of 30 miles. The charter will also ask for the establishment of telephone and telegraph systems. The estimated cost is \$300,000.

HALIFAX, N. S.—W. C. Harris, architect, has plans in hand for the following works: St. Paul's school room and assembly hall, four storeys, of sandstone and marble, cost \$25,000; residence for J. Y. Payzant, president of the Bank of Nova Scotia; residence for Hon. S. H. Holmes, addition to summer residence of Dr. Burden, Minister of Militia, at Canning, and a large stone church at North Sydney.

STURGEON FALLS, ONT.—It is stated that work on the completion of the mills of the Sturgeon Falls Pulp & Paper Co. will be commenced at an early date. A. S. Fairbanks is making a survey of the mill property, after which plans will be prepared under the direction of Mr. Hardy, who was consulting engineer for the Laurentide Pulp Co., of Grand Mere, Que.

HAMILTON, ONT.—Henry T. Thurber, of Detroit, head of the syndicate which proposes constructing an electric railway system from this city to Galt, Guelph and Berlin, states that operations will commence as soon as a charter is granted. Staunton & O'Heir are solicitors for the company.—W. A. Edwards, architect, has taken out a building permit for a brick office for the B. Greening Wire Co. at corner of Queen and Napier streets, to cost \$4,000.

SYDNEY, N. S.—A new coal hoist is to be built in connection with the Intercolonial railway here. The plans have been prepared and provide for a two storey building, 50x75 feet. Over 2,000 yards of concrete will be used in the foundation work.—A statement comes from the Boston office of the Dominion Iron & Steel Co. that the management is now considering plans for a large rail mill to be built at this place.—At the next meeting of the council the erection of a new institution

for the insane will probably be recommended by the commissioners of Riverside insane asylum.

ST. JOHN, N. B.—Among the new buildings to be proceeded with in the spring are the warehouse of Emerson & Fisher, the factory of D. F. Brown & Co., warehouse of T. E. Simms & Co., and the new I. C. R. roundhouse.—Work has been commenced on Haslam, Lyons & Co's. new foundry in Carleton.—About half the money required for the proposed building for the Young Men's Christian Association has been subscribed.—The Civic Dry Dock Committee, in a recent report, recommend that the proposed dock be built of wood, with entrance of concrete or granite, and with a pumping plant of sufficient capacity to pump the dock out in 80 minutes. The dimensions recommended are 665 feet long, 75 feet wide at the bottom, 90 feet at the top, 75 ft. on the floor and 140 ft. at the coping; estimated cost, \$800,000.—The fire chief has recommended to council that a steam fire engine be provided for the Portland street station and that each warehouse at Sand Point be provided with new linen hose.—The five storey building occupied by C. Flood & Sons has been purchased by Manchester, Robertson & Allison, who will remodel the premises next summer.

OTTAWA, ONT.—The Industrial Modern Home Co. has been organized in this city, with a capital of \$100,000, for the purpose of building modern houses for mechanics and workmen. F. A. Heney and M. C. Edey, architects, are provisional directors.—Ald. Askwith is proceeding with his scheme for obviating the floods in New Edinburgh by the construction of a dyke. A petition to that end will shortly be presented to council.—The Department of Militia is said to be looking for a site in the vicinity of Ottawa for the purpose of an artillery range.—It is reported that the new Canadian Mint will be built on Nepean Point, and that the Geological Museum building will be located at the southern end of Central Ward.—F. Gelinas, secretary Department of Public Works, invites tenders up to Saturday, 25th inst., for the construction of extension and protection to breakwater at Richibucto, N. B. Plans at above department and at offices of the resident engineers at St. John, N. B., and Halifax, N. S.—Signor Marconi stated when in this city last week that he had completed arrangements for building his wireless telegraphy station in Cape Breton. It is estimated that the cost will be about \$100,000.—H. B. McGovern, solicitor, of this city, is applying for the incorporation of the Dawson City Electric Railway Co., to build an electric railway and distribute electric power in the vicinity of Dawson City.

