

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 SATURDAY

Vol. 3. Toronto and Montreal, Canada, October 8, 1892. No. 35

**THE CANADIAN CONTRACT RECORD,**  
 PUBLISHED EVERY SATURDAY  
 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.

C. H. MORTIMER, Publisher,  
 14 KING ST. WEST. TORONTO, CANADA.  
 Telephone 2362.  
 64 Temple Building, Montreal.  
 Bell Telephone 1299.

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

ADVERTISING RATES ON APPLICATION.

At its Convention held in Toronto, Nov. 30 and 31, 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 to 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.



## NOTICE TO CONTRACTORS.

Tenders will be received by registered post, addressed to the City Engineer, Toronto, up to 11 o'clock a.m. on MONDAY, THE 10TH DAY OF OCTOBER, 1892, for the construction of the following works, track allowance only:

**On Gerrard Street, from River Street to Pape Avenue, Cedar Pavement with Concrete and Granite Tothing.**

Plans can be seen and forms of tender obtained at the City Engineer's office on and after Wednesday, October 5th, 1892.

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 work tendered for under \$1,000, and 2½ per cent. for the value of the work 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.

JOHN SHAW,  
 Chairman Committee on Works.  
 Committee Room, Toronto, Oct. 1, 1892.

## TENDERS

Will be received up to SATURDAY, THE 15TH INST., for all trades required in the erection of Two six-story Houses on Cathedral Street.

Plans and specifications can be seen after Monday, the 10th inst. The lowest or any tender not necessarily accepted.

J. A. P. BULMAN, Architect,  
 156 St. James Street, Montreal.

## TO ARCHITECTS.

A thoroughly competent architectural draughtsman, recently in charge of draughting room in a Chicago office, wants a situation in Toronto or vicinity, or would prepare designs, perspectives, etc., for resident architects. Terms, very reasonable. Address ASHTON PENT COST, Toronto Junction.

## Partner Wanted.

A Scotch Canadian Architect in established practice in Chicago City, Ill., U.S.A., wants a partner of from 25 to 40 years of age, must be of recognized ability and good moral character. To the right party a ½ or ¼ interest will be sold. About \$200,000 under one contract in the office. Answer quick. References exchanged. Address Suite 35, 175 La Salle Street, Chicago, Ill.

## Tenders for Stone Wanted.

Tenders will be received up to THURSDAY, OCTOBER 13TH, at 6 o'clock p.m., for 230 tons of Stone suitable for breaking into road macadam, to be delivered on Davenport Road where required, within the limits of the town, on or before the 15th day of November next.

Tenders to state the kind of stone to be delivered and where from.  
 Stone to be subject to approval.  
 Tenders may be for lots of 10 tons or more.  
 Tons to contain 216 cubic feet each.  
 Tenders to be addressed to the Town Engineer and marked "Tenders for Stone."

The lowest or any tender not necessarily accepted.  
 Any additional information required may be obtained at the Engineer's office.

By order, G. B. ABREV,  
 Town Engineer.  
 Toronto Junction, Sept. 29th, 1892.

## Notice to Contractors

Sealed tenders, addressed to the undersigned, will be received up to noon of FRIDAY, THE 14TH OF OCTOBER NEXT, for the construction of a

**Rivvoted Steel or Cast Iron Water Pipe 24 inches in diameter and 1,200 feet long,**

also for the laying of the same in the Kingston Harbor.

Specifications and form of tender can be obtained by application to the City Engineer, Kingston

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

N. C. POILSON,  
 Chairman Water Works Committee.  
 Kingston, Sept. 29th, 1892.

Messrs. Scott & Cross, contractors, corner Hamburg Avenue and Van Horne Street, have assigned to Messrs. Campbell & May, with liabilities of \$24,000.

## CONTRACTS OPEN.

STRATHROY, ONT.—Messrs. Collins contemplate the erection of a tannery

WESTON, ONT.—Mr. J. Pearson is about to erect a residence on Church street.

PORT COLBORNE, ONT.—A company has obtained a charter and will erect smelting works.

STRATFORD, ONT.—The Massey-Harris Company are said to contemplate the erection of a new building south of the market.

VICTORIA, B. C.—The sum of \$55,000 is to be expended in purchasing sanitary appliances and extending the sewerage system.

