

a considerable sum this year in improving and reconstructing the Government Military works in the eastern provinces.

**HAMILTON, ONT.**—Mr. Powell, architect, has stated that he will shortly commence the erection of ten new stores. The by-law to grant a bonus of \$775,000 to the Toronto, Hamilton and Buffalo Railway Company was carried by the ratepayers on the 2nd inst. The Committee appointed to consider the question of providing additional accommodation for the Collegiate Institute, have recommended the erection of a suitable modern Collegiate Institute, or of an addition to the present building. Building permits have been granted as follows: E. N. W. Buscombe, two story brick dwelling on Inchbury street, cost \$1,000; A. Horning, two and a half story brick dwelling on George street, between Queen and Pearl streets, cost \$3,000; F. W. Briggs & Co., brick dwelling on Hughson, between Young and Maria streets, cost \$2,700; Canadian Colored Cotton Mill Company, alterations to factory, corner James and Simcoe streets, cost \$10,000.

**TORONTO, ONT.**—The Medical Health officer, in his report presented to the local Board of Health yesterday, has recommended the construction of sewers on the following streets. Orde street, between Queens Park avenue and Murray street, lane east of 492 Adelaide west, Wallace street, from Grogan's lane to McKenzie avenue. Bain street, lane south of Louisa street, and on Blevins avenue. Plans have been completed by Commissioner Coatsworth for the new crematory to be erected in the west end. They have yet to receive the endorsement of the Board of Health. The Senate of the University of Toronto have recommended that the gymnasium and Students' Union building be erected on the west side of the ravine, south of Wycliffe College. C. F. Fraser, Commissioner of Public Works for Ontario, will receive tenders until the 29th inst., for works in connection with new Asylum at Brockville, and electric and gas fixtures for legislature chamber and main entrance and vestibule of the new Parliament Buildings. Tenders will also be received at the Department until noon of Thursday, the 22nd inst., for slate and marble tile work of entrances, etc., of new parliament buildings; alcove and shelving, furnishings, etc., of main library in new Parliament Buildings; cottage at London Asylum; lock-up at Sudbury; lock-up at French River, and addition to lock-up at Bracebridge. Building permits have been granted as follows: Geo. Barton, cor. Bloor and St. Thomas sts., three pr. s.d. 2 story and attic bk. dwellings on Balmuto st., n.w. cor. Carr st., and three similar, attached, n. side Carr st., w. of Balmuto st., cost \$30,000; W. H. Cormack, 15 Russell st., two det. 2 story and attic bk. dwellings, e. side Bedford rd., immediately n. of Tranby ave., cost \$9,000; A. Bates, 2 story bk. barn and stable s.e. cor. Queen st. and Strachan ave., cost \$1,200.

#### FIRES.

The Diamond Glass Works, corner Macphail and Burlington streets, Hamilton, were destroyed by fire on Wednesday last. The loss is estimated at \$35,000, about half of which is on the building, with an insurance of \$15,000. It is said the factory will be rebuilt at once. The fine residence of Mr. G. C. McPherson, barnster, of Stratford, Ont., was burned on the 4th inst. Insurance \$2,500. A fire occurred at Brighton, Ont., on Tuesday last, which destroyed the frame buildings of J. E. Proctor, J. B. Taylor, and the Eyre estate. The vinegar works of William Wilson, 117 Bay street, Toronto, were damaged by fire to the extent of \$3,000 on Monday last. The loss is fully covered by insurance. The British Columbia Iron Works at Vancouver, B. C., were burned to ground last week. The hotel at Jarratt's Corners, owned by James McKenzie, was burned on Sunday last, together with Thomas Leathersdale's paint shop. The loss on the hotel building is estimated at \$2,500. Mr. Benjamin Dinyne's residence at River du Loup, Que., was destroyed by fire on Monday last. Loss \$3,000, insurance \$1,900. A fire occurred at Rodney, Ont., on Tuesday last, which destroyed the buildings of S. B. Morris and L. Mistile. Total loss \$3,600. The residence and store of Mr. Octave Letellan, at St. Roch du Degele, Que., was completely destroyed by fire on Thursday last, entailing

ing a loss of \$10,000; no insurance. The large building of Tushingham & Son at 102 Adelaide street west, Toronto, was damaged by fire this week to the extent of \$10,000; there was no insurance.