MONTREAL, QUE.—Hutchison & Wood, architects, have been appointed to prepare plans for a magnificent office building to be built by the Liverpool, London & Globe Assurance Co. at the corner of St. James street and Place de Armes. Peabody & Stearns, of Boston, will be associate architects. The building will be eight storeys and basement, and will likely be commenced in the spring.—A proposition to erect a new hospital will be considered at the annual meeting of the Western Hospital on January 21st.—Plans are to be prepared immediately for alterations and additions to the court house so as to provide more accommodation for the police court.—A. C. Hutchison, architect, has submitted a report on the plans for the new Board of Trade building. He states that they provide for a substantial fireproof building.—Building permits have been granted as follows: Leandre Ouimet, two storey house, Esplanade avenue, cost \$5,000 (R.

Montbriand, architect); T. Bastien, two storey house, 368 Sherbrooke street, cost \$3,000 (A. Riza, architect, L. David, contractor); Estate Victor Beaudry, alterations to two storey house, 37 St. Lawrence street, cost \$2,000 (L. Lamontagne, contractor); Mrs. E. Beauchamp, alterations to three storey house, Sydenham street, cost \$3,400 (Geo. Tetrault, contractor); Estate Walter McFarlane, alterations to house and warehouse, corner McGill and St. Paul street, cost \$6,900 (Hutchison & Wood, architects, H. Hutchinson, contractor); Joseph Hague, two storey house, Berrin street, cost \$1,800 (J. Hague, contractor); Oswald Lachance, two storey house and store, Rachel street, cost \$1,000 (Jacob & Senecal, contractors); Henry Demers, two storey house, Dufresne street, cost \$1,600 (H. Demers, contractor); Jos. T. Ferron, two storey house, Massue street, cost \$1,000.—The water committee will again be asked to provide a new electrical pump for the high level pumping station. The cost is placed at \$35,000.

TORONTO, ONT.—It is understood to be the intention to expend on the new MacDonald building at the Agricultural College, Guelph, \$100,000 of the \$125,000 give by Sir William McDonald, and to erect the building on a plan that will permit of extension. The architects are G. M. Miller & Co.—The city council has given notice of its intention to construct the following works: Asphalt pavement on Spencer avenue, cost \$1,850; cement concrete sidewalks on portions of Booth avenue, cost \$1645, West Market street, cost \$554, and Spencer avenue, cost \$700.—Building permits have been granted as follows: Thomas McIlwain, two storey brick dwelling, 180 Springhurst avenue, cost \$3,500; Alice Brown, pair of brick houses and stores, Albany avenue, cost \$4,500; Corporation of Toronto, improvements at cattle market on Wellington street, cost \$3,750, and hay barns, stable and office on Strachan avenue, cost \$1,250; John Waldie, alterations to residence, 75 Park road, cost \$4,500.—Tenders are wanted by J. Bucksey, 2 Waverley Road, for brick work and plastering.—W. H. Smith is taking tenders at Grand's Repository for the removal of five brick and three rough-cast houses on corner of Simcoe and Nelson streets.—Chief Thomson, of the Fire Brigade, has recommended the building of a new fire hall on Cowan avenue and another in the vicinity of York and Wellington streets.—The Board of Works have a list of 38 new pavements upon which work will commence as early as possible in the spring. The sum involved is about \$70,000.—Ress & Holgate, consulting engineers, McKinnon building, are preparing plans for the large water power development for pulp manufacture at Seven Islands, below the city of Quebec, to be undertaken by Clarke Bros., publishers, of New York, associated with Thomas Meaney, of this city.—L. B. Howland last week interviewed the premier of Ontario and requested a subsidy for a further fifty miles of the Ironclad, Bancroft and Ottawa Railway. If given a subsidy he stated that the line would be completed this year to a point on the Canada Atlantic railway near the Caldwell Station, and close to the Ottawa river.—Tenders are wanted by J. E. Loney, 3 Adelaide street east, for carpenter work of pair of houses on Albany avenue.—At a vestry meeting of St. Peter's church, Carlton street, to be held this week, a report will be presented by the Music Committee favoring the rebuilding of the church organ.—The city engineer has presented to council a report as to the probable cost of extending the street railway to the breakwater,

crossing to the island by a swing bridge, thence to mainland at Woodbine avenue. The cost is estimated in the vicinity of \$850,000.—A new company is being formed to take over the foundry business of John Abell & Co. and conduct it on a larger scale. It is probable that the works will be extended.—H. H. Macrae, solicitor, Toronto street, will apply at next session of parliament for the incorporation of the Canadian Power Company. The place of operations is not stated.—Ald. Bell has given notice of motion in council that a clock be placed in the tower of the Ossington avenue fire hall.

