

Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

Coloured covers/  
Couverture de couleur

Covers damaged/  
Couverture endommagée

Covers restored and/or laminated/  
Couverture restaurée et/ou pelliculée

Cover title missing/  
Le titre de couverture manque

Coloured maps/  
Cartes géographiques en couleur

Coloured ink (i.e. other than blue or black)/  
Encre de couleur (i.e. autre que bleue ou noire)

Coloured plates and/or illustrations/  
Planches et/ou illustrations en couleur

Bound with other material/  
Relié avec d'autres documents

Tight binding may cause shadows or distortion along interior margin/  
La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure

Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/  
Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.

Additional comments:/  
Commentaires supplémentaires:

Coloured pages/  
Pages de couleur

Pages damaged/  
Pages endommagées

Pages restored and/or laminated/  
Pages restaurées et/ou pelliculées

Pages discoloured, stained or foxed/  
Pages décolorées, tachetées ou piquées

Pages detached/  
Pages détachées

Showthrough/  
Transparence

Quality of print varies/  
Qualité inégale de l'impression

Continuous pagination/  
Pagination continue

Includes index(es)/  
Comprend un (des) index

Title on header taken from:/  
Le titre de l'en-tête provient:

Title page of issue/  
Page de titre de la livraison

Caption of issue/  
Titre de départ de la livraison

Masthead/  
Générique (périodiques) de la livraison

This item is filmed at the reduction ratio checked below/  
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	12X	14X	16X	18X	20X	22X	24X	26X	28X	30X	32X
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

# CANADIAN CONTRACT RECORD

A WEEKLY JOURNAL OF

PUBLIC WORKS • TENDERS • ADVANCE INFORMATION • AND MUNICIPAL PROGRESS

EVERY THURSDAY

THIS PAPER REACHES EVERY WEEK THE TOWN AND CITY CLERKS, TOWN AND CITY ENGINEERS, COUNTY CLERKS AND COUNTY ENGINEERS THROUGHOUT CANADA.

Vol. 5.

Toronto and Montreal, Canada, May 18, 1893.

No. 1;

**THE CANADIAN CONTRACT RECORD,**  
PUBLISHED EVERY THURSDAY  
As an 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,

CONFEDERATION LIFE BUILDING, TORONTO.  
Telephone 2362.

64 Temple Building, Montreal.  
Bell Telephone 2299.

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

ADVERTISING RATES ON APPLICATION

At its Convention held in Toronto, Nov. 20 and 21, 1889, the Ontario Association of Architects signified its approval of the CANADIAN CONTRACT RECORD, and pledged its members to use this journal as their medium of communication with contractors with respect to advertisements for Tenders.

The following resolution was unanimously adopted at the First Annual Meeting of the Province of Quebec Association of Architects, held in Montreal, Oct. 10th and 11th, 1890: "Moved by M. Perrault, seconded by A. F. Dunlop, that we the Architects of the Province of Quebec now assembled in Convention being satisfied that the CANADIAN CONTRACT RECORD affords us a direct communication with the Contractors, resolved, that we pledge our support to it by using its columns when calling for Tenders."

Subscribers who may change their address should give prompt notice of same. In doing so, give both old and new address. Notify the publisher of any irregularity in delivery of paper.

## BARTER AND EXCHANGE.

This department has been opened for the speedy barter and exchange of second-hand plant or material, or small lots of new or second-hand materials by builders and others not regularly engaged in the sale of such articles. Advertisements other than those of the above description will not be inserted.

RATES—12 words and under, 15 cents; each additional word, 1 cent (three figures count one word); on two or more subsequent insertions a discount of 10 per cent. will be allowed. Not more than four insertions of an advertisement can be granted.

Replies to advertisements may be addressed to a box at this office, in which case necessary stamps must be sent for re-mailing replies. Advertisements for this department must be prepaid.

**TO DRAUGHTSMEN.**—About 1½ quires of Whatman's Drawing Paper for sale (Imperial size), only \$3.50 for the lot. Box 151 at this office.

**STAINED GLASS.**—An assortment of sizes, thickness, about 80 feet. 30 cents per foot. Box 45, 64 Temple Building, Montreal.

## WATERWORKS PLANT FOR SALE.

For sale—a waterworks plant consisting of two sets of pumping engines in first class order, and can be seen at the Parkdale Pumping Station, Toronto. One set of 2½ million gal. capacity with fly wheel, steam cylinder 30 inches, 2-d 18-inch stroke, gun metal plungers 23 inches diameter and 18 inch stroke, and one set of 1,500,000 gal. capacity, steam cylinder 14 inches and 22 inch stroke, also two boilers, 4 feet diameter and 12 feet long. The reason for disposing of these is in consequence of Parkdale, a suburb, being annexed to the City of Toronto. These are as good as new, and can be purchased at a large reduction on cost price; also 1,500 feet of 16 inch, and 500 feet of 22 inch, Ward joint flexible intake pipe. Apply to John Laxton, 1457 Queen St. West, Toronto.

