OIZOM
REDEFINING RESOURCES

CASE STUDY
Construction

Real-Time Air Quality Monitoring at a London Construction Site Using Oizom's device

INTRODUCTION: Enabling Smarter Environmental Monitoring at a London Construction Site

Our client is a trusted provider of cloud-based monitoring solutions for noise, vibration, and air quality. With a focus on delivering accurate data to the construction industry, they support structural and environmental monitoring across complex project sites.

In partnership with Oizom, the client has implemented a robust environmental monitoring system using Oizom devices at an active construction site in London. By installing four real-time ambient air quality monitoring devices configured for dust and gas parameters, the company has taken a proactive step to ensure site safety, regulatory compliance, and data-driven decision-making.

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THE CHALLENGE: Environmental Monitoring in a High-Impact Construction Zone

Construction sites bring multiple environmental concerns, especially when located in urban settings. For this project, the client faced three specific challenges:

1. **High Dust Generation from Daily Activities:** Ongoing earthworks and heavy machinery operations led to rising PM1, PM2.5, PM10, and PM100 levels, creating health and visibility concerns.
2. **Harmful Gases from Machinery Use:** Diesel-based equipment and frequent vehicle movement increased the presence of NO2 in the air, posing risks to on-site workers.
3. **Limited Access to Stable Power Supply:** Due to continuous site movement and temporary setups, powering standard monitoring equipment became difficult.
4. **Real-Time Data Unavailability:** Without an online system, the client struggled to access live readings or receive alerts during pollution spikes.
5. **Regulatory Pressure and Documentation:** Meeting local air quality compliance required detailed, timestamped data logs, which were hard to compile manually.

The client required a system that was robust enough for a construction site, capable of monitoring multiple parameters, and seamlessly integrated with their workflow. Customization, real-time alerts, and remote data access were non-negotiable features.

THE SOLUTION: Smart Monitoring with Oizom devices and Envizom

Oizom offered a scalable air quality monitoring solution using four Oizom units, equipped to measure:

1. **Multi-Parameter Monitoring:** Each of the four Oizom units was configured to monitor PM_1, $PM_{2.5}$, PM_{10}, PM_{100}, NO_2, and CO for full-spectrum air quality insights.
2. **Solar-Powered, Weatherproof Design:** To overcome unreliable power conditions, the client opted for solar-powered systems, ensuring uninterrupted monitoring.
3. **Seamless Connectivity for Remote Access:** The devices came equipped with GSM connectivity, allowing real-time data transmission even in low-network areas.
4. **Easy-to-Use Envizom Dashboard:** With the Envizom software, the team could visualize trends, set custom alerts, and download reports effortlessly.
5. **Automated Alerts for Proactive Action:** Threshold-based notifications helped site managers act swiftly during pollution spikes, improving safety and minimizing exposure.
6. **Scalable and Portable Setup:** The compact structure of the devices allowed flexible repositioning across the site

INSTALLATION DETAILS

4 UNITS
of
POLLUDRONE

as construction progressed.

The user-friendly dashboard helped the client visualize pollutant trends and take proactive steps to manage air quality on-site.

THE TRANSFORMATION: Operational Gains and Environmental Control

The deployment of Oizom systems combined with the Envizom software gave the construction team direct control over environmental parameters that were previously difficult to track. What was once a reactive process became data-led and proactive.

1. **Improved Worker Safety:** Real-time NO_2 and $PM_{2.5}$ monitoring enabled timely breaks and equipment shutdowns during unsafe conditions.
2. **Faster Reporting for Audits:** Envizom's automated report generation reduced manual work and made it easier to stay audit-ready.
3. **Pollution Trend Analysis for Site Planning:** AI-backed insights helped identify pollution sources and optimize machinery placement to reduce emissions.
4. **Compliance Confidence:** With continuous monitoring, the site stayed within air quality limits, preventing legal penalties and improving stakeholder trust.
5. **Lower Downtime from Weather and Dust Events:** Quick decisions based on real-time data minimized unnecessary delays caused by high dust or gas levels.
6. **Efficient Use of Resources:** With better planning and predictive alerts, the team optimized manpower and equipment use, cutting operational waste.

By integrating Oizom's monitoring solution into daily site routines, the construction firm transformed air quality compliance from a liability into a strength. Real-time data helped them stay ahead of environmental risks and maintain smoother, safer operations.

BROADER IMPACT: Long-Term Value for Safer and Smarter Construction Projects

unlock broader environmental, operational, and strategic benefits for construction site management.

1. **Data-Driven Environmental Accountability:** Continuous air quality monitoring positioned the client as a responsible contractor, committed to environmental transparency and safety.
2. **Support for ESG and Sustainability Goals:** The project contributed to larger sustainability objectives by reducing pollution impact, aligning with ESG frameworks relevant to modern infrastructure development.
3. **Improved Stakeholder Communication:** Clear and accessible air quality data shared through the Envizom platform built greater trust among developers, contractors, regulators, and the local community.

With proven results from this site, the same system can be replicated across multiple project

locations, ensuring consistency and efficiency in environmental compliance. By adopting forward-thinking monitoring practices, they strengthened their position as a reliable and tech-enabled solutions provider in the construction sector.

***CONCLUSION:** Data-Driven Monitoring that Works for Construction*

The client's decision to install Oizom's continuous air quality monitoring solution was based on three key factors: dependability, adaptability, and usability. The robust design suited their active site, the customizable sensors addressed their exact concerns, and the user-friendly Envizom platform made environmental monitoring seamless. By investing in smarter monitoring, they strengthened their environmental compliance while enhancing overall operational efficiency.

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.