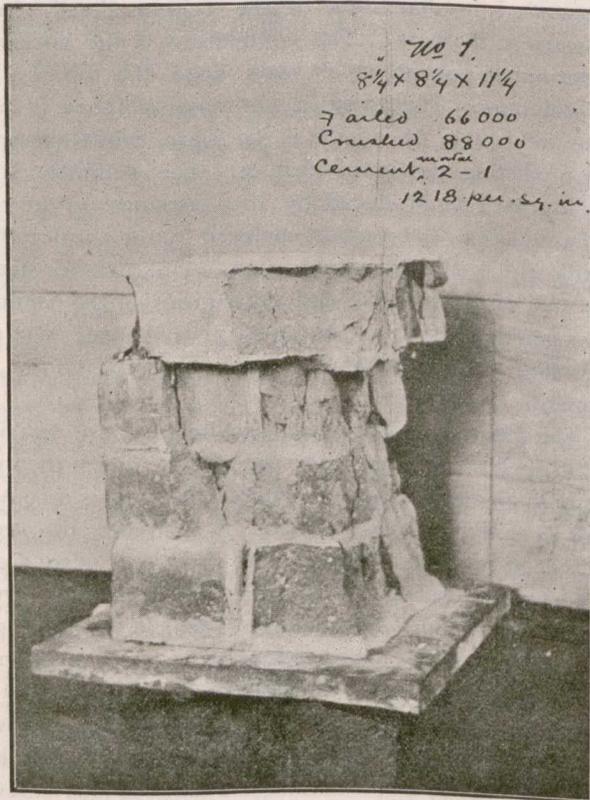


### TESTS OF CANADIAN AND ENGLISH BRICKWORK.

CANADIAN architects and builders in common with manufacturers and dealers, have been placed under obligation to the authorities of the School of Practical Science, Toronto, and the School of Technology in connection with McGill University, Montreal, by the series of tests of native constructive materials which in recent years have been successfully carried out in the laboratories of these institutions. As a result of these tests



there is now available considerable detailed information regarding the variety, character and strength of British Columbia timber, Canadian native and Portland cement and Canadian building stones the tests of the latter having been carried out and the results published under the direction of the Ontario Association of Architects.

In a recent number of this journal was published a table showing results of tests by the Public Works Department of Ontario of the absorbent properties of pressed bricks from the various manufactories throughout Ontario. In this number are given illustrations and some particulars of tests of common brick conducted by Mr. C. H. C. Wright and his assistants at the School of Practical Science, Toronto, at the commencement of the present year. The bricks employed in the tests were procured from four different brick yards in the neighborhood of Toronto, viz., the Kingston road, the Humber, Yorkville and Carleton. Before being built into piers, the bricks were individually tested for absorption by being immersed in water for thirty minutes.

The piers were built by a skilled bricklayer, who also provided the lime mortar, which consisted of  $4\frac{1}{2}$  yards of Bloor street coarse sand to ten barrels of lime, this being about the proportion of two parts sand to one part lime. The cement mortar was mixed in the proportion of three parts sand to one part of good Portland cement.

The piers were built and laid aside to harden in the mechanical laboratory of the School of Practical

Science, in a temperature which averaged about  $60^{\circ}$  Fahrenheit, and were prepared for the test as follows: A thin mortar of neat cement was spread on a smooth cast-iron plate, and the pier placed upon the mortar and left until the cement hardened. The bottom bed was then trimmed off flush with the sides, the pier placed on the testing machine, and a layer of neat Portland cement mortar was placed on top, the pier was slid under the head of machine, and the head was brought to its bearing while the mortar was yet soft. This method ensured two parallel beds and gave a uniformly distributed stress on the pier. The load was applied slowly and continuously, until complete failure of the pier occurred.

The results of the tests are as follows:—

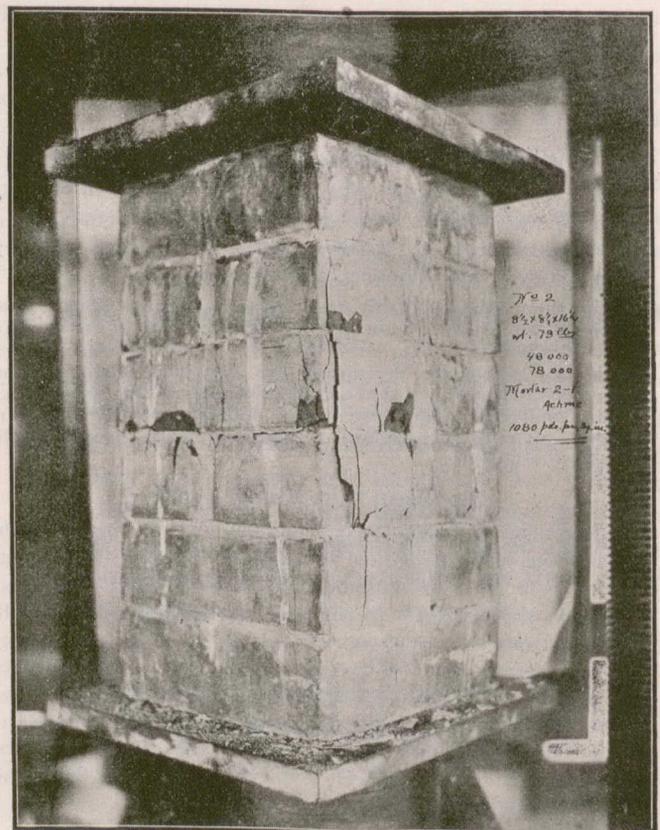
Pier No. 1.—Common brick, 4 courses; dimensions,  $8\frac{1}{2} \times 8\frac{1}{2} \times 11\frac{1}{4}$ " high; ult. strength, 88,000 pounds; cement mortar, 2 to 1.

No. 2.—Common brick, 6 courses; dimensions,  $8\frac{1}{2} \times 8\frac{1}{2} \times 16\frac{1}{4}$ " high; ult. strength, 78,000 pounds; cement mortar, 2 to 1.

No. 3.—Common brick, second quality, 5 courses; dimensions,  $8\frac{1}{2} \times 8\frac{1}{2} \times 14\frac{1}{4}$ " high; ult. strength, 70,000 pounds; cement mortar, 2 to 1.

No. 4.—Common brick, first quality, 8 courses; dimensions,  $8\frac{1}{2} \times 8\frac{1}{2} \times 22$ " high; ult. strength, 128,000 pounds.

Our knowledge of this important subject is further augmented by an elaborate and carefully conducted



series of tests of English brickwork carried out under the direction of the Science Standing Committee of the Royal Institute of British Architects, the results of which have recently appeared in the British architectural journals. Strange as it may appear these tests are said to afford the only accurate information available upon the subject. The method adopted was similar to the Canadian one, viz., to first test the individual bricks and afterwards test piers 18 inches square and 6 feet in height, composed of similar bricks, some built in mortar and some in cement. A specially designed testing