IOT MONITORING SYSTEMS

Smarter Monitoring for Safer Infrastructure

www.ryobi-g.com

WHY
IOT MONITORING

Manual monitoring is slow, error-prone, and often limited by site access. Ryobi-G's IoT system replaces these gaps with real-time data, instant alerts, and remote visibility—helping you act faster, reduce risks, and make smarter decisions.

TIME-CONSUMING MANUAL MONITORING

Frequent site visits, manual downloads, and disconnected tools slow down response and increase labor cost.

DELAYED DETECTION OF GROUND MOVEMENT

Without real-time data, early signs of instability can go unnoticed, increasing safety risks and project delays.

UNCENTRALIZED DATA ACCESS

Traditional setups involve different systems for different sensors, making it difficult to view, manage, and act on data efficiently.

WHY CHOOSE US?

20+ YEARS OF EXPERIENCE

1050+ COMPLETED PROJECT

1000+ CALIBRATED INSTRUMENTS

AUTOMATED, SCALABLE & WIRELESS

Our systems use LoRa, NB-IoT, or 4G to transmit data in real time. Matching your project, from compact sites to large infrastructure networks.

COMPLETED IOT MONITORING SOLUTIONS

We provide end-to-end support—from sensor setup to dashboards—powered by civil engineers who understand site needs and in-house teams who build our proprietary monitoring systems. This ensures seamless execution and reliable, real-world performance.

ACTIONABLE INSIGHTS, INSTANTLY

Our secure cloud dashboard turns raw data into visuals, trends, and smart alerts—enabling faster, safer, and more informed decisions.

OUR
IOT LOGGERS TECHNOLOGY

Our IoT system centers on high-performance data loggers that automatically collect, transmit, and safeguard your site data — while supporting varied sensor outputs for seamless integration across all monitoring applications.

KEY FEATURES

MULTI-LOGGER VERSATILITY
Seamlessly supports in-house and third-party loggers — including ATMS, ATVM, VWIOT, VD, LoadSensing, ZC Sensor, and HUASI ADM — to suit diverse project needs.

REAL-TIME, AUTOMATED MONITORING
Enables 24/7 data capture with wireless transmission (LoRa, NB-IoT, 4G), reducing manual checks and enabling rapid response to site changes.

WIDE SENSOR COMPATIBILITY
Fully integrates with a broad range of geotechnical and structural sensors or comprehensive monitoring.

BUILT FOR HARSH & REMOTE CONDITIONS
Designed for long-term, low-maintenance deployment even in extreme environments.

WIDE RANGE COMPATIBILITY

DEVICE TYPE	TYPICAL COMPATIBLE SENSORS
Automatic Total Station Data Logger	Total Station & Prism
VW Data Logger	Compatible with various vibration wire (VW) sensors, including VW strain gauges, VW load cells, VW tiltmeters, VW crackmeter
Voltage Data Logger	Analog Voltage Sensors and Digital Sensor
Vibration Meter	Geophones and Accelerometers

REAL TIME DATA FLOW &
DASHBOARD ACCESS

Ryobi-G's cloud-based dashboard gives engineers, consultants, and clients full access to site data — in real-time, from any device, anywhere in the world. No more manual downloads or site visits. Just clear, organized, actionable insights.

1

SENSOR INSTALLATION

We start by installing various sensors on-site, depending on the monitoring requirements.

2

DATA LOGGING & TRANSMISSION

Sensors connect to specialized loggers that collect readings at set intervals and transmit data wirelessly via 4G and NB-IoT communication network.

3

CENTRALIZED PROCESSING & BACKUP

Data is sent to a central server for processing and analysis, with automatic backup to a secondary server for data integrity and redundancy.

4

VISUALIZATION, ALERTS & ACCESS

Processed data is visualized via the WIRS platform, shared through push facilities, monitored by a health check system, and critical alerts are sent instantly to users — while raw data is archived securely for future use.

CASE STUDIES:
IOT IN ACTION

Ryobi-G's IoT monitoring solutions have been deployed across complex and sensitive infrastructure projects regionally. These case studies show how real-time data, automated alerts, and sensor integration drive safer, smarter, and more efficient outcomes.

TUNNEL STRUCTURAL HEALTH MONITORING

FIBER OPTIC MONITORING FOR DTSS PHASE 2 (TIMS CONTRACT)

Deployed 150 km of fiber optic sensors across 36 km of deep tunnels using BOFDA technology. Integrated with PUB's AMANDA system, the setup enabled real-time strain and temperature tracking.

URBAN GEOTECHNICAL & STRUCTURAL MONITORING

CROSS ISLAND LINE - URBAN MRT MONITORING

We've supported over 40 civil contracts across major infrastructure projects, including 7 of them from the Cross Island Line.

