

Nov. 29th. 1922.

Vibration of Buildings due to  
Street Traffic.

Dr. F. D. Adams,  
Dean Science Faculty.

Dear Dr. Adams:

During the construction of the Mount Royal Tunnel and for over a year after its completion I carried on an extended series of tests for the Company with a view to determining the effect of street and subterranean traffic on buildings. Observation stations were established at a number of points in the neighbourhood of the tunnel, namely, on Cathcart Street near its intersection with McGill College Avenue, at the corner of McGill College Ave. and St. Catherine Street, at several points along McGill College Ave. and Mansfield Street, at several points on Sherbrooke Street, at the old lodge at the University gate, in the Presbyterian College and on upper McTavish Street.

The above stations were selected in order to test different kinds of soil etc. and in the majority of cases tests were made in the basement, on the first floor and on one of the higher floors of each building concerned. A large number of tests were also made on side walks and on the street surface in the neighbourhood of the various observation stations.

The instruments used in the above tests were the Ewing Seismograph belonging to the University and four Mainka Tromometers which I had specially built in Strassburg for the purpose. Over a thousand records all told were taken by me and my assistants and the results of the experiments together with the original records etc. were turned over to the Canadian Northern authorities, from whom they can no doubt be obtained if desired. A summary of the results was submitted to the Royal Society of Canada and a paper on certain scientific aspects of the work was prepared by my senior assistant Mr. W. G. Mitchell, M.Sc. as part of his work in the Graduate School.

The result of the investigation referred to may be summarized as proving very conclusively:-

1. That street traffic in all of the cases investigated caused much heavier vibration than subterranean traffic.