

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

Coloured pages/  
Pages de couleur

Covers damaged/  
Couverture endommagée

Pages damaged/  
Pages endommagées

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

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

Cover title missing/  
Le titre de couverture manque

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

Coloured maps/  
Cartes géographiques en couleur

Pages detached/  
Pages détachées

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

Showthrough/  
Transparence

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

Quality of print varies/  
Qualité inégale de l'impression

Bound with other material/  
Relié avec d'autres documents

Continuous pagination/  
Pagination continue

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

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

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

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.

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

Additional comments:/  
Commentaires supplémentaires:

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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

# CANADIAN CONTRACT RECORD

A WEEKLY JOURNAL

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, Purchasers of Municipal Debentures and leading Contractors in all lines throughout Canada.

VOL. 7.

MAY 21, 1896

No. 16.

## 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.

C. H. MORTIMER, Publisher,

CONFEDERATION LIFE BUILDING, TORONTO.  
Telephone 2362.

New York Life Insurance Building, Montreal.  
Bell Telephone 2299.

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

Advertising Rates on application.

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

### CANADIAN CONTRACTORS HAND-BOOK

A new and thoroughly revised edition of the *Canadian Contractor's Hand-Book*, consisting of 150 pages of the most carefully selected material, is now ready, and will be sent post paid to any address in Canada on receipt of price. 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 daily requirements.

Price, \$1.50; to subscribers of the CANADIAN ARCHITECT AND BUILDER, \$1.00. Address

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

## TO BUILDERS

Tenders will be received for the erection of a brick Presbytery for Rev. Father McPhillips, Uptergrove, up to SATURDAY, MAY 23RD, by the undersigned.

Plans and specifications can be seen at the offices of the undersigned, Barrie and Orillia.

KENNEDY, McVITTIE & CO.,  
Architects.

## Notice to Contractors

### TENDERS FOR STREET LIGHTING

Tenders addressed to the undersigned will be received up to 7:30 p. m., JULY 6TH, 1896, for lighting the streets of the town of St. Marys with electricity for a period of ten years.

For particulars apply to the undersigned. The lowest or any tender not necessarily accepted.

L. HARSTONE,  
Clerk Town of St. Marys.

## TENDERS

Will be received up to first of June for the erection of a frame residence in Barrie and for alterations and additions to a frame residence in Grayhurst. Plans and specifications to be seen at the offices of

KENNEDY, McVITTIE & CO., Architects,  
Barrie and Orillia.

## SEALED TENDERS

Will be received up to JUNE 2ND for furnishing material and labor for slate roof for Town Hall, Aylmer, Ont. For specification and particulars apply to

JUNIUS T. BRADLEY,  
Town Clerk.

## Tenders Wanted

Tenders will be received at the office of the undersigned, until noon, JUNE 6TH, 1896, for

### STEAM HEATING, ELECTRIC WIRING, ETC.

Young Men's Christian Association Building, London, Ont.

Lowest or any tender not necessarily accepted.

MOORE & HENRY, Architects,  
London, Ont.



## NOTICE TO CONTRACTORS

### TENDERS FOR TANKS, GATES AND CONNECTIONS FOR NEW 6-FOOT STEEL CONDUIT

Tenders will be received by registered post only, addressed to the Chairman of the Board of Control, City Hall, Toronto, Ont., up to 5 o'clock p. m. of WEDNESDAY, JUNE 3RD, 1896, for the construction of one steel tank, 24 feet square and 10 feet deep, with three six-foot gates and hoisting gear

One steel tank, 8 feet x 9 feet, 15 feet deep, with centre pillar and guides for wood gate, complete.

One steel tank, 6 feet x 7 feet, 14 feet 6 inches deep, with gates for stop logs; the necessary connections between the tanks, the existing shore crib, and the existing 5 feet steel conduit.

Drawings and specifications may be seen and forms of tender obtained at the office of the City Engineer, Toronto, on and after Wednesday, May 20th, 1896.

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 up to \$1,000, and 2½ per cent. on the value of the work tendered for over that amount, must accompany each and every tender, otherwise they will not be entertained.

Tenders must bear the bona fide signatures of the contractor and his sureties, or they will be ruled out as informal.

Lowest or any tender not necessarily accepted.

BERNARD SAUNDERS,  
Chairman Committee on Works.

R. J. FLEMING,  
Chairman Board of Control.

Toronto, May 8, 1896.

## FOR SALE

A cramped wire cage and about 30 ft. of gallo, three double-standing desks, and a quantity of bank furniture of walnut. For particulars address

POWER & SON,  
Lion Block, Kingston.



## NOTICE TO CONTRACTORS

### Laying New 6-Foot Steel Conduit

Tenders will be received by registered post only, addressed to the Chairman of the Board of Control, City Hall, Toronto, Ont., up to 5 o'clock p. m. of WEDNESDAY, JUNE 3RD, 1896, for laying the proposed new

### 6-FOOT STEEL CONDUIT

to replace the present wooden one from the connecting crib on Toronto Island to the bell buoy crib in Lake Ontario, a distance of about 2,358 lineal feet, including the laying of the necessary

### TANKS, VALVES AND CONNECTIONS.

Drawings and specifications may be seen and form of tender obtained at the office of the City Engineer, Toronto, on and after Wednesday, May 20, 1896.

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 up to \$1,000, and 2½ per cent. on the value of the work tendered for over that amount, must accompany each and every tender, otherwise they will not be entertained.

Tenders must bear the bona fide signature of the contractor and his sureties, or they will be ruled out as informal.

Lowest or any tender not necessarily accepted.

BERNARD SAUNDERS,  
Chairman Committee on Works.

R. J. FLEMING,  
Chairman Board of Control.  
Toronto, May 8, 1896

## BUSINESS NOTES.

A. S. Black, contractor, has opened at Rossland, B. C.

T.P. Wallace, a carpenter of Halifax, N. S., has made an assignment.

Brunt & Nickerson, builders, Halifax, N. S., have dissolved partnership.

S. Patton, contractor, Niagara Falls, Ont., is reported to have assigned to H. L. Inglis.

Watson & Geiger, plumbers, Victoria, B. C., have dissolved. Thomas Geiger continues alone.

A meeting of the creditors of William Simpson, contractor and planing mill proprietor, Toronto, has been called.

The assignment is announced of Stewart & Killackey, felt roofers, Toronto. Liabilities \$6,000 to \$8,000. The assets are chiefly in equities in real estate.

The Rossland Brick & Lime Co., Rossland, B. C., has dissolved, Thomas Haley and Hugh Glencross retiring, and Andrew Hackett continuing alone.

