

# Almabani Construction in Riyadh Monitoring Environment with Oizom for Better Urban Planning



## **INTRODUCTION: Smart Environmental Monitoring in Riyadh for Almabani Construction Company**

Almabani General Contractors is a leading engineering, procurement, and construction (EPC) contractor based in the Kingdom of Saudi Arabia. It is a leader in infrastructure development and is committed to integrating sustainable practices into its operations. The company has extensive experience in various sectors, including civil construction, electro-mechanical works, infrastructure, and communication. As Riyadh City continues to expand, large-scale construction like The Sports Boulevard Project contributed to environmental challenges, particularly in air quality.

The Sports Boulevard Project in Riyadh is a significant urban development initiative to enhance the city's infrastructure and environmental sustainability. As part of their commitment to ensuring a safe and compliant construction environment, Almabani Construction Company sought a comprehensive air quality and environmental monitoring solution. They needed a system that could provide real-time data, ensure regulatory compliance, and help maintain a safe working atmosphere.



## **THE CHALLENGE: Ensuring Environmental Compliance in a High-Impact Sector**

Construction sites generate significant air pollution due to dust, emissions from heavy machinery, and material handling. Almagbani faced several challenges that required immediate intervention:

- 1. Operational Efficiency:** The company needed an automated, real-time monitoring solution that seamlessly integrates with its construction activities. Manual monitoring methods were inefficient and did not provide the necessary data to make informed decisions promptly.
- 2. Regulatory Compliance:** To avoid legal repercussions, it was crucial to adhere to Riyadh's environmental guidelines for pollution. Stringent environmental regulations require real-time monitoring and reporting to ensure adherence to prescribed air quality limits.
- 3. Worker and Public Health:** A top priority was ensuring safe air quality levels for on-site workers and surrounding communities. Prolonged exposure to high concentrations of particulate matter and gaseous pollutants could lead to respiratory diseases and long-term health issues.
- 4. Construction-Related Air Pollution:** Heavy-duty equipment, material transportation, and excavation activities generated significant amounts of airborne pollutants, such as dust and toxic gases. Understanding pollution trends helped in planning construction schedules to minimize peak emissions.
- 5. Climate and Weather Considerations:** Wind speed and direction played a crucial role in pollutant dispersion, necessitating a system that could analyze meteorological parameters for better pollution control strategies.
- 6. Sustainability goals:** The Sport Boulevard Project is designed to create a sustainable and healthy urban space. Reducing emissions and managing dust effectively was essential to align with the project's sustainability goals.

To address this, Almagbani connected Saudi Envirozone LLC and installed Oizom's Polludrone across multiple sites, ensuring regulatory compliance, worker safety, and environmental responsibility.

## **THE SOLUTION: Oizom's Polludrone for Smart Environmental Monitoring**

To tackle these challenges, Almagbani Construction Company took Saudi Envirozone LLC's help and selected Oizom's Polludrone, a state-of-the-art environmental monitoring solution. Installing 13 Polludrone devices at key locations within the Sport Boulevard Project site enabled precise data collection and real-time insights, ensuring effective pollution control. Key Advantages of Polludrone:

- 1. High Accuracy and Reliability:** Equipped with advanced sensors, Polludrone delivers real-time, precise measurements of PM<sub>1</sub>, PM<sub>2.5</sub>, PM<sub>10</sub>, TSP, NO<sub>2</sub>, NO, SO<sub>2</sub>, CO,



VOC, O<sub>3</sub>, along with meteorological parameters like temperature, humidity, wind speed and direction, pressure, noise, and rainfall,

- IoT-Powered Data Transmission:** Oizom's Cloud-based platform, Envizom, ensures seamless data visualization and reporting, enabling informed decision-making.
- Customizable and Scalable:** Polludrone's flexible design allows for easy customization to meet Altabani's specific monitoring requirements, with scalability for future projects.
- User-Friendly Interface:** The intuitive dashboards of Envizom software provided by Oizom allow project managers and environmental officers to seamlessly visualize and interpret data, enabling quick responses to air quality fluctuations.
- Cost-Effective Compliance Solution:** By investing in a cutting-edge yet budget-friendly solution, Altabani ensures long-term sustainability without exceeding operational costs.
- Strong Support and Service:** Oizom's customer support team ensures timely assistance, maintenance, and troubleshooting to keep the monitoring system operational at all times.

## INSTALLATION DETAILS

1 UNIT  
of  
POLLUDRONE

By continuously monitoring air quality and noise, the project safeguards the health of construction workers and nearby residents, reducing exposure to hazardous pollutants.

### **THE TRANSFORMATION: Optimizing construction operations and reducing pollution**

The installation of Polludrone devices across the construction site has provided Altabani Construction Company with a robust monitoring system, delivering real-time insights into air quality, noise levels, and weather conditions. This has led to several key outcomes:

- Effective Management:** Real-time tracking of pollutants like PM<sub>1</sub>, PM<sub>2.5</sub>, PM<sub>10</sub>, TSP, and toxic gases like NO<sub>2</sub>, NO, SO<sub>2</sub>, CO, VOCs, and O<sub>3</sub>, along with meteorological parameters, allows appropriate management that improves worker efficiency while mitigating environmental risks.
- Increased Operational Efficiency:** Continuous monitoring has enabled proactive decision-making, optimizing construction schedules and reducing downtime caused by unforeseen environmental conditions.
- Improved Monitoring:** The comprehensive data collection and automated report ensures Altabani stays ahead in mitigating pollution and maintaining a healthy work environment.
- Maintain a Safe Environment:** With accurate insights into pollutant levels, construction activities can be adjusted to minimize emissions and dust dispersion, leading to safer air quality for workers and nearby communities.
- Enhanced Compliance and Reporting:** With real-time and historical data at their fingertips, Altabani can efficiently comply with environmental regulations and streamline reporting processes.
- Cloud-based Platform for Data Insights:** Envizom's Automated reporting and data visualization simplify documentation for regulatory authorities, reducing pollution levels,



ensuring a safe working environment, and ensuring transparent environmental management.

By leveraging real-time air quality monitoring, stakeholders can make informed decisions to minimize ecological impact. Additionally, increased transparency enables communities to stay aware of environmental conditions while encouraging developers to uphold corporate responsibility and sustainable practices.

### ***BROADER IMPACT: A Step Towards Better Urban Planning and Green Infrastructure***

Beyond the immediate benefits to Almagbani's construction project, deploying Oizom's Polludrone devices has broader implications for Riyadh's construction industry and urban development. The data collected contributes to the city's broader environmental sustainability initiatives, helping policymakers make informed decisions on urban planning and green infrastructure. The implementation of advanced monitoring systems paves the way for other construction projects in Riyadh to adopt data-driven environmental management strategies. Real-time air quality monitoring fosters transparency, informing communities about environmental conditions and promoting corporate responsibility among developers.

### ***CONCLUSION: Maintaining Environmental Standards for Nearby Communities***

By integrating Oizom's advanced environmental monitoring solutions, Almagbani Construction Company has strengthened its commitment to sustainable and safe construction practices. Implementing Polludrone devices has improved regulatory compliance and reinforced Almagbani's dedication to maintaining superior environmental standards throughout the Sport Boulevard Project in Riyadh.

Oizom is a company specializing in environmental monitoring solutions. They offer products to monitor air quality, weather conditions, and other environmental factors. Utilizing advanced sensor technology and data analytics, Oizom aims to provide actionable insights for construction, industrial compliance, and community awareness. Their solutions can be applied in various sectors including government, industries, and community initiatives.