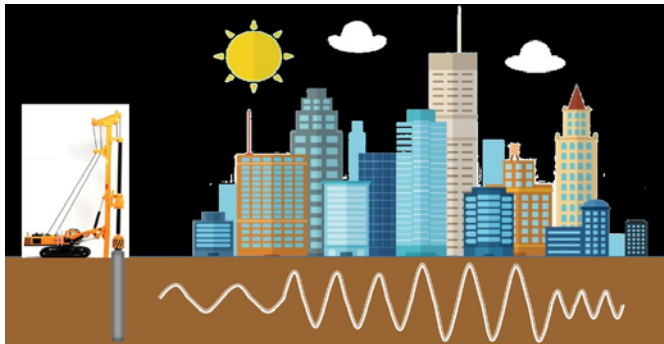


# A Cloud-based System for Vibration Impact Monitoring and Assessment in Hospital Construction Projects

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Construction activities often generate excessive ground-borne vibrations, which has great adverse impact on structure safety, human comfort and equipment functionality insider nearby buildings. Particularly in numerous recent hospital expansion or redevelopment projects, Hong Kong's construction industry is facing a great challenge in accurately predicting vibration level and reliably preventing the exceedance of vibration limits of vibration sensitive medical equipment.



In view of this challenge, a PolyU's research team developed a novel cloud-based system for real-time vibration monitoring, assessment, and alarm to facilitate local contractors. This system integrates cloud computing and remote data transmission technologies. All monitoring data is transferred to cloud platform automatically and analyzed by high-performance cloud computing software. A web interface is proposed to display vibration level and issue various alarming signals to users without time delay. The whole system offers autonomous operation without human interfaces.

The cloud-based vibration impact monitoring and assessment system is an innovation to the traditional construction industry. This application provides a once-for-all solution for construction-induced vibration monitoring in hospital-related construction projects, which not only offers more accurate vibration information, but also makes the simultaneous construction and medical service feasible. It helps to avoid enormous financial loss due to tentative shutdown of hospital operation.