FIRES.

Residence of John McManus at Grafton Harbor, near Cobourg, Ont., totally destroyed.—Building at Sydney, N. S., occupied by Kelly & Dodge, photographers.—Boot and shoe store of George Price at Goderich, Ont., partially destroyed.—Parish church at St. Fulgence, in the Lake St. John district, Que., damaged to extent of \$3,000.

CONTRACTS AWARDED.

OWEN SOUND, ONT.—A Toronto firm has purchased \$46,000 corporation debentures, at par and accrued interest.

GRANBY, QUE.—It is reported that the contract for the new post office building here has been let to a Quebec contractor.

WATFORD, ONT.—The contract for improvements to Presbyterian church has been let to Henry Hume and Thomas McWaters.

REVELSTOKE, B. C.—Boyd, Burns & Co., of Vancouver, have secured the contract for supplying pipe for the extension of the Water, Light & Power Company's plant.

ST. JOHN, N. B.—Contracts for fire hose for the city have been let as follows: W. H. Thorn & Co., 500 feet at 14½ cents; John J. Barrie, 500 feet at 15 cents; T. McAvity & Sons, 250 feet at 15 cents.—The contract for a new organ for St. Peter's church, North End, has been let to Casavant Bros., of St. Hyacinthe, Que.; price about \$6,000.

TORONTO, ONT.—The National Portland Cement Co. last week awarded contracts for machinery to the extent of about \$30,000, the successful tenderers being the Northey Co. and Polson Iron Works, of this city, and Darling Bros., of Montreal.

BUILDERS' SUPPLIES.

An important change was announced last week in the price of lead. In Montreal the price was reduced 12½ cents per 100 pounds, and in Toronto 25 cents per 100 pounds. This makes a uniform price at Montreal, Ottawa, Toronto, Hamilton, London, St. John and Halifax. Quotations are: No. 1, \$5.50; No. 2, \$5.12½; No. 3, \$4.75; No. 4, \$4.37½ per 100 pounds.

As the result of cutting by United States manufacturers, there has been a decline in the price of some lines of builders' hardware. It has not been ascertained just what lines are affected.

The dissolution is announced of Monette & Pigeon, builders, Montreal.

THE AGE OF CONCRETE.

Engineers are not as afraid of concrete as they used to be. There was a time—and it still exists in the minds of many members of the profession—when concrete always had to be covered up with stone. It was an excepted maxim that concrete must not be exposed to water or weather or wear. Cut stone facing was the thing for such places. As examples of how ideas have changed we may instance the St. Croix dam, in which the stone and concrete have their places reversed from the usual position, the stone being on the inside and the concrete being an outside facing. This was done because a very soft stone was the only thing available for the dam. Another example of a dam with rubble stone heart and concrete face is illustrated in this issue; but the concrete facing was adopted here merely to save the expense of cutting the face stones of the dam to make a smooth overfall. Doubtless many engineer will look askance at such a construction, yet we see no reason why it should not be entirely satisfactory. The dam is in a region where ice will never trouble it, and if heavy driftwood going over during high

water should gouge a hole or two in the concrete facing it would not endanger the safety of the dam, and could easily be made good as new at low water. Engineering News.

BUSINESS NOTES.

M. Lefebvre, Laprairie, Que., is reported to have assigned.

E. E. Shaw has succeeded John E. Wilson in the roofing business at Sydney, N. S.

The assets of George S. Kimber, painter, Montreal, are being offered for sale by tender.

T. A. Kennedy, of Owen Sound, Ont., is advertising his sash and door factory for sale.

L. Leveille & Company have registered partnership as sash and door manufacturers at Maisonneuve, Que.

Brown & Reed, plumbers, Smith Falls, Ont., have dissolved partnership, J. F. Reed continuing the business.

Mrs. A. St. Amour has registered proprietress of the business of E. C. St. Amour & Co., roofers, Delorimer, Que.

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THE ENGINEERS' CLUB OF TORONTO.

