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CANADIAN CONTRACT RECORD

A WEEKLY JOURNAL OF PUBLIC WORKS · TENDERS · ADVANCE INFORMATION · AND MUNICIPAL PROGRESS

EVERY THURSDAY

This paper reaches every week the Town and City Clerks, Town and City Engineers, County Clerks and County Engineers, Purchasers of Municipal Debentures and leading Contractors in all lines throughout Canada.

VOL. 7. JULY 30, 1896 NO. 26.

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 to tender.

Advertising Rates on application.

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NOTICE TO CONTRACTORS

TENDERS FOR ASPHALT AND BRICK PAVEMENTS, AND CONCRETE SIDEWALK

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. on WEDNESDAY, AUGUST 12, 1896, for the construction of

A Brick Pavement on Wellesley Place, from Wellesley Crescent to Wellesley Lane,

An Asphalt Pavement on Brunswick Ave., from College Street to Ulster Street,

And a Concrete Walk on Queen's Park Crescent.

Specifications may be seen and forms of tender obtained at the office of the City Engineer, Toronto, on and after Wednesday, July 29th, 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, Mayor,
Chairman Board of Control.

Toronto, July 23, 1896.

CONTRACTS OPEN.

LEAMINGTON, ONT.—George Ainslie, of Comber, purposes building a dwelling here.

FLINTON, ONT.—The corner stone of the new Anglican church was laid on the 28th inst.

COBOURG, ONT.—T. Downs will build a brewery at the corner of King and Albert streets.

ORILLIA, ONT. W. H. Croker, architect, has completed plans for a residence for Dr. Diggle.

BRANTFORD, ONT.—The Brantford Electric Light Co. will put in new machinery, to cost $25,000.

BLENHEIM, ONT. The question of constructing asphalt walks is under consideration by the town authorities.

SOUTH EDMONTON, N. W. T.—The Edmonton Milling Co. will erect an elevator in connection with their mill.

KEMPTVILLE, ONT.—Mr. Bowen will erect a large grain elevator. Next spring he will build a mammoth roller mill.

KINGSTON, ONT.—Notice has been given by the City Council that a tile sewer will be constructed on Beverley street, at a cost of $2,163.60.

CHATHAM, ONT.—J. R. Oldershaw, architect, has prepared plans for a frame residence, with brick foundation, for John A. Walker, to cost $1,200.

BROCKVILLE, ONT.—Proposals are invited by George A. McMullen, town clerk, until the 30th inst., for the purchase of $7,000 of public school debentures.

PLUM COULEE, MAN.—Giesbarcht & Wiens will build a 100 barrel flour mill at this place. The contract for machinery has been let to Stuart & Harper, of Winnipeg.

MIDWAY, B. C.—Plans have been prepared by J. A. Coryell for an irrigation system for Midway and valley. The plans have been forwarded to Montreal for approval.

SUSSEX, N. B.—S. H. White & Co., who recently purchased the lumber property of the Alma Lumber Co., in Albert county, will in all probability make extensive improvements to the buildings.

VICTORIA, B. C.—A. C. Ewart has in hand the erection of a brick and stone building on Wharf street for James Yates.

—The city engineer has been instructed to prepare plans for rebuilding the Point Ellice bridge.

SHERBROOKE, QUE.—A by-law will be submitted to the ratepayers to grant a bonus of $30,000 to the Talbot Brussels Carpet Co. for the establishment of a manufactory here and the erection of suitable buildings.

FREDERICTON, N. B.—The ratepayers voted on a by-law on Tuesday last to provide funds for the construction of a complete system of sewerage. The estimated cost is $100,000 for laying the mains, with additional for services.

DUNDAS, ONT.—Tenders are invited by James Moore, town clerk, until Saturday next, for the construction of various works in the town, consisting of masonry, concrete work, cribbing, sheet piling, timber work and earth work.

GODERICH, ONT.—The town council have passed a by-law granting exemption from taxation and free water for ten years to the Dominion Cold Storage Co., of Montreal, who purpose erecting a cold storage building. A site has been secured.

ST. CROIX, N. B.—Application has been made for the incorporation of the Quoddy Fish Company, among the promoters being Edwin Canong, John D. Chipman, Julius T. Whitlock and Gilbert W. Ganong. It is proposed to erect cold storage warehouses.

ALMONTE, ONT.—The building of the Carp, Almonte and Lanark railway from Carp, on the O. A. and P. S. railway, to Almonte, then to Lanark and Bridgewater, on the G. T. R., is being agitated. A survey will be made between Cary and Almonte at once.

DESERONTO, ONT.—By-laws will be submitted to the ratepayers on the 7th of August to raise $35,000 for constructing a system of water works and $3,000 for the erection of a fire station.—D. A. Walker and Thos. McHenry have purchased sites for new buildings.

LITTLE CURRENT, ONT.—The survey of the Manitoulin and North Shore railroad has been completed. A public meeting was held at the request of Mr. J. J. McIntyre, at which the construction of the road was approved of and the council authorized to grant a right of way.

LONDON, ONT.—H. Goodenough, sanitary engineer, of Boston, has presented his report on a sewerage system for this city. He recommends a sewerage farm on the northern bank of the river.—The Hiscox building will be fitted with electric elevators.—H. A. Stringer will build a brick residence on Elmwood avenue.

FORT WILLIAM, ONT.—The McAnulty Mill Co., of Manheim, Penn., have made a proposition to the Town Council to establish a plant here for the manufacture of flour mill machinery, and also to erect a 1000 barrel flour mill, at an expenditure of $300,000, in consideration of a free site, exemption from taxes for 10 years and a cash bonus of $30,000. The proposition is under consideration.

