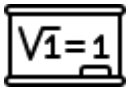
Monitoring Consultancy Prospectus

Tunneling			Construction
Rail			Mining
Structures			Oil and Gas
Environmental			Data Management

Extensive global experience in providing monitoring consulting across a broad range of sectors and industries.

Design, review, procurement, project management, installation, commissioning, training and maintenance – KODA has you covered.

With a strong history in the development of hardware and software solutions even the most challenging and novel monitoring tasks are achievable.

Total Station
Leica/GeoMos
PC or Logger-based
Track Geometry Experts

Weather/Environment
Temperature
Humidity
Precipitation
Condensation
Wind

Communications
Hardwired
Radio/WiFi/BT
Satellite

Geotech/Structural
In-Place Inclinometers
Extensometers
Tilt
Strain/Stress
Thermal
Noise and Vibration

Web Systems
Development
Configuration
Customization

Campbell Scientific
System Design
Custom Programming

Project Experience of Key Staff

The following is a selection from over 100 unique, challenging and interesting projects in which the staff of KODA Engineering have been involved.

Cross City Tunnel: Monitored 10 interfaces with rail tunnels - some as close as 5m away – with both structural and track parameter measurements. Several utility and road tunnels were monitored using survey and structural sensors. High-rise tower monitoring provided for Altair, Elan and CitiGroup buildings by high-precision orthogonal EL beam monitoring systems.
Extensive reporting and daily involvement with monitoring committee.

Geothermal Slope Stability, Leyte, Philippines: In difficult conditions, provided installation, training and commissioning of critical slope and soil moisture monitoring system for protection of life.

Sydney Opera House: Implemented automated and manual monitoring systems for stringent monitoring requirements on high profile project. Frequency and extent of monitoring required development of freenet adjustment methodologies to quickly adjust, assess and analyze monitoring data with high degree of confidence.

DC Water, Washington DC: Audit of Automated Total Station Monitoring Systems (ATS). SQL programming for transfer of data between GeoMos and Altas.

Hazelbrook Underpass: Ultimately assessing over 1 million track parameters in real-time in a one month period, this monitoring system incorporated 3x ATS placed deep within the monitoring zone.
A high precision control network and custom code for 7 parameter transformation of each instrument provided first 'dynamic monitoring solution'.

Blakefield South Longwall 1: Integrated TS30/GPS for real-time monitoring of rapid (>500mm/day) mining subsidence, detailed daily analysis and extensive final reporting.

Mt Owen LW11/12 Rail: Highly reliable rail stress and temperature system, management and surveying services.
Combined TPS/GPS survey system with custom processing improved accuracy and efficiency.

Redbank Cutting ATS: Completely customized ATS for high availability rail, embankment and weather monitoring.

Douglas Park Rail/Road: Incorporating thousands of sensors, covering over 3km of rail and road monitoring.
Complete monitoring engineer support, project management, installation, configuration and maintenance.
Highly tailored solution with several sub-projects generating >1 million records per week.

Trinity Uni Pump Controller, San Antonio: Customized pump controller systems and CR6 datalogger programming for intricate and evolving experimental system.

LW601 Rail Stress: Particularly unique electrical isolation and site access conditions for rail stress and temperature system in remote area.

Castlereagh St Pump Station: Installation of 9x specially encapsulated EL Tilt-meters and temperature sensors in operational sewerage shaft.

Hume Highway Pavement: Development of pavement monitoring targets to road authority standards suitable for ATS monitoring in real-time during live traffic. Weather monitoring and advanced alarming system.

Water St Bus Tunnel: Successfully proved hypothesis regarding vibrating wire crackmeter accuracy for concrete monitoring – greatly improving the confidence and value of the installed system.

1 Railway Parade: Rail and structural monitoring system during excavation of basement within 3m of live tracks.

Epping-Chatswood Rail Link Tunnel: First to market with TS30 based monitoring solution, incorporating triple prism concept to increase reliability and confidence in relatively inaccessible, high profile project.

ECRL M2 Shaft/Tunnel Interface: Rapid delivery of completely customized rail structure monitoring solution, including membership to technical committee and integration of alarms to rail management center.
Quick delivery and 100% reliability on high profile project.

Marosszeky House Simulation: Novel system in which total station monitoring system was used to collect strain and tilt data for simulation of future undermining.

Industry Contribution

KODA is proud to continue its history of giving back to the industry through sharing of technical leadership and teaching.

Papers/Presentations:

2015 [Presenter/Guest Blog]: Multi-Instrument Longwall Monitoring with Detailed Atmospheric, Site and Weather Management, HxGN Live

2014 [Author/Presenter]: Challenges of Large Scale Rail and Road Monitoring at Douglas Park and Tahmoor, Mine Subsidence Technical Society

2012 [Author]: Real-time Monitoring of Rail Track Adjacent to Deep Excavation, Australia-New Zealand conference on geomechanics

2011 [Author/Presenter]: Continuous Monitoring of Longwall Undermining at Blakefield South LW1, Mine Subsidence Technical Society

2010 [Author/Presenter]: Continuous Monitoring of Longwall Undermining at Mt Owen Mine, FIG Congress

2007 [Author]: Dynamic Monitoring of Hazelbrook Underpass Installation, NSW Awards for Excellence in Surveying and Spatial Information

2000 [Author]: Survey Network Software Modification Thesis, School of Surveying and Spatial Information Systems, UNSW

Lecturer – University of New South Wales, Sydney, Australia

Part-time lecturer for School of Surveying and Spatial Information Systems for:
- Surveying Applications (technology, advanced applications, innovative techniques)
- Survey Business Management (project, value and risk management)

Thesis Supervision:

Luke Pearce 2004, Matthew Behling 2012, Peter Boorer 2014, Alex Rowell 2014

Consulting globally

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