P-CON
INSTRUMENTATION

REAL-TIME Geotechnical Instrumentation & Monitoring Specialist Firm In Malaysia

P CON Instrumentation Sdn. Bhd.
[Company No.: 202001008760 (1365080-H)]

Introduction

P CON Instrumentation Sdn. Bhd. is a geotechnical instrumentation and monitoring specialist firm in Malaysia providing **REAL-TIME** Geotechnical Instrumentation and Monitoring services for: -
-Main and Sub-contractors.
-Properties owners whose own properties are near the heavy construction activities.
-Building or infrastructure maintenance teams.

In-situ site construction monitoring exercises have been one of the most resource-intensives activities in Malaysia. High equipment cost and complicated operating procedures leads to impracticality for frequent and detailed data collection for reliable analyse of the soil conditions.

Leveraging from the Internet-of-Things (IoT) infrastructure, P CON Instrumentation Sdn. Bhd. devices 3G-enabled communication units specifically to the existing geotechnical equipment, for e.g. optical levels, geophones, tiltmeter, displacement sensors. The communication devices continuously collect data from the geotechnical equipment and send the data to the computer/ handphone over the Cloud architecture, to achieve REAL-TIME monitoring application.

These REAL-TIME monitoring data is not limited for accuracy and timely soil condition estimation, but also can be used as a protection mechanism, whereas early warning can be provided if abnormally is detected from the sensors.

Our Services

REAL-TIME Geotechnical Instrumentation & Monitoring

- Structural, Ground & Building MOVEMENT & SETTLEMENT Monitoring.
- Structural & Ground VIBRATION & NOISE Monitoring.
- Structural TILT & ROTATION Monitoring.
- Structural CRACKS Monitoring.
- Structural VERTICALITY Assessment.

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Vision

Digitalize and automate all the geotechnical monitoring to provide more effective solutions than the existing practices.

Mission

To provide more resource-effective geotechnical monitoring services to construction sites and existing buildings

The Team

Dr. Chin Hong Lim
Founder & CEO
Ph.D in Mechanical Engineering
Specialized Structural Vibration Monitoring & Instrumentation

Dr. Huei Ee Yap
Co-Founder & CTO
Ph.D in Mechatronics Engineering
Founder of LP Research Pte Ltd, Tokyo
Specialized in Hardware & IoT

Dr. King Hann Lim
Co-Founder
Ph.D in E&E Engineering
Specialized in Artificial Intelligence & Image Processing

Wen Loong Lim
Co-Founder & PM
Mechanical Engineer, 8 years experience in Product Design, Research, Development, QA

Ir. Teng Soon Ng (Eddie)
Associate Partner
BSC (Hons) Civil Eng, University of Aberdeen, P.Eng, I.EA, CPEng, NPERm Int PE

P CON Instrumentation Sdn. Bhd. is currently co-spearheaded with Dr. Lim Chin Hong, researcher and entrepreneur in construction monitoring services and sensors for more than 6 years in Malaysia. He and his teams have deployed **REAL-TIME** geotechnical monitoring sensors for MRT system, LRT system and IOI properties groups in Malaysia.

Ir. Teng has more than 8 years of experience in geotechnical consultancy works for mining industry in Australia, Indonesia, UK and as well as in Malaysia. Currently he focuses on project management and consultancy works in geotechnics, structural assessment and rehabilitation (or Forensic Investigation).

Our Expertise

- REAL-TIME Geotechnical Instrumentation & Monitoring

1. MOVEMENT & SETTLEMENT Monitoring (Structural, Ground & Building)
3G-enabled high resolution cameras are attached on the existing optical levels to detect any minute (vertical and horizontal) movements of the target buildings or grounds. The camera takes images of the targets via the high precision optical level, and uses image processing algorithm to compute the vertical (or settlement) and horizontal movements of the target. Multiple dumpy levels can be linked together to give continuous levelling of the targeted sites. The equipment also have the battery-powered option for rural area monitoring, which can last for 6-9 months of continuous monitoring without charging.

2. VIBRATION Monitoring (Structural & Ground)
3-directional geophones are used to measure and detect seismic grade vibration on the target structure. The vibration is measured in mm/s, and range from 1Hz to 100Hz vibration frequency. Once the measured vibration velocity exceeds the limits recommended by the local authority, for e.g. Department of Environment Ministry of Natural Resources and Environment Malaysia, the sensors send a data and inform the stakeholders via emails. Optional sirens and alarms can be attached to the sensors to provide onsite warning where required.

3. NOISE Monitoring
The main aim of measurements of environmental noise levels are to assess the existing noise climate. The scope of this exercise includes taking the background, and in-situ (ambient) sound pressure levels at a receiver location(s) and/ or at the real property boundary of a noise source(s) prior and during project developments. Outdoor noise measurements at near buildings are carried out at places where the noise to which a building is exposed is of interest.

4. TILT and ROTATION Monitoring (Structural)
High precision low noise MEMS inclinometers are connected to our in-house developed 3G-enabled data logger to provide continuous measurement of the structural tilt and rotation. Battery-powered unit is also available for rural area monitoring where power supply is not available.

5. CRACKS Monitoring (Structural)
Structural crack is one of the most preliminary sign for deterioration of structural integrity. We extended our service to provide a REAL-TIME solution for monitoring of wide and very wide cracks (> 2cm) on buildings and infrastructures. The crack sensor is placed perpendicular to the crack line, and perpetually monitors the crack width. Once the crack width increases and reached the safety limits, the sensor will communicate to the Cloud server and hence trigger escalation the respective stakeholders.

6. VERTICALITY Monitoring (Structural)
The verticality assessment/ monitoring works should be examined at the time of building up construction at various stages like during setting up vertical formworks of columns and transmitting levels up successive floors of multi storey structures. We leverage from the high-accuracy MEMS-type verticality sensors, to be attached on the target surfaces to measure the minute deflection/tilt of the structure. The verticality is also 3G enabled and can provide 2-axis verticality readings on real-time basis.

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Why Us?

We have large number of trained personnel to perform design & planning, deployment and site data collections in REAL-TIME monitoring for soil, ground and buildings for our clients. Unlike the other service providers in Malaysia, the sensors were optimized to be able to operate without any human intervention for 6-9 months in the harsh outdoor environment, for e.g. construction sites, MRT tracks and residential apartments. All the sensors can be controlled remotely via 3G connection, to provide the soil measurement data with the least lag time.

Contacts

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REAL-TIME Monitoring
to save lives, money & properties

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