## CONTRACTS OPEN.

**TWEED, ONT.**—J. F. Davis, grocer, will erect a store and dwelling.

**TRAIL, B. C.**—R. T. Daniels will build a four storey hotel at this place.

**NEUBURG, ONT.**—T. A. Dunwoodie will build a residence this summer.

**FERGUS, ONT.**—The town will lay a granolithic sidewalk on St. Andrew's street.

**LISTOWEL, ONT.**—Tenders are invited for the construction of a bridge over the Matland river.

**WINTERBOURNE, ONT.**—School Section No. 12 will erect a union school house, at a cost of \$2,000.

**NORWICH, ONT.**—Mr. Bartholemew, of the Norwich Gazette, will build a brick office, 30 x 40 feet.

**HILBURY CENTRE, ONT.**—Henry Benoit proposes erecting a dwelling, cor. Fort and Cathcart streets.

**PRESCOTT, ONT.**—It is reported that the C. P. R. will build an elevator here of 2,000,000 bushels capacity.

**BELLEVILLE, ONT.**—The Board of Education have decided to remodel the interior of the Central school.

**HULL, QUE.**—The Wakefield Council have decided to build an iron bridge over the Peche, at a cost of \$2,500.

**SARNIA, ONT.**—Tenders for the repaving of Front street will be received by the Town Clerk until the 26th inst.

**HUNTSVILLE, ONT.**—Plans for a waterworks system have been submitted to the Provincial Board of Health for approval.

**NORTH BAY, ONT.**—A grant of \$4,000 has been made by the Provincial government for an addition to the court house.

**NEWMARKET, ONT.**—Mr. Bunny, architect, is preparing plans for a double storey to be erected on the site of the Saxton block.

**INGERSOLL, ONT.**—The Collegiate Institute Board have under consideration improvements to the building, to cost \$5,000.

**MOOSOMIN, N. W. T.**—Humphreys & Sons, pork packers, will erect buildings here, to cost \$12,000, provided a bonus is given them by the town.

**WOODSTOCK, N. B.**—The Maritime Wrapper Co. have commenced the erection of a building on King street, 90 x 60 feet, and three stories high.

**GALT, ONT.**—Jno. Scott is considering the erection of an opera house.—The G. T. R. will probably erect a new station here near the Baker house.

**CHARLOTTETOWN, P.E.I.**—It is stated that the Trennamin property on the north side of Queen square will be purchased as a site for a new hotel building.

**BURNS, ONT.**—Tenders are invited by John Watson, clerk of Mornington, until the 30th inst. for the purchase of \$32,000 of 4 per cent. twenty year debentures.

**TILBURY, ONT.**—D. F. Henry, 52 Woodward avenue, Detroit, Mich., writes that he is preparing plans for waterworks extension, for the acceptance of the council here.

**IRONSIDE, ONT.**—The building committee have decided to proceed at once with the erection of a new Methodist church. Particulars may be obtained from Rev. G. A. Bell, pastor.

**ELLICE, ONT.**—John Pearson, township clerk, will receive tenders until the 27th inst. for improving and extending the Whirl Creek drain. Plans may be seen at the clerk's office, Sebringville.

**ST. THOMAS, ONT.**—John Stacey has made an offer to the city to electrify the street railway and light the city with 2,000 candle power lights for \$10,000 per year. The matter has been referred to a committee.

**CHATHAM, ONT.**—Tenders will probably be invited this week for the erection of a new school building, and an addition to the present building, plans for which have been prepared by C. R. Olderslaw, architect.

**TRURO, N. S.**—The Merchants Bank has purchased property, corner Prince and Church streets, on which to erect a brick or stone building, 76 x 90 ft., three stories high, plans for which have been prepared.

**ELMIRA, ONT.**—The Evangelical Association will erect a parsonage, to cost \$2,000, from plans prepared by Chas. Moogk, Waterloo. From plans by the same architect Isaac Hibborn will erect a \$7,000 residence.

**PEIROLEA, ONT.**—Plans for the proposed system of waterworks for the town have been submitted to the Provincial Board of Health for approval. The source of supply will be Lake Huron. Willis Chipman, Toronto, engineer.

**MILVERTON, ONT.**—The by-law to authorize the erection of a new school building was carried by the ratepayers last week, and steps will be taken at once to secure its erection. H. J. Powell, architect, of Stratford, is preparing the plans.

**WATERLOO, ONT.**—The council will shortly lay some new sewer pipes, and also some cement pavements, for which tenders will be called shortly.—Chas. Moogk is preparing plans for a residence for C. W. Shiedel, to cost \$2,500, and a residence to cost \$1,600.

**TILSONBURG, ONT.**—M. L. Buffy, architect, of London, has prepared plans for the new town and fire hall. It will be two stories, with basement, 48 x 80 feet. On the second floor will be an auditorium with gallery. The building will be built of brick, and will cost \$7,500.

**PORTAGE LA PRAIRIE, MAN.**—Geo. E. Kidd, solicitor, of Ottawa, gives notice of applying for incorporation of a company to construct a steam or electric railway from this town to a crossing of the Saskatchewan river, at or near Grand Rapids, thence to Hudson Bay, with branches.

**STRATFORD, ONT.**—Plans are in course of preparation by Mr. D. G. Baxter, architect, for two kindergarten schools, to cost \$1,200. Kindergarten furnishings will be required.—The Catholic societies have purchased the Cabinet hotel here and will expend \$5,000 in refitting the building for lodge and club purposes.

**ST. CATHARINES, ONT.**—Tenders are invited by W. A. Mittleberger, treasurer, until the 30th inst. for the purchase of \$350,000 of debentures.—Wm. B. Allen, architect, will receive tenders until 5 p. m. on Friday, May 22nd, for the erection of a brick dwelling house on Yate street, including plumbing and heating.

**MONCTON, N. B.**—Tenders are invited by D. Pottinger, General Manager Intercolonial Railway, until the 27th inst. for the supply of oil required for one year from July 1st next.—Joshua Peters, manager of the R. F. & N. Co., will erect a large three-storey brick building this summer on the site of his present residence.

**WOODSTOCK, ONT.**—Tenders are invited by John Mearns, M. D., until Tuesday, the 26th inst., for the erection of a Presbyterian church, corner Hunter and Riddell streets. Plans may be seen at the office of the architects, Burke & Horwood, Toronto, and at the office of Alexander White, architect, Woodstock.

**LONDON, ONT.**—The City Council have refused to grant the Board of Education the sum of \$40,000 for school buildings, and the Board will probably ask for \$20,000.—The Mayor states that the erection of the G. T. R. car shops will be commenced at once.—Proposals are invited by John Pope, treasurer, until the

29th inst. for the purchase of upwards of \$200,000 of debentures.

**ST. MARY'S, ONT.**—Plans are being prepared by Mr. D. G. Baxter, architect, of Stratford, for the entire remodelling of the St. Mary's Methodist church. There will be required steel columns, girders and trusses, new floors, furnaces, about 1,500 to 1,800 feet of pews, fresco work, &c. The improvements will probably cost from \$7,000 to \$8,000.

**PETERBOROUGH, ONT.**—Messrs. E. C. Capey, T. B. Callister, James B. Williams and Dr. Purnell, of Rochester, were recently in town with a view of purchasing the Burleigh Falls hotel, in which case it is the intention to improve the buildings.—Government engineers are preparing plans for a railway bridge across the river at Auburn.

**PERTH, ONT.**—The by-law to grant a bonus of \$5,000 for an electric railway has been carried.—Louis H. Tache, secretary of the company holding a franchise for a waterworks system, has requested the Council to permit of certain modifications. It is proposed to do away with the water tower and use a double system of pumps. The engineer for the company is Mr. Mignault.

**HALIFAX, N. S.**—Elliott & Hopson, architects, have prepared plans for a residence, corner South and Pleasant streets. It will be two stories, finished in hardwood, gables in half timber and cement, with ornamental terra cotta tympanum, basement walls of buff brick marble, trimmed. It will contain five bed rooms, bath room, laundry, store room, parlor, kitchen, dining room, etc.