HARROW, ONT.—A new Methodist church is to be erected here. Mr. Amasa Wood will lay the corner stone early in the spring.

BRANTFORD, ONT.—The sum of \$1,000 has been subscribed towards putting a chime of bells in Grace church. The estimated cost is \$5,000.

WATFORD, ONT.—A by-law has been passed in Council to provide funds with which to purchase a site and town hall, lock up and engine house.

EAST TORONTO, ONT.—Mr. D. G. Stephenson is about to erect a handsome residence. Messrs. Edwards & Webster, Toronto, have prepared the plans.

WINDSOR, ONT.—The manager of the Canadian General Electric Company will shortly decide upon the location for the erection of a power house.

NEW GLASGOW, N. S.—The New Glasgow Electric Company are negotiating with the town authorities for the construction of an electric street railway.

MONTREAL JUNCTION, QUE.—It is reported that the C. P. R. has had plans prepared for a new station here, also that they will extend their tracks on each side of the present limit.

SAULT AU RECOLLET, QUE.—The Municipal Council have voted a thirty years' franchise for an electric street railway and electric light to Mr. A. J. Corriveau, representing an electric syndicate.

WALKERVILLE, ONT.—The Ontario Natural Gas Company will lay pipes from their gas wells near Kingsville to this city, a distance of thirty miles. They will commence work in the spring.

LONDON, ONT.—Mr. J. M. Moore, Engineer, will receive tenders until Monday next for building frame stable and shed and constructing piston rods for hydraulic pumps at Springbank for the Water Commissioners of the city of London.

THREE RIVERS, QUE.—The Board of Health has recommended to Council that steps be taken to secure the erection of a public hospital outside of the city, also of a permanent hospital for contagious diseases constructed in a suitable locality.

YARMOUTH, N. S.—A London syndicate are taking up the debenture stock of \$275,000 of the Western Counties Railway. The money will be used to pay off the existing liabilities, relay the road with steel rails, and put the whole line in first-class condition.

SARNIA, ONT.—The Board of Works have instructed Mr. J. H. Jones, Engineer, to make surveys for the construction of a sewer on George street.—Plans for the Curling Club's new rink are about completed and the committee will

shortly advertise for tenders for its erection. It will be situated on the Copland property opposite the Presbyterian church.

HAMILTON, ONT.—A handsome altar is to be erected in St. Peter's church, in memory of the late T. H. Stinson. A special meeting of the Council was held recently to consider the proposed scheme for a mountain drive. Mr. Beckett reported that it would cost \$13,000 to purchase the necessary property, also that the sum of \$57,000 would be required for macadamizing, grading, fencing, etc. A sub-committee was appointed to get options for right of way.—Messrs. Pennington, Baker & Co. contemplate enlarging their premises.—The following building permits have recently been granted. Edward Harrison, three 2-story brick dwellings on Main street, between Locke and Pearl sts., cost \$2,500. R. Berryman, brick addition to 260 Herkimer st., cost \$1,200. Hugh Burke, two-story brick dwelling on Aberdeen avenue, between Queen and Kent streets, cost \$1,000.

OTTAWA, ONT.—Ald. Wallace intends building two tenement houses on Cooper st., between O'Conner and Metcalfe streets, plans for which have been prepared.—T. Trudeau, Acting Secretary Department of Railways and Canals, will receive tenders until Tuesday, the 25th inst., for the supply of the following steel rails. 800 tons of 50 lb. steel rails to be delivered C. I. F. on the Prince Edward Island Railway wharf at Summerside, P. E. I., 300 tons of 56 lb. steel rails to be delivered C. I. F. on the Intercolonial Railway wharf at Richmond, N. S., 3,000 tons of 67 lb. steel rails to be delivered C. I. F. on the Intercolonial Railway wharf at St. John, N. B.—A deputation from the Council and Board of Trade of Sorel, Que., recently waited on the Government and asked for a subsidy towards building a bridge over the Yamaska river, the cost to be \$130,000. The old bridge was swept away last spring.—Messrs. Montague Allan and Nicholl Kingsmill left last week for Europe to complete financial arrangements for the construction of the extension of the Manitoba & Northwestern railway to Prince Albert.