The third annual meeting of the Engineers' Club of Toronto was held in the rooms of the Society, 94 King street west, on Tuesday, January 7th. The attendance of members was unusually large, and included the following:

F. W. Barrett, C. M. Canniff, W. A. Clement, C. L. Fellowes, Henry A. Gray, A. H. Harkness, E. H. Keating, W. H. Law, A. F. Macallum, W. H. Patton, J. B. Shields, Wm. Spry, R. F. Tate, Jno. Williams, M. J. Butler, J. H. Chewett, C. E. Cooper, Jno. Galbraith, R. A. L. Gray, A. L. Hertzberg, A. B. Lambe, Wm. Monds, G. R. Mickle, T. R. Rosebrugh, F. L. Somerville, L. B. Stewart, E. B. Temple, W. J. Withrow, A. A. Bowman, Willis Chipman, Henry F. Duck, K. Gamble, W. F. Grant, H. S. Holcroft, H. J. Lamb, N. M. McLeod, H. H. Miller, C. H. Rust, T. B. Speight, J. G. Sing, A. J. VanNostrand.

The chair was occupied by the president, Mr. A. L. Hertzberg. After the reading of minutes and correspondence, the report of the executive was presented by the secretary, Mr. Willis Chipman. This report reviewed very carefully the work of the Club during the past year, and on motion of Mr. Chipman, seconded by Mr. H. F. Duck, it was unanimously adopted.

Mr. C. M. Canniff, treasurer, then presented his report, which was of a most encouraging nature. The receipts were shown to be \$589.09, and the balance on hand \$309.50. This balance, it was stated, is more than sufficient to pay the entire expenses of the Club up to the fiscal year ending October, 1902, when fees for next year will be forthcoming, whereas there are outstanding fees for the current year which will increase the receipts. Several members expressed their pleasure to learn of the prosperity of the club, and the report was unanimously adopted.

The reports of the Room Committee and the Library Committee were read and adopted. Mr. Duck made a brief verbal report for the Finance Committee.

The president referred to the excellent work done by Mr. Chipman as secretary of the Club, stating that he voiced the sentiments of every member in this respect. On behalf of the members, he presented Mr. Chipman with a handsome gold pencil as a token of esteem for his faithful work for the Club since its inception. Mr. Chipman expressed his appreciation of the gift. He regretted that his professional work, which frequently called him out of the city, had debarred him from giving as much attention to the affairs of the Club as he would desire.

The following persons were elected members of the Club: Campbell Reeves, C. W. Dill, F. L. Gagnon, J. G. Sing, W. J. Bowers, G. H. Power, F. W. Thorold,

Toronto; Vaughan M. Roberts, St. Catharines. Two amendments to the constitution, introduced by Mr. Duck, were carried. The first provides that there shall be a second vice-president of the Club. The second is to regulate the annual fee. It provides that persons becoming members of the Club during the months of November, December, January and February shall pay an annual fee of \$5, but that persons joining during the months of March to October inclusive shall pay at the rate of 50 cents per month for each month during which they are a member prior to October 31st, the close of the fiscal year.

Votes of thanks were tendered to Capt.

Willis Chipman (re-elected); treasurer, H. F. Duck; directors, T. R. Rosebrugh (re-elected), Capt. Gamble and E. B. Temple.

Mr. Duck gave notice of a motion to amend the constitution by adding that the immediate past president be a member of the executive committee.

After adjournment a light luncheon was served in the Club rooms.

THE NEW PRESIDENT.

Major Henry Alfred Gray, M. Inst. C. E., M. Can. Soc. C. E., who has been unanimously elected president of the Engineers' Club for 1902, was educated under Dr. Charles Baker, at Doncaster, Yorkshire, and at Salfrey College, near Birmingham. He entered the service of the Midland Railway of England, where he served as a student engineer, etc., under the late Sir James Allport. In 1863 he terminated his connection with the railway, passing the examination for the Royal Engineers, and was afterwards stationed in the West Indies, from 1864-66. He came to Canada in 1866, joined the engineering staff on Exploratory Surveys of the Intercolonial Railway, and acted on surveys and location till 1871, as assistant engineer. In 1871 he was appointed by the Commissioners, Engineer in Charge of the construction of a portion of the Nova Scotia section of the railway. In 1873, upon the completion of the road, he was appointed upon the staff of the Public Works Department of Canada, as Engineer of Permanent Way on the Intercolonial Railway, and held this charge until 1875.