## TO CONTRACTORS.

Whole tenders will be received by the undersigned for all works (except heating and lighting) required in the erection and completion of a church for the congregation of the Evangelical Association, Berlin, up till WEDNESDAY, MAY 31ST. Separate tenders will be received up till June 15th for the heating and lighting. Plans and specifications may be seen at the office of the Berlin Gas Co. The lowest or any tender not necessarily received. Contractors will be required to furnish satisfactory evidence of their ability, financial and otherwise, to properly execute the work.

WILLIAM NIEHAUS,  
J. C. BREITHAAPT,  
JOHN S. ANTHES, Chairman.

HARRY J. POWELL, Architect, Stratford.



## Notice to Contractors

Tenders will be received by registered post addressed to the City Engineer, Toronto, up to 11 o'clock a.m. on SATURDAY, MAY 20TH, 1893, for the

## Repairing and Relaying of the Intake Conduit Pipe.

Plans can be seen and terms of tender obtained on and after the 18th instant. A deposit in the form of a marked cheque, payable to the order of the City Treasurer, for the sum of 25 per cent. on the value of the work tendered for must accompany each and every tender, otherwise it will not be entertained. All tenders must bear the bona fide signatures of the contractor and his sureties (see specifications) or they will be ruled out as informal. The Committee do not bind themselves to accept the lowest or any tender.

DANIEL LAMB,  
Chairman of Committee on Works.  
Committee Rooms, Toronto, May 15, 1893.



## Notice to Contractors

Tenders will be received by registered post addressed to the City Engineer, Toronto, up to 11 o'clock a.m. on SATURDAY, MAY 27TH, 1893, for the following works:

### A SEWER

on Wallace avenue, from McKenzie Crescent, easterly to Grogans line fence.

Specifications may be seen, and forms of tender obtained, on and after Monday, May 22nd, 1893, at the office of the City Engineer.

A deposit in the form of a marked cheque, payable to the order of the City Treasurer, for the sum of 5 per cent. on the value of the material tendered for under \$1,000, and 25 per cent. on the value of the material tendered for over that amount, must accompany each and every tender, otherwise it will not be entertained.

All tenders must bear the bona fide signatures of the contractor and his sureties (see specifications) or they will be ruled out as informal.

The Committee do not bind themselves to accept the lowest or any tender.

DANIEL LAMB,  
Chairman of Committee on Works.  
Committee Rooms, Toronto, May 17, 1893.

## TENDERS

for the erection of a STONE CHURCH at Morrisburg, Ontario, will be received by the Building Committee of St. James Church, Morrisburg, until JUNE 1ST, 1893. Plans and specifications can be seen at the offices of J. F. MILLER & SON, Morrisburg, and CHAS. J. GIBSON, Architect, 9½ Adelaide Street East, Toronto.



## TO ARTISTS.

The Government of Canada propose erecting in the grounds of the Parliament Buildings, at Ottawa, a bronze statue, nine feet high, (9'), of the late Sir John A. Macdonald.

Artists are invited to submit models, 2 ft. 3 in. in height, which must be accompanied with proposals for the bronze statue complete.

A premium of five hundred dollars will be paid the artist whose model and proposal are accepted. \$300.00 will be paid for the model considered next in order of merit, and \$200.00 for the third successful model.

The models must be delivered to the Department of Public Works, Ottawa on or before the 1st day of November next, and the premium models will remain the property of the Department. The others will be returned to the artists, if they so express their desire when submitting them.

Copies of the conditions, &c., may be obtained on application at the office of the High Commissioner of Canada, No. 10 Victoria Chambers, London, S.W., England, Hon. Hector Fabre, 10 Rue de Rome, Paris, Direction Générale des Beaux Arts, Department of the Interior, Brussels, and to the Secretary of the Department of Public Works, Ottawa, Canada.

E. F. E. ROY,  
Secretary.

Department of Public Works, }  
Ottawa, April 17th, 1893. }

## Toronto Public Schools

### To Builders and Contractors.

Tenders are requested for the usual midsummer repairs at the several schools, including masonry, carpentering, painting, plumbing, etc.

Plans and specifications may be seen and all information obtained at the office of Mr. C. H. Bishop, Superintendent of Buildings, on and after Saturday, May 20th.

Tenders on forms to be supplied by the Superintendent of Buildings are to be delivered at the office of the Secretary-Treasurer of the Public School Board on or before

Friday noon, May 26th, 1893.

Each tender must be accompanied by an accepted bank cheque for five per cent. of the amount of the tender as per regulations of the Board.

The lowest or any tender will not necessarily be accepted.

W. C. WILKINSON,  
Secretary Treasurer T. P. S. Board.

W. W. HODGSON,  
Chairman of Committee.

## To Contractors.

A new edition of the *Canadian Contract Hand-Book* is now in press, and will be published before the first of June.

The Hand-Book has undergone thorough revision. Everything not considered to be of the greatest practical value has been eliminated from the new edition, while the size of the work has been increased by the addition of seventy-four pages of entirely new material. This book should be in the hands of every architect, builder and contractor who desires to have readily accessible and properly authenticated information on a wide variety of subjects adapted to his requirements.