WINNIPEG, MAN.—The erection of the new Methodist College will be commenced in the spring, the cost of which will be about \$50,000. Mr. Geo. A. Cox, of Toronto, has subscribed the sum of \$5,000 towards its erection.—Tenders have been asked for the construction of a new rink for the Granite Curling Club, the cost of which is placed at \$12,000.—The Chairman of the Fire, Water and Light Committee of the City Council will receive tenders until the 18th inst. for the supply of the following material for waterworks construction. One 4 million gallon pumping engine, two boilers, twenty-five tons special castings, a quantity of cast-iron pipe, hydrants and stop valves. A new system of waterworks will be constructed in the near future, for which a large quantity of supplies will be required, the above being only a small portion of the amount needed.—Tenders will shortly be called for the supply of 1,000 feet of fabric hose.—At a recent meeting of the Board of Trade it was resolved that a committee be appointed to take into consideration the necessary steps to be taken to improve the sanitary condition of the city.—Mr. E. Galbraith will erect a two-story brick building on

the corner of Princess and Jenima streets.—J. W. Cockburn, Chairman Committee on Works, will receive tenders until noon on Thursday, the 13th inst., for the construction of sewers on Catherine, Macbray, Austin and Carey streets, also for the supply of a quantity of six-inch sewer pipe.

**MONTREAL, QUE.**—Tenders are invited by the City Clerk until Monday next for the supply of 5,000 feet of fire hose, with patent coupling complete.—Mr. Justice Pagnuelo, of this city, has purchased three acres of land at Outremont on which he intends to erect a handsome residence.—The Health Committee has recommended the construction of sewers on Montcalm street, Champlain street, Christopher street, Mount Royal avenue, Visitation street, Dorchester street, between St. Denis st. and Beaver Hall, Citawa, College, Plessis and St. Charles Borromeo streets. The matter has been referred to the Road Committee for a report.—Mr. A. J. Corriveau has made a proposition to the Council of Cote des Neiges to build an electric street railway through the municipality.—The ratepayers of St. Henri have carried a by-law granting eight acres of land to Wm. Clendenning & Son, of this city, as an inducement to establish their works at that place. The firm state that operations will be commenced at once.—At a recent meeting of the Road Committee, it was decided to report in favor of proceeding with the *Bernie* street subway at once, and to prepare an estimate of the cost of paving Common street, between Black's Ridge and Jacques Cartier Square. A Gendron, architect, is preparing plans for stores and dwellings for estate of F. J. Durand, to be erected on Bleury street.—J. H. Macduff, architect, is preparing plans for a block of stores and dwellings, for Mr. B. Decarie, to be erected on the corner of Notre Dame and Borget streets. They are to be built of brick and stone and will be three stories.

**TORONTO, ONT.**—The Royal Dominion Mills, corner of Bay and Esplanade streets, are to be enlarged.—The management of the Toronto Technical School have decided to purchase \$300 worth of electrical apparatus.—A meeting of the shareholders of the Toronto and Scarborough Electric Railway Company was held recently, at which it was decided to proceed with the construction of the road at once, and if possible to give communication with the city to the residents of East Toronto and Little York this fall.—The Massey-Harris Company contemplate enlarging their works in this city.—F. W. Story, Islington, wants tenders for putting in about eight thousand tile, digging drain and refilling.—Tenders are asked until to-day for plumbing of twelve houses on Pacific avenue, south of King street.—Mr. H. A. Massey, of the Massey Harris Company, has purchased a lot on the corner of Victoria and Shuter streets on which he intends to erect a large building. Work will be commenced in the spring.—The corner stone of the new church of St. John the Evangelist, corner of Stewart and Portland streets, will be laid this afternoon. Rev. A. Williams is the rector of this church.—The following building permits have been granted: Green & Green, bk. stable and add. to Russell House, cost \$1,000; F. H. Herbert, Toronto Arcade, add. 74 & 76 Hazleton ave., cost \$2,000; Eden Smith, 14 King st. w., alterations and add. to Old People's Home, John street, cost \$2,500.—The Chairman of the Parks and Gardens Committee will receive tenders until Monday next for the erection of buildings and digging of a well on the new Rifle Range near Fort Credit. Plans at office of Mr. M. Hall, architect, No. 9 Victoria street.

