



Independent Quality Assurance

Non Destructive Testing 

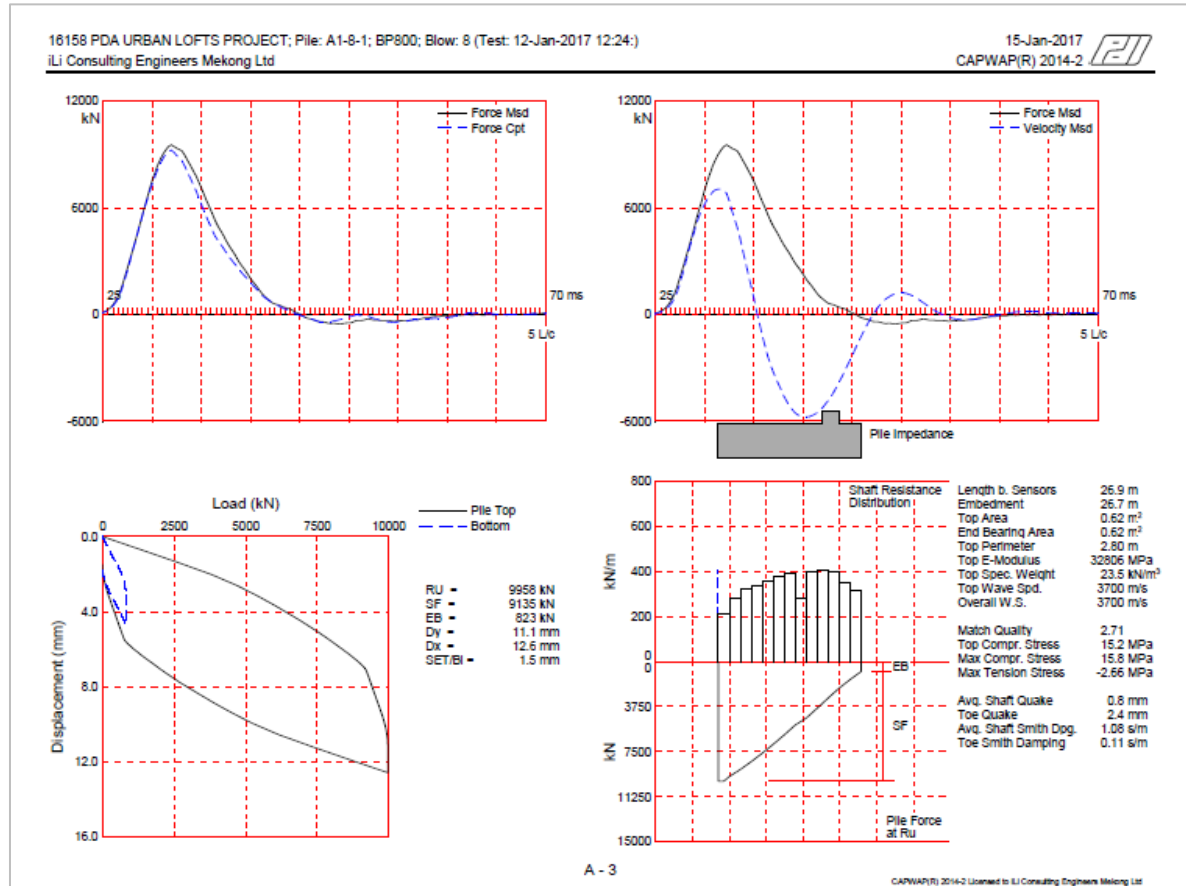
Inros Lackner Cambodia is an ***independent*** civil engineering service provider. We offer the following QA services:

1. Quality assurance for deep foundations
 - High-strain dynamic testing by Pile Dynamic Analyzer (PDA)
 - Low-strain dynamic testing by Pile Integrity Tester (PIT)
 - Pile integrity testing by Cross-hole Sonic Logging (CSL)
 - Static pile load tests
2. Monitoring of deep excavations and lateral supports
 - Control surveys of ground and building settlement markers
 - Monitoring of movements by inclinometer and tilt meter
 - Monitoring of groundwater levels and pore water pressure
 - Strain monitoring in lateral support struts
3. Quality assurance for reinforced concrete works
 - Control surveys
 - Compressive strength testing of concrete
 - Locating of reinforcement bars, ducts and voids
 - Tensile strength testing of concrete, floor finishes and large construction fittings

1. QA for Deep Foundation



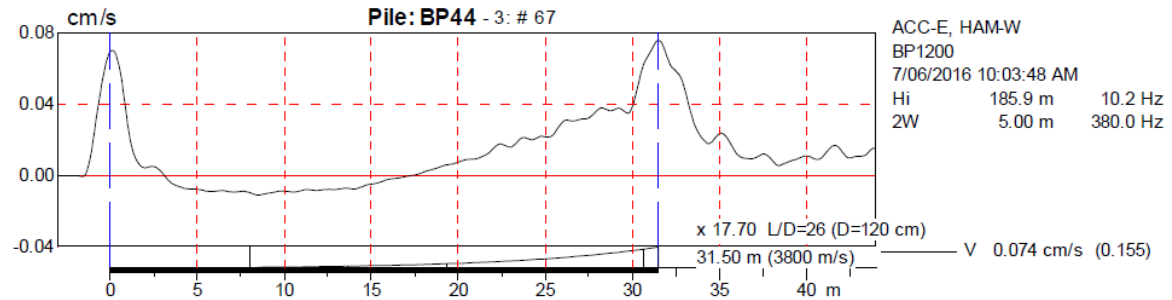
1. Quality Assurance for Deep Foundations