**BROCKVILLE, ONT.**—The plans of Arthur Ellis, architect, of Kingston, have been accepted for the new school building here, to cost \$7,000. It will be two stories high, and contain four class rooms, 22 ft. 6 in. x 33 ft. 6 in. The ceilings will be 12 ft. 6 in., that in the basement being 7 ft. 6 in. high. Metal roofing and ceilings will be used and Kilsey warm air generators put in for heating.

**KINGSTON, ONT.**—The Kingston Dairy school will be enlarged.—Arthur Ellis, architect, has prepared plans for an extension to the Baptist mission house, Union street.—W. Newlands, architect, will receive tenders until 6 p. m. on the 21st inst. for remodelling a stone building on King street for C. Millan.—Arthur Ellis, architect, has been asked to submit plans before September 1st for a ten room school at Brantford.

**HAMILTON, ONT.**—It is the intention of the city authorities to issue annuities to raise funds for the following works: Collegiate Institute and Normal School, \$85,000; jail purchase, \$36,000; sewerage interception system, \$85,000.—The projectors of the Hamilton, Chedoke and Ancaster railway have requested the council to make a grant of \$22,000. The railway is to be a trolley line extending along the Beckett line to Chedoke, thence to Ancaster.—Work will be commenced at once on the South street and Robinson street sewers. The former will cost \$9,600 and the latter \$7,800.

**WINNIPEG, MAN.**—Plans are being prepared by H. S. Griffith, architect, for a two-storey solid brick block for J. J. Mitchell, photographer.—It is the intention of the Central Canadian Loan & Savings Co. to erect a three-storey brick building, with stone foundation and stone dressings, on the north-east corner of Notre Dame and Main streets.—The Lake of the Woods Milling Co. have purchased a site between King and Princess streets upon which to erect this summer a large elevator.—Tenders are asked by Geo. Browne, architect, until the 25th inst., for erecting a stone foundation under residence.

**MONTREAL, QUE.**—The Market Committee will ask the City Council for a grant

of \$100,000 for the proposed extension of Bonsecours market.—Plans have been accepted for the reconstruction of the old Academy of Music.—Amongst the works contemplated this year by the Harbor Commissioners are eight hundred feet of wharf at Windmill Point, and the construction of one of the wharves called for by plan No. 6, together with the usual dredging in the harbor. Mr. Kennedy will also report on the proposal to either close up the thousand feet opening between the Mole and the Victoria bridge or to reduce it to three hundred feet.—Building permits have been granted as follows: one house, 32 x 78 ft., on St. Hubert street, for S. L. de Bellefemille; architects, Roy & Gauthier; contractors, masonry, Oumet & Labelle; carpenter and joiner's work, Lambert & Son; probable cost \$8,000. One wood house, lined with brick, on Dufferin st., for E. Riopelle. Reparatons of a house on St. James st., stone and brick, for the Standard Life Insurance Co.; contractors, Simpson & Peel, all trades.

BERLIN, ONT.—A large number of residences will be built here this summer, among which will be the following: Jno. Mosser, two houses, \$3,000 each; Geo. Zeigler, 1½ storey house, \$1,800; Saul Sauder, house, two stories, \$2,500; Peter Otter, 3 houses, \$2,500 each; S. Wing, house, \$2,000; Jno. Dufebacher, two houses, \$2,500 each; H. Sharlock and Wm. Sharlock, two houses, \$1,700 each; Wm. Slomkoski, house, \$1,800; Louis Breithaupt, house, \$2,000; Levi Snyder house, \$2,000, and a barn, \$1,000; Alex. Schaumaker, house, \$2,000; Earnst Chein, house, \$1,200; Jos. Farnbauch, house, \$1,900.—The city will spend \$1,000 in sanitary arrangement at the Central public school. They will lay several hundred yards of granolithic sidewalk and also construct some new sewers.—Geo. Schlee, Alex. Wrenshaw, Joe. Spetz and Mr. Pullman will each erect a new residence.—There is some talk of a new opera house being built here.—Hon. Samuel Merner proposes erecting an hotel, for which Chas. Knechtel is preparing plans.—The Lang Tanning Co. will shortly have a number of vats built.

OTTAWA, ONT.—The council has given notice of its intention to construct an artificial stone sidewalk on both sides of Queen street, between Elgin and Bank streets, at a cost of \$4,953.—G. M. Bayley, architect, will receive tenders until Wednesday, the 27th inst., for the erection of a residence in this city.—Messrs. Butterworth, hardware merchants, have purchased property on Sparks street, on which they will erect a large building.—County School Inspector Smirle has recommended that an addition be built to the Richmond Model School, at a cost of \$1,000.—J. H. Balderson, Secretary Department of Railways and Canals, will receive tenders until Friday, June 12th, for the deepening and enlarging of the Iroquois canal. Plans may be seen at the office of the chief engineer, Ottawa, and at the superintending engineer's office, Cornwall.—Geo. M. Bayley, architect, is preparing plans for a house on Cooper street, a shop on Bank street, and alterations to two other properties on Bank st. He is also making extensive alterations and additions to the McAllister property, Pembroke.—F. J. Alexander, architect, is calling for bulk tenders up to noon of Tuesday, the 26th inst., for the erection of a dwelling house on Daly ave., for Mr. Moss. Same architect has prepared plans for a three storey warehouse to be erected on George st., for Kenneth McDonald, to be built of stone and brick, with pressed brick and terra cotta trimmings.

TORONTO, ONT.—The City Engineer has recommended the construction of a brick pavement on Wellesley street, at a cost of \$2,700.—A site in Trinity College

grounds has been granted upon which to build St. Hilda's college.—The York Township Council have been asked by the Interclub Association of Wheelmen for permission to construct a cinder path from the Woodbine through Norway to the Scarboro line, and another up Yonge street.—Mr. Russell, C. E., of Glasgow, recently interviewed the City Council in reference to the establishment of steel works in Toronto.—Tenders will be received by the Ontario government until Tuesday, the 26th inst., for the supply of coal required by the various public institutions.—A meeting of the provincial directors of the Huron and Ontario Electric Railway was recently held in this city, at which M. McNamara, of Walkerton, was elected president, and A. McK. Cameron, of Meaford, secretary. The route of the proposed line was adopted and proposals for the construction of the road considered. The first sections to be built will extend from Walkerton to Kincardine and Goderich, and from Flesher ton to Meaford.—In connection with repairs to cedar block pavements, the City Engineer in his fortnightly report suggests that tenders be invited for re-blocking such streets as may be duly and properly authorized by Council to be renewed, at a stated price per square yard. He has been asked to report thereon.—The construction of a brick pavement on Wellesley place will be proceeded with.—By the will of the late Col. F. C. Denison, the sum of \$1,000 is to be held by the executors until a church is built near St. John's cemetery, Humber when the money and interest is to be devoted to the erection of a parsonage.—Building permits have been granted as follows: Jos. Watson, 24 Bernard ave., pr s. d. two-storey and attic bk. dwellings, 310 Brunswick ave., cost \$5,400; Mr. Smellie, 99 Jamieson ave., additions to dwelling, cost \$5,500; Bryson Bros., two storey bk. dwelling and bake shop, 326 Delaware ave., cost \$2,100; Wm. Booth, 115 Bedford rd., pr. s. d. two-storey and attic bk. and stone dwellings, 118 Bedford rd., cost \$5,000; Separate School Board, one-storey and basement bk. school house, 55 Sackville st., cost \$2,500.—Ground has been broken for new dwellings on west side of Brunswick ave., north of Bloor st.—Messrs. Burke & Horwood, architects, have prepared plans for a new building for the Dominion Cold Storage Co., to cost \$40,000. Tenders will be called shortly.

