TORONTO, ONT.—The Robert Simpson Co. are now pulling down two store buildings facing on Yonge street for the purpose of erecting on the site an addition to their large departmental store. Burke & Horwood are the architects.—The plans of J. A. Ellis, architect, of this city, have been accepted for a new central school at Welland, for the erection of which tenders will be invited this week.

The Department of Public Works at Ottawa invite tenders up to Tuesday, 23rd inst., for extending and repairing the west pier at the eastern entrance to Toronto harbor. This is an extensive work, and an accepted cheque for $10,000 is required with each tender. Plans at office of E. B. Temple, resident engineer, Confederation Life Building.—The Minister of Public Works is considering the advisability of erecting a building for the annual provincial fat stock show.—A meeting to consider the advisability of establishing a college of domestic science in this city was held last week. Mrs. Coleman Stuckert, the originator of the scheme, stated that they had a suitable site for the building in view and that many prominent people had promised financial aid.—A deputation, composed of Rev. Dr. Potts, Rev. Chancellor Burwash, and others, interviewed the Premier a few days ago with reference to the establishment of a women's residence in connection with Victoria University, on a strip of land lying north of the present building. The regents of the university have the sum of $50,000 to proceed with the scheme, the gift of the late H. A. Massey.—At the next session of the legislature Hon. John Dryden, Minister of Agriculture, will probably bring in some legislation in connection with the establishment of cold storage plants in different parts of the province.—Plans have been completed for the new wharf, freight and baggage sheds and offices to be built for the Richelieu & Ontario Navigation Co. and Hamilton Steamboat Co., and tenders for the work will be invited at an early date. The wharf will be 357 feet long and 54 feet wide, and will support a shed 264 × 54 feet. The cost will be about $22,000. The Niagara Navigation Co. purpose making alterations and improvements to their present quarters at foot of Yonge street, and it is said that negotiations are pending with the C.P.R. for the erection of an elevator in the same vicinity.—McMurrich, Coatsworth, Hodgins & McMurrich are solicitors for the Huntsville & Lake of Bays Railway Co., which purposes constructing a railway from Lake of Bays to Peninsula Lake and Hollow Lake.—Building permits have been granted as follows: F. B. Poucher, two pair semi-detached two-storey and attic brick dwellings, west side Parliament street, near Duke, cost $8,000; John Taylor & Company, one-storey brick boiler house and two-storey brick stable, Front street east, near Beachell, cost $3,500 (Jas. Crang, builder; J. W. Siddall, architect); F. A. Snider Estate, four-storey brick and cut stone warehouse, 78 Bay street, cost $6,000 (Symons & Rae, architects; Wickett Bros., builders).—Ald. Spence has given notice that he will move in council that the city engineer be requested to report upon the most desirable plan for an overhead bridge crossing the C.P.R. tracks at the foot of Yonge street.

FIRES.

Macdonald block at Ridgetown, Ont., occupied by H. M. Green's hardware store, P. Baddin's drug store and several offices; loss on building, $15,000.—Burnier & West's drygoods store on St. Catharines street, Montreal, damaged to the extent of $30,000.—Brick block at Dundalk, Ont., owned by J. O. Morgan; loss on building, $3,000.—Residence of Wm. Corwell, at Eardley, Ont.; loss $1,200.—Stave mill at Woodslee, Ont., owned by H. C. Rees; loss $3,000.—Saw mill of J. McDermott at Old Fort, Ont.; loss $2,500, no insurance.—Residence of Frank Kirkpatrick, about four miles from Bradford, Ont.; loss $3,000, insurance $900.

CONTRACTS AWARDED.

BEAR RIVER, N.S.—The contract for removing piers at mouth of Bear river has been let to O. S. Clarke.

MARYSVILLE, N.B.—Contract for building post-office has been let to Joshua Limerick, of Fredericton.

REVELSTOKE, B.C.—W. A. Nettle has secured contract for building fire hall, at $1,681. The galvanized iron roof will be furnished by W. M. Lawrence.