- Assessment of pile bearing capacity
- Verification of pile integrity

High strain dynamic testing by Pile Dynamic Analyzer (PDA)

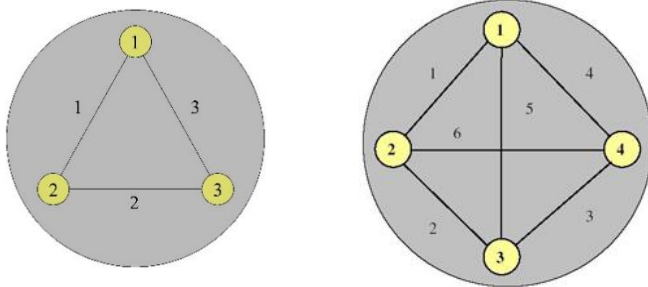
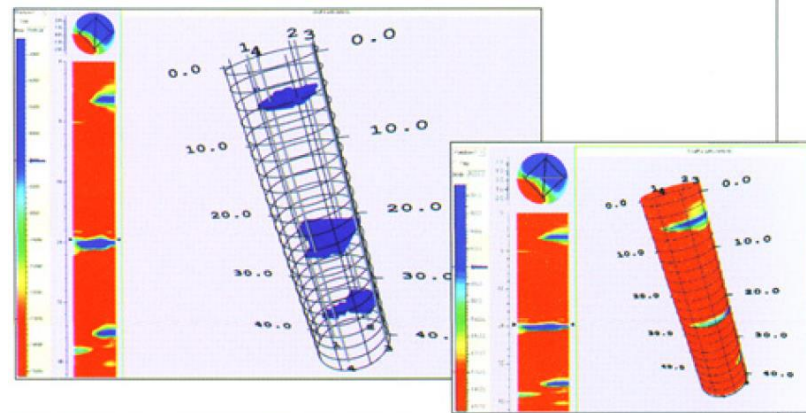
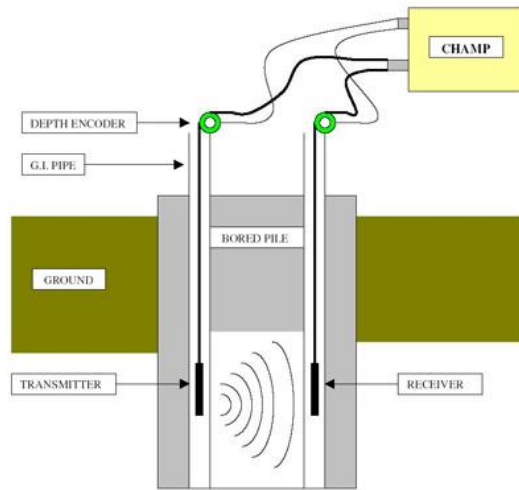
1. Quality Assurance for Deep Foundations



Fast verification of pile integrity

Low strain dynamic testing by Pile Integrity Tester (PIT)

