

L&T Construction Ltd. Installed Oizom's Polludrone for Clean Air at Bhogapuram Airport



INTRODUCTION: L&T Construction Ltd. Advancing Sustainability with Real-time Air Monitoring

L&T Construction Ltd., the construction arm of Larsen & Toubro, is one of India's most respected and innovation-driven infrastructure companies. Known for executing complex engineering projects across sectors like transportation, airports, energy, and smart cities, L&T has consistently integrated sustainability and technology into its construction practices.

In a strategic initiative to promote sustainability and environmental responsibility, L&T Construction Ltd. partnered with Oizom Instruments to implement real-time ambient air quality monitoring at the Bhogapuram Airport construction site in Vizianagaram district, Andhra Pradesh, India. They installed Polludrone, Oizom's continuous ambient air quality monitoring system, to validate and enhance their eco-conscious construction practices while complying with regulatory standards.



THE CHALLENGE: Managing Compliance and Complexity in Large Infrastructure Projects

With large-scale infrastructure development underway, L&T faced several environmental challenges at the airport site:

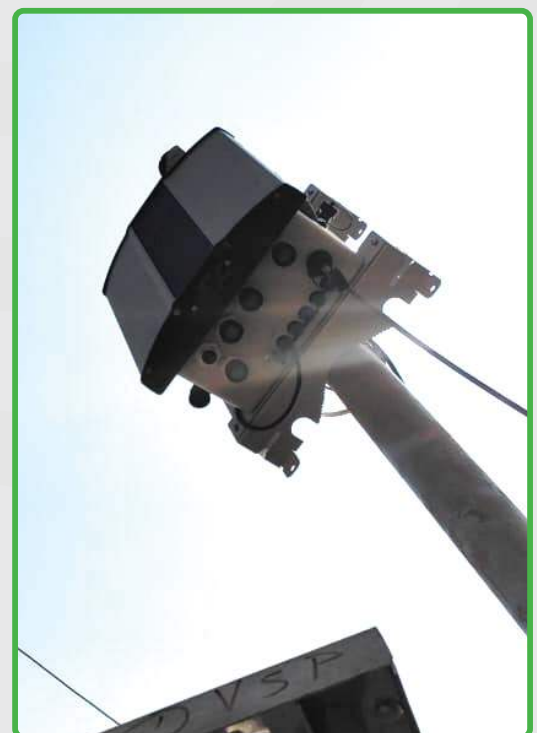
- 1. Monitoring Diverse Environmental Parameters:** L&T needed to continuously track a broad spectrum of environmental parameters, including particulate matter, toxic gases, noise, UV radiation, and weather conditions, to assess the full impact of construction activities.
- 2. Ensuring Compliance During Regular Inspections:** Regular inspections by authorities required L&T to deliver accurate air quality data in standardized, audit-ready formats.
- 3. Showcasing sustainable practices:** To reinforce its commitment to green construction, L&T required real-time air quality data to transparently demonstrate environmental responsibility to stakeholders and regulators.
- 4. Pinpointing High-Impact Emission Areas:** The complexity of large-scale operations made it essential to identify emission hotspots and process-level pollution sources with precision.
- 5. Generating Actionable, Real-Time Analytics:** L&T sought a smart platform capable of visualizing real-time trends and generating actionable insights to support data-driven environmental decisions.

Replacing Costly, Inefficient Manual Methods: Relying on manual monitoring and third-party testing services proved costly and time-consuming. It also introduced delays in obtaining actionable data, which limited the ability to make timely, informed decisions on-site.

THE SOLUTION: Polludrone- A Smart Air Quality Monitoring System

To address these complex requirements, L&T Construction deployed Oizom's Polludrone, a compact, IoT-based continuous air quality monitoring system at the airport site. The key reasons behind choosing Polludrone included:

- 1. MCERTS-Certified Sensor:** Equipped with an MCERTS-certified PM sensor ($PM_{2.5}$ and PM_{10}), the device delivers globally trusted and highly accurate data.
- 2. Intuitive software:** Envizom software integration provides centralized real-time dashboards, customizable reports, and actionable alerts.
- 3. All-in-One Parameter Monitoring:** Polludrone is the all-in-one solution to monitor $PM_{2.5}$, PM_{10} , CO, CO_2 , SO_2 , NO_2 , O_3 , and Noise with high accuracy.
- 4. Pinpointing high-emission zones:** Polludrone enables



real-time monitoring of high-impact zones to prioritize emissions control and optimize workflow timing.

5. **Customization availability:** Polludrone can be customized to meet specific monitoring requirements, ensuring smarter and more effective air quality management.
6. **Stakeholder Transparency:** The real-time data dashboards powered by Envizom enable L&T to share air quality updates with stakeholders, including government bodies and the public, via web portals or display screens.

INSTALLATION DETAILS

**1 UNIT
of
POLLUDRONE**

Through Polludrone, L&T was equipped with a high-resolution data monitoring setup to validate sustainable construction efforts, optimize operations, and meet all compliance norms seamlessly.

THE TRANSFORMATION: From Manual Oversight to Data-driven Actions

The implementation of Polludrone led to several positive transformations on-site:

1. **Reliable AQI Data:** With continuous monitoring, L&T could now access real-time, reliable air quality data to track daily construction impact.
2. **Regulatory Compliance:** Data-driven reports allowed them to fulfill statutory environmental reporting, avoiding penalties.
3. **Operational Efficiency:** Envizom's analytics revealed which construction processes emitted the highest pollutants, allowing for corrective actions.
4. **Source Identification:** Pinpointing emission hotspots helped the team address root causes rather than surface-level symptoms.
5. **Community Health and Safety:** The monitoring system enables them to track the pollution level, which demonstrates L&T's commitment to enhancing workers' and community safety.
6. **Environmental Impact Mitigation:** The data offered critical insights that strengthened audits, streamlined inspections, and supported the preparation of Environmental Status Reports (ESRs) and Half-Yearly Compliance Reports for submission to regulatory authorities.

The adoption of Polludrone highlighted the company's commitment to environmental protection, being a responsible builder, and strengthening trust among partners, clients, and regulatory stakeholders.

BROADER IMPACT: Setting a Benchmark for Eco-conscious Infrastructure Development

By implementing Oizom's continuous air quality monitoring solution, an ideal complement to traditional monitoring stations, provides more granular and flexible information. With Polludrone, L&T Construction not only ensured environmental compliance but also set a

precedent for sustainable infrastructure development. Their proactive approach has sparked interest among peer developers and public infrastructure authorities, encouraging wider adoption of real-time monitoring systems to maintain air quality and operational transparency.

With Polludrone's deployment, L&T could align air quality management with operational efficiency, building a robust framework for environmentally conscious construction at one of India's key upcoming aviation hubs.

CONCLUSION: Empowering Developers with Real-time Air Quality Insights

The collaboration between L&T Construction and Oizom at the Bhogapuram Airport site exemplifies how technology-driven environmental monitoring can support sustainable infrastructure development. By choosing Polludrone and leveraging the Envizom platform, L&T gained the ability to ensure real-time compliance, improve process efficiency, and uphold environmental integrity, all while enhancing their brand as a responsible construction leader.

This use case demonstrates how Oizom's continuous air quality monitoring solutions are not just tools for compliance but powerful enablers of smarter, cleaner, and more efficient construction practices.

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.