Installed 1,000+ instruments near live MRT lines and urban zones, using ATS, piezometers, tiltmeters, and IoT dashboards to monitor movement, pore pressure, and ground conditions.).

AVIATION INFRASTRUCTURE MONITORING

CHANGI AIRPORT T5–T2 LINK – MONITORING UNDER LIVE RUNWAYS

Delivered real-time surface and subsurface monitoring beneath operational runways via ATS, extensometers, and piezometers—fully integrated into our WIRS platform with automated alerts.

EARLY DETECTION | **OPERATIONAL EFFICIENCY** | **SAFETY & COMPLIANCE**

INDUSTRIES
WE SERVE

Our IoT monitoring platform supports a wide range of geotechnical and structural applications — from deep underground to densely populated urban zones.

TUNNELING & SHAFT MONITORING

Track strain, displacement, and deformation in deep tunnels and shafts throughout excavation and operation phases.

RAILWAY & MRT INFRASTRUCTURE

Ensure safe construction and operations near live rail systems through real-time monitoring of adjacent tunnels, stations, and utilities.

AIRPORTS & AVIATION ZONES

Deploy non-intrusive systems under runways and taxiways for underground works without disrupting airport operations.

URBAN DEVELOPMENT & STRUCTURAL

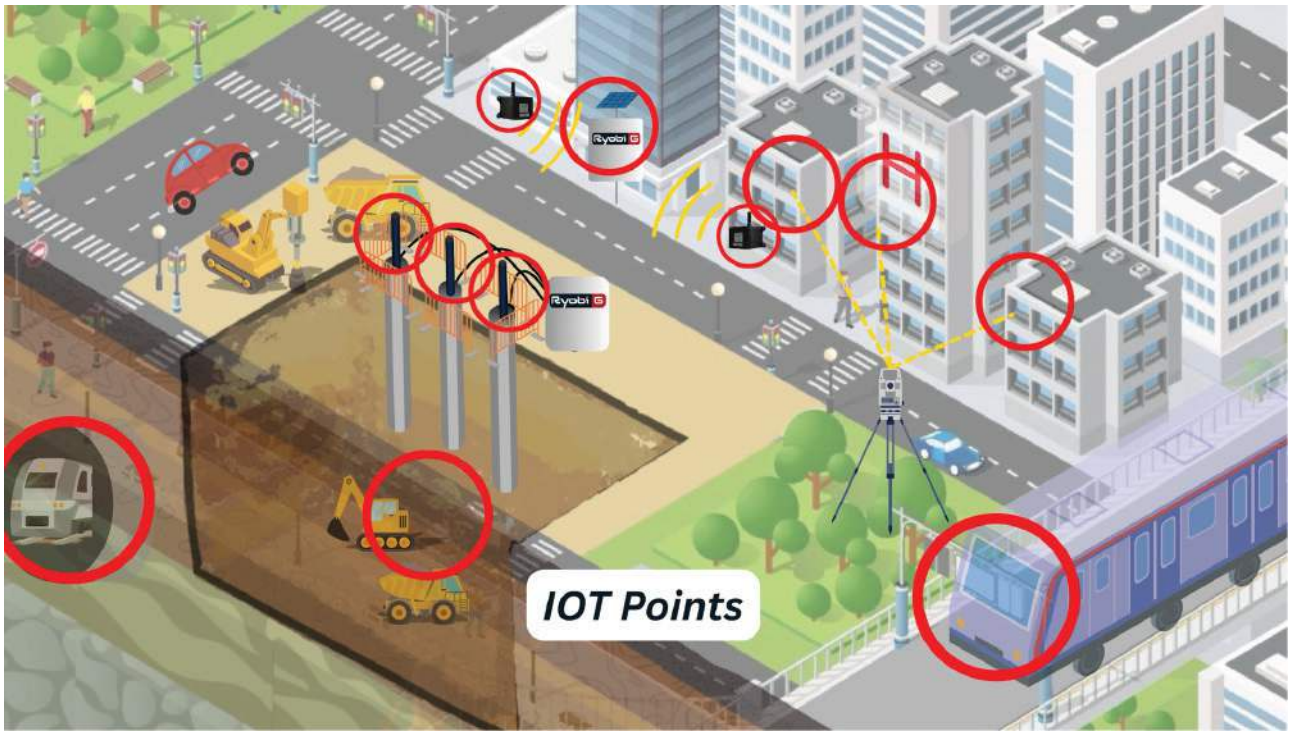
Safeguard surrounding structures, roads, and utilities in high-density areas during deep excavation or foundation works.

SLOPE & EMBANKMENT STABILITY

Detect early signs of ground movement or landslides in slope-prone areas with tilt and settlement monitoring.