1. Quality Assurance for Deep Foundations

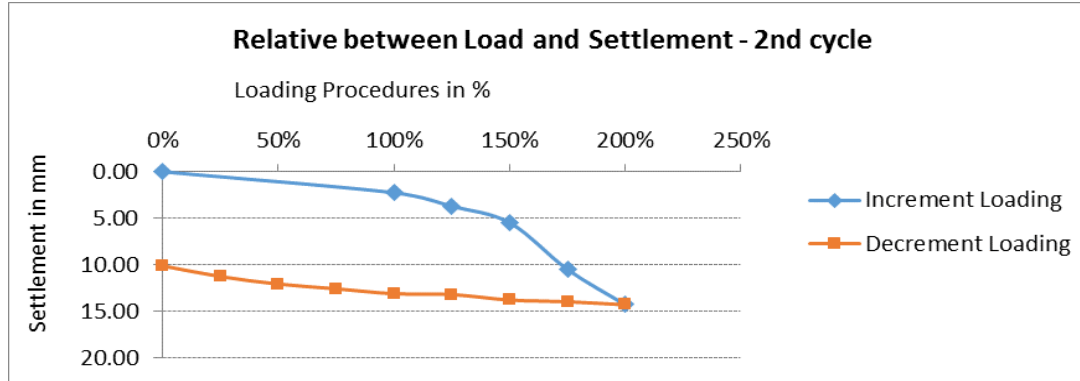


Verification of pile integrity



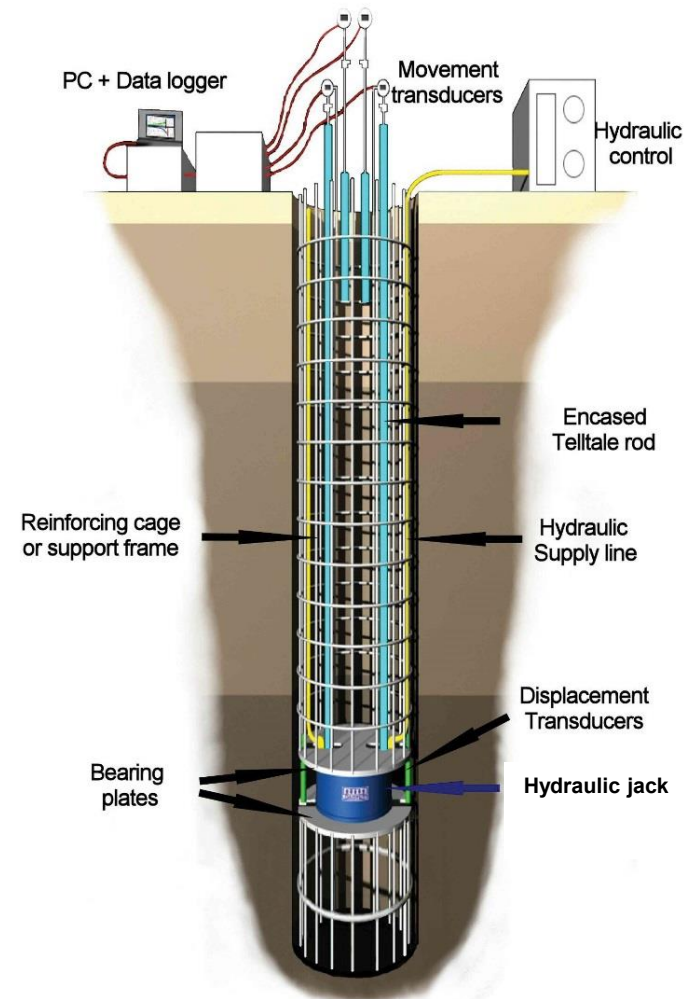
Low strain pile integrity testing by Cross-hole Sonic Logging (CSL)

1. Quality Assurance for Deep Foundations



Static pile load tests

1. Quality Assurance for Deep Foundations

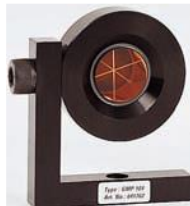


Static pile load tests, Bi-directional tests

2. Monitoring of Deep Excavations and Lateral Supports

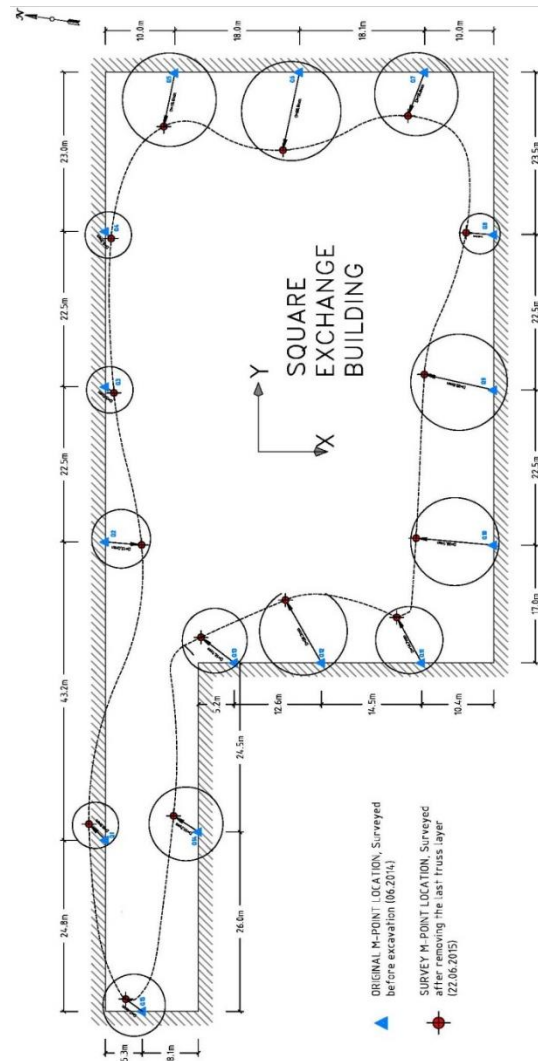


2. Monitoring of Deep Excavations and Lateral Supports



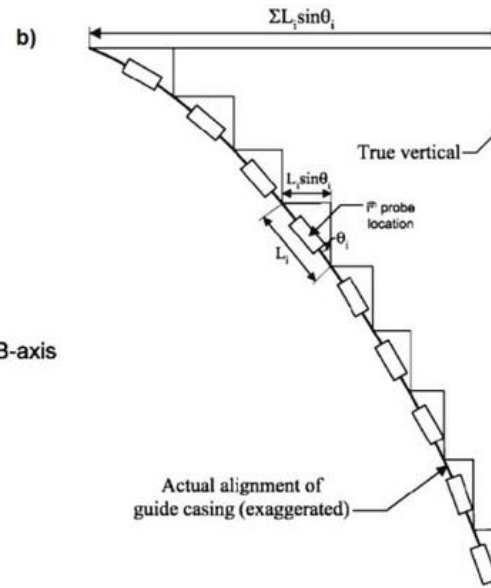
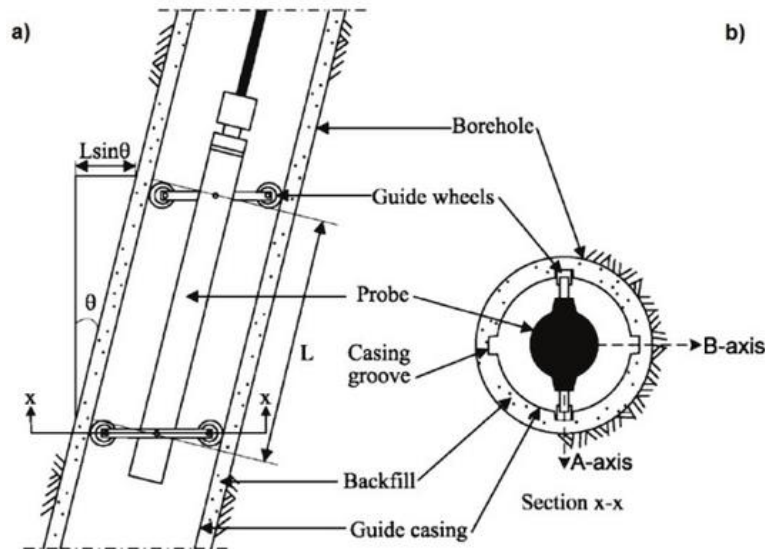
Control surveys of ground and building movement markers