VANCOUVER, B. C.—Donald G. Macdonell, solicitor, gives notice that application will be made at the next session of the Dominion Parliament for incorporation of a company to construct a railway from Vancouver in an easterly direction through the province, also through Alberta, Assiniboia and Manitoba, thence through the provinces of Ontario and Quebec to the Atlantic seaboard, also to construct and operate telegraph and telephone lines.

QUEBEC, QUE.—Building permits have been granted as follows: One building on St. Ursule street for F. X. Drouin; architect, D. Ouellet; contractor, P. Boulanger; probable cost $3,000. One building on St. Louis street, for T. F. Baillairgé; contractor, W. J. Peters.—The city attorney will make application on the 26th of August for the approval of the plans by the Governor-General in Council for the construction of the proposed bridge over the St. Charles river, to connect the city with the park.—Alex. T. Porter, of London, representing an English syndicate, is the promoter of a scheme to establish immense abbatoirs near Quebec. In consideration of an annual subsidy of $125,000 from the Dominion government, it is proposed to erect abbatoirs and store houses to cost about $1,000,000.—F. X. Berlinquet, architect, is preparing plans for a pavilion for the Three Rivers Exhibition Co., and one octogon building for the same.

HAMILTON, ONT. E. B. Patterson, architect, is preparing plans for stores on York street for C. S. Cochrane, to cost $2,200, and a house on West avenue for J. Voelker, to cost $1,800.—Mr. Barrow, city engineer, is at work on the plans for the sewage disposal works.—Mr. B. B. Osler, Q.C., president of the Hamilton & Dundas Railway Co., will hold a conference with the city council regarding the proposed conversion of the railway into an electric road.—The Toronto, Hamilton & Buffalo Railway Company will construct a bridge crossing the Hamilton and Milton road. It will be 380 feet in length and 170 feet above the water. The estimated cost is $20,000.—The Board of Governors of the city hospital have decided to call for tenders for the placing of new boilers in the hospital, and other improvements at the institution. Tenders are to be sent in by August 6th.—A. W. Peene has been granted a permit for a two-story brick dwelling on Emerald street south, for J. H. Clappison, to cost $3,600.

MONTREAL, QUE.—W. E. Doran, architect, is calling for tenders for a house on St. Charles Borromee street for John Clifford.—The Citizens Light & Power Co., Cote St. Paul, Montreal, will build an addition to their engine house.—Building permits have been granted as follows: Two houses, 42×66 feet, on St. George street, wood lined in brick, for the Jacques Cartier bank; contractors, N. Pauze & Son for all trades. One manufactory for compressed oil gas for railway cars on Lusignaw street, 100×96, for the Pintsh's Patent Lighting Co., Ltd.; architect, T. R. Saxton; masonry contractor, L. Paton & Son.—The city surveyor has reported that a number of new shafts are required throughout the city, at a cost of $4,760.—The Bell Telephone Co. of Canada will receive offers until the 8th of August for the purchase of $100,000, or any part thereof, of 5 per cent. debentures, maturing on the 1st of April, 1925.—The Lachine Rapids Hydraulic & Land Co. has made application to the city council for permission to place their wires underground. The subway used for the purpose will be cement-lined iron tubes.

OTTAWA, ONT.—Mr. Kennedy, C. E., will prepare plans for the erection of a dam above the Chaudiere.—A by-law will be submitted to the ratepayers of Hintonburg to raise $5,000 by the issue of debentures for the purpose of erecting an addition to the public school.—The Hull Electric Railway Co. have decided to erect a building at Aylmer for restaurant purposes. Estimates for the erection of a promenade pier at Deschenes Lake will also be asked for.—The ratepayers of Goulbourne township will build a new school house this fall.—Hon. Peter McLaren applied for a free grant of land in section 11, township 9, Macleod district, upon which to erect a saw mill in 1887. An order in council has recently been passed granting Mr. McLaren the land at the nominal price of $1 per acre, and the construction of the mill will now be proceeded with.—E. F. E. Roy, secretary Department of Public Works, will receive tenders until the 7th of August for the supply of coal for the Dominion Public

building.—J. R. Booth will place two arc machines in his electric light plant at his saw mill.—Local capitalists have under consideration the erection of a cold storage warehouse.

TORONTO, ONT. — A largely-signed petition for a brick pavement, with concrete and stone curb, on Huron street, between College and Bloor, has been presented to the City Clerk.—A deputation from the city council will request the Minister of Militia to complete the drill hall in this city by erecting a cavalry stable.—Messrs. Humphries & Rohan, manufacturers of brass mountings and harness fixtures, Canton, Ohio, are considering the establishment of a branch factory in Toronto.—Steps will be taken at once by the Industrial Exhibition Association to erect a new stable and make other repairs to buildings at the exhibition grounds.—The Dominion Government will be memorialized to construct three groynes to protect the western point of the island, at a cost of $1,500.—The city council have resolved to purchase a strip of land, 26×75 feet, adjoining the Bay street fire hall for the purpose of extending the building.—Building permits have been granted as follows. Wm. Murray, two 2-story and attic bk. dwellings, 157 Dowling ave., cost $5,000; Toronto Electric Light Co., one-story bk. power house, Esplanade, south of Scott st., cost $5,000; F. Nicholls, one-story bk. add. and alterations to dwelling, 422 Sherbourne street, cost $1,000; Kemp Manufacturing Co., 2-story bk. engine and boiler house, rear factory, cor. Gerrard and River streets, cost $3,000.