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

## CONTRACTS OPEN.

PERTH, ONT.—Petitions are before the Court for the construction of a number of drains

NORTH BAY, ONT.—The Baptists have decided to purchase a site and erect a new church this summer.

SARNIA, ONT.—J. C. Robson, architect, invites tenders until the 20th inst. for erecting brick stores on Christina street.

ST. CATHARINES, ONT.—The electric street-railway company will shortly commence to build the extension to Port Dalhousie.

ST. MARYS, ONT.—The Methodists are collecting funds for the erection of a Sunday school. The sum of \$4,700 is required.

NIAGARA FALLS, ONT.—Messrs. Macklen Slater, who operate a brewery across the river contemplate erecting a grain elevator here.

AMHERSTBURG, ONT.—Mr. Halford, engineer, has been engaged to prepare a plan for draining the village, the cost not to exceed \$13,500.

PORTAGE LA PRAIRIE, MAN.—Mr. R. J. Gilliland intends to erect a two-storey brick block. Newman Bros. will also erect a brick block.

WESTMEATH, ONT.—Tenders are wanted for supplying the brick, stone and lime for the erection of a church. Rev. A. B. Johnston, pastor.

OSHAWA, ONT.—The Presbyterians are making arrangements for the construction of a new brick church, and a building fund has been started.

YARMOUTH, N. S.—Tenders are asked for \$265,000 worth of debentures, the money to be spent in providing the town with waterworks. Hiram Goudey, town clerk.

BRANTFORD, ONT.—Grace church is to have a new tower, at a cost of \$5,000. The sum of \$2,000 is subscribed, and it is thought the balance will be speedily forthcoming.

WATERLOO, ONT.—At the last meeting of the Township Council, the clerk was instructed to invite tenders for the construction of an iron bridge, to be known as Bridgeport bridge.

JORDAN, ONT.—Tenders are invited until the 25th inst. for building a bridge over the Twenty-Mile Creek, on the townline between Louth and Clinton. Jacob Fry, Chairman of Committee.

MONCTON, N. B.—D. Pottinger, General Manager Canadian Government Railways, will receive tenders until the 27th inst. for the supply of oil required for the year commencing July 1st, 1893.

CHATHAM, ONT.—John Welsh, Township Clerk, will receive tenders until the 27th inst. for dredging about 6,000 feet of drainage work in the township of Dover. Plans at the office of A. McDonnell, C. E., in this town.

CHATHAM, ONT.—The Council is discussing the question of improving the sewerage system.

Some of the members are in favor of engaging Mr. Chipman, C. E., of Toronto, to make a report, but after discussing the matter at their last meeting, no definite action was taken.

**PEMBROKE, ONT.**—The Contingent Committee of the Public School Board have recommended that furnaces be placed in the centre public school building.—Mr. J. W. Munro, will erect a handsome brick block. The corner will be fitted up for the Bank of Ottawa.

**ST. JOHN, N. B.**—D. Pottinger, General Manager Government Railways, will receive tenders at his office in Moncton until Wednesday, the 31st inst., for the construction of the railway extension along the water front from the Intercolonial deep water terminus to Corporation Pier. Plans may be seen at the Station Master's office, this city, and at the office of the Chief Engineer, Moncton.

**KINGSTON, ONT.**—Mr. William O. Wockoff of Brooklyn, N. Y. has purchased a large portion of Carleton Island. He intends building a cottage that will cost in the neighborhood of \$25,000, and has already begun the construction of a boat house which, when completed, will have cost about \$6,000.

**GUELPH, ONT.**—A meeting of members of the A. O. U. W. was held recently to consider the advisability of building a block in which would be centered the A. O. U. W. hall, an opera house of the most modern design, and stores. A provisional committee of five influential men was elected to further the scheme, and report at as early a date as possible.

**STRATFORD, ONT.**—David G. Baxter, architect, is preparing plans for alterations and additions to a frame house on Nile street for Mr. Chas. Stock, having hot air heating, grates, extensive plumbing, leaded glass, hardwood floors, etc., cost \$3,000. He is also asking for tenders until the 27th inst. for the erection of a house for Thos. Trow, cost \$6,500.

**LONDON, ONT.**—On the recommendation of the City Engineer new water mains will be laid on Oak and Pine streets, at a cost of \$1,700.—Mr. Geo. Craddock, architect, will receive tenders until noon of Saturday next for the erection of a brick house on Wellington street.—The City Engineer invites tenders until to-day (Thursday) at 5 o'clock for the construction of a tile sewer on Queen's avenue.

**WOODSTOCK, ONT.**—Sheriff Brady is about to build a handsome residence on the north side of Ingersoll ave., between Vansittart ave. and DeLatre street.—Plans have been prepared for a residence for Mr. F. J. Ure, on Graham street.—At a special meeting of the General Hospital Committee a sub-committee was appointed to select a site. The subscriptions to the building fund now amount to \$8,500. A strong effort will be made to erect buildings this year.—Debentures have been issued to the amount of \$7,600 to cover the cost of erecting the Chapel street school house.