#### CONTRACTS AWARDED.

**VICTORIA, B. C.**—The contract for the new power house for the National Electric Tramway Co. has been awarded to J. W. Carter, at \$16,300.

**STRATHROY, ONT.**—The tender of Mr. John McPherson has been accepted for rebuilding the Roman Catholic church. Mr. Jos. Getty has the sub-contract for brickwork, and E. Gooderham for plastering.

**ST. MARY'S, ONT.**—Contracts have been awarded as follows for the erection of St. Mary's Roman Catholic Church: masonry and cut stone work, Messrs. Herbert & Murphy, Toronto, carpentry, John Hanrahan, Toronto. The total amount of the tenders sent in from the various trades for the work necessary to complete the building, is about \$20,000.

**TORONTO, ONT.**—Messrs. Bennett & Wright have been awarded the contract for the gas and electric light fixtures for the new Parliament buildings. The contract for the construction of a subway at the cattle market has been awarded to Mr. McKeown, at the price of \$8,872. Mr. A. J. Brown has secured the contract for a sewer in connection therewith, at \$859.

**COLLINGWOOD, ONT.**—Mr. Kenny, architect, has awarded contracts as follows for the erection of a pressed brick residence for Mr. Smart: masonry, Mr. Lougis; carpentry, Bryan Bros.; painting, Mr. Northvale; plumbing, Duncan Bros.; plastering, Mr. Lockton. Probable cost \$3,500. The following tenders have been accepted for the erection of a pressed brick residence on Pine street for Mrs. Beany, to cost \$3,500: masonry, E. Colherall; carpentry, Peterman & Findlay.

#### ACTION OF SEA WATER ON PORTLAND CEMENTS.

In the opinion of Dr. Michaelis, of Berlin, the greatest enemies to the permanency of the Portland cement used in marine structures are the sulphates contained in sea water. If there is any great quantity of alumina and ferric oxide in the cement the structure breaks up sooner than otherwise. This is accounted for by the fact that the sulphate forms with the aluminate and ferrate of lime a number of crystalline compounds such as basic sulphate of lime aluminosulphate and ferro sulphate of lime. These compounds take up a large quantity of water of crystallization so that the total volume is much increased. Hence the weakness and disintegration of the cement structure. Dr. Michaelis considers that the separation of hydrate of magnesia is quite innocuous, for it is only displaced from its solution in the form of a flocculent slimy hydrate which, if anything, is useful in stopping up the pores. His general recommendation to users of concrete for marine work is to choose a cement rich in silica, and as poor as possible in alumina and ferric oxide; and to envelop the structure with an impermeable mixture composed of one part of cement with 2 to 2½ parts of sand of mixed grain, of which at least one-third should be very fine sand, and to this the requisite amount of ballast should be added.

Leaks in cisterns can be repaired by applying to the seams a mixture of four parts of linseed oil, boiled with litharge, and eight parts of melted glue, mixed well together. In about two days after application, it will be found to have set so hard that water can again be admitted with safety.—*Exchange.*

#### USEFUL HINTS.

The painting of brick walls is mainly for the purposes of preservation, but the fact should not be forgotten that paint is an excellent preventative of dampness, and that a house with well painted walls is dryer, and consequently healthier, than one with the walls exposed. The best paints for this purpose, where the colour is not an objection, are the natural ochre pigments, united with zinc oxide. Thus, yellow ochre and zinc would give a pleasing buff. Whatever impairs the usefulness of a paint by attacking its tenacity and waterproofing quality is to be avoided.

The distance between Capes Traverse and Tormentine, the proposed outlets of the Prince Edward Island Tunnel, is eight miles. The work of testing the rock is being carried on by the Electric Mining Company, of Ottawa. In order to accomplish the diamond drilling under the water a tripod of iron tubing is driven into the bottom, this giving a stationary surface, on which a platform is built beyond reach of the waves. The drilling is done through a large casing sunk to the bottom. The test holes are a third of a mile apart and are carried 110 ft. deep.