FIRES.

The Belleville Box & Basket Manufacturing Co.'s factory at Belleville, Ont., was completely consumed by fire on the 23rd inst. Loss about $10,000, fully covered by insurance.—A brewery at Prescott, Ont., owned by J. McCarthy, Sons & Co., was burned last week. The damage is about $30,000.—The dry goods store of T. E. Vanstone & Co., at Owen Sound, Ont., was damaged by fire on Saturday last to the extent of $6,000.—Six houses in the village of St. Nicholas, Que., were burned on the 26th inst. The losers are: Ignace Paquet, Gabriel des Rochers, Benj. De Villiers, Geo. Bedard, Joseph Martineau and Modeste des Rochers.—The Hastings shingle mill at Vancouver, B.C., owned by E. H. Heaps and leased by J. & D. McNair, was destroyed by fire on the 27th inst. Loss, $10,000; insurance, $2,500.

CONTRACTS AWARDED.

MERRICKVILLE, ONT.—W. H. Newman has the contract for a residence for R. C. Percival.

BRUCEFIELD, ONT. — William Scott has let the contract for a residence to Mr. Gutteridge, of Seaforth.

SANDWICH, ONT.—The contract for seating the court house has been awarded to the Globe Furniture Co., of Walkerville.

SHERBROOKE, QUE.—The contract for interior decoration for the Methodist church here has been let to Castle & Son, of Montreal.

GANANOQUE, ONT.—Mitchell & Wilson have secured the contract for building an addition to the Methodist church here, at the price of $7,863.

LONDON, ONT.—The new Southern Congregational church will cost $4,500. Moran & Ridge have the contract for brick work. Herbert Matthews, architect.

RODNEY, ONT.—Thomas C. Campbell has been awarded the contract for building the new Baptist church here. The price is $1,800. Harry Livingstone, architect.

PETROLEA, ONT.—Forkin & Simpson of Sarnia, have been awarded the contract to construct the pumping house, engineer's residence and intake well for the water works system.

BARRIE, ONT.—Kennedy, McVittie & Co., architects, have awarded the contract for a residence for Mrs. G. Copeland, Penetang, to A. Tessier. Heating and plumbing not yet let.

CHATHAM, ONT.—A syndicate, composed of Messrs. J. Abram, J. Kime, and W. H. Carswell, has been awarded the contract for the construction of the sedimentation basin. The price is $9,973.

WINNIPEG, MAN.—The tender of Kelly Bros., for asphalt paving, as reported in last week's issue, has been accepted, the price being $80,384.80 for Wasatch and $81,134.80 for Trinidad or Bermuda asphalt.

OTTAWA, ONT. T. A. Shore has been awarded the contract for a car barn at Lake Dechene for the Hull & Aylmer electric railway.—O'Rielly & Murphy have the contract for wiring Orme & Stephen's stores on Sparks street.

NEW GLASGOW, N. S.—Raymond & Dand have been awarded the contract for the erection of the new Baptist church here. It will be a wooden edifice 50×70 feet, with stone foundation. The plans were prepared by H. H. Mott, architect, St. John.

TORONTO, ONT.—G. A. Stimson & Co., of this city, have just taken delivery of the £20,500 sterling debentures of Drainage District No. 1, guaranteed by the Province of Manitoba, which they recently purchased from the Manitoba Treasury Department.

ST. MARY'S, ONT.—Jacob Near has been awarded the contract for remodelling the Methodist church here, at the price of $2,414. Other tenderers were: A. Falconer, $2,775: Pullyblank Bros., $2,625; W. W. Haines, $2,790; Johnston & Wright, $2,450.

HAMILTON, ONT.—The contract for the interior woodwork and fittings for the new Royal College of Dentistry, Toronto, has been awarded to J. Hoodless & Son, of this city.—The tender of John Lampman has been accepted for the construction of a sewer on Catherine street, at 33 cents a foot.

ST. CATHARINES, ONT.—S. G. Dolson, architect, has prepared plans for a buff brick residence for James A. McSloy, to cost $5,500, without plumbing, mantels or heating. The contract has been awarded to Newman Bros., with the exception of carpenter work and interior woodwork, which has been given to George Wilson. It will have hardwood finish throughout.

GUELPH, ONT.—G. R. Bruce, architect, has let contracts as follows for a two storey brick dwelling house for Robert Strachan: Stone and brick work, Taylor Bros.; carpentry, John Hughes; painting, John Goss; plumbing, Feek & Phillips; plastering, Peter Martin. The Guelph Pavement Co. have received the contract from the village of Elora for some 10,000 feet of pavement.

QUEBEC, QUE.—Messrs. O. Picard & Son, plumbers, have the contract for heating the convent at St. Roch, Quebec.—Berlinquet & Lemay, architects, have awarded the following contracts for a church on Grande Allee, for the Franciscains: Masonry, Louis Larose; carpenter and joiner's work, J. B. Gingras; roofing, L'Heureux & Dallaire, painting and glazing, J. M. Tardivel; iron work, Canadian Bridge Co. Estimated cost, $23,000.

MONTREAL, QUE. The contract was awarded last week by the Lachine Rapids Hydraulic & Land Co., for 10,000 barrels of cement for construction purposes. The successful tenderer was Francis Hyde & Co., the price being $2.05 per barrel.—Gamelin & Huot, architects, have awarded the following contracts for two houses on Oliver avenue for H. S. Hutchins. Masonry, brick and plastering, Z. Piopel & Co.; carpenter and joiner's work, painting, glazing and heating, Georges Bail.