#### FIRES.

The foundry of George Tait, rear 14 Defoe street, Toronto, was damaged by fire last week to the extent of \$3,500.—The Collins Hotel at Lambton owned by Mrs. Rafe Hodgins, of London and leased by Len Hall, was burned to the ground on Monday last. The loss on the building is placed at \$2,500, which is partially covered by insurance.—The monastery of Petit Clairvaux at Tracadie, N. S., was totally consumed by fire on Tuesday last. The loss is estimated at \$100,000, on which there was no insurance.—Grace Church, Ottawa, was destroyed by fire to the extent of \$10,000 during the past week.

#### CONTRACTS AWARDED.

**PETERBORO, ONT.**—The contract for the excavation and laying of a sewer from the General Electric Works to the river has been awarded to John Farley, of Toronto.

**BRANTFORD, ONT.**—Messrs. J. G. Pocach and Wm. Hancock, of Hamilton, have been awarded the contract for the masonry work of the Toronto, Hamilton, and Buffalo Railway bridge at this city.

**ALLANDALE, ONT.**—Mr. R. E. Fletcher has the contract for the erection of St. George's Church. It was designed by Messrs. Holgate & Lennox and when finished will cost \$3,125.

**GUELPH, ONT.**—Mr. J. E. Lewitt has let contracts as follows for erection of a two-story brick house, store and knitting factory on the corner of Nottingham and Devonshire streets: brick and stone work Taylor Bros., carpentry, Tait & Graham, plastering, J. J. Mahoney.

**OTTAWA, ONT.**—The City Council have accepted the following tenders for sewers: Wm. Kilt, Church street sewer, \$4.75 for earth and \$29.90 for rock per 100 lineal feet. P. Burns, St. Patrick street sewer, \$6 for earth and \$42 for rock. John Sullivan, Sussex street sewer, \$3 for earth and \$30 for rock.

**LONDON, ONT.**—The Board of Managers of the First Presbyterian Church have awarded contracts as follows for the erection of their new edifice: carpenter work, Wm. Tytler; brick and stone work, Mr. Martin, plastering, Gould & Stratford gas fitting, Smith Bros.; slating and galvanized iron, Douglas & Plunkett, Toronto, painting, R. Lewis. The total cost will be \$15,000.

**TORONTO, ONT.**—The Toronto and Niagara Navigation Company has closed a contract with the Hamilton Bridge Company for a steel steamer for passenger traffic between Toronto and Lewiston. The vessel will be 311 feet over all and 68 feet beam. Her capacity will be 2,400 people, and the cost will approximate \$250,000. It is said that she will be the largest boat ever built in Canada.

**MONTREAL, QUE.**—The Road Committee have awarded contracts for the paving of Amherst street. The asphalt work has been given to Jas. Cochran, at \$3.87 per sq. yard, and the block stone for the hill to F. D. Lawrence, at \$2.30 per sq. yard.—A. Gendron, architect, has awarded contracts as follows for two houses on Seymour avenue for Mr. Peter Gillespie: plumbing, heating and roofing, Brodeur & Lesard; plastering, St. Denis & Dubé; painting and glazing, O. Manihon; also for the painting and glazing of four houses on Mountain street for George Bishop to Pointe & Arcand.—D. R. Brown, architect, has awarded the following contracts for school house for Methodist church, Atwater avenue—brickwork, Thos. Malhot, carpenter work, John Morrison; plastering, Thos. Phillips; roofing, G. W. Reed; plumbing, Garth & Co.; painting, A. McAfee; for store on St. Hepr st. for Morgan Estate—brickwork, W. H. Boone, carpenter work, J. E. Mooney & Co., plastering, John Morrison & Son; roofing, Montreal Roofing Co.; painting, A. McAfee; plumbing, W. M. Briggs.—R. Findlay, architect, has let the following contracts: masonry and brickwork of a residence at Cote St. Antoine for Geo. Coniel, to Mr. Lewis, builder, masonry work of residence at Norwood, Back River, for J. Corbett, to Pecard & Mesnard, masonry of residence at St. Anne de Bellevue for Jas. Morgan.—A. C. Hutchison, architect, has awarded contracts as follows for a residence for Mr. Jas. Rodgers: masonry, Geo. Morrison & Co.; brick work, Wm. Travers; carpenter work, M. Toulrie; plastering, G. A. Cook; plumbing, W. M. Biggs; painting, Theo. Delage, roofing, Campbell & Co. The house to have a red sandstone front, and the ground floor to be finished in white wood.