INDUSTRIES
WE SERVE

URBAN CONSTRUCTION MONITORING WITH IOT INTEGRATION



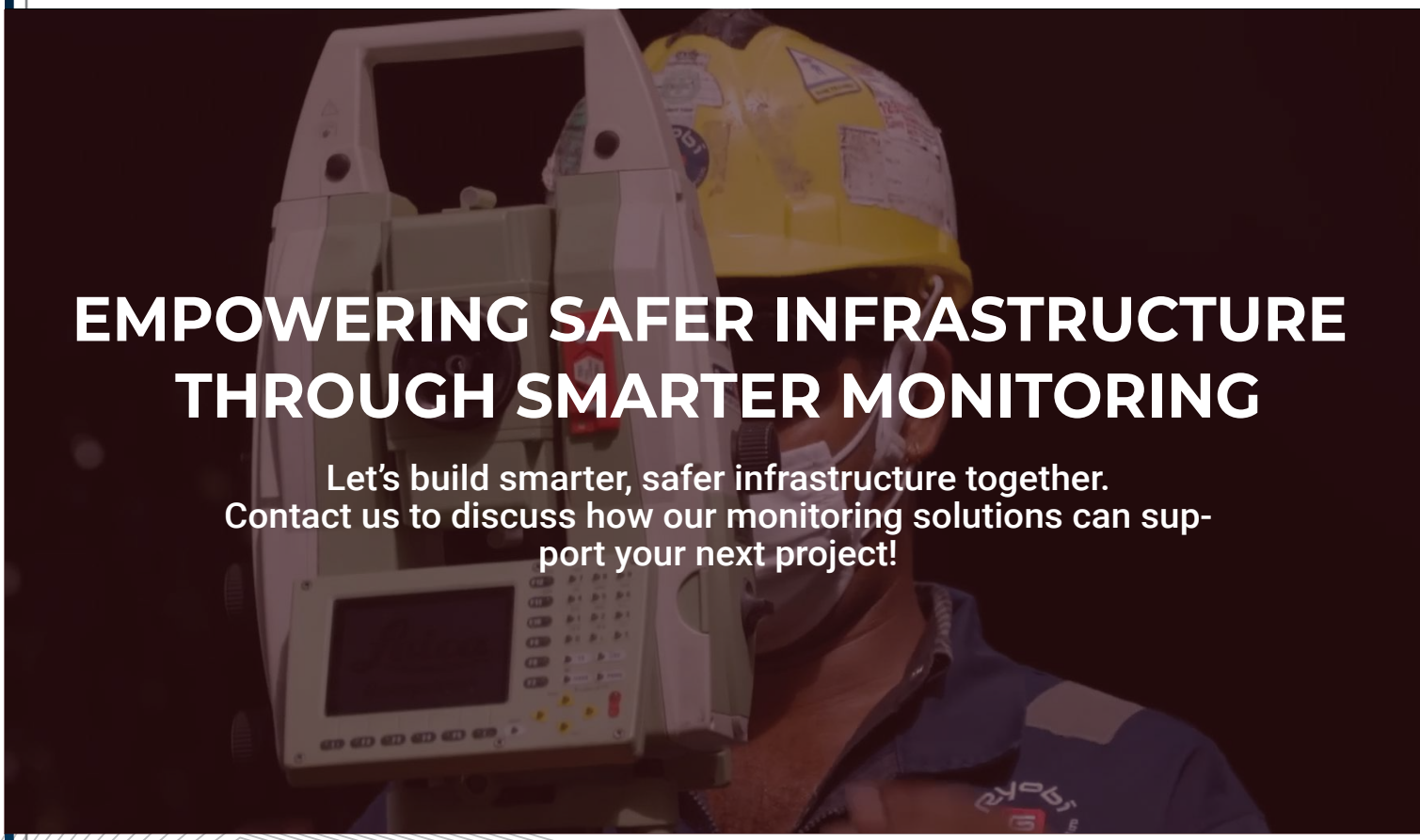
KEY HIGHLIGHTS

- IoT sensors deployed across construction zones, vehicles, and infrastructure.
- Real-time tracking of equipment, materials, and site activity.
- Integration with urban mobility systems (e.g., roads, rail).
- Enhanced situational awareness for safety and project coordination.
- Scalable for complex, multi-phase urban developments.

OVERVIEW

This dynamic urban environment showcases real-time connectivity through strategically placed IoT points—highlighted across machinery, vehicles, buildings, and infrastructure.

From the bustling construction pit to the surrounding streets and rail systems, every element is connected, monitored, and optimized for safety, efficiency, and sustainability.



EMPOWERING SAFER INFRASTRUCTURE THROUGH SMARTER MONITORING

Let's build smarter, safer infrastructure together.
Contact us to discuss how our monitoring solutions can support your next project!

GET IN TOUCH

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