THE STRENGTH OF TIMBER.

Among the results arrived at by the committee appointed by the American Association of Railway Superintendents, for the purpose of considering the strength of timbers for bridges and trestles, emphasis is laid on the fact that variations in strength are generally directly proportional to the density or weight of the timber, and that structures should be, in general, designed for the strength of green or moderately seasoned timber, of average quality, and not for a high grade of well-seasoned material, age or use not destroying the strength of timber unless decay or season checking takes place. It is found that timber, unlike materials of a more homogeneous nature, as iron or steel, has no well-defined limit of elasticity; for, as a rule, it can be strained very near to the breaking point without serious injury, which accounts for the continuous use of many timber structures with the material strained far beyond the usually accepted safe limits; while, on the other hand, sudden and frequently inexplicable failures of individual sticks at very low limits are liable to occur. Knots, even when sound and tight, are declared to be one of the most objectionable features of timber, whether for beams or struts. The full-sized tests demonstrate, not only that beams break at knots, but that invariably timber struts will fail, owing to the proximity of a knot, by reducing the effective area of the stick, and causing curly and cross-grained fibers.

VENEERING.

The softest woods should be chosen for veneering upon. Perhaps the best for the purpose are those of perfectly straight grain and without a knot; of course no one ever veneers over a knot. Hard wood can be veneered boxwood with ivory, for instance: but wood that will warp and twist, such as cross grained mahogany, must be avoided. The veneer and wood on which it is to be laid, says a writer in a contemporary, must both be carefully prepared, the former by taking out all marks of the saw on both sides with a fine toothing plane, the latter with a coarser toothing-plane. If the veneer happens to be doing this it may be repaired at once with a bit of stiff paper, glued upon it on the upper side. The veneer should be cut rather larger than the surface to be covered; if much twisted it may be damped and placed under a board and weight over night. This saves some trouble, but with veneers that are cheap it is not worth while taking much trouble about refractory pieces.

The wood to be veneered must now be sized with thin glue; the ordinary glue-pot will supply this by dipping the brush first into the glue, then into the boiling water in the outer vessel. This size must be allowed to dry before the veneeer is laid. We will suppose, now, that the veneering process is about to commence. The glue in good condition, and boiling hot, the bench cleared, a basin of hot water with the veneering hammer and a sponge in it, a cloth or two, and everything in such position that one will not interfere with or be in the way of another. First, damp with hot water that side of the veneer which is not to be glued, then glue the other side. Second, go over as quickly as possible the wood itself, previously toothed and sized. Third, bring the veneer rapidly to it, pressing it down with the outspread hands, and taking care that the edges of the veneer overlap a little all round. Fourth, grasp the veneering hammer close to the pane (shaking off the hot water from it), and the handle pointing away from you; wriggle it about, pressing it down stoutly and squeezing the glue from the centre out at the edges, If it is a large piece of stuff which is to be veneered, the assistance of a hot iron will be wanted to make the glue liquid again after it has set; but do not let it dry the wood underneath it, or it will burn the glue and scorch the veneer, and ruin the work. Fifth, having got out all the glue possible, search the surface for blisters, which will at once be betrayed by the sound they give when tapped with the handle of the hammer. The hot iron (or the inner vessel of the glue-pot itself, which often answers the purpose must be applied and the process with the hammer repeated, when the hammer is not in the hand it should be in the hot water. The whole may now be sponged over with hot water and wiped as dry as can be. And observe throughout the above process never have any slop and wet about the work that you can avoid. Whenever you use the sponge, squeeze it well first. Damp and heat are wanted, not wet and heat. It is a good thing to have the sponge in the left hand nearly all the time, ready to take up any moisture or squeezed out glue from the front of the hammer.

So much for laying veneers with the hammer, which, though a valuable tool, is not much used in the best cabinet makers' shops—cauls are adopted instead. They are made of wood, the shape and size of the surface to be veneered, or, better still, of rolled zinc plate, and being made very hot before a good blaze of shavings, they are clamped down on the work when the veneer is got in its place; they must be previously soaped, to prevent them sticking to the veneer. The whole is then left to dry together. The hammer is quite sufficient, however, in small cabinet shops. Veneers can be laid with it 5 ft. long by 18 in. wide, without assistance and without a blister. Cauls, however, are very necessary if a double curved surface has to be veneered, or a concave surface; they need not be used for a simple convex surface. By wetting well one side of the veneer it will curl up, and can easily be laid on such a surface; but it will be well to bind the whole round with some soft string to assist it in keeping down while drying.

The City Engineer of Toronto has reported that the brick sidewalks which were laid two years ago are in good condition, and in his opinion it would be economical and in the public interest if more brick walks were laid, instead of wooden walks, the cost being about double that of wood, but it is very much more durable.

MUNICIPAL ENGINEERS, CONTRACTORS AND MATERIALS

MORTAR OF BRICK DUST.

It will not be without interest, says the Moniteur de la Ceramique, to make a note of the application of brick dust for the making of mortar. Why not, indeed, use this substance if it is good, and even economical in certain cases, as a substitute for cement? Experiments have been made with a mixture of this substance with quick lime, and blocks made of such composition, thirteen millimetres thick, after having remained submerged in water for four months, have substained, it appears, without cracking or breaking, a weight of 10,500 kilograms per square decimetre. One part in ten of the brick dust was sufficient to give ordinary mortars a remarkable cohesive power. This composition was serviceable for the construction of drains, reservoirs, cisterns, the tops of terraces, etc. The best proportion is one part of brick dust, one of lime and two of sand, the whole mixed dry and wet with the water necessary.