**LISTOWEL, ONT.**—The Bank of Hamilton will make extensive alterations to the building recently purchased from Mr. Bowmap. The old front will be replaced with a handsome bank front, rock faced stone work, plate glass windows, etc. The interior will be remodelled and refitted throughout, with large vault, office fittings, metallic ceiling, hot water, plumbing, grates, mantels, etc. W. E. Binning, architect, is preparing the plans and will have charge of the work, contracts will be awarded about 1st June.—Mr. Binning has also prepared plans for a 1 1/2 story brick residence to be erected on Inkerman street for Mr. Mathew Sharping, to cost \$1,000, also improvements to school in Wallace, cost \$523.—Work has been commenced on a two story brick cottage on Dudd street for Mr. D. Bowyer, costing \$2,000, and a cottage for Mr. Andrew Foerch on Inkerman street to cost \$1,400. They will be heated with furnaces, and have plumbing, gas fitting, etc.—A large foundry will be erected here this summer.

**WINNIPEG, MAN.**—At a meeting held last week of the board of directors of Wesley College, the executive committee was instructed to procure plans for the proposed building, and to proceed with its erection as soon as an additional \$10,000 had been paid in. The executive committee have appointed the following members to take further action in the matter: Dr. Sparling, Messrs. Atkin, Ashdown, McBride, Laird, Somerset, G. H. Campbell, Whittle and Nixon.—The plans for a branch of the transfer railway to be built up the gully between Market and Bannatyne streets, have been placed in the hands of the N. P. officials. It is the intention of the promoters to build mercantile warehouses along the line.—It is reported that Davis & Rankin, manufacturers of creamery machinery in Chicago, will erect a factory in Manitoba during the present summer.—Notice of incorporation of the "Academy of Music company" has been published. The stock of the company is placed at \$50,000. The directors are: Edward L. Drewry, proprietor Redwood brewery; Duncan McArthur, banker; Thos. W. Taylor, mayor; Chas. A. Barber, architect, and Elias George Conklin, real estate and financial agent. The directors state they intend to go on at once with the erection of the new building.

**OTTAWA, ONT.**—Mr. Conway C. Wyatt, of Duluth, was in the city recently in connection with the construction of a canal from Lake St. Clair to Lake Erie. During the last session of Parliament Col. Tisdale asked the Government to undertake the construction of the canal as a public work, but his suggestion did not meet with

approval. It is understood that Mr. Wyatt is considering the carrying out of the work as a private enterprise, and no public aid will be asked.—G. M. Bayly, architect, is asking for tenders for the removing of houses and sheds at No. 499 Albert street. S. Bingham, chairman Board of Works, will receive tenders until the 31st inst. for sewer excavation.—Mr. Dale Harris, engineer of the Pontiac & Pacific Junction railway and the Gatineau Valley railway, has stated that the building of a bridge across the Ottawa river from Hull to Nepean Point is a settled fact. The scheme has been under consideration for some time and it will be ratified by the shareholders of the Pontiac railway company at their annual meeting to be held in Montreal this week. A purely railway bridge will cost \$500,000, while a railway and bridge combined would cost \$250,000 more.—It is learned that the directors of the C. P. R. will shortly take into consideration the question of the construction of the Vaudreuil & Ottawa branch, from Point Fortune to Caledonia Springs and thence to Ottawa.—N. Champagne, Chairman Waterworks Committee, invites tenders until Thursday, June 1st, for the excavations required for main pipe extensions.

**HAMILTON, ONT.**—James Balfour, architect, is inviting tenders until Tuesday, 23rd inst., for alterations to Joseph Hoodless & Son's warehouse on King street.—W. A. Edwards, architect, will receive tenders until Saturday next for the erection of a brick residence on Hugison street.—It is probable that tenders will be asked for the extension of the west end sewer, the work being too extensive to be executed by the day labor system.—Building permits have been granted as follows: John Young, brick store and dwelling, corner of Picton and Catherine streets, cost \$1,000; T. E. Leather, brick residence on Queen street, cost \$2,800; A. Horning, two story brick dwellings on George street, between Hess and Caroline streets, cost \$4,000.