From 1875 to 1878 Major Gray was Chief Engineer of the Cape Breton Company's Railways, completing the narrow gauge line from Sydney to Louisbourg; was also Consulting Engineer for the Londonderry Iron and Steel Works, Nova Scotia; Engineer in charge of the Western Counties Railway Construction in Nova Scotia, and City Engineer of Dartmouth, Nova Scotia, designing and laying out the proposed water works and other improvements for that city. He was appointed to the Public Works Department of Canada and from 1879 to 1886 was in charge of Western Ontario (Lake District), residing at Stratford. In 1886 he was called to Ottawa and appointed Assistant Chief Engineer of the Department of Public Works, and during 1886-87 exam-

(Continued on page 7.)



MAJOR H. A. GRAY,
President Engineers' Club of Toronto.

Gamble and Mr. C. M. Canniff for their kindness in contributing engineering views to the Club.

The election of the officers for the ensuing year was the next order of business. Mr. E. H. Keating stated that he believed it was in the interest of the Club that a president should serve for two years, and nominated Mr. Hertzberg for re-election. Mr. Hertzberg, however, declined the nomination, pleading inability to properly attend to the duties of the Club. The following officers were elected unanimously: President, Major H. A. Gray; first vice-president, C. H. Rust; second vice-president, C. M. Canniff; secretary,

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Mr. Hugh Cameron, Canada Life Building, Montreal, has been appointed eastern agent for the Don Valley Brick Company. Mr. Cameron will be pleased to give quotations for Don Valley bricks. He is also agent for the American Enamel Brick & Tile Co., of New York, for which he has done a large business the past year.

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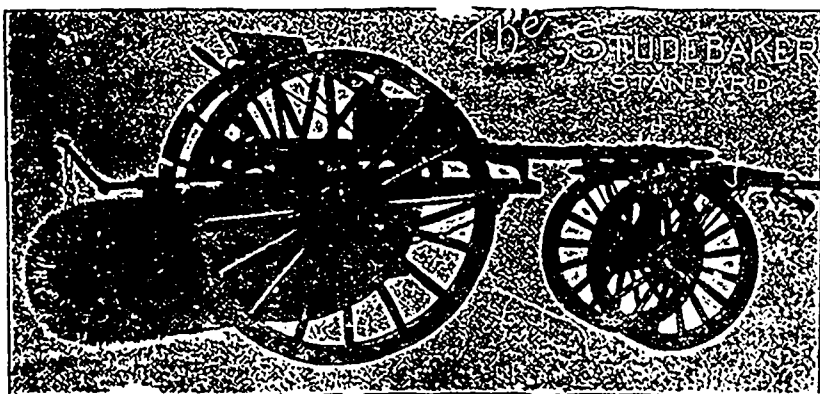
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ned and reported upon the Rideau river floods and proposed canal; also the saw-dust obstructions in the Ottawa river, giving evidence on the same before a committee of the Senate. In 1887 Major Gray was admitted a member of the Canadian Society of Civil Engineers, having been one of the most active workers in promoting the establishment of that society. From 1888 to 1889 he was resident superintendent engineer, Public Works of Canada, Maritime Provinces. In 1889 he was recalled to take charge of the district of Ontario, with headquarters in the Confederation Life Building, Toronto, which position he yet fills. In 1890, as a mark of his professional standing, he was nominated by the late Sir James Allport, and admitted to membership of the Institution of Civil Engineers, London, England.

BUILDING IN TORONTO.

Building operations in Toronto last year showed an encouraging increase. There were 981 permits issued, representing a value of \$3,518,883. In 1900 the permits numbered 674, and represented a value of \$1,903,136. The year before there were 710 permits, for buildings worth \$2,010,446.

Last year's figures are the highest since 1891, when the permits for the City Hall swelled the total up to four millions. The year's figures are high on account of the general increase in the building business, but the permit for the million dollar hotel accounts for the startling amount of the total.