MUNICIPAL DEPARTMENT

SEWER VENTILATION.

Mr. H. N Ruttan, City Engineer of Winnipeg, sends the following facts with reference to sewer ventilation to the Free Press:

The necessity for ventilation arises from the fact that noxious gases are formed in the sewers, which if allowed to find entrance to dwellings are extremely disagreeable and dangerous to health. While there is no case on record where specific disease germs have been formed in sewer air, the inmates of houses to which it has access are "liable to be affected with various forms of distended digestion, loss of appetite, slight headache, and a depressed state of vitality." (Dr. J S. Billings.)

In order to prevent as far as possible the danger of sewer air being forced into houses, it is necessary to provide outlets into open air of the street. The most convenient and effective measures known to provide for the escape and dilution of the sewer air is the open manhole. Various means have been tried from time to time, by the use of high chimneys or ventilating shafts, attached to furnaces, to discharge the sewer air at points where it would not cause annoyance to the people who live on or use the streets. All special devices hitherto tried have proved failures, and to-day the open manhole, notwithstanding its disadvantages, is the universally approved and adopted system of sewer ventilation.

The chief cause of the formation of gas in sewers is the decomposition of a thin film of sewage, which is deposited on the walls of the sewer by the fluctuation of the water level in the sewer. As it is impossible to keep a uniform water level in the sewers it is impossible to prevent the formation and decomposition of the film. The only thing to consider is how to prevent the annoyance caused by escaping gases without interfering with the sufficient ventilation of the sewers, and the protection which such ventilation affords to the inmates of houses connected with the sewers. It is a mistaken idea to suppose that flushing will prevent the formation of sewer gas. As stated above, the formation of the gas would be reduced to a minimum by keeping the flow in the sewers at a uniform level, which level should be such that the sewer flow would be at least quarter its capacity To maintain this rate of flow in the Winnipeg sewers at present would take about 100 cubic feet of water per second or fifty-two million gallons per day, or at least twenty-six times more water than our present water system is capable of pumping. As a matter of fact the Winnipeg sewers are as well flushed as those of any city on the continent, using the combined system. See comparison with city of Toronto in report of sanitary condition of Winnipeg, 1893.

The complaint about smelling manholes is not confined to Winnipeg. It is universal. In Europe and America the experts of all large cities have been engaged for some years past in making bacteriological examinations of sewer air in order to determine its exact nature and what danger, if any, is to be expected from its discharge into the streets. Without going into particulars it may be stated that more bacteria were found in the air of the street than in the sewer air, and the "deadly manhole," of which so much have been said by the press of the country, has gradually assumed its proper place of a comparatively harmless, if intolerable, nuisance.

TO STRENGTHEN ASPHALT PAVEMENTS.

A novel experiment in street paving is about to be made in South Park avenue, between Sixty-third and Sixty-sixth streets, Chicago.

Some time ago an inventive genius produced what is called "expanded steel." This is simply a thin sheet of metal with slits cut in it and expanded lengthwise by forcing these slits into diamond-shaped apertures. It was at first used only as a substitute for lathing in the construction of buildings, but now it is to become part of a new method of laying asphalt pavements, and will be given its first trial on South Park avenue. It is proposed to have steel sheets of one-half inch in thickness cut into large-sized strips and then expanded under powerful pressure. These sheets will be inserted flatways in the concrete base by first laying four or five inches of the stone and cement mixture and then covering the entire surface with steel, and over this steel in turn will be put the rest of the concrete. When partly dry the base will be compressed by ten-ton rollers and the concrete mixed forced into the interstices in the steel sheets, the whole, when solidly set, forming a foundation which will not only afford a much greater weight-resisting surface than the old system of asphalt paving, but furnish as well an effectual barrier to the picks and axes of the vandals.

Damage to the top coating of an asphalt pavement causes but small expense or annoyance nowadays. Time was when repairs to the top could only be made by tearing up a good sized section of the pavement and relaying it entirely, and even then the job was seldom satisfactorily done, as it was almost impossible to get an even surface on the patch.

Now, when the top coat needs fixing a man comes along with an ingenious gasoline contrivance something on the principle of a plumber's blow furnace, except that it is mounted on wheels. He shoves it along over the spot to be repaired and the fierce heat, directed downward, quickly softens the asphalt so it can be readily smoothed over by the rolling machine's weight, and an even surface secured.

It is only when the base or foundation of the pavement is cut through in replacing an even surface, and this, it is expected, will be obviated by the use of the combined steel and concrete base. The difficulty of cutting through the mass will force the making of water, sewer and gas connections before the pavement is laid, and where this is not done it will be cheaper and easier to tunnel under the street from the sidewalk than to tear up the pavement.—Exchange.

POWER FROM REFUSE.