**MONTREAL, QUE.**—The Road Department has given notice that it is proposed to construct a sewer on Panteleon street, from Sherbrooke street northward about 170 yards.—Mr. Hudson has applied to the council of St. Henri for a bonus to aid in erecting a rolling mill.—Tenders will be awarded in a day or two for the construction of sewers on a number of streets.—The following list of streets to be paved in 1893 has been submitted to the Road Committee: Ontario, from St. Lawrence to Bleury streets, asphalt, \$31,700; Berri, from Dubord to St. Catherine, granite and asphalt, \$34,069.50; Dubord, from Campeau to St. Denis, asphalt, \$25,500; Viger place from Craig to Dubord, asphalt, \$9,500; St. Denis, from Ontario to Ernest, granite and asphalt, \$35,500; St. Lawrence, from Ontario to Sherbrooke, granite and asphalt, \$72,866; Notre Dame, from Monarque to Lacroix, grading and sidewalks \$20,000; St. Catherine, from Harbor to Cuvillier, granite and asphalt, \$76,500; St. Catherine, from St. Mathew to western city limits asphalt, \$50,550; Union avenue, from Dorchester to Sherbrooke, granite and asphalt, \$34,500; Centre, from Shearer to Roper, asphalt, \$39,665; St. Etienne, from Mill to Wellington, granite, \$33,050; Colborne and Common, from Wellington to Black's bridge, granite, \$9,600. Permanent sidewalks have been approved as follows: Viger place, Vire to Dubord, asphalt, \$766; Viger square, St. Hubert and Campeau, from Craig to Dubord, asphalt, \$3,265; Ontario St. Urban to Bleury, both sides, firmite or asphalt, \$8,744; Berri, Dubord to St. Catherine, both sides firmite or asphalt, \$10,890; Dubord, Campeau to St. Denis, north side, asphalt, \$4,130; Bleury, Craig to Sherbrooke, both sides asphalt, \$25,400; Amherst, St. Catherine to Chermier, both sides firmite, \$10,620; McFord and Murray streets, asphalt, \$16,640; St. Denis, Sherbrooke to Chermier and Roy, asphalt, \$8,010; St. Catherine and Mansfield, southwest corner, Bank of Montreal, granolithic, \$600; Mountain, Dorchester to Sherbrooke, both sides asphalt, \$12,500; Windsor, St. James to Osborne, both sides asphalt, \$5,250; St. Lambert, at property of Mutual Fire Insurance company, asphalt, \$8,750; William at Clendinning's foundry, renewals, flagstone, \$1,227.50.—The Board of Trade is urging the necessity of widening St. Nicholas street immediately.—The annual meeting of the shareholders of the Canadian Pacific railway was held in this city last week, at which the following expenditure of capital was authorized: Permanent bridges and improvements on the company's railway, \$1,900,000, for grain elevators and additional terminal facilities, \$750,000; additional rolling stock \$1,250,000; for the construction and extension of the Souris branch from the international boundary to Pasqua, 162 miles, of the Temiscamingue railway, 50 miles; of the Revelstoke branch line, 28 miles, and of a section of the Eganville branch line, \$3,700,000. The annual report recommends the building of an additional grain elevator of fifteen million bushels capacity at Fort William during the present year and another of 800,000 bushels at Winnipeg, also additions to the company's wharves at Vancouver.—The Inundation Committee of the City Council have approved of plans for the proposed Brock street tunnel, and tenders will be called for in a few days. The plans show a tunnel 30 feet wide, 15 feet in height, 666 feet long, faced in cut stone. The estimated cost is \$263,000.

**TORONTO, ONT.**—The City Engineer has recommended the construction of the following cedar block pavements: west side of Stanley Park

from King to Defoe, cost \$1,130. Huron street from Phoebe street to Grange avenue, cost \$1,855; Castle avenue from Spadina road to Walmer road, cost \$1,300. Asphalt pavements are recommended on Winchester street from Parliament to Sumach, cost \$22,400, Mincing (Munn's) lane, cost \$1,600; lane in rear of Canada Permanent building, cost \$1,135. A tile sewer is recommended on North Crawford street from Bloor street to Garrison Creek, cost \$3,820, and a similar sewer on Summerhill ave, cost \$1,550.—At the quarterly meeting of St. Andrew's Society held last week, Major J. A. Cosby read a communication suggesting that the society should take steps towards the erection of a large hall and offices for the accommodation of all the Scottish societies of the city. A committee was appointed to consider the advisability of making such a move.—An appropriation of \$10,000 is asked for widening the pavements on the following streets: Gerrard street from Broadview ave. to Howland avenue, Howard Park avenue from Dundas street to Roncevalles avenue, Parliament street from Gerrard street to Queen street, and probably the pavement on Dundas street.—At a meeting of the Senate of the University of Toronto held on Saturday last, Dr. Sheraton moved that a committee consisting of the president, Prof. Pike, Chancellor Burwash, Dr. Cameron, the mover and seconder, wait upon the Minister of Education and press upon him the necessity for the construction of the chemical laboratory and to learn the reasons for delay in letting the contract for the building.—Building permits have been granted as follows: Dr. A. Orr Hastings, det. 2 story and attic bk. dwelling, n. w. corner Sherbourne and Selby sts., cost \$8,000; Western Canada Loan Co., alterations, s. e. corner Adelaide and Victoria sts., cost \$12,000; Wm. Brown, 64 Macdonald ave., 2 story and attic bk. dwelling, 55 Macdonald ave cost \$2,700; A. K. Creelman, 13 Queen's Park, alterations to dwelling, cost \$3,000; Mrs. J. Haywood, det. 2 story and attic bk. dwelling, Dunbar Road, Rosedale, cost \$3,000.