2. Monitoring of Deep Excavations and Lateral Supports



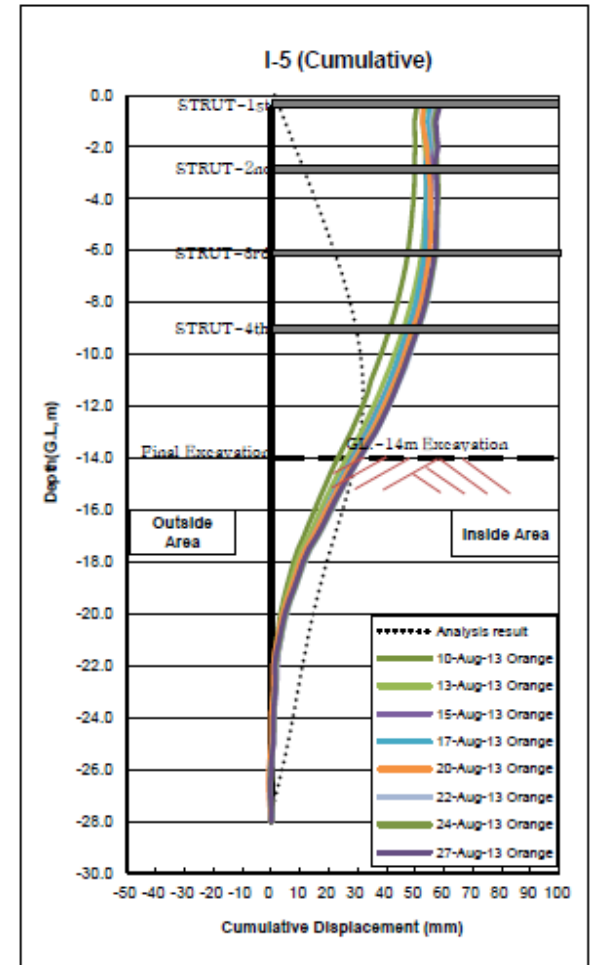
Control surveys of ground and building movement markers

2. Monitoring of Deep Excavations and Lateral Supports



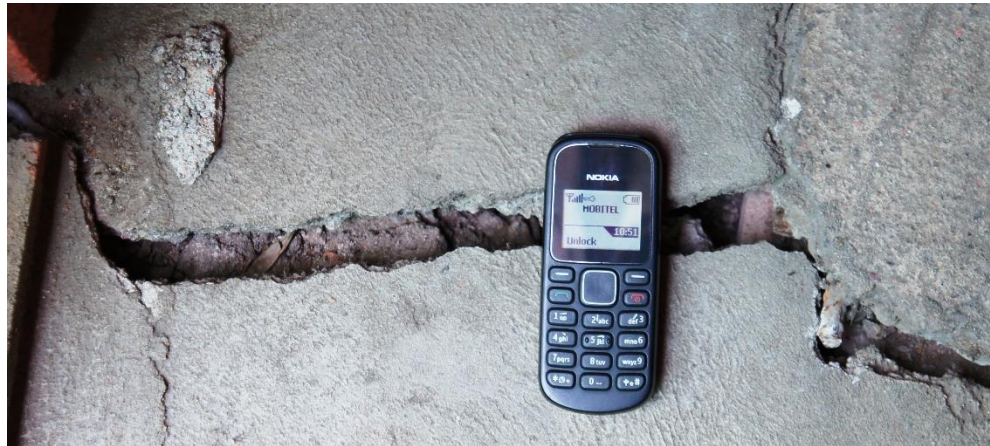
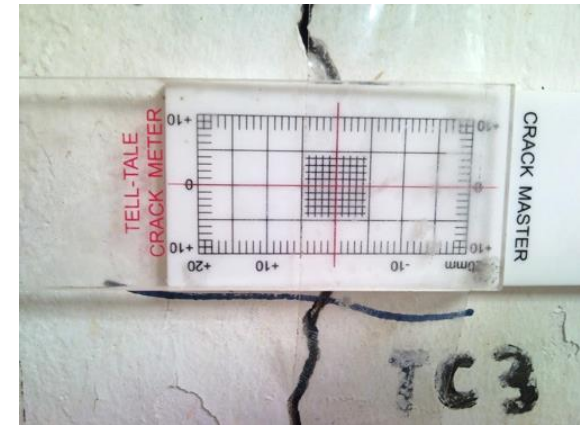
Monitoring of movements by inclinometer

