CHAPTER 7
STRUCTURAL HEALTH MONITORING SYSTEMS FOR TALL BUILDINGS

Health monitoring systems shall be established in all tall buildings in order to monitor the real behaviour of tall building structural systems, to improve the existing seismic and wind codes and to predict the level of seismic damage in a tall building immediately after the ocurrence of an earthquake. A typical health monitoring system shall have a minimum 8 acceleration sensors distributed in the building, as shown in **Fig.7.1**.

(a) Acceleration sensors shall be syncronized and connected to a 24-bit digital recording system equipped with a GPS card. Recording system shall record the building vibrations continuously and transfer the data in real time to a prescribed centre via internet, modem or similar channels. Sufficient battery and disk capacity shall be provided against electricity and communication shortages, which will help the system operate and store data for at least a period of one week.

(b) Technical specification of sensors and recording systems shall be provided by Dubai Municipality.

(c) Vibration records shall be transferred in real time to the *Structural Health Monitoring Centre* of Dubai Municipality. The records shall be stored at this centre as well as by the building owner.

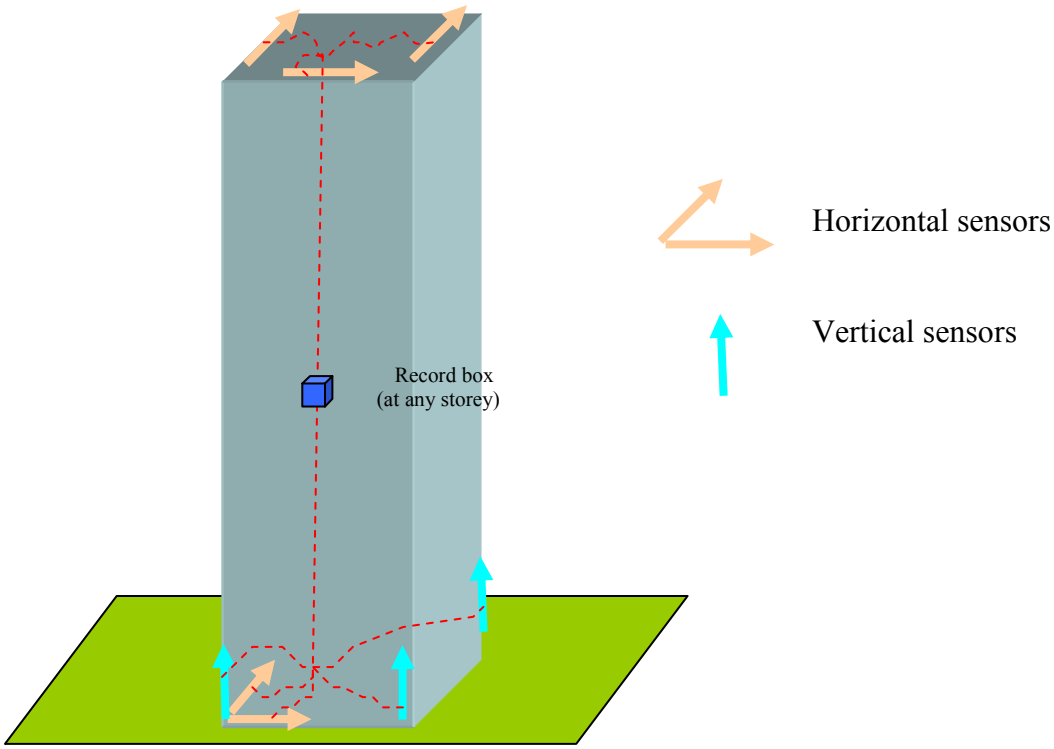

Figure 7.1