

2. That the vibrations produced even by heavy street traffic do not injure the buildings along the street provided they have good foundations and are well built, but that it might and in some cases actually did damage buildings in which the foundations were inadequate or in which they had begun to decay.
3. That while the buildings themselves are not injured by the traffic, their use may be and often is seriously interfered with by vibration passing from the street to the walls and up through them to the floors etc. of the building.
4. That in general the vibrations are least in the basement of a building and greatest in the higher storeys, and in many structures this increase is very marked and an almost negligible vibration in the basement may lead to noticeable and annoying vibrations on the upper floors.
5. That of the various kinds of traffic to which our streets are liable, the least harmful is that of motors carried on pneumatic tires, and that the most harmful is that of street cars or heavy vehicles with solid tires.
6. That the character of the ground through which the street is run and on which the foundations are built determines to a considerable extent the frequency and amplitude of the vibrations.
7. That in connection with the above the character of the street paving and particularly the condition of its surface has a very great influence on the amplitude of the vibrations and that so far as street car or railway traffic is concerned the condition of the track is of the utmost importance.
8. That the distance from the street to the building has a great influence on the amplitude of vibrations in the building itself, and while traffic even so far away as from Sherbrooke to St. Catherine Street is noticeable, the effect even of heavy traffic is minute at less than one half that distance, whereas it is very marked when the vehicles are passing directly in front of the building under test.

The above observations make it possible to predict with certainty what will happen to existing and prospective University buildings in the neighbourhood of University Street if a street car line is built on that thoroughfare, and particularly on the part of the street between Sherbrooke and Milton where the sub soil is unstable.

It is improbable that the buildings will be injured structurally even by heavy street car traffic, but it is quite certain that even buildings of heavy construction will be affected appreciably by vibration and that this vibration will be sufficiently serious to interfere with the use of delicate chemical balances, optical instruments and many other kinds of precise apparatus of the kinds used in physical, chemical and biological laboratories. So long as the street car tracks are new and the rails in perfect alignment the passage of street cars may not produce more serious vibrations than those due to heavy waggon and