In works which are exposed to the action of the sea or the currents of rivers, Rennie adopted the plan of bedding the outside of joints, for about an inch deep, in the face, with Roman cement of the best quality. The interior part of the stones was bedded in mortar, composed of two parts of well burnt stone lime, one part of ground puzzolano, or calcined pounded iron-stone, and two parts of clean sharp river sand not too fine. The lime was used hot, for which purpose it was necessary that it should be burnt adjoining the works, and mixed at once with its due proportion of sand and puzzolano, or iron-stone, previous to being slacked. It was afterward covered over with sand, so as to prevent the access of the air; water was then poured on the heap, and in this state it was left for a day or two until completely slaked; after which it was taken from the heap as wanted. The unslaked particles were separated, and the other ingredients well mixed, by being passed through a screen, after which the mixture was made into mortar, with the least possible quantity of water, by means of a pug mill, prepared for that purpose.

A difference of opinion has existed as to the best priming to use in iron work, some bridge and railroad engineers having maintained that iron oxide paint is better than red lead, as possessing greater covering qualities. While this may be true, the thickness of the covering is greater when red lead is used, and, moreover, the coating adheres more closely to the iron, forming a skin impervious to moisture, while the oxide paint seems to be more or less porous and allows rust to go on underneath its surface. The best method of priming iron is to pickle it with a dilute solution of muriatic acid, and then to remove all the scale and dirt with wire brushes, which leaves the iron with a bright smooth surface. It is then washed with pure water, rubbed entirely dry and immediately coated with red lead and raw linseed oil. This is the method employed in some of the best ship building yards on all work requiring the greatest care. In ordinary work as well, the painter should use the utmost care to clean any rust from the surface of the iron before priming; for rust, containing moisture in itself, will spread, even though the surface of the iron is more or less efficiently protected from the action of the atmosphere by a coating of paint.—*Plumber and Decorator.*

#### MUNICIPAL DEPARTMENT.

##### LEGAL DECISIONS AFFECTING MUNICIPALITIES.

In *Edward Yanish v. City of St. Paul*, it was held that a city council, having general authority to establish streets, may, under peculiar circumstances, fix the grade for one side of the street on a materially different level or plane from that of the other side; and if this render it incidentally necessary to construct a retaining wall along the center of the street to support the earth on the higher grade, that may be done. Such an exercise of public rights is not an infringement of the rights of an adjacent proprietor whose property may be injured thereby.

If a city has power given by the legislature to grade streets, the common council or governing body has full discretion as to the exercise of the power. So it is held that the courts will not inquire into the necessity of the grading, or the refusal to grade, or whether a particular grade adopted, or a particular mode of executing the grade, is judicious. Possibly a plain case of abuse of any such power to the injury of a petitioner might under certain circumstances warrant an injunction, but the presumption is against such petitioner. Such functions are in their nature legislative. Hence the grade can be altered at will.

The power to grade streets is usually conferred on cities expressly, but if that be not so, it is usually implied in other grants of power. In Pennsylvania it is held that a city has an implied power to grade its streets when it is not expressly, granted such power. The power to pave streets includes grading and all other things preliminary and incidental to good paving.

"Paving," as applied to streets, means in law their "reduction to a certain degree of ascent or descent."

A municipal corporation is not liable for damages resulting from the establishment or alteration of the grade of a street unless the state law happens to establish such liability. It is not liable for any peculiar kind or method of grading, except as stated. There are several states, however, wherein abutting owners are compensated for injury from the change of grade of a street. If a statute fixes the grade of streets at their intersection, the streets between the crossings must conform to that grade.

In grading, shade trees may be removed if necessary, and the owner cannot get damages unless he shows negligence in the work. No liability exists independent of statute, if by grading the street a portion of the adjoining lot falls into the highway; or, on the other hand, the street is so cut down as to make the abutting lot difficult of access. This is true also when the abutting owner erected buildings or made improvements with reference to an established grade which was subsequently altered to the injury of such owner. But the city is liable if it obstructs streets by the approach to a bridge in a street, whereby the abutting owners' access is prevented, or water caused to flow and drain on his property.

Although many states have provisions relating to these topics, I might add that such injury from grading is not considered to come under the constitutional provision