#### FIRES.

A warehouse at Hull, Que., belonging to the Humber Engineering Company, was burned on Thursday last.—The Royal Waterproof Company, on LeMoine street, Montreal, was damaged by fire recently to the extent of \$6,000.—A large lobster factory with all its contents was destroyed by fire on Saturday last at Port Mouton, N. S. It was owned by Michael Neville.—James Milne & Son's grocery store at Stirling, O. T., was gutted by fire last week. The loss on stock and building is heavy, but is said to be covered by insurance.—The village of Apohaqui, N. B., was visited by a disastrous fire recently, in all 13 buildings being destroyed. G. B. Jones lost a store, two warehouses and a barn, Stephen Jones, dwelling, shop and barn, and M. Fenwick store, warehouse, two barns and two dwellings. The total loss is about \$25,000.—Kupley Bros. carriage factory in St. John, N. B., together with engine and machinery, were destroyed by fire last night.—The Methodist parsonage at Billings Bridge, Ont., occupied by Rev. Mr. Elliott, was totally destroyed by fire a few days ago. The loss is about \$2,000.—Mr. P. Keefer's sash and blind factory at Iroquois Ont., was completely destroyed by fire on Tuesday of last week. The electric plant was situated in the building, and was also destroyed. Loss from \$0,000 to \$10,000, mostly covered by insurance.—The following places were destroyed by fire at Carberry, Man., last week: Windsor, tailor, stock, H. Anderson, stock, Dr. Shaw, building; Wm. Boyd, drugs; R. Logan & Co. office; E. R. T. Smith photographer; I. H. Curran office; A. J. Dickie, bookseller; C. W. Malton, hardware; R. F. Lyons, William Munro, furniture, stock, G. Barrett, office; John Stinson, office; W. G. Perrin, barber, Forester's hall, George Gernie, restaurant. Total loss, \$35,000.

#### CONTRACTS AWARDED.

**PORTAGE LA PRAIRIE, MAN.**—Messrs. Head & Bossos have secured the contract for erecting a fire hall, at the price of \$7,875.

**NIAGARA FALLS, ONT.**—Messrs. Newman Bros., of St. Catharines, have been awarded the contract to build the new high school. The cost price is \$17,500.

**WOODBRIDGE, ONT.**—The contract for the erection of the public school building has been awarded to Mr. Mason, of Brantford. The tender is in the neighborhood of \$7,000.

**LONDON, ONT.**—Contracts for the erection of St. George's Church rectory, London West, to cost \$2,300, have been awarded, as follows:—Brickwork, Flory & Co.; carpentering, W. S. Greenway; plastering, R. Gash; painting, Geo. Burdick; furnace fittings, H. J. Boyd; plumbing, J. Greenway.

**MONTREAL, QUE.**—The Police Committee received the following tenders for the erection of the Hochelaga Station: masonry—O. Martineau, \$5,000; Oumet & Labelle, \$6,128; Chapleau & Lemay, \$6,100; Woodwork etc.—Lambert & Sons, \$7,170; Labrecque & Mercure, \$7,207; J. B. Gratton, \$7,345; C. H. Laurier, \$7,500; Quintal & Morin, \$7,250. The tenders for the whole work were:—Oumet & Labelle, \$13,396; J. B. Gratton, \$13,445; Cole & Benard, \$12,275; A. Benoit & Co., \$7,195; Arsene Latour, \$7,150. The Committee have accepted the tender of A. Benoit & Co.

**TORONTO, ONT.**—Messrs. Burns & McCormack are the successful tenderers for draining the exhibition grounds, the amount of tender being \$2231.—Tenders for pavements have been awarded by the City Council as follows: A. C. Guelick, Detroit, C. Ilton street, Yonge to Parliament street, \$20,304; York street, Front to Queen street, \$9,788; Parliament street, Winchester to Carlton st., \$2,227; Construction & Paving Co.—Winchester street, Sumach to Parliament, \$8,000; Dundas street, Queen to Arthur, \$10,499; Queen street, Yonge to River, \$35,430; Richmond street, Victoria to Bay, \$10,841; Clark & Connolly—Jameson ave., vitrified brick, \$2,077; cedar block \$1,440; Trinidad Asphalt Co.—College street, Yonge to McCaul, \$16,130; Earl street, \$3,999; Warren, Schaff Co., Parliament street, Queen to Gerrard, \$15,492; Clark & Connolly, College street, Dufferin to Jameson avenue, cedar block, \$6,339; vitrified block, \$8,700.—The following tenders for supplies to the Water Works Department have been accepted: Brass work, James Morrison & Company, iron and steel, Rice Lewis & Son, general stores, F. W. Lunt, pig lead, Adam Hope & Co., cast iron pipe, St. Lawrence Foundry, Rubber goods, the Gutta Percha and Rubber Company, of Toronto; stop valves, John Perkins, pipe laying, Smith & Wilson.