Hamilton Smith, jr., in addressing the Iron and Steel Institute of Great Britain, recently remarked, "So far as rust is concerned, in my extensive experiments, I have only seen one notable instance where an asphaltum coat, properly applied, did not protect iron, and that was with a pipe over which a stream of water highly charged with sulphate of iron passed.

#### PRESERVING STONE.

The following formulas for metallic cements are given in *La Revue Pratique des Travaux Publics*: Oxide of zinc dissolved in a solution of the chloride has for a long time been used as a paint, and it serves as a base for the following cements: (1) Oxide of zinc, 20 kilogs.; pulverized Lorraine cement stone, 20 kilogs.; sandstone, 10 kilogs. This cement must be tempered by a liquid composed of hydrochloric acid, 22° Beaumé, 10 liters; water, 5 liters; zinc, 3 kilogs.; ammonium chloride, 0.5 kilog. (2) A cheaper cement can be obtained by mixing oxide of zinc, 10 kilogs.; pulverized Lorraine cement stone, 20 kilogs.; sandstone, 5 kilogs., and yellow ochre, 0.4 kilog. This cement is tempered with the solution just given, diluted with 5 liters of water.

For soft stone a cement is made of: Oxide of zinc, 10 kilogs.; Lorraine cement stone, 30 kilogs.; sandstone, 10 kilogs., and yellow ochre, 0.3 kilog.; or the following formula may be used: Zinc white, 5 kilogs.; plaster, 10 kilogs.; Lorraine cement stone, 10 kilogs.; and yellow ochre, 0.5 kilog. If an extremely strong cement is desired it can be prepared of oxide of zinc, 10 kilogs.; pulverized quartz, 15 kilogs. For the three last mentioned cements the liquid given above is used, only 10 liters of water are added instead of 5 liters.

These cements can be applied with a brush as a paint. Colors give good results, the coating adheres perfectly to the stone and gives it the appearance of a newly cut surface, and at the same time forms a protecting cover against the inclemency of the weather. The stone should be well cleaned before applying the paint, and if necessary two or more coats can be given.

Copperplating sheet-zinc for building purposes has recently, it is said, been tried with considerable success, the process being especially recommended where mechanical wear takes place. The zinc combines very well with the copper. The galvanic method of copperplating is advantageously used, but the zinc may also be coated with copper by ordinary means. In the first place the sheet-zinc is cleaned with soda from any adhering dirt and grease, and is also purified by a weak acid-bath from the covering of zinc-oxide. There are then dissolved in twenty-four parts of water one part of cupric-oxide carbonate (refined verdigris), and twelve parts of tartar, the mixture being heated to boiling point, after which three or four parts of Spanish white are added. The Spanish white is here decomposed, and is precipitated as lime-tartrate. The dark-blue liquid is poured off and filtered, and can be used either as a bath for a sheet-zinc or for the production of a copperplating paste. The first application is the more recommendatory, as the fluid forces its way into the corners and angles of the zinc articles, and is uniformly distributed all over. It is to be desired to coat an immovable zinc object with copper, the article after being cleaned, is painted with the copper solution and chalk compound, and after drying brushed. The very simple operation would likewise prove of value for architectural purposes, namely, where it is desired to remedy the generally displeasing effect of zinc adornments.—*Metalarbeiter.*

#### MUNICIPAL DEPARTMENT.

##### LEGAL DECISIONS AFFECTING MUNICIPALITIES.

**MCDOWALL VS. TOWN OF PALMERSTON.**—Judgment on application by Thomas McDowall to set aside an award made between him and the corporation of the Town of Palmerston in respect of the compensation for certain land, formerly used as a cemetery, and expropriated by the corporation under an act of the Legislature of Ontario. The chancellor holds that the act is *intra vires*, and that the arbitrators proceeded on a right principle in estimating the value of the appellant's interest in the land. Motion dismissed with costs.

**HOWARTH V. TOWNSHIP OF SOUTH WOLD AND MCGUGAN.**—Action for damages for negligence causing an accident and injury to the plaintiff. The jury found that the placing and leaving of a hammer on the highway was the cause of the accident. The learned judge holds that the damage was by reason of default of the corporation to keep the highway in repair and therefore that the action not having been brought within three months after the damage had been sustained, the municipality cannot be compelled to pay the sum assessed by the jury. Judgment for the plaintiff against the defendant McGugan for \$600 and costs and for the defendant the corporation dismissing the action with costs.