**FIRES.**

The Imperial Lumber Co.'s saw mill at Warren, Ont., was burned recently at a loss of about \$40,000.—A portable saw mill at Hardingville, N. B., owned by James R. Hoey, was destroyed by fire a fortnight ago. Loss \$5,000; no insurance.—Three mills of the Hawkesbury Lumber Co., at Hawkesbury, Ont., were completely consumed by fire on the 10th

inst. Loss, \$100,000, fully covered by insurance.—Moore's portable saw mill, situated on Loch Lomond road, St. John, N. B., has been burned.—A stone building at Peterboro, Ont., owned by the Auburn Milling Co., and occupied by Meltrum & McAllister, millers, was destroyed by fire on the 14th inst., together with Wynn's saw mill and office. The total loss is placed at \$150,000. The mills will be rebuilt at once.—Fire at Manotick, Ont., on the 11th inst., destroyed John M. Caffray's hotel, J. J. Lynch's dwelling and carpenter shop, John Wilson's shop, P. Teaven's store house and the Catholic Forester's hall. The loss on the buildings is placed at \$6,000. T. C. Dawson's saw mill at Renfrew, Ont., has been burned. Loss on building and machinery, \$3,000, no insurance. Eby's saw mill and a quantity of lumber at Flouadale, Ont., has been destroyed by fire. A terrace of houses on Bannatyne street, Winnipeg, owned by Alex. Bain, have been burned. Loss, \$6,000.—The buildings in connection with Smith's brick yard at Owen Sound, Ont., which had recently been fitted with new machinery, were consumed by fire on the 17th inst. Loss \$3,000; no insurance.—H. J. Kilbourne's cut stone residence at Owen Sound, Ont., has been burned. Loss on building and contents, \$5,000; insurance, \$1,400.—At Sarnia, Ont., on Sunday last fire destroyed the King Milling Co.'s flour and oatmeal mill, together with ware houses and elevator, also the hub and spoke works of J. S. Loughheed & Co. The former are owned by Mr. King, and were valued at \$50,000. The loss to J. S. Loughheed & Co. will be about \$40,000.

**CONTRACTS AWARDED.**

BERLIN, ONT.—Boehmer & Schlee have the contract of laying the cement sidewalks in this town for 1896.

HAVELOCK, ONT.—Mr. Knox has secured the contract for building a new Methodist church, at the price of \$2,500.

HAMILTON, ONT.—The tender of W. Spence, for a sewer on Mary street, has been accepted. Price 33½ cents per foot.

ST. CATHARINES, ONT.—Newman Bros., of this city, have been awarded the contract for building a residence for Jos. Doan at Niagara Falls.

NEWMARKET, ONT.—Mr. Bunney, architect, has recently let contracts for two new residences for Isaac Silver, corner Prospect avenue and Timothy streets.

PETERBOROUGH, ONT.—The excavating contract for the proposed Y. M. C. A. building has been awarded to Thomas Reahill, George Henry and Michael O'Donell.

WINNIPEG, MAN.—The tender of D. E. Spragge for the supply of from 500,000 to 1,250,000 feet of pine lumber, at \$13.25, has been accepted by the council.—The



**MINERAL WOOL**

SECTIONAL

**STEAM PIPE and BOILER COVERING**

Gives Dry Steam at long distances without loss of power.

ASBESTOS GOODS & ENGINE PACKINGS

EUREKA MINERAL WOOL & ASBESTOS CO., - 124 Bay St., TORONTO

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

Railway and Contractors' Plant.

**BRIDGE BUILDERS**

BELLEVILLE, ONT.

contract for Jas. Ryan's 2 storey solid brick block, 38x60 ft., has been awarded by H. S. Griffith, architect, to A. Spencer, contractor. The same architect has let the contract of Frith's residence to W. W. Cross.

WESTPORT, ONT.—Contracts for the Presbyterian Church have been let as follows: Carpentry, Westport Furniture Co.; masonry, T. B. Taber; plumbing, metal roofing and ceilings, Elliott Bros. Arthur Ellis, architect, Kingston.

TORONTO, ONT.—Worthington, Garratt & Armstrong have secured the steam heating contract of the new Jewish synagogue on Bond street.—The plumbing contract of four stores at 84-90 Yonge street has been awarded to the Bennett & Wright Co.

MONTREAL, QUE.—The Lachine Rapids Hydraulic & Land Co., have awarded the contract for twelve 100 h. p. generators to the Canadian General Electric Co., of Toronto.—A. C. Hutchinson, architect, has awarded contracts as follows: Onehouse at St. Henry, Montreal, for the Merchants Mfg. Co.—masonry, Peter Lyall & Sons; carpenter and joiner's work, John Morrison; roofing, Geo. Reid; plumbing and heating, F. Horton; brick, Peter Lyall & Sons; plastering, S. Gosseli; painting and glazing, I. E. Blackwell.

OTTAWA, ONT.—J. R. Booth has awarded the contract for a steel bridge across a river at the terminus of the Ottawa, Arnprior and Parry Sound Railway to Brewer & McNaughton, of this city. The amount of contract is between \$25,000 and \$30,000. The bridge will be 300 ft. long.—The Dominion government have let the contract for the new post-office building at Arnprior to Fortin & Gravelle. Amount of contract, \$25,000. The building will be of stone.—G. M. Bayley, architect, has let the contract for a residence at Britannia.

LONDON, ONT.—Contracts for new buildings at the Western Fair grounds have been let as follows: Brick work, boiler and engine, John Hayman & Sons, \$367; double horse barn, Tambling & Jones, \$4,612; interior of barn, W. L. Lucas, \$325; single horse barn, Broadbent & Moore, \$3,800; interior of same, Wm. Reynolds, \$223; cattle, sheep and swine sheds, John Purdon, \$4,195; interior of same, Maurice Inwood, \$328, and W. L. Lucas, \$96.60; carriage shed, Jones Bros., \$2,772; interior of same, Maurice Inwood, \$168; poultry addition, W. L. Lucas, \$385.

NIAGARA FALLS, ONT.—The following is a summary of the totals of the bids on sections Nos. 1 and 2 of the Niagara Falls

sewerage system, received May 13th, 1896: Section No. 1 (brick sewers and outlets)—Garson & Co., St. Catharines, \$21,003; Clement & Co., Niagara Falls, N. Y., \$21,501; Abbot-Gamble Co., St. Louis, Mo., \$21,787; Piggott & Ingles, Niagara Falls, Ont., \$22,959; Wm. F. Grant & Co., Toronto, \$23,824; Phillips & Young, Niagara Falls, N. Y., \$24,180; J. H. McKnight, Toronto, \$24,897; Rowan & Elliott, St. Catharines, \$25,962; H. C. Symmes, Niagara Falls South, \$26,090; Newman Bros., St. Catharines, \$27,100; A. J. Brown, Toronto, \$27,300; Tilden & Co., St. Catharines, \$27,435; Barry & Ross, Niagara Falls, \$30,358.65; Sewell & Smith, Windsor, \$40,125. Engineer's estimate, \$23,000. Section No. 2 (pipe sewers)—Clement & Co., Niagara Falls, N. Y., \$17,880; Pigott & Ingles, Niagara Falls, Ont., \$19,253.27; Abbot-Gamble Co., St. Louis, Mo., \$19,642.43; L. D. Groom, Niagara Falls, Ont., \$20,254.05; Garson & Co., St. Catharines, \$22,250; J. H. McKnight, Toronto, \$23,050; Tilden & Co., St. Catharines, \$25,113; Barry & Ross, Niagara Falls, Ont., \$24,136; Makin & Cookman, Niagara Falls, N. Y., \$24,600; Wm. F. Grant & Co., Toronto, \$25,540; Newman Bros., St. Catharines,

\$26,775; H. C. Symmes, Niagara Falls South, \$28,050; Rowan & Elliott, St. Catharines, \$30,628. Engineer's estimate, \$22,500. The award of contracts was made by the Municipal Council on Monday, May 18th, to Garson & Co., for sec. No. 1, at \$21,003, and to Pigott & Ingles, for sec. No. 2, at \$19,253.27, or a total for both sections of \$40,256.27.—The superstructure contract of the new steel arch bridge has been awarded to the Pennsylvania Steel Co., of Steelton, Pa.