## MUNICIPAL DEPARTMENT.

### LEGAL DECISIONS AFFECTING MUNICIPALITIES.

**YORK V. TOWNSHIP OF OSGOODE.**—Judgment in the Court of Queens Bench in action tried at Ottawa. An action for declaration that an engineer's award as to the construction of a drain is not binding, and for an injunction restraining the defendants from going on with the work, and for damages. Falconbridge, J., follows the considered judgment of Galt, C. J., on a motion to continue an interim injunction, and holds that the rights of the parties were concluded by the finding of the county judge on appeal from the engineer's award or certificate. Action dismissed with costs. Weir v. Matheson, 11 Cr., at p. 390, and McGee v. Kane, 14 O. R., 226, referred to on the question of a trial judge holding a point of law to be disposed of by the decision upon an interlocutory motion.

### HOW TO DESIGN A SEWERAGE SYSTEM.

Let us now examine into its various parts and see how we can adapt our design to the different conditions as they occur in practice. The first and simplest way of laying out a system of sewerage is the perpendicular system. It is a direct discharge into the river or stream along the valley lines. Where it becomes necessary to discharge the sewerage below the town, the intercepting system is used by which the different sewers leading to the river are intercepted by another parallel to the river, which conducts the sewerage to its point of discharge below the town. Another system is called the zone system. It is used in London and other European cities. Its advantages are that it gets the run-water away with as uniform a velocity as possible, and without conducting it through the city, and it admits of abundant flushing. A system applicable to flat level cities such as Berlin, New Orleans or Chicago, is called the radial system. It is at present in use in Berlin, where over a tract of 8 square miles there is a difference of elevation of only 15 feet. The sewerage is collected at central pumping stations and pumped out to irrigation farms of 18,000 acres, where it is purified. Local conditions, the lay out of streets, etc., determined a few other systems than those mentioned. It should always be observed in designing sewers that the velocities should be equalized in order that deposits may be prevented. A sewer descending with a steep grade and then abruptly going on a level is very bad practice, inasmuch as deposits are certain to form in the level portion of the sewer near its junction with the steeper part. It is therefore better to take a longer route to avoid this abruptness.

Sir Robert Rawlinson's principle is a most important one in the construction of sewers. It is in effect that we should at all times be able to inspect and clean any of the sewers at any place. This makes it necessary to lay the sewers perfectly straight between points of access or manholes. By lowering a lamp into one of them and a mirror placed at an angle of 45 degrees into the other the entire surface of the inside of the intervening sewer can be inspected.

Another principle called the Lindley principle, is to have no dead ends in the system. A dead end is the highest point of the sewer into which all the foul gases necessarily rise and accumulate. These can only be cleaned by means of flush tanks at the dead ends. This is the system employed in Frankfurt-on-the-Main, where the reservoirs used hold half a million gallons.

With reference to economy we should observe,

**MUNICIPAL ENGINEERS, CONTRACTORS, AND MATERIALS.**

first that the largest sewers should have the shortest route. This seems self-evident. Another principle to be borne in mind is that economy is reached by concentrating sewers as much as possible. This is easily seen from the fact that to build a sewer of *n* times a certain capacity does not cost *n* times as much money.

Keep in mind that the sewage should be gotten as quickly as possible into the large mains. The size of the different sewers is the next point to consider. The underlying principle governing size is that the quantity of sewage is equal to the water supply of the city. It is sometimes more, but unless specified can be considered as being the same. We should also assume that the quantity varies during the day just as the consumption of water varies—being greatest in the forenoon and least at night. One-half the daily quantity flows in from six to eight hours, and we should always, for safety, assume that this quantity will fill the sewer only half full.

We must now consider the ground water. In America there is kept out of the sewers; it will leak in. When necessary to allow for ground water make careful investigations of its maximum amount from existing records. In some places its amount is as high as 1,000,000 gallons per square mile per day. To keep it out of the sewers concrete cells should be constructed around them. This was done in many cases in Berlin.

We must next ascertain the greatest quantity of rain-water to be removed. To do this, consider the greatest intensity of rain fall in the vicinity and design the system to carry it. A certain fall per day was formerly all the information that was recorded, but this is of no practical value since the entire quantity may have fallen in a single hour. Automatic registers now in use show graphically the fall for every minute during the day. We find that this maximum varies considerably in different sections. In New York City, as a striking example, it has been as much as 6 inches per hour. At that rate it actually fell 1 inch in 10 minutes. It has been observed that these phenomenal falls do not last very long, and in fact are generally over by the time the water has reached the sewer, so they need not be considered. The presence of snow, which would melt during a rain, might be supposed to increase the amount of water to be allowed for, but it has been observed that heavy rainfalls seldom take place when snow is upon the ground.

(To be Continued.)

**CEMENT.**

7,000 Barrels of the best London brand in stock and to arrive; also Fire Brick, and Drain Pipes, best quality and lowest prices.

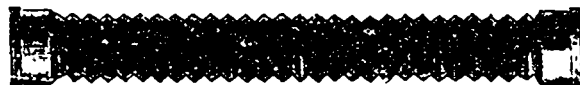
**F. HYDE & CO.**

31 Wellington Street, MONTREAL.  
Sole Agents for "The Grahnyx" Smoke Test Machine, for applying the smoke-test to defective drains, soil pipes, gas pipes, &c., fumigating, disinfecting, destroying vermin, &c.