2. Monitoring of Deep Excavations and Lateral Supports



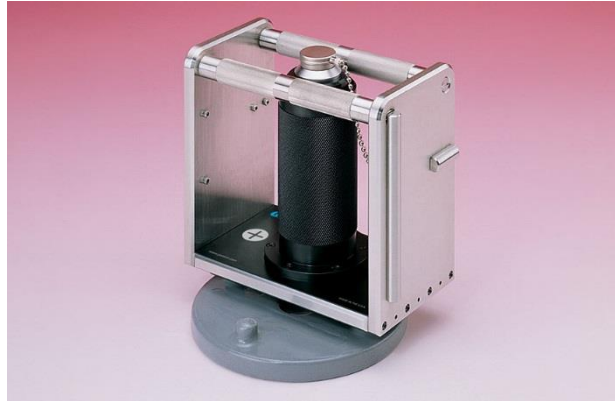
Monitoring of movements by inclinometer

2. Monitoring of Deep Excavations and Lateral Supports



Monitoring of movements by inclinometer

2. Monitoring of Deep Excavations and Lateral Supports

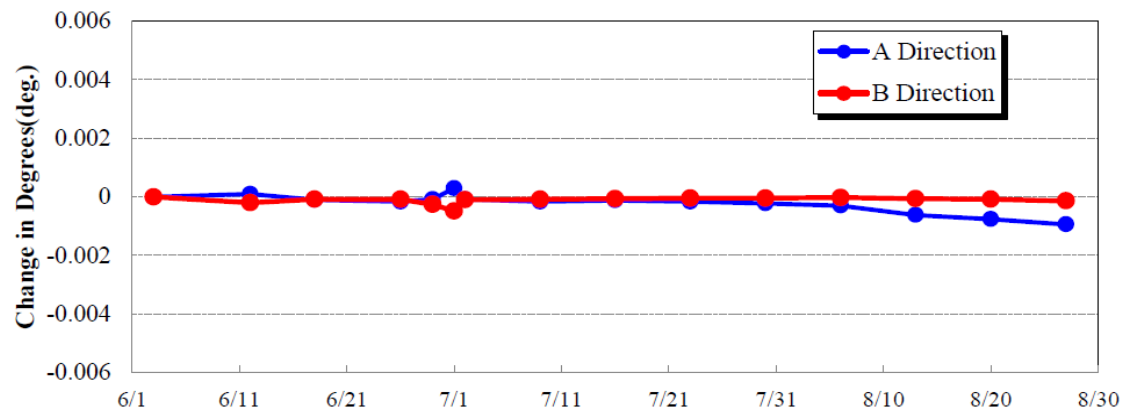


ACLEDA Bank Plc. Headquarters Building Extension Project

Installed Date 2-Jul-13

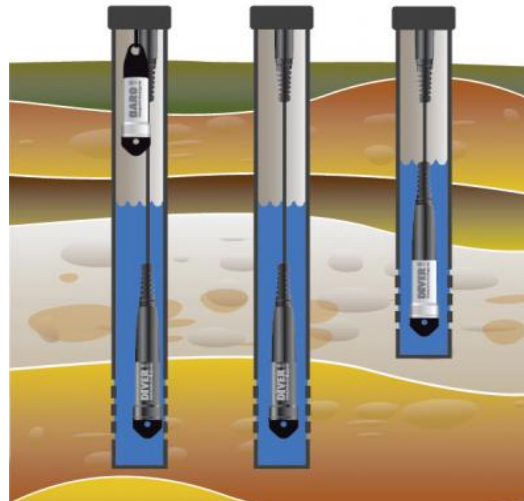
Location :

South MOI



Monitoring of movements by tilt meter

2. Monitoring of Deep Excavations and Lateral Supports



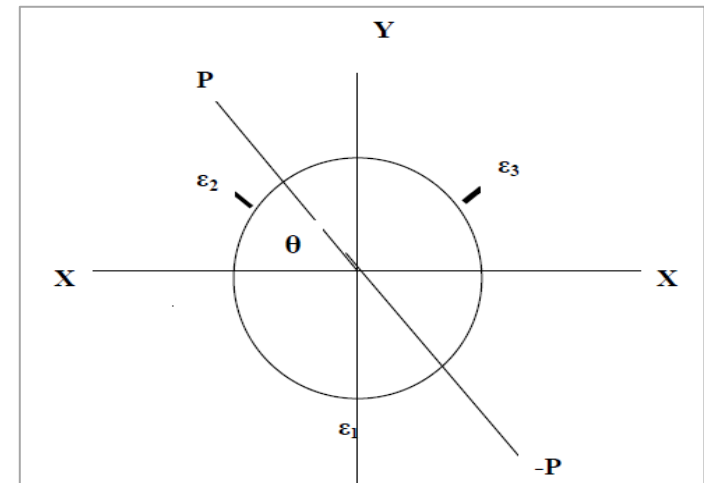
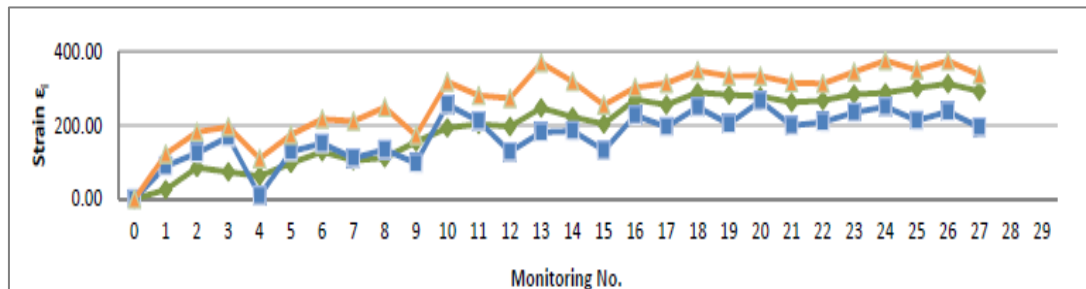
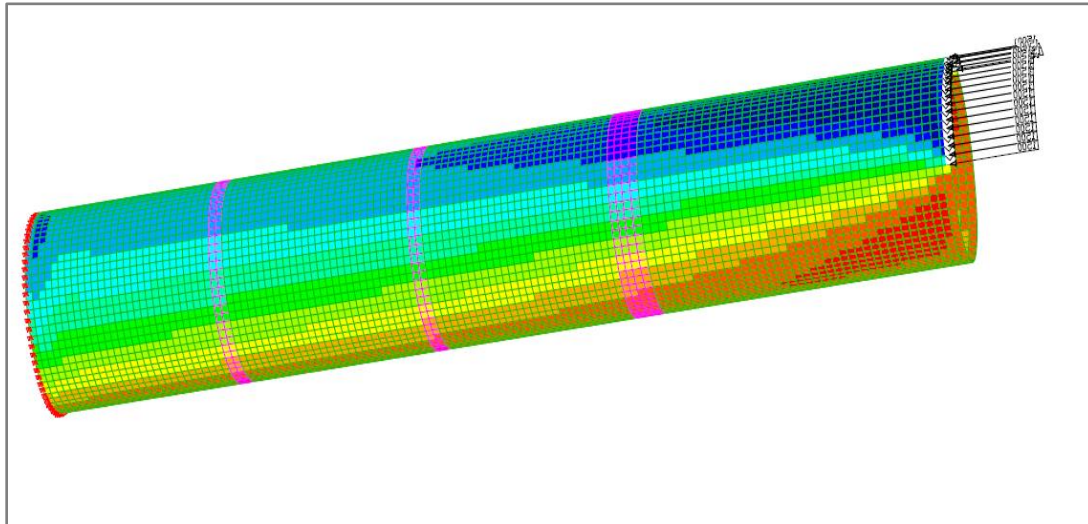
Monitoring of groundwater levels and pore water pressure

