

# UNITED GROUP

FOR ENGINEERING MONITORING SOLUTIONS













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Over the past years, United Group has proudly contributed to vital infrastructure and environmental monitoring projects across the region.

Amid growing global challenges—from health crises to climate change and rapid urban expansion—our mission remains clear:

to deliver precise, reliable, and integrated engineering monitoring solutions.

We recognize that today's world demands adaptability and innovation, backed by an unwavering commitment to safety and quality.

Whether safeguarding the structural integrity of iconic towers, preserving historic landmarks, or monitoring essential water resources, UG continues to perform with technical excellence and outstanding resilience.

We extend our sincere thanks to our partners, clients, and dedicated teams for their trust and collaboration.

Together, we will build smarter, safer, and more sustainable environments.

**United Group** 

Precision that protects. Expertise that delivers.

Reda Awad Yassen

Owner - CEO

#### **Our Mission**

#### **Our Goals**

Delivering high-precision, integrated, and customized monitoring systems to address complex engineering and environmental challenges.

Providing intelligent and reliable monitoring solutions that enhance infrastructure safety and support knowledge-sustainable development.

#### **Our Vision**

To become the region's leading provider of smart and geotechnical monitoring solutions, contributing to enhanced safety, sustainability, and resilience across critical infrastructure and diverse environments.

**A Brief Story About The Company** 

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# ABOUT US

United Group is one of the leading providers of integrated monitoring, geotechnical, and environmental solutions across the Middle East and Africa.

We specialize in implementing comprehensive systems for structural health monitoring, geotechnical investigations, vibration and air/water quality monitoring, and minimizing environmental and unforeseen risks to infrastructure.

With our extensive experience, strong technical partnerships, and continuous commitment to innovation, we serve government agencies, major infrastructure projects, and key industrial sectors.

United Group is recognized for its precision, reliability, and ability to address complex engineering challenges across diverse environments.

Through our scalable intelligent systems and specialized team, we contribute to building safer, smarter, and more sustainable communities.



### **OUR KEY SERVICES**

The Structural Monitoring Division at United Group delivers fully integrated, turnkey systems for real-time monitoring and assessment of structural, geotechnical, hydrological, and environmental conditions.

01

#### Structural Health Monitoring

We monitor the performance and safety of buildings, bridges, towers, and other structures using advanced sensor systems that track stress, tilt, displacement, and vibration in real time—ensuring safety and long-term sustainability.

02

#### **Geotechnical Monitoring**

We provide high-precision geotechnical monitoring systems to assess soil behavior, groundwater levels, and subsurface stability.

These systems help detect early signs of movement, settlement, or failure in foundations, tunnels, and slopes.

03

#### Vibration and Blast Monitoring

We offer systems for monitoring vibrations and blasts caused by construction, mining, and seismic activity, delivering real-time alerts and data to ensure compliance with regulatory standards.

04

#### Weather and Air Quality Monitoring

We provide weather stations and air quality monitoring systems that measure wind, temperature, humidity, pollution levels, and fine particulate matter—supporting aviation, urban planning, and environmental protection efforts.

05

#### Hydrology and Water Quality Monitoring

We design and install systems to measure surface and groundwater levels, flow rates, and quality indicators—essential for dam projects, environmental studies, and water resource management.

## **SOLUTIONS ARCHITECTURE**

#### **HOW WE WORK**

#### Site Study & System Design

We start by conducting a thorough site assessment to identify structural, geotechnical, or environmental challenges. Based on this, we design a custom monitoring solution, selecting the optimal sensors, equipment, and data architecture tailored to the project's needs.

#### **Equipment Supply & Installation**

We supply certified instruments from leading international partners and install them on-site through our experienced technical team. Installation follows the exact specifications of the design, ensuring secure, weather-resistant setup.





#### **Data Collection & Real-Time Monitoring**

Once installed, sensors begin collecting data continuously. This information is transmitted in real time to cloud platforms or local servers, allowing clients to monitor performance instantly from anywhere.

#### **Analysis, Reporting & Alarm Systems**

We analyze the data, generate engineering reports, and provide automated alert systems. Alerts are triggered when any parameter exceeds its safe threshold, helping prevent critical failures.

#### **Post-installation Support & Maintenance**

Our commitment continues beyond installation. We provide client training, routine maintenance visits, technical support, and system upgrades to ensure sustained performance and reliability.