Garbage and town refuse disposal is one matter where the cities of Europe are far ahead of those of this country. An ideal plant of this kind is that at Rochdale, England. Investigators have all agreed that burning is the best way to dispose of the accumulations. This preference is due to the fact that by this method not only is all organic matter liable to putrify and become a menace to the health of the community, destroyed, but it has been found by actual trial that the heat derived from the burning of this refuse may be used for the production of steam, which can be utilized for commercial purposes, and the revenue received from this source may be sufficient to more than pay for the cost of burning. There are no less than fifty-five such destructors in different parts of England. The Health Committee of Rochdale, a manufacturing town of 73,000 inhabitants, recently adopted the method, with the idea of ultimately using the steam produced for electric lighting purposes. It has been found that this rough, unscreened refuse, running as much as 35 per cent. of clinker and ash, will evaporate 1.6 pounds of water for every pound of refuse burned, under boilers built to produce steam at 120 pounds pressure. Coal burned under the same boilers evaporated 7 pounds of water per pound of coal. The two boilers have a grate surface of 45 square feet each. In building the two destructor cells a large combustion chamber, common to both, was provided between them and the boilers, so that the gases could intermingle, and that time should be allowed for the combustion of gases before they came in contact with the comparatively cold surface of the boiler, noting the fact that if once the organic matter in the fumes were heated sufficiently high, no amount of subsequent cooling down could again make them malodorous. It is interesting to note that it is not necessary to use coal to aid in the burning of this refuse. The plant has been able to produce 340 brake horse-power, burning two tons of refuse per hour. This high efficiency is obtained with ordinary boilers by using a forced draught. The weight of the refuse is reduced two-thirds, and the volume three-fourths. The author says in conclusion: "The disposal of two-thirds of the refuse completely is an important matter, but when to this is added the fact that the remaining third is rendered quite free from any organic matter whatever, it is past conception that corporations and local companies will continue to tip such immense quantities of putrefactive matter away, when, if they put in suitable appliances and used the steam which can be produced, the refuse might be burned and a profit made on the transaction."—Cassier's Magazine.

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Prices of Building Materials.

CONDITION OF THE MARKET.

TORONTO. There are few new features to note in building material. The demand is falling off in many lines as a result of the summer quietude. In wire nails there is some movement, principally for small lots. A few orders are also being received for galvanized iron and iron pipe. An advance on glass has taken place in Belgium, but local trade is slow.

MONTREAL. The building supply trade has changed but little. Buyers are purchasing very lightly, and business is therefore restricted. The feature of the cement market has been the awarding of the contract to a local firm for 10,000 barrels by the Lachine Rapids Hydraulic and Land Co. The demand is principally for small lots, and business on the whole rules quiet and of a jobbing character. The arrivals for the past week were 1,900 barrels English, as against 2,498 for the previous week, making a total to date of 36,268 barrels of English and 24,561 Belgian. There is little activity in cut nails. Paints and oils are quiet and prices unchanged. For iron pipe there is a moderate demand.

LUMBER.

CAR OR CARGO LOTS.

	Toronto. $	Montreal. $
1¼ to 2 clear picks. Am ins	33 00@36 00	40 00@45 00
1¼ to 2 three uppers, Am ins.	37 00	40 00 45 00
1¼ to 2, pickings, Am ins	26 00	27 00 30 00
3 inch clear		40 00 45 00
1 x 10 and 12 dressing and 1 better	20 00 22 00	18 00 20
1 x 10 and 12 mill run	16 00 17 00	19
1 x 10 and 12 dressing	20 00 22 00	18 00
1 x 10 and 12 common	13 00 14 00	8 00 10 00
Spruce culls	10 00 11 00	8 00 10 00
1 x 10 and 12 culls	9 00 10 00	9 00
1 inch clear and picks	28 00 3200	35 00 40 00
1 inch dressing and better	20 00 22 00	18 00 20 00
1 inch siding, mill run	14 00 15 00	12 00 16 00
1 inch siding, common	12 00 13 00	10 00 13 00
1 inch siding, ship culls	11 00 12 00	10 00 11 00
1 inch siding, mill culls	9 00 10 00	8 00 9 00
Cull scantling	8 00 9 00	8 00 9 00
1¼ and thicker cutting up plank	24 00 26 00	22 00 25 00
1 inch strips, 4 in to 8 in. mill run	14 00 15 00	14 00 15 00
inch strips, common	11 00 12 00	10 00 12 00
1¼ inch flooring	16 00 17 00	12 00 15 00
1¼ inch flooring	16 00 17 00	12 00 15 00
XXX shingles, sawn, per M 16 in	2 25 2 30	2 60 2 60
XX shingles, sawn	1 40 1 50	1 60 1 70
Lath	1 60	1 50

YARD QUOTATIONS.

Mill cull boards and scantling	10 00	10 00 12 00
Shipping cull boards, promiscuous widths	13 00	13 00
Shipping cull boards, stocks	16 00	16 00
Hemlock scantling and joist up to 16 ft	11 00 12 00	10 00
Hemlock scantling and joist up to 18 ft	12 00 13 00	12 00 13 00
Hemlock scantling and joist up to 20 ft	13 00 14 00	13 00 14 00
Cedar for block paving, per cord	5 00	5 00
Cedar for kerbing, 4 x 14, per M	14 00	14 00
Scantling and joist, up to 16 ft	14 00	14 00
" " 18 ft	15 00	16 00
" " 20 ft	16 00	16 00
Scantling and joist, up to 22 ft	17 00	17 00
" " 24 ft	19 00	19 00
" " 26 ft	20 00	21 00
" " 28 ft	22 00	23 00
" " 30 ft	24 00	25 00
" " 32 ft	27 00	27 00
" " 34	29 50	29 50
" " 36 ft	31 00	31 00
" " 38 ft	33 00	33 00
" " 44 ft	34 00	36 00
Cutting up planks, 1¼ and thicker, dry	25 00 28 00	25 00 30 00