**A. & E. LOIGNON,**  
CIVIL ENGINEERS.

Bridge and Structural Iron Work. Steel Beams kept in stock.  
Plans, Estimates and Specifications.  
WORKS: ST. COLUMBAN ST. AND CANAL SIDE, MONTREAL.  
OFFICE: 7 PLACE D'ARMES, Telephone 9277.

**CORRUGATED SOIL PIPE AND FITTINGS (PATENTED)**



This improvement marks an era in sanitary reform. Universal certificates in its favor from Architects, plumbing inspectors, master plumber associations, and others. Costs no more: more economical to use.

**H. R. Ives & Co.** - Montreal.

**MUNICIPAL OFFICIALS** should see to it that in the erection of town and city **PUBLIC BUILDINGS**, the installation of water works plant, etc., the advantages of...  
**MINERAL WOOL**



are made use of for deadening sound in floors and partitions, insulation of heat and cold, fireproofing, etc., also **SECTIONAL MINERAL WOOL COVERING** for steam pipes, boilers, exposed water pipes, etc.

Montreal Agent.  
**GEO. A. COWAN,**  
Room 23, 204 James St.

**Canadian Mineral Wool Co., Limited,**  
122 Bay Street, TORONTO.

**DEBENTURES WANTED.**

Municipalities issuing debentures, no matter for what purpose, will find a ready purchaser by applying to **G. A. STIMSON, 9 Toronto Street, Toronto.**  
N.B.—Money to loan at lowest rates on first mortgage.

**NOTICE**

We manufacture the  
**Thorold Cement.**

It is the best  
**Hydraulic Cement.**

Write us for prices.

**ESTATE OF JOHN BATTLE,**  
Thorold, Ontario.

**WILLIS CHIPMAN, B.A., Sc.,**  
M. Can. Soc. C.E.; M. Am. Soc. C.E.;  
M. Am. W. W. Ass'n.  
**CIVIL AND SANITARY ENGINEER**  
Water Works - Sewerage  
Sewage Disposal  
103 BAY STREET - TORONTO.

**J. McDOUGALL, C. E.,**  
ENGINEER COUNTY OF YORK,  
Consulting Engineer for Municipal Work.  
Electric Railways and Bridges.  
COURT HOUSE, - TORONTO.

**JOHN GALT**  
MEM. CAN. SOC. C. E.,  
CONSULTING ENGINEER AND EXPERT  
WATERWORKS, SEWERAGE, ETC.  
Twenty five years' practical experience in Great Britain, United States and Canada.  
Office Rooms 99 and 100,  
CANADA LIFE BUILDING, - TORONTO.

**PORTLAND CEMENT**

23,353 Barrels of Burham Brand were sold in Toronto in 1892, amounting to two-thirds of our total sales.

**BURHAM IS THE BEST.**

Nichols, Smythe & Co., - 25 George St., Toronto.  
Telephone 1948 or call and see us.

**HAMILTON AND TORONTO SEWER PIPE CO.**



- FOR -  
**SEWERS,**  
CULVERTS,  
AND  
WATER PIPES.  
**INVERTS**  
Fire Brick Sewers  
Write for Discounts

HEAD OFFICE AND FACTORY, HAMILTON, CANADA.

**Drummond McCall Pipe Foundry Company,**

**MONTREAL**  
MANUFACTURERS OF

**CAST IRON WATER AND GAS PIPES**

WORKS: LACHINE, QUE. PRICES ON APPLICATION.

**CANADA PIPE AND FOUNDRY CO. . . .**

MANUFACTURERS OF

**. . . . Cast Iron Pipes and Special Castings**

Works: MONTREAL AND ST. HENRI, QUE.  
CORRESPONDENCE SOLICITED.

**THE STANDARD DRAIN PIPE CO.**

OF ST. JOHNS, P. Q., (LIM.)



Manufacturers of  
Salt-Glazed,  
Vitrified  
**SEWER**  
**PIPES**

Double Strength  
Railway Culvert Pipes,  
Inverts, Vents,

AND ALL KINDS OF FIRE CLAY GOODS.

**Ontario Water Meter Co., Ltd.**

MANUFACTURERS OF

**WATER METERS**



Meter Supports, Dial Extensions, Fixture Locks, Water Cart Registers, Strainers, Coupling Seals and Reservoir Indicators.

Send for Price Lists and Testimonials. Our Meters are adopted and in use in over 500 cities and towns in Canada and the United States. Highly endorsed by leading Engineers. A guarantee for five years given with all Meters. All information furnished on application to

**A. C. WINTON, Secretary-Treas.**

OFFICE: No. 23 Toronto Street, Toronto, Ont.

**THE G. & J. BROWN MFG. CO.**

Railway and Contractors' Plant.

**BRIDGE BUILDERS**

BELLEVILLE, ONT.