P. Picotte, contractor, Montreal, is endeavoring to compromise.

## ARTIFICIAL STONE PAVEMENTS

SIDEWALKS A SPECIALTY

CORPORATIONS Will do well to consider our work and prices before letting contracts

The Silica Barutic Stone Company of Ontario, Ltd.

WALTER MILLS, General Manager. Head office: INGERSOLL, ONT.

## Drummond McCall Pipe Foundry Company,

Canada Life Building - MONTREAL.

MANUFACTURERS OF

## CAST IRON WATER AND GAS PIPES

WORKS: LACHINE, QUE.

PRICES ON APPLICATION.

## THE THREE RIVERS IRONWORKS CO.

Montreal Office: IMPERIAL BUILDING.

THREE RIVERS, P. Q.

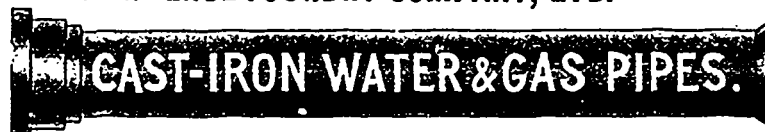
MANUFACTURERS OF

## Cast Iron Water and Gas Pipes

of best quality, from 2 inches in diameter.

HYDRANTS, VALVES and GENERAL CASTINGS.

## ST. LAWRENCE FOUNDRY COMPANY, LTD. Manufacturers of



Front St. East  
TORONTO, ONT.

ALEX. GARTSHORE,  
PRESIDENT.

J. G. ALLAN  
SECY & TREAS.

JAS. THOMSON,  
VICE-PRES'T & GEN'L MGR.

ESTABLISHED 1870

INCORPORATED 1896

**THE GARTSHORE-THOMSON PIPE & FOUNDRY CO. LTD.**

MANUFACTURERS OF

CAST IRON WATER, GAS, CULVERT & SEWER PIPE.

SPECIAL CASTINGS AND ALL KINDS OF WATER WORKS SUPPLIES.

HAMILTON, ONT.

## MUNICIPAL DEBENTURES

wanted for foreign clients. We can place Debentures direct with foreign clients without charge to municipalities. Commission allowed to persons introducing new business.

**ÆMILIUS JARVIS & CO.** (Member Toronto Stock Exchange) — Stock and Bond Brokers. Investment Agents. 23 King St. West, TORONTO

ELECTRIC RAILWAY BONDS PURCHASED.

STOCK EXCHANGE ORDERS PROMPTLY EXECUTED

MUNICIPAL ENGINEERS, CONTRACTORS AND MATERIALS

**DEBENTURES PURCHASED**

Municipalities issuing debentures, no matter for what purpose, will find a ready purchaser by applying to G. A. STIMSON & CO., 9 Toronto Street, Toronto. Any assistance required in computing calculations in connection with sinking fund, etc., will be gladly given. N.B.—Money to loan at lowest rates on first mortgage.

**MUNICIPAL DEBENTURES**

BOUGHT AND SOLD . . . ON FAVORABLE TERMS.

**A. E. AMES & CO.**

— Bankers and Brokers —

10 King Street West - TORONTO

**W. McNALLY & CO.**

Building and Contractors' Supplies . . . . .

**SEWER PIPES & PORTLAND CEMENTS**

PATENT WALL PLASTER—The hardest, quickest drying and cheapest material made.

Corner McGill and Wellington Streets, MONTREAL

*Water Works*

*Fire Hydrants*

*Stop Valves*

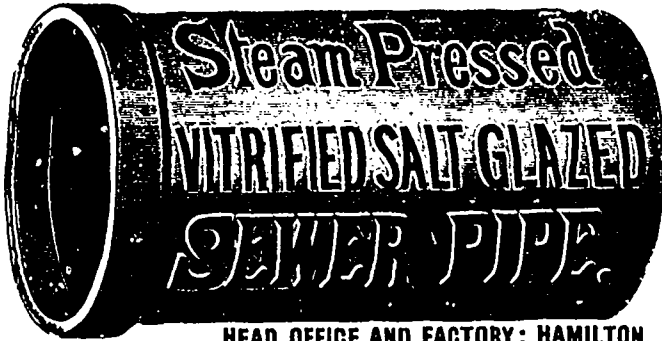
3" to 36"

BOILERS, TOWERS & C, ENGINES AND GENERAL WORK

**JNO. PERKINS CO'Y**

Toronto Engine Works . . . . . TORONTO

**THE HAMILTON AND TORONTO SEWER PIPE CO. (LIMITED.)**



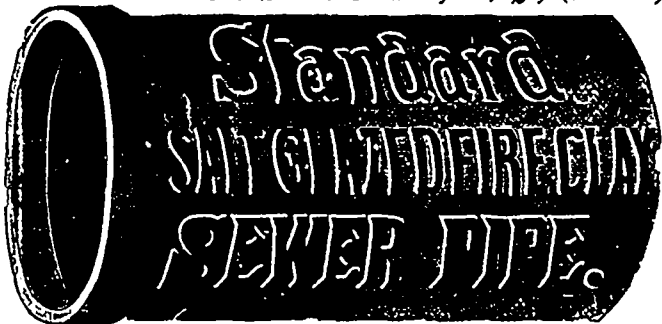
— FOR —  
**SEWERS,**  
CULVERTS;  
AND  
WATER PIPES.  
**INVERTS**  
For Brick Sewers

Write for Discounts

HEAD OFFICE AND FACTORY: HAMILTON, CANADA.

**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

JOHN McDOUGALL CALEDONIAN IRON WORKS MONTREAL, P. Q.

**WORTHINGTON PUMPS**



**BOILERS  
ENGINES**

. . . . MACHINERY OF ALL KINDS . . . .

**STEAM AND POWER**

FOR ALL DUTIES



**NORTHEY Co. LTD.**

TORONTO, ONT.

THE LAURIE ENGINE CO., MONTREAL  
Sole Agents for Province of Quebec.

**The Central Bridge and Engineering Company, Ltd.**

Capital Stock PETERBOROUGH, ONT. \$200,000.00



W. H. LAW, Manager and Engineer

Manufacturers of

**RAILWAY and HIGHWAY BRIDGES**

Viaducts, Piers, Roofs, Turntables, Girders and Architectural Work.