B. M.

1¼ in. flooring, dressed, F M.	26 00 30 00	28 00 31 00
1¼ inch flooring, rough, B M.	18 00 22 00	18 00 22 00
1¼ " dressed, F M.	25 00 28 00	27 00 30 00
1¼ " undressed, B M.	18 00 19 00	18 00 19 00
1¼ " dressed	18 00 20 00	18 00 22 00
1¼ " undressed	12 00 15 00	12 00 15 00
Beaded sheeting, dressed	20 00 35 00	22 00 35 00
Clapboarding, dressed	12 00	8 00 12 00
XXX sawn shingles, per M 18 in	2 60 2 70	3 00
Sawn lath	2 50 2 60	2 50 2 60
Cedar	2 90	2 90
Red oak	30 00 40 00	30 00 40 00
White	37 00 45 00	35 00 55 00
Basswood, No. 1 and 2	28 00 30 00	18 00 20 00
Cherry, No. 1 and 2	70 00 90 00	70 00 80 00
White ash, No. 1 and 2	24 00 35 00	30 00 35 00
Black Ash, No. 1 and 2	20 00 30 00	18 00 30 00
Dressing stocks	16 00 22 00	16 00 22 00
Picks, American inspection	30 00	40 00
Three uppers, Am. inspection	50 00	50 00

	Toronto.	Montreal.
BRICK— ₱ M		
Common Walling	6 50	6 00
Good Facing	8 00	8 50
Sewer	8 50 8 00	8 50 9 00
Pressed Brick, Per M:		
Red, No. 1, f.o.b. Beamsville	16 00	
" " 2	14 00	
" " 3	9 00	
Buff	21 00	
Brown	24 00	
Roman Red	30 00	
" Buff	35 00	
" Brown	40 00	
Sewer	7 50	
Hard Building	6 00	
Roof Tiles	22 00	
Hip Tile (each)	20	
Ridge Tile "	60	
1st quality, f.o.b. at Port Credit	12 00	18 00
2nd " " " "	10 00	15 00
3rd " " " "	8 00	12 00
Hard building brick	6 50	
Ornamental, per 100	3 00 10 00	
SAND.		
Per Load of 1½ Cubic Yards	1 25	1 25
STONE.		
Common Rubble, per toise, delivered	14 00	14 00
Large flat Rubble, per toise, delivered	18 00	18 00
Foundation Blocks, per c. ft.	50	50
Kent Freestone Quarries Moncton, N. B., per cu ft., f.o.b.	1 00	
River John, N. S., brown Freestone, per cu. ft., f.o.b.	95	
Ballochmyle	80 90	65 75
New York Blue Stone		1 05
Granite (Stanstead) Ashlar, 6 in. to 12 in., rise 9 in., per ft.		25
Moat Freestone		60 70
Thomson's Gatelawbridge, cu. ft.		75 80
Credit Valley Rubble, per car of 15 tons, at quarry	8 00	
Credit Valley Brown Coursing, up to 10 inch, per sup. yard, at quarry	1 75	3 25
Credit Valley Brown Dimension, per cu. ft. at quarry	60	75
Credit Valley Grey Coursing, per superficial yard	1 50 2 00	2 15
Credit Valley Grey Dimension, per cubic foot	60	75
Clark's N. B. Brown Stone, per cubic foot, f.o.b.	1 15	1 00
Brown Free Stone, Woodpoint, Sackville, N.B., per cub. ft.	1 15	1 00
MadocRubble, delivered, per toise	14 00 14 50	14 00 14 50
Madoc dimension floating, f. o. b. Toronto, per cubic ft.	30 32	
Cape Bauld, N. B., Brown Freestone	90	70
Cocaigne, N. B., Gray Freestone (olive-green)	90	70
OHIO FREESTONE, FROM THE GRAFTON STONE CO.'S QUARRIES.		
No. 1 Buff *Promiscuous*	90	1 10
No. 1 Buff Dimension	05	1 05
No. 1 Blue Promiscuous	60	70
No. 1 Blue Dimension	65	75
Sawed Ashlar, No. 1 Buff, any thickness, per cub. ft.	1 10	1 20
Sawed Ashlar, No. 1 Blue, any thickness, per cub. ft.	80	90
Sawed Flagging, per sq. ft., for each inch in thickness	06½	07½

Above prices cover cost freight and duty paid. For small lots add 5 to 10 cents per cubic foot.

Quebec and Vermont rough granite for building purposes, per c.ft. f.o.b. quarry	33 1 50	
For ornamental work, cu. ft.	35 2 0	
Granite paving blocks, 8 in. to 12 in. x 6 in. x 4½ in., per M	50 00	
Granite curbing stone, 6 in. x 20 in., per lineal foot	70	
SLATE.		
Roofing (₱ *square*), red	18 00	20 00
" purple	00	10 00
" unfading green	9 00	6 00
" black	8 00	5 50
Terra Cotta Tile, per sq	25 00	
Ornamental Black Slate Roofing	8 50	

PAINTS. *(In oil, ₱ lb.*

White lead, Can., per 100 lbs.	6 25 5 50	5 50 6 00
" zinc, Can., " "	6 50 7 50	6 50 7 50
Red lead, Eng	4 00 5 00	4 50 5 00
" venetian, per 100 lbs	1 60 1 75	1 60 1 75
" vermillion	90 1 00	90 1 00
" Indian, Eng	10 12	10 12
Yellow ochre	5 10	3 5
Yellow chrome	15 20	15 20
Green, chrome	7 12	7 12
" Paris	20 25	14 20
Black lamp	15 25	12 25
Blue, ultramarine	15 20	12 18
Oil, linseed, raw, *Imp. gal.*	54 59	58 59
" " boiled "	57 63	62 63
" " refined, "	78 85	75 75
Putty	2¾ 3¼	2¾ 2¾
Whiting, dry, per 100 lbs	75 1 00	60 75
Paris white, Eng., dry	90 1 25	90 1 00
Litharge, Eng	4 5	4 50 5 00
Sienna, burnt	10 15	12 15
Umber, "	8½ 12	12 15
CEMENT, LIME, etc.		
Portland Cements.— German, per bbl	3 25	2 55 2 65
London "	2 50 2 75	1 92 05