2. Monitoring of Deep Excavations and Lateral Supports



Strain monitoring in lateral support struts

2. Monitoring of Deep Excavations and Lateral Supports



Strain monitoring in lateral support struts

3. QA for Reinforced Concrete Works

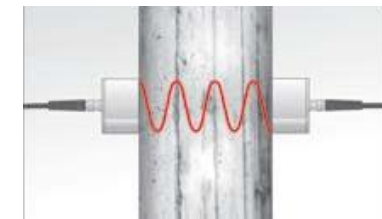
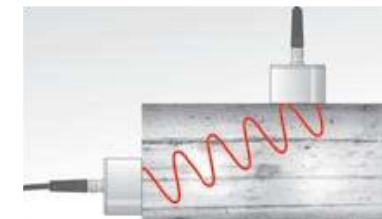
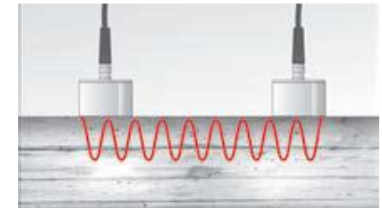


3. Quality Assurance of Reinforced Concrete Works



Control surveys for high-rise structures

3. Quality Assurance of Reinforced Concrete Works

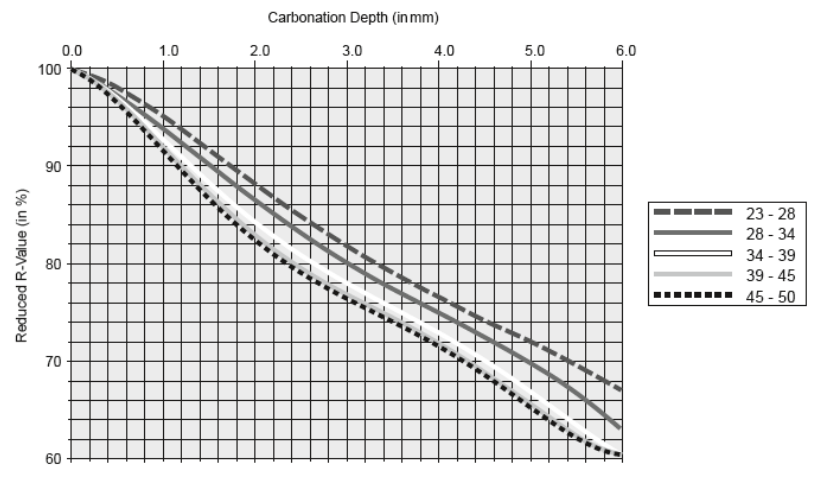
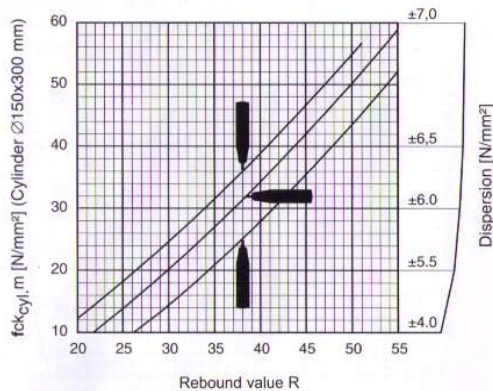


Compressive strength testing by Ultra-sonic Pulse Velocity (UPV)