The \$3,518,883 is divided as follows: 513 brick houses valued at \$1,121,000; 95 alterations to brick houses, \$96,178; 93 roughcast houses, \$78,775; 5 alterations to roughcast houses, \$12,100; 39 stables and sheds, \$39,040; 29 stores and offices, \$89,110; 43 alterations to stores and offices, \$140,075; theatre alterations, \$3,500; brewery alterations, \$4,000; 8 summer residences, \$6,375; 10 hospital alterations, \$8,000; 2 alterations to banks, \$29,000; 5 alterations to churches, \$40,850; 21 warehouses, \$135,200; 8 hotels, \$1,048,900; 26 factories, \$207,605; 11 alterations to factories, \$63,175; alterations to schools, \$19,500; alterations to colleges, \$57,000; city buildings, \$19,500.

BUILDING IN MONTREAL.

The report of the Building Inspector of Montreal for the year 1901 places the value of new buildings erected during the year in that city at \$2,568,372 and the repairs and alterations at \$332,361, or a grand total of \$2,900,733. The total revenue of the building inspector's department amounted to \$6,526.41, as against \$3,710.48 in 1900.

Arthur Snazel, painter, is removing from Stratford to Goderich, Ont.

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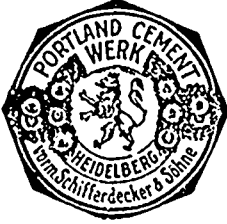
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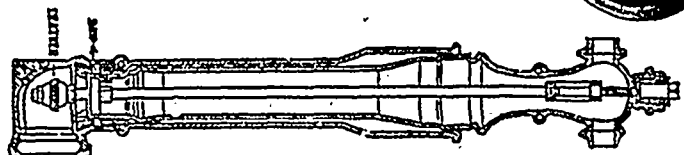
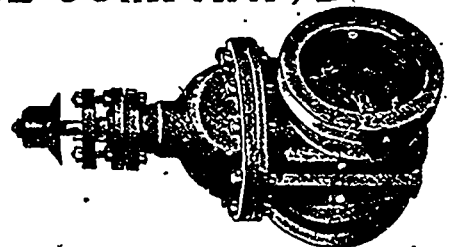
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MUNICIPAL DEPARTMENT

SEWAGE DISPOSAL IN WESTERN ONTARIO.*

By W. M. DAVIS, C.E., BERLIN.

Mr. President and Gentlemen:—So much has been said and written on the subject of sewage disposal during the last fifteen years that the writer does not hope to present anything new to this association of scientific gentlemen, the majority of whom have for many years made this and kindred subjects affecting the public health their especial study, but merely to submit for discussion the results of his practical experience and observation as an engineer. We have most of us come to very definite conclusions on this subject at different times during the period mentioned, and have as many times been forced to change those conclusions in the light of later experience.

A very short time since all that was considered in the way of disposal by the most advanced municipalities in this country was the removal of household wastes to such a distance that their decomposition would not offend the senses of those with whom they originated. Our efficient Provincial Board of Health has, however, changed all that, and a sewerage system can now only follow on the heels of a satisfactory scheme for the disposal of the sewage.

Of the many different systems of disposal, chemical precipitation, broad irrigation, intermittent filtration, bacterial treatment in septic tanks or contact beds or both, time does not permit a description or a discussion of their several advantages and disadvantages. It is sufficient to say that these advantages and disadvantages exist in each, that a system admirably adapted for one town may be totally unsuited to a neighboring town of the same size, and that the proper system to adopt in each case can only be determined by an intelligent study of the peculiar conditions that exist in each locality. In one locality the situation may be such that the elevation of the town and the surroundings point to broad irrigation as the most efficient and economical system. In the next a large tract of suitable land for this purpose may not be within reach, but a smaller area may be had for intermittent filtration. In the next these conditions may be absent, when recourse must be had to chemical or bacterial treatment. The majority of failures in sewage disposal have occurred through the inability to appreciate these facts.

"Intermittent filtration" is adopted where the soil is unsuitable.

"Chemical precipitation" where the finances do not permit of a system costly in maintenance, and the writer has heard of one town in the United States where a septic tank is being constructed in the public park and it is proposed to erect on the roof a grand stand from which to view lawn tennis and base-ball games. Each

* Paper read at the seventh annual meeting of the Association of Executive Health Officers of Ontario.

of these systems would under proper conditions produce satisfactory results, but under the circumstances described would be condemned as failures.

