

tenders on behalf of the city for the purchase of \$600,000 of 20 years debentures and \$100,000 of 40 years debentures.—Tenders are invited by the Department of Public Works until Monday, the 31st inst., for the erection of a court house at Wolseley, N. W. T. Plans may be seen at the following places: E. A. Bamberly's office, Wolseley; Deputy Sheriff Murphy's office, Moosomin; Dominion Public Works office, Regina; and at the Department of Public Works in this city.—It is expected that steps will be taken shortly to commence the construction of a central depot at the canal basin.—The Board of Works has decided to issue debentures to the amount of \$30,000 to cover the cost of erecting a contagious disease hospital.—It has also been decided to construct a number of local improvement sewers.

HAMILTON, ONT.—Charles Mills, architect, is asking for tenders for the erection of two semi-detached dwellings.—It is rumored that the Grand Trunk Railway Company intends to build a new station in this city. A site is spoken of between King and Main streets.—It is said that the proprietor of the Arlington hotel, Toronto, is endeavoring to secure possession of Wesley Ladies college with a view of converting it into a first-class hotel.—The City Council is considering the question of increased water supply. Two schemes are being discussed, one to lay a new main from the beach and the other to build a high level reservoir at the head of James street. The cost of carrying out either of the schemes will be about \$100,000.—A building permit has been granted to John Brill for a two-story brick dwelling on the east side of Magill street, between Burton and York streets, cost \$1,100.—Tenders are invited by Mr. A. Stuart, City Treasurer, until Wednesday, the 4th of October for the purchase of \$2,300,000 of debentures, issued by the Corporation of the City of Hamilton, payable in 40 years with interest at 4 per cent.—Tenders have been asked by the City Clerk for constructing a pipe sewer on Crook street northerly from Barton street.

FIRES.

A number of buildings at Shediac, N. B., were destroyed by fire on the morning of the 22nd inst., among which were the following: the Methodist church, value \$3,000, insurance \$2,000, Union hotel, owned by E. J. Smith, value \$1,500, insurance \$500; Dr. J. H. White's residence, value \$1,800, insurance \$1,000; Stipendiary Magistrate Abercrombie's office, value \$1,200, insurance \$500; houses owned by Miss Kate Theal, value \$800, no insurance; hotel owned by Mr. Theal, value \$2,000, insurance \$1,200; the old post-office, value \$500, no insurance.—Mr. William Beatty's saw mill at Parry Sound, Ont., was destroyed by fire on Sunday morning last. Loss about \$10,000; partly covered by insurance.—A large roller mill at Pefferlaw, Ont., owned by Way & Co. and operated by F. Summerfeldt, was burned a few days ago. The loss on the building is placed at \$12,000, with an insurance of \$5,000.—Fire at Chesley, Ont., on Monday morning last destroyed Thomas Reid's livery stable, loss \$1,400, Dr. Johnston's stable and A. McConnell's implement store room.—The Farmer's Loan and Savings Company's building at Bethany, Ont., was destroyed by fire recently. It was occupied by Mr. James Dawkins, general store and Dr. P. C. Leslie, V. S.—The Laward flour mills of Ferdinand Demers, at St. Raymond, Que., were burned down on Saturday night last. The loss is estimated at \$5,000, on which there is an insurance of \$2,000.—The residence of Stephen O. Humphery, at Sunny Braie, a suburb of Moncton, N. B., was totally destroyed by fire on the 15th inst. Loss, \$5,000.—D. R. Ferris's planing mill at Levis, Que., was consumed by fire last week. The loss will be about \$15,000, with very little insurance.—Fire at Buctoche, N. B., on the 21st inst., destroyed buildings owned by C. Chase, V. D. Burke, Isaac Trenholme, E. J. Leblance and Mr. Jude. The total loss is estimated at \$15,000.—Two warehouses at Guelph, Ont., owned by John McCrea, have been destroyed by fire.—A disastrous fire occurred at St. Anne's Parade, a town about 45 miles west of the city of Quebec, on the 20th inst., causing loss to property amounting to about \$100,000. One of the bridges spanning the large river is burned, together with 40 houses. The saw mill of Mr. Clement and the cheese factories of Messrs. Richardson and Clement, as well as the residences of Messrs. Pleau, N. P. Barry, T. Bureau, A. Perron, Ed. Beribeau, M. Hannel, J. Godoin and Roy are amongst the burned buildings.—Elliott & Carscadden's paper box factory on Hagerman street, Toronto, was burned on Tuesday evening last. The building was owned by Buntin, Reid & Co., wholesale stationers. The total loss will be about \$3,000, on which there is an insurance of \$2,500.—R. Bartlett's planing mill at Campbellford, Ont., was destroyed by fire recently. Loss, \$1,300; insurance \$700.