:: CAPACITY: 5,000 TONS PER ANNUM ::

G. N. REYNOLDS, Toronto Agency  
North of Scotland Chambers, 20 King St. West. Telephone 111.

# MUNICIPAL DEPARTMENT

## THE ACTION OF HEAT ON CEMENT.\*

By J. S. DOME, Grad. S. P. S.

The modern tendency towards large and high buildings, with a skeleton structure of steel, has made the question of fire prevention and protection one of the most vital importance to architects, manufacturers, engineers, and builders in general. Countless experiments have been made to devise some means of preventing iron and steel columns and girders from buckling under great heat. Plainly, the only way this can be done is by so protecting the metal that heat cannot come into contact with the metal surface.

Experiments have also been made, and numerous schemes introduced, to devise some means of making a floor between the girders that will withstand the action of fire, and so prevent a fire, even if started, from spreading from one flat to another. Hollow tile, brick, and terra cotta have been tried with indifferent success; and at present the tendency is towards using Portland cement or concrete as a protection for ironwork.

It is not the purpose of this paper to propose or condemn any scheme, or to introduce any new one; but rather to show what really may be expected from a mass of concrete or cement when subjected to great heat. The writer has carefully examined all available literature upon the subject, including books and trade catalogues; and while many give tests which are claimed to be eminently satisfactory, still, in almost every case, the accounts give such meagre information about the tests themselves as to be almost useless, as far as information is concerned, and certainly so as far as comparisons with each other are concerned. The information as to the action of the cement itself is, in every case, very meagre; and all the information given refers only to the conduct of the system tested, and no information whatever is given as to its condition afterwards.

In making these tests three brands of cement were used—two Canadian brands: "Star," manufactured at Deseronto, and "Samson," from Owen Sound; one foreign brand, "Jossen," of Belgium manufacture. These cements were thoroughly tested for fineness, strength, and "blowing," before using, and were found to be first-class. The "Star" and "Jossen" were comparatively slow-setting, and the "Samson" set very rapidly.

Tests were made upon neat briquettes and sand briquettes, mixed in proportions of one sand to one cement, two sand to one cement, and three sand to one cement. The age of the briquettes varied from two months to about four years. Over two hundred briquettes were used in making the tests.

The briquettes were heated in a small assay furnace, heated by a large gas burner, and which gave a range of temperatures of from about 650° Fahrenheit to about 1775° Fahrenheit.

The temperatures were determined by means of a water calorimeter; the temperature of the furnace being obtained from the rise in temperature of a pint of water, in which had been immersed an iron ball of known weight, and which was heated to the temperature of the furnace. The temperatures given are approximately correct. The calorimeter gave good results—different readings, under the same conditions, rarely differing by more than 10° or 15°, which is very close for such high temperatures.

On heating the briquette and removing from the furnace, the first thing noticed was a loss in weight in the briquette; and almost all neat briquettes showed cracks, some large and some small. Some sand briquettes also showed cracks, but not to the same extent as in the neat briquettes; but there was no exception to the change in weight. This loss in weight is due to the fact that the hardened cement is a compound of hydrated crystals of aluminum silicate and calcium silicate, and the heat drives off the water of crystallization, and the loss in weight corresponds to the amount of water of crystallization driven off by the heat. Now, since the crystals depend upon the water for their formation, it is evident that when the water is removed the crystals are destroyed, and the cement ruined. Such was found to be the case in every instance.

The briquettes, after cooling sufficiently to allow handling, were broken in the testing machine, the load being applied at the rate of about 400 pounds per minute. The result showed a marked decrease in the tensile strength, as reference to Tables I. and II. will show; and, under the best conditions, this loss in tensile strength showed an approximate proportion to the loss in weight. Briquettes which lost 19 or 20 per cent. of weight, which is practically the amount of water required for proper crystallization, were practically unable to resist any load whatever, and in very few cases possessed 10 per cent. of their original strength.

The effect of different temperatures was rather peculiar. Briquettes placed immediately into a temperature of about 1775° Fahrenheit, showed a very great loss in strength for a very small loss in weight, and did not appear to follow this law of proportion between losses of weight and strength, at least not nearly so well as briquettes treated differently. When the briquettes were gradually heated, however, and allowed to slowly rise to the temperature of the furnace, this law was followed quite closely, as reference to tables will show. The plotted curves give a good idea of the effect of slow and rapid heating on the relation of the cement to this law. This is accounted for by the fact that the cold briquette, on being placed in the furnace at such a great heat, is immediately subjected to very considerable internal stresses, due to the expansion of the outside of the briquette before any water of crystallization at all is driven off. Briquettes, heated gradually, were not subjected to these internal stresses to nearly the same extent as those which were heated very suddenly.

An attempt was made to discover, if possible, a critical temperature to which it would be possible to subject the cement without danger of injury to the crystals, and where the cement would retain its cohesive powers. It was found that, if such a temperature existed, it was below the lowest temperature generated by the furnace, which was considerably below red heat. The lowest temperature had the same effect as the highest, excepting, of course, that with the lower temperature a longer time was required to effect the same reduction of weight than with a higher one. The lowest temperature necessary to destroy the cement was not determined, but it is probably quite low.

The following quotation from Heath's "Manual of Lime and Cement" is interesting regarding this. "Even good Portland cement concrete, if exposed to the weather during a hot, dry summer, with no supply of moisture available, will probably be found covered with a network of innumerable hair-like cracks, which are signs of the beginning of disintegration, the natural and inevitable result of the loss of the water of hydration of the cement." (Heath's "Manual of Lime and Cement," page 75.)

The only neat briquettes which were not cracked by the heat were some very old ones, about four years old, which were tested. Most of these were uncracked, although some that were very suddenly heated cracked somewhat. All the newer briquettes cracked, the cracks being very large in most cases.

After cooling, the briquettes were found to be quite soft, and could easily be crushed between the fingers. This was especially noticeable in the case of those briquettes which had lost the most water of hydration. These briquettes were like lumps of dry mud or clay, and a very slight pressure was sufficient to crush them completely. Briquettes which had not lost so much water were harder, while those which had lost only about one or two per cent. of water were quite hard. Of this latter class, however, those briquettes which had been heated suddenly were much the softer.

Briquettes which were cracked on removing from the furnace showed the cracks much distended and widened out on cooling, and most of those which had not cracked in the furnace showed cracks on standing for a day or two.

All sand briquettes, whether cracked in the furnace or not, entirely disintegrated on standing in air for a time, the cementing material having been entirely destroyed. Those sand briquettes which had lost most of their water of hydration disintegrated first, and those that had lost less followed soon after. Six briquettes of two sand to one cement were placed suddenly in the most intense heat, and left for about three minutes and removed. They lost from three to four per cent. in weight, and two of them which were broken showed a complete loss of tensile strength; one breaking before any load was applied, and the other going at about eight pounds. The remaining four were set away, and in a couple of days commenced to crumble, the edges going first, and leaving an irregular mass in the centre. This, however, resisted for some time, but in about three weeks they also were completely disintegrated. It was thought that the sudden application of very intense heat would cause the water of hydration to be removed from the outside only, and that the inside would remain solid, and resist weathering. The results, however, showed that although the outer part of the briquettes suffered most, as is shown by the rapid disintegration, still the heat also affected the inner part, and caused its ultimate disintegration. These briquettes were too hot to be handled comfortably when weighed, after removal from the furnace, and it is quite probable that the heat still remaining in the outer portion caused a still further loss of water of hydration in the parts in the centre of the mass. The low tensile strength of these two briquettes was probably caused by the sudden heat causing great internal stresses in the briquettes. The parts of the two broken briquettes also behaved in the same manner as the unbroken ones.