Valuable lessons may be learned from the experience of certain disposal plants in Western Ontario. In 1892 the Town of Berlin purchased 20 acres of land $1\frac{1}{2}$ miles from the town for the purpose of treating the sewage by intermittent filtration; unfortunately the soil was what is usually called "hard pan," a mixture of fine sand and clay. For a time, probably while the quantity of sewage to be treated was small and chiefly of a domestic character, the results were not unsatisfactory, but as the town increased in size and the manufacturing establishments multiplied the volume of sewage was augmented and its character changed until an analysis now shows it to be as foul as some of the English factory towns. It is therefore no wonder that the original plan failed in giving satisfaction. In 1899, on the recommendation of the writer, who was engineer for the corporation, a septic tank and two bacteria beds were installed, not with the idea that the capacity was entirely sufficient for even present needs, but it was believed that the existing filter beds of which some twelve acres had been levelled, could be cropped, that the septic effluent which experience with a small water tank had shown to contain much ammonia could be used to irrigate and would force the growth of the crops. In this manner a revenue would be produced which

partially defray the cost of maintenance, the money invested in the original system would thus not be lost, and it was hoped that the use of the two bacteria beds in conjunction with irrigation would relieve the cropped beds when the quantity of effluent was more than could be earned on the crops without injury to them, and would effect a disposition of the effluent which would cause no nuisance; should the experiment prove successful it was the intention to enlarge the capacity of the tanks and beds as circumstances demanded. The tank has a capacity of 56,000 gallons, or $\frac{1}{4}$ of the daily flow of sewage at the time it was designed.

The bacteria beds are 76x50 feet, with a depth of 3 feet of clean gravel; the upper 2 feet 4 inches is from $\frac{1}{4}$ inch to 1-16 inch in size, the lower 8 inches is coarser, the stones being from 1-2 inch to 2 inches in diameter.

The beds are underdrained by field tile, the outlet being through a gate chamber. It is intended that the sewage should be held quiescent in the beds for two hours to give time for bacterial action. As plans accompany this paper the details of construction will be understood without further explanation.

(To be Continued)

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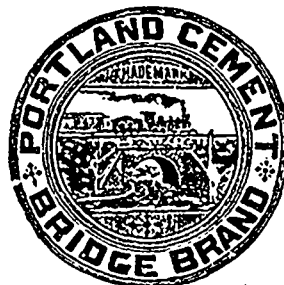
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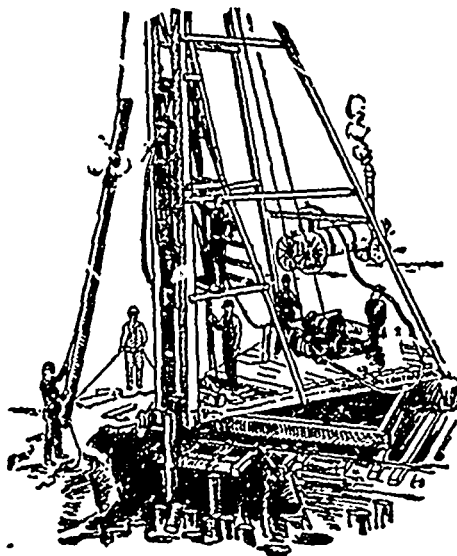


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Table listing brick products (Red Peerless, No. 1, No. 2, No. 3, Brown Peerless) and their prices for Beamsville and Montreal.

Index listing various categories of advertisements such as Architects, Contractors' Plant and Machinery, Mantles, Grates, and Tiles, Reflectors, Roofing Materials, Mail Chutes, Mouldings, Mortar Colors and Shingle Stains, Ornamental Iron Work, Painters, Prisms, Paints and Varnishes, Parquetry Floors, Plate Glass, Plumbers, Roofers, Slate, Cement, Lime, etc., and their corresponding page numbers.

Table listing stone products (Buff Peerless, No. 1, No. 2, Moulded and Ornamental Bricks, Roman Red, Buff, Brown, Vitrified Pavin, Brick No. 1, Sewer, Roofing Tile) and their prices for Beamsville and Montreal.

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