**MCDUGALL V. VILLAGE OF FENELON FALLS.**—Judgment on appeal by the defendants from the judgment of the judge of the County Court of the County of Victoria, dismissing a motion by the defendants to set aside a verdict for the plaintiff in an action for damages for the illegal seizure of a buggy for taxes. Hugh McDougall was the person assessed for the taxes, and the buggy seized was the property of his wife, the plaintiff. The judge below held that the corporation had ratified the act of their collector in seizing the buggy for taxes. The court failed to distinguish this case from *McSorley v. City of St. John*, a decision of the Canadian Supreme Court, and held that the defendants were responsible for the act of their collector. Appeal dismissed with costs.

##### CEMENT CONCRETE TESTS.

A large number of experiments have been made by the engineers of the Melbourne Metropolitan Board of Works as to the desirability of bluestone toppings and screenings being substituted for sand for making Portland cement concrete or mortar for the main outfall sewer. The results show that the substitution is advantageous; that samples or briquettes made with Beaconsfield sand and cement, and bluestone toppings and cement, in the same proportion—viz, 2 to 1 of cement—show that the strain required to break the briquettes was much greater with the latter material than with sand. As to the crushing strength of the concrete, this being the chief requirement for sewers, the experiments made showed conclusively that from ratios of 1 to 8 to 1 to 15 the mortar made with bluestone toppings was much stronger than that made with sand. Other series of tests prove the same superiority of bluestone toppings in

MUNICIPAL ENGINEERS, CONTRACTORS, AND MATERIALS.

every case, and the authorities have decided to allow either bluestone toppings or sand to be used for the outfall sewer, whichever is the cheaper. Comparing the strength and cheapness of the various concretes, the following give very good results: 1 of cement, 4 of bluestone toppings, 1 of bluestone screenings, and 1 of bluestone; also 1 of cement, 3 of bluestone toppings, 2 of screenings and 2 of bluestone; also 1 of cement, 3 of bluestone toppings, 2 of screenings, and 3 of bluestone. Of these the latter is recommended for the sewers. The general results are thus summarized: (1) Neat Portland cement is stronger both in tensile and crushing strength than any mixture, (2) that Portland cement mixed with bluestone toppings to form a mortar is always stronger if sand be substituted for toppings; (3) that mortar composed of 1 of Portland cement and 1 of bluestone toppings is reduced in strength by the addition of 2 parts of screenings which increases the strength of the poorer mortars, and that the maximum strength is obtained by the addition of one part of screenings to mortars of ratios 1 to 2 to 1 to 5, (4) that in Portland cement concrete the best result with any mortar is given when combined with one part of screenings and 1 part of stone; that the increase of screenings has a tendency to weaken the concrete if more than 1 or 2 parts be used; that with mortars poorer than 1 to 2, 2 or 3 parts can be added without materially reducing the strength."

**CURBING OF ROADS NOT ESSENTIAL.**

All residential streets can readily dispense with stone or plank curbing by a little care in forming the gutters; that is to say, let the lawns and the gutter meet each other at the foot of their respective inclines. The handsomest style for a street improvement is in form like the seats of an amphitheatre; by this we mean that the dwelling should be at least two feet above the general level of the road bed—four feet would be much handsomer—while the sidewalk proper should occupy the inside six feet, leaving for lawn purposes, ten or more feet in width, thus curbing the emerald lawn to skirt the road and fringe the gutters. An extended experience of the writer has demonstrated the fact that the gutter and lawn unite with great solidity after a twelve-month.