(To be Continued.)

Mr. J. MacFarlane, Dominion analyst, has gone to England, for the purpose of investigating and reporting upon the utilization of city sewage in Europe for the purpose of fertilization.

\* Paper read before the Engineering Society of the School of Practical Science, Toronto.

MUNICIPAL ENGINEERS, CONTRACTORS AND MATERIALS

ENGINEERS

INDEX TO ADVERTISEMENTS

In the "Canadian Architect and Builder."

WM. NEWMAN, C. E.

A. M. Can. Soc. C. E., M. Am. W. Wks. Assn. CITY ENGINEER OF WINDSOR.

Civil and Sanitary Engineer

Waterworks, Sewerage, Drainage, Pavements, &c. Fleming Block - WINDSOR, ONT.

MERRIFIELD & WESTCOTT

ENGINEERS and CONTRACTORS - FOR -

WATER WORKS AND GAS PLANTS

269 Front Street East, TORONTO.

G. H. MASSY, B. E., M. C. S. C. E.

CIVIL ENGINEER

Railways, Waterworks, Foundations, Drainage, &c., &c.

180 St. James Street - MONTREAL

GEO. WHITE-FRASER

C. E., D. T. S., A. AM. INST. E. E. C. ENG. CONSULTING

ELECTRICAL ENGINEER

Electric Railways and Electric Light. SPECIALTY: Specification and Superintendence of MUNICIPAL PLANTS.

18 Imperial Loan Building - TORONTO.

VAUGHAN M. ROBERTS

Civil and Sanitary Engineer

Waterworks, Sewers, Electric Light, Electric Railways.

Plans and Specifications prepared.—Work Superintended. 18 Ontario Street, ST. CATHARINES

J. McDOUGALL, C. E.,

ENGINEER OF THE COUNTY OF YORK

GENERAL MUNICIPAL ENGINEER

Consulting Engineer for Municipalities in regard to Electric Railway and other Franchises. Specialties: Bridges, Foundations, Electric Railways, and Roads. Surveys made; Plans, Specifications and Agreements prepared, and work superintended.

COURT HOUSE, - TORONTO.

E. GARL BREITHAAPT

CONSULING

Electrical Engineer

ASSOC. MEM. AM. INST. E. E.

Electric Lighting and Railway Work BERLIN, ONT.

DAVIS & VAN BUSKIRK

Graduates Royal Military College of Canada.

- - Civil Engineers - -

SPECIALTY: Municipal Engineering, including Drainage, Sewerage, Sewage Disposal, Waterworks, Roadways and Bridges.

W. F. Van Buskirk, A. M. Can. Soc. C. E., Stratford. Wm Mahlon Davis, M. Can. Soc. C. E., Woodstock.

ALAN MACDOUGALL

M. CAN. SOC. C. E. M. INST. C. E.

CIVIL AND SANITARY ENGINEER

ABERDEEN CHAMBERS,

35 East Adelaide St. - TORONTO

New Telephone Number, 1252

Architects.

Ontario Directory... 111 Quebec Directory... ii

Architectural Sculptors and Carvers.

Beaumont, H. .... ii Dom. Art Woodwork Company... vii Holbrook & Mollington... i Lamar & Metzger... ii McCormack, W. N. .... ii

Architectural Iron Work.

Dominion Bridge Co. I Chanteloup Mfg. Co. . . 1

Art Woodwork

Dom. Art Woodwork Company... vii Southampton Mfg. Co. v

Boiler Covering

Mica Boiler Covering Co. .... 70

Bicycles

Hill & Co., E. C. .... ix

Bricks (Pressed)

Beamsville Pressed Brick Co. .... i Brockville Pressed Brick Co. .... iv

Builders' Supplies.

Bremner, Alex. .... IV Currie & Co., W & F. P. xii Clatworthy, Geo. .... x Maguire Bros. .... i Montreal Directory... x Ontario Lime Association... 111 Rice Lewis & Son. .... IV Toronto Directory... x

Building Stone Dealers.

Credit Forks Mining & M. G. Co. .... 70 Samuel & Son, Thos. . . v Turner & Brown. .... IV

Builders' Hardware.

Gurney, Tilden Co. .... iv Rice Lewis & Son. .... IV Toronto Fence & Ornamental Iron Works. vi Vokes Hardware Co. . . iv

Cresoto Stains

Cabot, Samuel. .... IV

Church and School Furniture.

Can. Office & School Furniture Co. .... v Snider, J. B. .... v

Chimney Topping.

Bremner, Alex. .... IV Currie & Co., W & F. P. xii

Contractors' Plant and Machinery

Rice Lewis & Son. .... IV

Cements.

Bremner, Alex. .... IV Currie & Co., W & F. P. xii Maguire Bros. .... i Owen Sound Portland Cement Co. .... viii

Cut Stone Contractors.

Isaac Bros. .... 111 Oakley & Holmes 111

Drawing Tables.

Laughlin-Hough Drawing Table Co. .... 11

Drain Pipe

Bremner, Alex. .... IV Currie & Co., W & F. P. xii Hamilton and Toronto Sewer Pipe Co. .... 72 Maguire Bros. .... i

Elevators

Fenson, John. .... IV Leitch & Turnbull . . I Miller Bros & Toms. . . vi

Engravers.

Can. Photo-Eng Bureau. .... 11

Fire Brick and Clay

Bremner, Alex. .... IV Currie & Co., W & F. P. xii Maguire Bros. .... i

Floor Deafener

Lazier & Sons, S. A. 111

Galvanized Iron Workers.

Douglas Bros. .... ix Ormsby & Co., A. B. . . I

Grates, Mantles, and Tiles.

Holbrook & Mollington i Rice Lewis & Son . . . IV Rogers & Sons Co., Charles. .... ii

Granite

Brunet, Jos. .... ii

Heating.

Clare Bros. .... vii Gurney Foundry Co. . . x King & Son, Warden. . . iv McClary Mfg. Co. . . vi Ormsby & Co., A. B. . . xi Pease Furnace Co. . . xi Toronto Radiator Mfg Co. .... iii

Interior Decoration

Castle & Son. .... viii Elliott, W. H. .... vi

Lime.

Currie & Co., W & F. P. . . xii Mille Roches Lime Co., The. .... iv Ontario Lime Association. .... 111

Legal.

Denton & Dods. .... viii

Machinery

Petrie, H. W. .... ix

Mortar Colors and Shingle Stains.

Cabot Samuel. .... IV Maguire Bros. .... i Munnead, Andrew. . . i

Ornamental Plasterers.

Hynes, W. J. .... viii

Paints & Varnishes.

Muirhead, Andrew. . . i

Painters.

Gilmor & Casey. .... 111 Montreal Directory... ix Toronto Directory... x

Plasterers

Hynes, W. J. .... viii

Paints & Varnishes

Cottingham, Walter "vi Munhead, Andrew . . . i

Plate Glass

The Consolidated Plate Glass Co. .... ii

Parquetry Floors

Elliott, W. H. .... vii

Prismatic Glass.