CONTRACTS AWARDED.

VLENELY, ONT.—Messrs. Post & Holmes, architects, Toronto, have awarded the contract for a new Roman Catholic church to Messrs. McKechnie, of Durham, at the price of \$4,500.

TORONTO, ONT.—Messrs. Shannon & Whilans have been awarded the contracts for cedar block paving on Northumberland avenue, from Ossington to Preston avenue, at \$5,028; on Olive avenue, from Bathurst St. to Palmerston, ave. at \$1,288; and on Victoria crescent, from Dunn ave. to Jaunesson avenue, at \$2,532.

OTTAWA, ONT.—The contract for extending the wharf at Baie St. Paul has been let by the Public Works Department to Mr. L. Lemieux, of Levis, Que.—Messrs. Torney, Georgeson & Co., of this city, have been awarded the contract for heating, plumbing and galvanized iron work for the Bank of Ottawa building at Pembroke.

HALIFAX, N. S.—The School Board has accepted the tender of Mr. J. F. Corshon for repairs and addition to the Compton avenue school, at the price of \$3,945.—The contract for erecting the new Salvation army barracks at the corner of Brunswick and Prince streets has been awarded to W. Hames. The price will be about \$6,000. The building will be of brick, with freestone facing, and is to be ready for occupation by November 1st.

LISTOWEL, ONT. W. E. Binning, architect, has awarded the contract for Roll's new block to Bamford Bros., at the price of \$4,200. It will be a three-story building, with Beansville pressed brick fronts, and will be heated by hot air or hot water.—The contractors for improvements to the Bank of Hamilton building are Bamford Bros., carpenter work, Newart Bros., masonwork R. T. Kemp, cut stone, Andrew Hay, plastering; J. C. Campbell & Co. of Hamilton, will supply all the glass and do the painting, etc. The contracts for plumbing and hot water heating have not as yet been awarded. The whole work will cost in the neighborhood of \$2,500.

CONSTRUCTION IN QUICKSAND.

A lecture was delivered at the School of Mines, Columbia College, New York, recently, by Mr. R. L. Harris, C. E., on foundations, especially in regard to his method of hydraulic construction in quicksand and other fine materials. After alluding to various modern methods for difficult foundations as pneumatic, bucket dredged, contained caisson and the freezing process, the speaker described the especial subject of the lecture, structures in quicksand. He said that quicksand is a bane of engineers and builders. It has sunk millions of capital, and has caused the abandonment of extensive enterprises. I had known from observation that fine quicksand is widely scattered, but had no idea until recently that it is so extensively distributed. During the past six months I have received complaints of it from Puget Sound to Maine, and between the Gulf of Mexico and Canada, from the interior as well as near the great bodies of water. As cities build deeper, and municipal improvements go deeper still, we learn more of what is beneath than when our works were nearer the surface. The process of which I am to speak is proposed for upwards of twenty engineering sub-structures located in fifteen different states.

Upon some important work in Providence, R. I., an intercepting sewer 6 by 8 feet in diameter, a halt had been called on account of quicksand encountered. The contractors for the worst sections claimed that it was ruinous for them to proceed and had petitioned the City Council to release them from their contracts and cancel their bonds, which was consequently done. Nearly all the work and trials had been made by the usual methods of sheeting excavating and pumping out, reducing the water-level. These resulted in the sinking of considerable tracts of the forest surface 4 to 5 feet, carrying down forest trees, building material, &c. Experience promoted me to consider the reverse of these processes, that of pumping in material which should solidify the troublesome quicksand in place, while in its normal condition and before injurious subcurrents should be established, in fact, to make it its own protector. The problem was separated into three divisions, which, as they represent unknown quantities to be obtained, we will designate by the algebraic characters, x , y , z . These were, then, x , to find a cementing substance, fluid or otherwise, that should unite with and solidify this extremely fine and light, yet compact and hard quicksand, y , to form channels and chambers at any depth underground and of desired form without extensive disturbance of the surface or the neighbouring materials; z , to fill such chambers and permeate the interstices of the adjacent materials with the cementing substance x . The divisions y and z comprise a pretty riddle. It was to put a fluid, say, 40 feet into the earth and to low water-level in such a way that it shall mix with the material there for a defined area of, say, 12 by 30 feet, and