3. Quality Assurance of Reinforced Concrete Works



Conversion Curves, Concrete Test Hammer Model N/NR
Concrete pressure resistance of a cylinder after 14 - 56 days



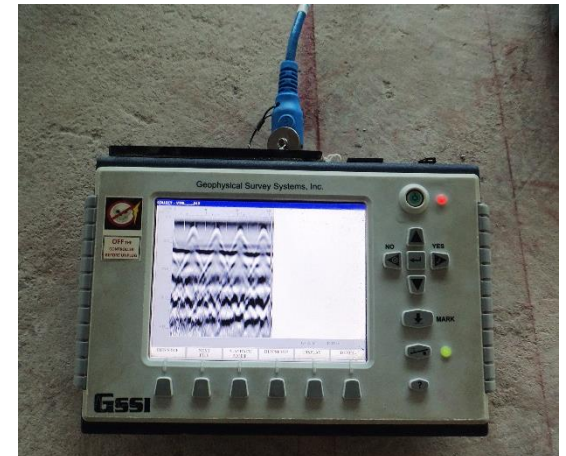
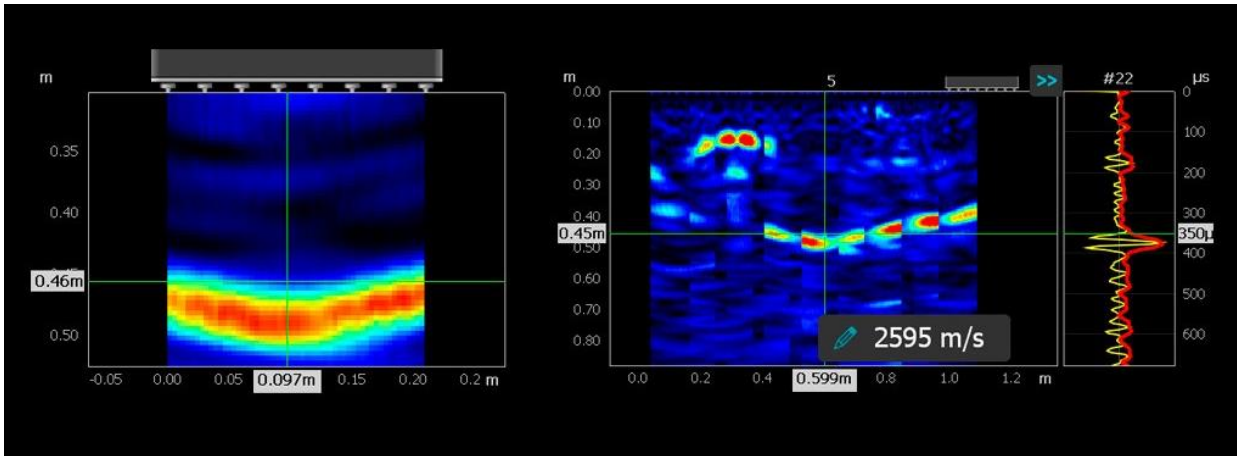
Compressive strength testing by rebound hammer

3. Quality Assurance of Reinforced Concrete Works



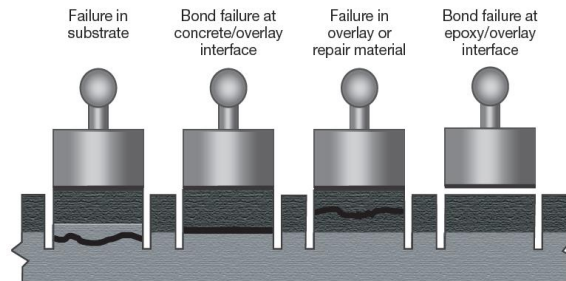
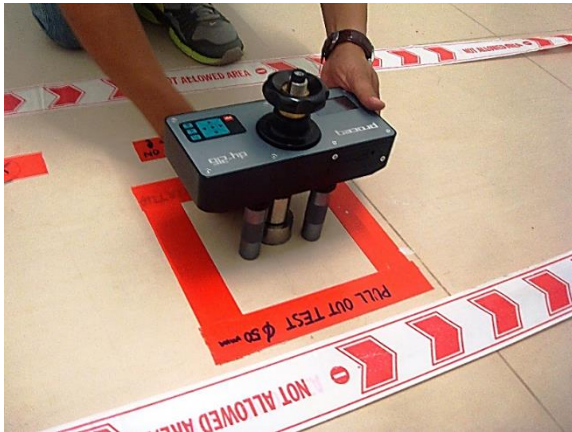
Compressive strength testing by core drilling

3. Quality Assurance of Reinforced Concrete Works

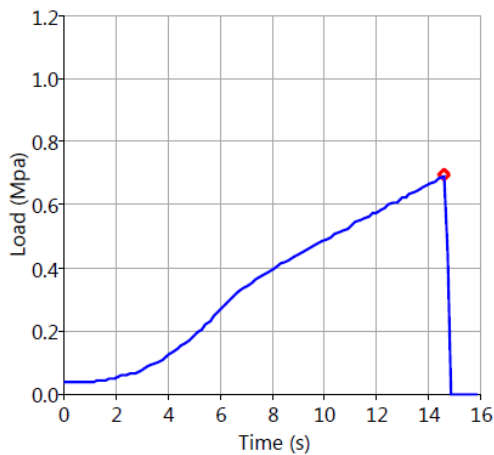


Locating of rebars, ducts and voids

Tensile Strength Testing



Load Rate Curve



Measurement

Peak Load 0.69 Mpa
Peak Load Time 14.6 s
Tear-off Time 15.0 s
Effective Load Rate 0.045 Mpa/s