## **PROJECTS SNAPSHOT**

#### King Abdul Aziz Endowment Towers - Makkah, KSA

- In collaboration with Dar Al-Handasah and the Saudi Binladin Group,
- the company was responsible for the supply, installation, and operational follow-up of all structural monitoring activities for the project.
- Real-time data collection was conducted and visualized through a dedicated web portal.

#### Agyad Hospital Project - Makkah, KSA

- Phase One involved monitoring towers, surrounding buildings, and tunnels beneath the site during excavation and blasting activities.
- Phase Two included the design, supply, and implementation of all structural monitoring systems, along with monitoring systems.









#### El Dabaa Nuclear Power Plant - Egypt

- Pre-construction Phase, which included conducting hydrological, geological, geotechnical, and environmental studies on site.
- Second Phase, in collaboration with the Russian firm UNISF, focused on geotechnical investigations of the coastline adjacent to the site and marine studies of the project area.

#### **Merowe Dam - Sudan**

- We were responsible for the supply and implementation of all activities related to:
- Structural safety monitoring
- Hydrological movement monitoring for dams
- Water quality monitoring in dam reservoir systems

#### **Makkah Weather Network - Saudi Geological Survey**

- collaborated with the Zamzam Research Center to establish a monitoring network
- for tracking weather conditions and rainfall levels across Makkah.
- system included monitoring the impact of rainfall on the Zamzam well from four key locations.



- supplied, installed, and supervised activities related to structural safety monitoring
- for the tunnel and surrounding buildings at the construction site.
- Inclined and settlement monitoring wells were installed, equipped with precision sensors.







#### Cairo Metro Line 3 - Phase 3 - Egypt

- provided technical support services for structural health monitoring systems
- covering tunnels, stations, and key historical and critical buildings along the route of the rail line.
- The goal was to assess the line's impact on nearby structures.

#### **Central Body Shop Project - Kuwait**

- Supply and installation monitoring system for stress, strain, and settlement in piles.
   Installation of stress sensors and strain gauges
  - Installation of stress sensors and strain gauges on foundation piles.
  - Execution of all required safety tests for piles, including bi-directional sonic tests and static load tests.
  - Provision of a full data acquisition, analysis, and reporting system.



#### **New Capital Monorail - Egypt**

- Full supply and installation of structural health monitoring systems
- along the entire route of the line.
- Monitoring of stress and tilt during static and lateral load tests.
- Scope of work included supply, installation, and testing.



#### **Duqm Drydock SHMS - Sultanate of Oman**

- Installation of an Structural Health Monitoring System
- for the South Wall and Exhibition Hall Roof.
- Monitoring included crack development, joint movement, wall tilting, and settlement across all sections.
- The system featured automated data logging and remote online monitoring.
- The project was commissioned by the Ministry of Transport and Communications in the Sultanate of Oman.





#### Julius Nyerere Dam Project - Tanzania

- Installation of precision monitoring instruments at designated locations.
- Periodic readings were taken from the instruments to collect performance data.
- Regular technical reports were prepared and submitted, including all recorded measurements.
- The company played a key role in monitoring the dam's structural safety and stability.



#### **LNAPL Recovery System - Mostorod, Egypt**

- Inspection of Extraction Wells
- Inspection of extraction wells and identification of system issues.
- Examination of core components, including pumps, batteries, control panels, and hoses.
- Development of a maintenance plan outlining required parts and labor.
- Submission of a comprehensive report to ERC detailing findings and recommendations.



#### Cairo Metro - Line 4 Proiect

- Provided a fully integrated monitoring system for the Cairo Metro Line 4 project.
- Monitored the impact of excavation works on nearby buildings and structures.
- Delivered a real-time data acquisition system for continuous geotechnical and structural readings.
- Implemented alert tools and customized reports to support engineering decisions and ensure compliance with safety standards.

#### **Kingdom Tower (Jeddah Tower)**

- Supplied and installed a comprehensive structural health monitoring system.
- Provided accurate data on the tower's performance during various construction and operational phases.
- Monitored vibrations, vertical and horizontal displacements.
- Developed data analysis and alerts to notify engineering teams of any threshold exceedance.
- Submitted reports to support structural safety decisions and extend the life of the concrete.





# THANK YOU

We appreciate your time and interest in United Group. For further information or project inquiries, please contact us:

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