



Consultancy Work for Vibration Testing and Human Comfort Criteria Assessment

*By:
Dr. Goh Lyn Dee*

This project was headed by Dr. Goh Lyn Dee from the Faculty of Civil Engineering UiTM Cawangan Pulau Pinang with a collaboration with Smart Sensing Technology Sdn. Bhd. and a team from Faculty of Civil Engineering, Universiti Tun Hussein Onn, to investigate the vibration issue at a four storey office building. The users in the building were complaining that they felt uneasy/dizziness when there were human activities on the affected areas as the floor vibrated even an average weight man was walking on the floor. Thus, the vibration testing was proposed to determine the vibration behaviour of the floor slabs and the human comfort criteria was assessed. There were three types of tests conducted at the site; i.e. the ambient tests, the shaker tests and the walking tests. To capture the responses of the floor in all directions during the tests, the accelerometers were installed in all directions. The project was divided into two phases. The vibration tests were conducted before a strengthening work was carried out in the building, and after the strengthening works were completed. The natural frequencies of the affected floors in the building were increased by a range of 25% - 28% after a strengthening work was carried out. This project was a success as the client was satisfied with the outcomes of the project.