solidify the same, so that if an excavation is made a century hence that floor will be found as you now determine. Could a cementing fluid be forced through and into fine sand at a depth below the surface? Would it remain in a cavity already filled with incompressible water? Would it harden sufficiently within reasonable time under the buried conditions and in predetermined shape? Could the pipes be used and removed without being clogged or made useless? A trial was made on the work during the second week in March and in freezing weather, as bad as any experience during the winter. The answers to the queries suggested were satisfactory. The results, despite the adverse circumstances, were successful, and fully demonstrated the method, and that it would be under complete control. The engineers and contractors of the work promptly and cordially expressed their satisfaction with the trial and their confidence in the new method. The result is that x , y , and z are determined both theoretically and practically. The ultimate results should be far-reaching and of great benefit. The method is applicable not only to quicksands but to other sands and the finer earthy materials. The applications are innumeral, enabling engineers and builders to make constructions in many of the fine, loose or soft materials, largely of the substances themselves, at any depth below the surface of the adjoining material, as, for example, shafts, tunnels, bridge foundation or canal repairs, waterworks, sewers, harbors, shore protections, jetties, buildings, &c., and perhaps there may be found herein the solution of a difficult problem in rapid transit for cities.

INDIAN TEMPLES CHISELED FROM SOLID STONE.—Mayalipuram, India, is graced with seven of the most remarkable temples in the world, each of the unique places of worship having been fashioned from solid granite boulders. Some idea of their size may be gleaned from the fact that the smallest of the seven is twenty-four feet high, seventeen feet long, and twelve feet wide, and is divided into upper and lower stories. The "Hevasa-Goda Cla," the largest of the seven, is three and a half stories high, its outlines resembling those of an Atlantic steamship. The inside of the boulder has been chiseled away until the walls do not exceed eight inches in thickness. The two floors above that of the foundation are each about a foot in thickness, and seems as solid as the rock of ages. The upper stories are reached by a spiral stairway carved from the same piece of granite. The second largest of these single stone temples has a portico eleven feet wide and seventeen feet long, ornamented with four crouching lions and two elephants, all carved from the same boulder which goes to make up the main building.

MUNICIPAL DEPARTMENT.

LEGAL DECISIONS AFFECTING MUNICIPALITIES.

According to the decision of the Supreme Court of Minnesota, in the recent case of The City of Chaska vs. Hodman, where the officers of a municipal corporation pay out its money upon a contract which the corporation has no power to make, the payment is not an act of the corporation, and it may recover the money paid.

TOWNSHIP OF PRESCOTT V. CONNELL.—The facts were that respondent's horses had been frightened by the effects of a blast and the respondent in endeavoring to prevent them from running away was hurt. The contention was that the injury was caused by the respondent voluntarily incurring danger, and not the blast. The courts below held against this contention. Judgment was given by the Supreme Court for respondent Connell, the appeal being dismissed, Gwynne dissenting. Connell was awarded \$3,000 in the court below.

VILLAGE OF NEW HAMBURG V. COUNTY OF WATERLOO.—This action in the Su-

perior Court was to decide as to the liability to maintain a bridge over a river running through the appellant village. The county is obliged by the law to maintain the bridge if the river is over 100 feet wide and whether it is or not is the question for decision. The trial judge held that it was; his judgment was reversed by the divisional court, and the court of appeal was equally divided when the case came before it.

THE COUNTY OF YORK V. CHAPMAN.—This was an action brought in the Superior Court by respondent for compensation for land encroached upon by what is known as the lake shore road in the county of York, the legislature having passed an old stakes and fences having disappeared. The act defining the boundaries of said road, the Act allowed any action for compensation for the land encroached upon by the road as so defined to be brought within a certain time. The defence to the action was that the land claimed by the respondent was a part of the public highway as established by long-continued use and she could not claim compensation for it. The courts below held against this contention. The appeal of the county was dismissed.

CARRIERE VS. THE CORPORATION OF THE VILLAGE OF COTEAU LANDING.—The defendant by a resolution of its council of date 26th March, 1892, appointed plaintiff a member of such council to replace one Lalonde. This appointment was afterwards contested by one E. Bourbonnais and declared null by judgment of this court. Plaintiff now sues defendant in warranty for all the costs incurred upon said proceedings. The Superior Court at Montreal, before which the case was tried, cited article 706 of the Municipal Code in virtue of which defendant is to be held liable for all claims and damages arising out of the passing of its resolutions. Judgment for plaintiff condemning defendant to indemnify plaintiff for all costs and expenses arising out of the proceedings in the cause No. 1527 of the court with costs against defendant.

DEBENTURES WANTED.

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

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