	Toronto.	Montreal.
Portland Cements.—		
Newcastle "	2 50	1 85 1 95
Belgian, Josson, artificial	3 40 2 50	2 65 2 75
English, artifical, per bbl	2 60 2 90	2 55 2 65
Belgian, natural, per bbl	2 30 2 40	1 70 1 85
Canadian "	2 50 2 50	1 80 1 85
Roman "		2 00 2 25
Parian "	4 50 4 75	5 50 5 75
Superfine "	6 50 7 00	8 00 9 00
Hydraulic Cements.—		
Thorold, per bbl	1 50	1 25 1 50
Queenston, "	1 50	1 50 1 60
Napanee, "	1 50	1 50
Hull, "	1 50	1 50
Ontario, "	1 25	
Keene's Coarse "Whites"	4 50	4 75 4 50 4 75
Fire Bricks, Newcastle, per M	27 00	35 00 15 00 21 00
" Scotch "	27 00	35 00 19 00 21 00
Lime, Per Barrel, Grey		40
" " White		50
Plaster, Calcined, N. B		2 00
" " N. S		2 00 2 50
Hair, Plasterers', per bag	80	1 00

HARDWARE.

Cut nails, 5cd & 6od, per keg	2 75	2 75
Steel " " " "	2 85	2 85

CUT NAILS, FENCE AND CUT SPIKES.

40d, hot cut, per 100 lbs	2 80	2 80
30d, " " "	2 85	2 85
20d, 16d and 12d, hot cut, per 100 lbs	2 90	2 90
10d, hot cut, per 100 lbs	2 95	2 95
8d, 9d, " " "	3 00	3 00
6d, 7d, " " "	3 15	3 15
4d to 5d, " " "	3 35	3 35
3d, " " "	3 75	3 75
2d, " " "	4 25	4 25
4d to 5d cold cut, not polished or blued, per 100 lbs	3 25	3 25
3d to 5d cold cut, not polished or blued, per 100 lbs	3 65	3 65

FINE BLUED NAILS.

3d, per 100 lbs	4 25	4 25
2d, " "	4 75	4 75

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

12d to 30d, per 100 lbs	3 25	3 25
10d, " "	3 35	3 35
8d and 9d, " "	3 50	3 50
6d and 7d, " "	3 65	3 65
4d to 5d, " "	3 85	3 85
3d, " "	4 25	4 25

FINISHING NAILS.

3 inch, per 100 lbs	3 60	3 60
2½ to 2¾ " " "	3 75	3 75
2 to 2½ " " "	3 90	3 50
1½ to 1¾ " " "	4 10	4 10
1¼ " " "	4 50	4 50
1 " " "	5 00	5 00

SLATING NAILS.

5d, per 100 lbs	3 60	3 60
4d, " "	3 60	3 60
3d, " "	4 00	4 00
2d, " "	4 50	4 50

COMMON BARREL NAILS.

1 inch, per 100 lbs	4 25	4 25
⅞ " " "	4 50	4 50
¾ " " "	5 00	5 00

CLINCH NAILS.

3 inch, per 100 lbs.	3 60	3 60
2½ and 2¾ " " "	3 75	3 75
2 and 2¼ " " "	3 90	3 90
1½ and 1¾ " "	4 10	4 10
1¼ " "	4 75	4 75
1 " "	5 25	5 25

SHARP AND FLAT PRESSED NAILS.

3 inch, per 100 lbs.	4 10	4 10
2½ and 2¾ " " "	4 25	4 25
2 and 2¼ " " "	4 40	4 40
1½ and 1¾ " " "	4 60	4 60
1¼ " " "	5 25	5 25
1 " " "	5 75	5 75

STEEL WIRE NAILS.

Steel Wire Nails, 70c. and 5% discount from printed list.

Iron Pipe:

Iron pipe, ¼ inch, per foot	6c.	6c.
" " ⅜ " "	7	7
" " ½ " "	8½	8½
" " ¾ " "	12	12
" " 1 " "	17	17
" " 1¼ " "	24	24
" " 1½ " "	30	30
" " 2 " "	43	43

Toronto, 65 per cent. discount.
Montreal, 60 to 65 per cent. discount.

Lead Pipe:

Lead pipe, per lb	7c.
Waste pipe, per lb	7½

Discount, 30 % off in small lots.

Galvanized Iron:

Adam's—Mar's Best and Queen's Head:		
16 to 24 guage, per lb	4½c.	4¾c.
26 guage, "	4¾	5
28 "	5	5¼
Gordon Crown—		
16 to 24 guage, per lb	4¾	4¾
26 guage, "	4½	4¾
28 "	4¾	5

Note.—Cheaper grades about ¼c. per lb. less.

Structural Iron:

Steel Beams, per 100 lbs	2 75 2 50
" channels, "	2 85 2 60
" angles, "	2 50 2 30
" tees, "	2 80 2 60
" plates, "	2 55 2 35
Sheared steel bridge plate	2 35

(Corrected up to July 29th)