Pnsmatic Glass Co. . . ix

Plumbers

Montreal Directory . . x Toronto Directory . . . x

Roofing Materials

Ormsby & Co., A. B. . . I Metallic Roofing Co. . . xii Estate of John Battelle xii

Reflectors

Frink, I. P. .... ii

Roofers

Ormsby & Co., A. B. . . I Montreal Directory . . . x Toronto Directory . . . x

Sanitary Appliances

Dakin & Co., F. B. . . viii Toronto Steel Clad Bath & Metal Co. .... vii

Shingle Stains

Cabot, Samuel. .... IV

Stained and Decorative Glass

Castle & Son. .... v Dominion Glass Co. . . v Horwood & Sons, H. . . v McKenzie's Stained Glass Works. .... v Longhurst, H. .... v Lyon, N. T. .... v Prismatic Glass Co. . . ix

Shingles and Slating

Metallic Roofing Co. . . xii Ormsby & Co., A. B. . . I Peular Metal Roofing Co. .... viii

Soil Pipe.

Toronto Foundry Co. . . xi

Wall Plaster

Atabastine Co., The. . . IV Albert Mfg Co . . . x

Window Blinds

Seaman, Kent & Co. . . IV Semmes & Evel. . . xii

WILLIS CHIPMAN, B. A. SC.,

M. Can. Soc. C. E.; M. Am. Soc. C. E.; M. Am. W. W. Assn.

CIVIL AND SANITARY ENGINEER

Water Works - Sewerage Sewage Disposal 103 BAY STREET - TORONTO.

JOHN GALT, C. E. & M. E.

(Member Can. Soc. C. E.)

CONSULTING ENGINEER AND EXPERT

Specialties: Water Supply and Sewerage, etc. Electric Power, Lighting, Railways, etc.

Offices: CANADA LIFE BUILDING - TORONTO

Paving Granite

Granite Sets for Street Paving. CURBING cut to any shape ordered. Quarries, St. Philippe d'Argenteuil, P. Q.

Address all communications to JOS. BRUNET - COTE DES NEIGES, MONTREAL

BELLHOUSE, DILLON & CO.,

30 St. Francois Xavier Street MONTREAL

Sole Agents in Canada for the COMPAGNIE GENERALE DES ASPHALTES DE FRANCE (ROCK ASPHALT)

PORTLAND CEMENT

Paving and Fire Brick a Specialty

FOR ARTIFICIAL STONE PAVEMENTS, ROOFING GRAVEL, CONCRETE, ETC.

USE CRUSHED QUARTZITE

SILICA SAND & GRAVEL CO. MONTREAL

Telephone 2444

15 Mill Street

..... Write for prices delivered in your town. ....



Also CASTINGS of every description

Please mention the CONTRACT RECORD when corresponding with advertisers.

OTTAWA, ONT.

Hydrants

Valves

Waterworks Supplies

Specials



Prices of Building Materials.

CONDITION OF THE MARKET.

TORONTO. There has been a fair trade done on country account, but city business shows little activity. Cut nails have advanced 15 cents per keg, the base figures now being \$2.75 per keg, Toronto, Montreal, Hamilton and London. Consequently orders have fallen off. A fair trade is doing in wire nails, the discounts in Ontario being 70 and 5. Some car-load lots of building paper have gone forward, and trade is fair. An advance is announced in steel squares of about 20 per cent.

MONTREAL. Little change has taken place in the market for builders' supplies. From the west there is a fair enquiry. Arrivals of cement for last week were 2,000 barrels of English, against 4,220 English and 5,205 Belgian for the previous week. The feature of the week was a sale of 1,000 barrels of Belgian on western account. In car load lots and small quantities a number of sales are reported. The arrivals of firebricks were 140,000, which are selling at \$16 to \$22. A better tone has taken hold of the glass market, the volume of business for the week showing an increase.

LUMBER.

CAR OR CARGO LOTS.

Table with columns for Toronto and Montreal prices for various lumber types like clear picks, spruce culls, and shingles.

VALID QUOTATIONS.

Table listing valid quotations for materials like mill cull boards, shipping cull boards, hemlock scantling, and cedar for kerbing.

B. M.

Table listing B. M. (Board Measure) prices for flooring, lath, and various types of wood like red oak, white, basswood, cherry, etc.

Toronto. Montreal.

Toronto. Montreal.

Table for BRICK-M M listing prices for Common Walling, Good Facing, Sewer, Pressed Brick, Red, Buff, Roman Red, etc.

Table for SAND listing Per Load of 1 1/2 Cubic Yards.

Table for STONE listing Common Rubble, Large flat Rubble, Foundation Blocks, Kent Freestone Quarries, etc.

Table for TORONTO. MONTREAL listing prices for various stone types like River John, Granite, Moat Freestone, etc.

OHIO FREESTONE, FROM THE GRAPTON STONE CO.'S QUARRIES.

Table listing Ohio Freestone products like Buff Promiscuous, Buff Dimension, Blue Promiscuous, etc.

Table for SLATE listing Roofing (per square) in red, purple, unslating green, black, and Terra Cotta Tile.

PAINTS. (In oil, per lb.)

Table listing various paint types like White lead, Red lead, Venetian, Vermillion, Yellow ochre, Green, Chrome, Blue lamp, Black ultramarine, Oil, Putty, Whiting, Paris white, Litharge, Sienna, and Umber.

CEMENT, LIME, etc.

Table listing Portland Cements from German and London sources.

Table for Portland Cements listing Newcastle, Belgian, English, Canadian, Roman, and Parian types.

Table for Hydraulic Cements listing Thorold, Queenston, Napanee, Hull, and Ontario types.

Table listing Keene's Coarse Whites, Fire Bricks, Lime, Plaster, and Hair Plasterers' materials.

HARDWARE.

Table listing Cut nails, Steel, and other hardware items.

CUT NAILS, FENCE AND CUT SPIKES.

Table listing various sizes of cut nails and spikes, including 40d, 30d, 20d, 16d, 12d, 10d, 8d, 6d, 4d, 3d, and 2d.

FINE BLUED NAILS.

Table listing Fine Blued Nails in 3d and 2d sizes.

CASING AND BOX, FLOORING, SHOOK AND TOBACCO BOX NAILS.

Table listing Casing and Box Nails in 12d, 10d, 8d, 6d, 4d, and 3d sizes.

FINISHING NAILS.

Table listing Finishing Nails in 3 inch, 2 1/2 inch, 2 inch, 1 1/2 inch, and 1 inch sizes.

SLATING NAILS.

Table listing Slating Nails in 5d, 4d, 3d, and 2d sizes.

COMMON BARREL NAILS.

Table listing Common Barrel Nails in 1 inch, 3/4 inch, and 1/2 inch sizes.

CLINCH NAILS.

Table listing Clinch Nails in 3 inch, 2 1/2 inch, 2 inch, 1 1/2 inch, and 1 inch sizes.

SHARP AND FLAT PRESSED NAILS.

Table listing Sharp and Flat Pressed Nails in 3 inch, 2 1/2 inch, 2 inch, 1 1/2 inch, and 1 inch sizes.

STEEL WIRE NAILS.

Table listing Steel Wire Nails with 75% discount from printed list.

Iron Pipe:

Table listing Iron Pipe in 1/2 inch, 3/4 inch, 1 inch, 1 1/2 inch, 2 inch, and 2 1/2 inch sizes.

Lead Pipe:

Table listing Lead Pipe in 16 to 24 gauge sizes.

Galvanized Iron:

Table listing Galvanized Iron in 16 to 24 gauge sizes.

Structural Iron:

Table listing Structural Iron products like Steel Beams, angles, tees, plates, and sheared steel bridge plate.