When it is remembered that good stone curbing is cheap at seventy-five cents per lineal foot laid, the subject matter of which we write touches the property owner in his most vulnerable part, the pocket, because \$37.50 will be saved on every 50 foot lot.—*Clay Record.*

**THE BEST ROAD STONE.**

Comparative experiments, made with a view to ascertain the kind of stone best adapted for roads, show the specific gravity of a rock is really no indication whatever of its fitness for such a purpose, slate, for example weighing 175 pounds per cubic foot, and pure mica, weighing about 183 pounds, being entirely unserviceable. It is thought by some that trap rock has no superior for this use, after this coming felsite, and next in order is granite, though in regard to the latter there is to be considered the difference in quality that exists, the kind containing hornblende being preferable to that with mica; the latter sort is soft, rendering it much inferior to the former.—*Poughkeepsie News Press.*

**THOROLD CEMENT**

WELL AND CANAL ENLARGEMENT,  
RESIDENT ENGINEER'S OFFICE,  
WELLAND, April 17th, 1884.

JOHN BATTLE, Esq., Thorold  
Dear Sir,—Yours of yesterday, relative to Thorold Hydraulic Cement, is received. In reply, I beg to say that my tests of the Thorold Hydraulic Cement have extended over a period of twenty-eight years, and have been on a large scale, as exemplified in the locks, bridges, culverts and other masonry on the Welland Canal and Welland Railway, and that the record, which has been invariably satisfactory, is to be found in examination of the structures. The necessary tearing down of masonry and concrete, during the Welland Canal Enlargement, has afforded abundant evidence of the reliability of the Thorold Hydraulic Cement, both in masonry and concrete, and above and under water. I desire no better cement for the class of work referred to.

I am, dear sir, yours truly,  
W. G. THOMPSON,  
Resident Engineer.

ISAAC USHER & SON,  
THOROLD, ONT.  
Manufacturers of

**QUEENSTON CEMENT**  
Proved by Government tests to be the best Canadian natural cement. Write for prices, &c.

**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 low rates on first mortgage.

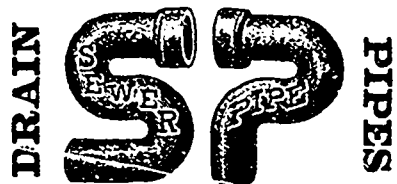
R. E. H. BUGKNER,  
39 Adelaide St. East, - TORONTO.

PATENT CAST IRON GULLIES,  
Vitrified Clay Sewers - Dust Bins - Sewer Pipe  
Cements - Steam Road Rollers - Stone  
Breakers - Street Scrapers  
Horse Brushes, etc.

**ASPHALT PAVING**

We are prepared to do first-class work on WALKS, FLOORS, CELLAR BOTTOMS, &c., with ROCK ASPHALT, which is conceded to be the best for this class of work

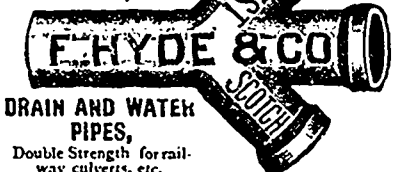
H. WILLIAMS & CO.,  
Roofers and Painters,  
4 Adelaide Street East, - TORONTO.



For SEWERS, CULVERTS; also WATER PIPES, INVERTS, VENTS, &c.  
Goods shipped by water or rail to all points.

The Thos. Nightingale Pressed Brick Co.  
67 Adelaide St. East, Toronto.  
Telephone 449. Works at Port Credit.

DIRECT IMPORTERS AND DEALERS IN  
SCOTCH FIRE CLAY-BRICK,



DRAIN AND WATER PIPES,  
Double Strength for railway culverts, etc.  
Sewer Bottoms or Invert Blocks, Cement.  
NOTE.—Only pure SCOTCH unglazed Fire Clay Linings will be kept in stock; any other quality is worthless for resisting heat. Correspondence invited. Quotations promptly furnished.  
Office: 31 Wellington St., Montreal.

**EUREKA CONCRETE SIDEWALKS**

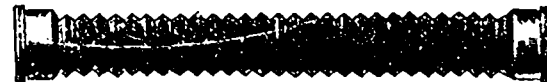
FOR CELLARS, FLOORS, STABLES, ETC.

A. GARDNER & CO., - ROOM 17, YONGE STREET ARCADE, TORONTO.  
TELEPHONE 2147.

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.