Settings

Unit Mpa
Load Rate 0.045 Mpa/s
Load Limit 2.00 Mpa
Test Disc Area 6648 mm²
Test Disc Diameter 92.0 mm
Failure Mode 1 A 0%
Failure Mode 2 AB 0%
Failure Mode 3 B 0%



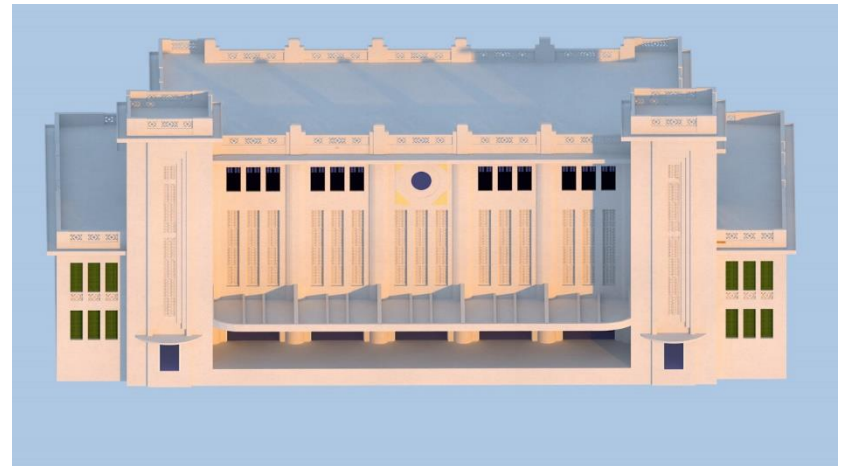
Pull-out test setup as per ASTM E488

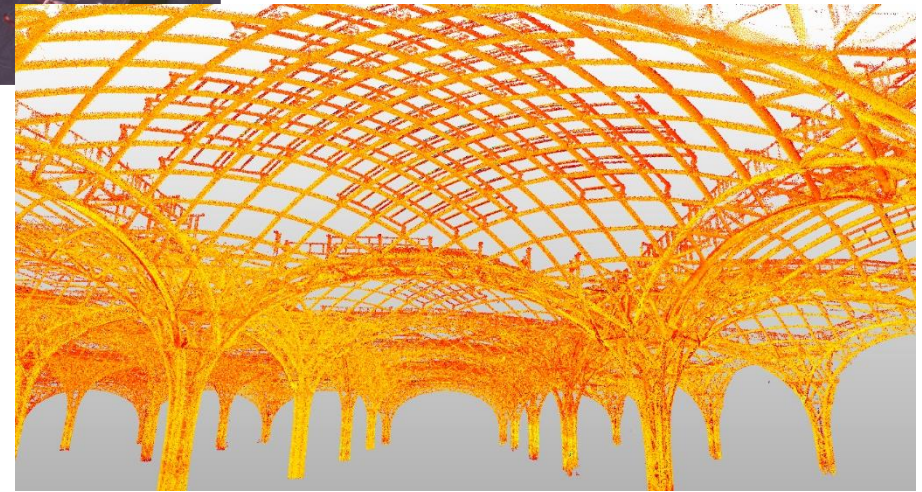
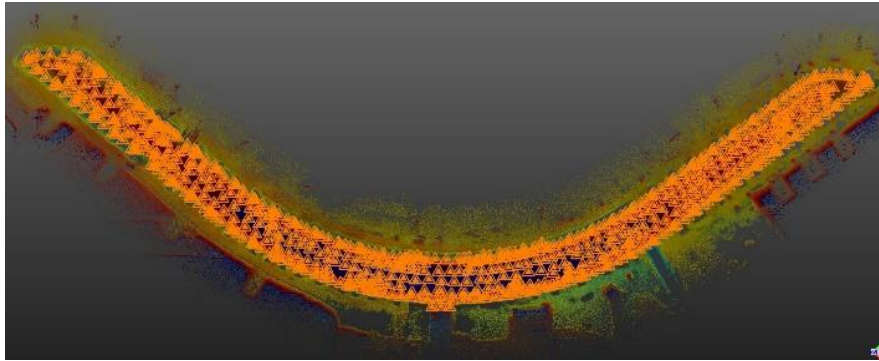
Pull-out tests for bars and anchors, pull-off tests for tiles

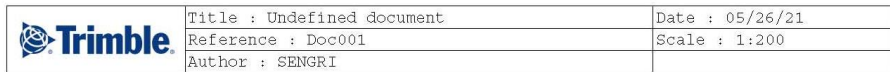
4. Building Surveys and Assessments



Building Surveys





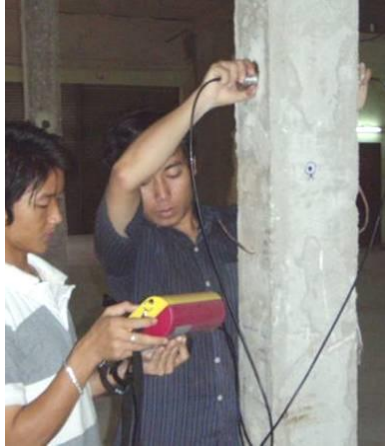


Areas(m2)	
In Front of Reference Plane (Red)	286.06
Behind Reference Plane (Blue)	244.97



Floor Slab Flatness and Wall Vertically Surveys

Structural Investigations



Thank you.