MONTREAL, QUE.—The Harbor Improvement Committee have recommended the acceptance of the following tenders for supplies: Cut stone coping and cut stone for ashler, T. Lessard; broken stone, A. & H. Lionais; cement, St. Lawrence Portland Cement Company; sand, Montreal Sand & Gravel Company.

PORTLAND CEMENT MORTARS.

Since about the year 1886 numerous experiments have been undertaken with the object of definitely ascertaining the effect produced by variations in the volumes of mortars composed of Portland cement, one of the greatest constructive materials ever placed at the disposal of the architect, the engineer, and the builder. It was not, however, until very recently that the experiments were extended to the investigation of the same subject in connection with armoured concrete and masonry, which have been applied to so many purposes with perfect success as to constitute a veritable new type of construction. It should be mentioned that the introduction of the metallic element in the mass seriously complicates the whole question and gives rise to the development of internal stresses. Evidently, therefore, in order to thoroughly study the matter, it became imperative to conduct the experiments upon a duplicate system, so as to institute a comparison between armoured and non-armoured specimens, which has just been effected by M. Considere, with results that are both sufficiently interesting and instructive to deserve a short notice and description. The test specimens took the form of prisms armoured and unarmoured. Some were immersed in clean water, and others exposed to the action of the open air, and all variations of their length were recorded by means of a micrometer screw reading to 0·0004 in.

Commencing with the test samples placed in water, four were manufactured, their dimensions being 2·4 in. by 1 in. by 2 ft. in total length. Two of these prisms were composed of pure cement mortar, and the other two consisted of cement and sand in the proportion by weight of nearly one of the former to two of the latter, which is a very usual admixture for specimens made for the purpose of testing. One prism of each separate pair was unarmoured, and the others reinforced by the presence of a rod of iron 0·4 in. in diameter passing through its vertical axis. One of the first results established was that the elongation of the prisms was not a matter of mere haphazard, but that their extensions obeyed a regular law, accompanied by a daily diminution in the rate of elongation the longer the specimen was under trial. These experiments lasted for two months; but by comparing them with similar tests carried out during some years both in France and Germany, the following conclusions may be fairly relied upon as furnishing a good average satisfactory conclusion. The elongation of the sample pieces of pure unarmoured Portland cement mortar immersed in clean water amounted to 0·02 in. in one month to 0·04 in. in a year, and to 0·08 in. at the end of three years. It should be observed with attention that the dilation of the specimens composed of sand and cement were three times less than that of those of pure cement. It was also ascertained with respect to the armoured specimens that the metallic rods acted like regular dynamometers, and registered very faithfully by their extension the amount of stresses which brought about their elongation. The whole investigation demonstrated that the metallic material in the prism immersed in water take a far greater portion of the tensile stresses, which is just what is constructively wanted in the combination, than is usually allowed for. There can be no doubt that this extension, which places the metallic rods, bars, or whatever section may be employed under an initial tensile stress, is of great advantage to this compound type of construction. It imparts to mortar of pure cement a superiority over all others in the case of armoured samples under water, owing to the fact that its dilatation is considerably in excess of that of all other mortars and concretes.

We have now to consider the case of the prisms of simple mortar and cement exposed to the action of the air, which, instead of expanding, are subject to contractive forces, and, in addition, do not follow any regular law or what is termed any mathematical series. But, in contradiction to these examples, the results obtained for armoured prisms of pure cement demonstrate unmistakably that they contract in accordance with a well-defined and regular law, and that they differ in this respect from the unarmoured cements. It has also been proved that the internal tensile stress, which is developed without any apparent signs of injury in a prism of cement by the action of the metallic combination with it, approaches very closely to the breaking stress of an armoured specimen of the same age. It is evident, therefore, that the armoured concrete, to use its best known term, possesses certain qualities which are not to be found in the ordinary simple material. It it were not so, there would not have been so many examples of large span bridges constructed abroad upon that system, and it is a little difficult to account for the fact that hitherto the principle has not been applied to any extent worth mentioning among ourselves.—C. T., in Building News.

Chas. Nardomne, contractor, Longueiul, Que., is reported to have assigned.