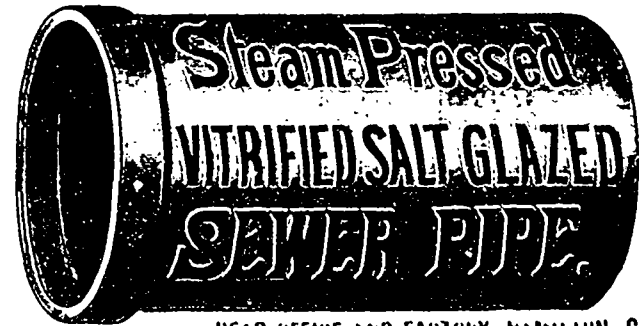
**CORRUGATED SOIL PIPE AND FITTINGS (PATENTED).**



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

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

**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.

**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.

**Canadian Bridge & Iron Co.**  
MONTREAL.

Architectural Ironwork a Specialty. Pleased to furnish estimates.

**THE J. C. EDWARDS**

Vitrified Terra Metallic Paving Brick

FOR STABLE, COACH HOUSE, BOILER HOUSE, BREWERY FLOORS AND YARDS, Also all places of heavy and light traffic.

The only Genuine Vitrified Brick. The best in the world for Sidewalks & Street Crossings  
FROST-PROOF, WATER-PROOF, TIME-PROOF

JOHN S. CUTHBERTSON, AGENT FOR CANADA.  
Room 64, Temple Building, Montreal.  
PRICES ON APPLICATION.

THE CENTRAL BRIDGE WORKS

Peterborough, Ont.

WM. H. LAW, Proprietor and Engineer.

MANUFACTURER OF

RAILWAY AND HIGHWAY BRIDGES

Viaducts, Piers, Roofs, Turntables and Girders in Steel and Iron.

Tension members forged without welds. Riveting done by hydraulic or compressed air machines. Specialties: Good workmanship and strict adherence to specifications and drawings.

CAPACITY: 2,000 TONS PER ANNUM.

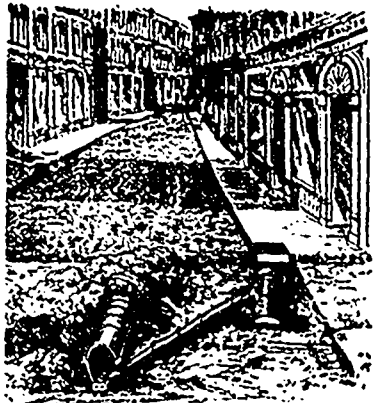
St. George's Patent Sectional

VITRIFIED CLAY SEWER

AND

CAST IRON STREET GULLEY.

Over 5000 Gulleys are now in use in the following towns: Montreal, Toronto, Ottawa, Quebec, St. Cune-gone, St. Henri, Peterboro, Owen Sound, Sarnia, Cote St. Antoine, Sherbrooke, London, New Glasgow, N.S. A saving of \$22 on each gulley over the brick gulleys.



LEWIS SKAIFE, Engineer and Contractor,

New York Life Building, - MONTREAL. AGENT.

Prices of Building Materials.

LUMBER.

CAR OR CARGO LOTS.

Toronto. Montreal.

Table listing lumber prices for various grades and sizes, including clear picks, dressed lumber, and shingles.

Toronto. Montreal.

Table listing prices for various types of lumber, including cutting up planks, dressed lumber, and shingles.

BRICK—M

Table listing prices for common walling, good facing, and sewer pipes.

Pressed Brick, Per M:

Table listing prices for plain brick, hard building, roof tiles, and diamond locking tiles.

SAND.

Table listing prices for common rubble and large flat rubble.

STONE.

Table listing prices for foundation blocks and granite paving blocks.

Table listing prices for granite curbing stone and granite curbing stone.

SLATE.

Table listing prices for roofing slate and building stone.

PAINTS.

Table listing prices for white lead, red lead, and yellow ochre.

Toronto. Montreal.

Table listing prices for black lamp, blue ultramarine, oil linseed, and putty.

CEMENT, LIME, etc.

Table listing prices for various types of cement and lime.

HARDWARE.

Table listing prices for cut nails, steel, and various hardware items.

Toronto. Montreal.

Table listing prices for cold cut, pink blued nails, and casing and box.

Table listing prices for finishing nails and slating nails.

Table listing prices for common barrel nails and clinch nails.

Table listing prices for shank and flat pressed nails.

Table listing prices for structural iron, including steel beams and plates.

INDEX TO ADVERTISEMENTS

In the "Canadian Architect and Builder."

Large index table listing various contractors, architects, and suppliers, categorized by profession and location.