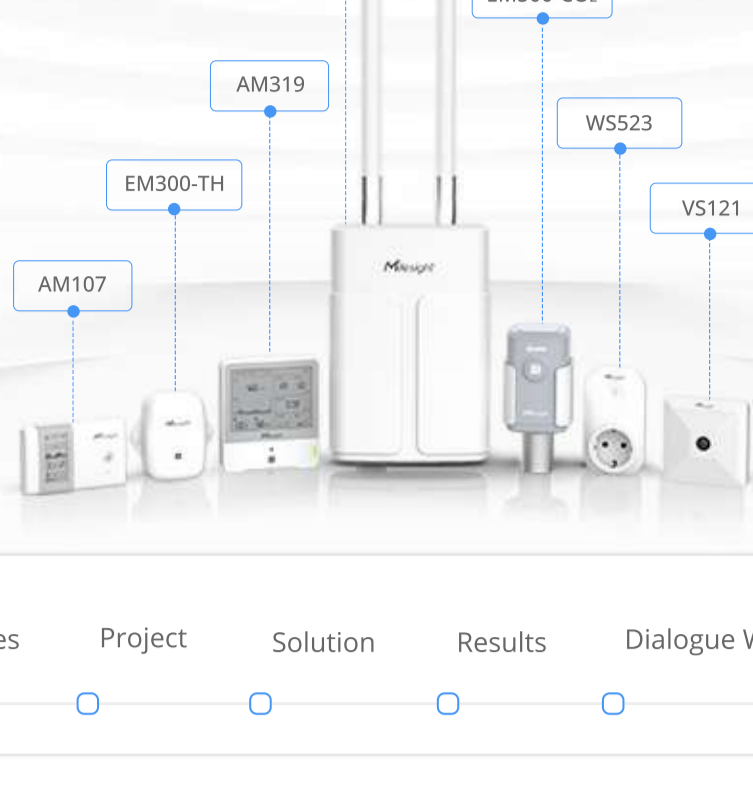


MILESIGHT 4, 400 SENSORS

Energize 62 Energy Efficient and Comfortable Buildings in Canada

Overview

<p>Milesight Partner Peak Power</p>	<p>Number of Devices Deployed 4,400 units of sensors, 440 units of gateways</p>	<p>Location Ontario, Canada</p>	<p>Number of Buildings Covered More than 62</p>	<p>Energy Cost Savings Over \$250,000 in Q1, 2022</p>
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Background Challenges Project Solution Results Dialogue With Partner Media Coverage

BACKGROUND

In commercial buildings, temperature, humidity, and air quality are all important for people's health and productivity. High levels of CO2 inside commercial buildings can cause many health concerns, commonly known as SBS (Sick Building Syndrome). Increasingly sophisticated smart buildings are being developed by nations around the world to improve efficiency, reduce costs, and generally make the environment healthy for residents and business owners. Additionally, under the looming climate crisis, energy prices began soaring last year. The need for building energy usage optimization has never been this urgent.



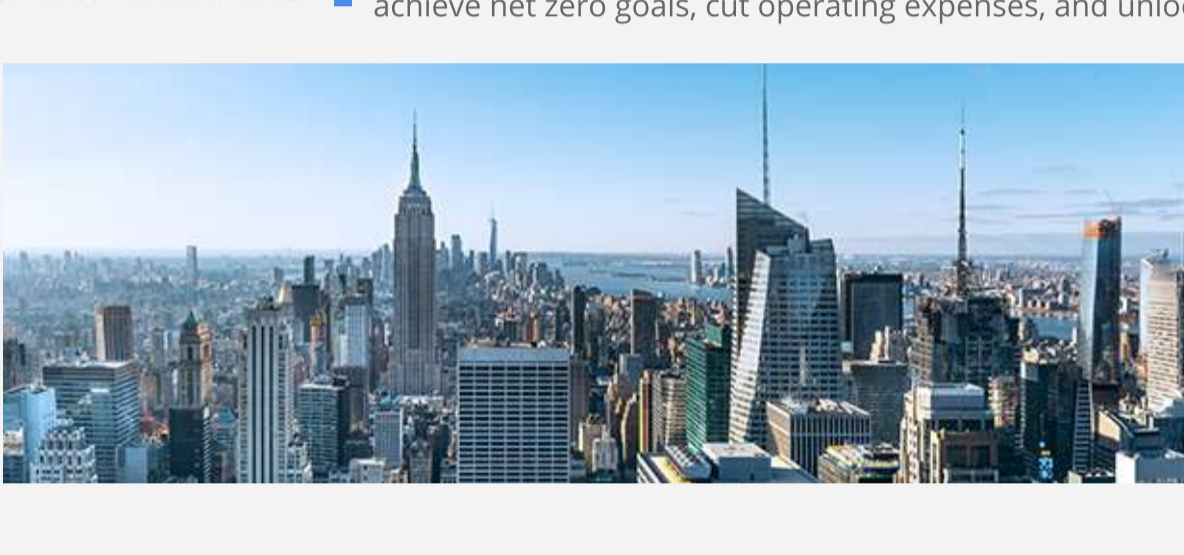
CHALLENGES

The AI-driven system requires accurate and real-time environmental data for analysts to provide alerts and recommendations to the building operators when sensors show that pre-determined thresholds have been exceeded, or to optimize the building's operation to save money. The existing sensor system functioned poorly with critical problems:

<p>Poor Signal</p> <p>The original solution was based on a technology with limited signal coverage, up to 60% of sensors onsite were</p>	<p>Excess Maintenance</p> <p>High power consumption required building operators to visit sites frequently to change sensor batteries which greatly</p>	<p>Extra Expense</p> <p>Each Temperature and CO2 sensor required a sim card that generated an extra \$500 monthly for each floor.</p>
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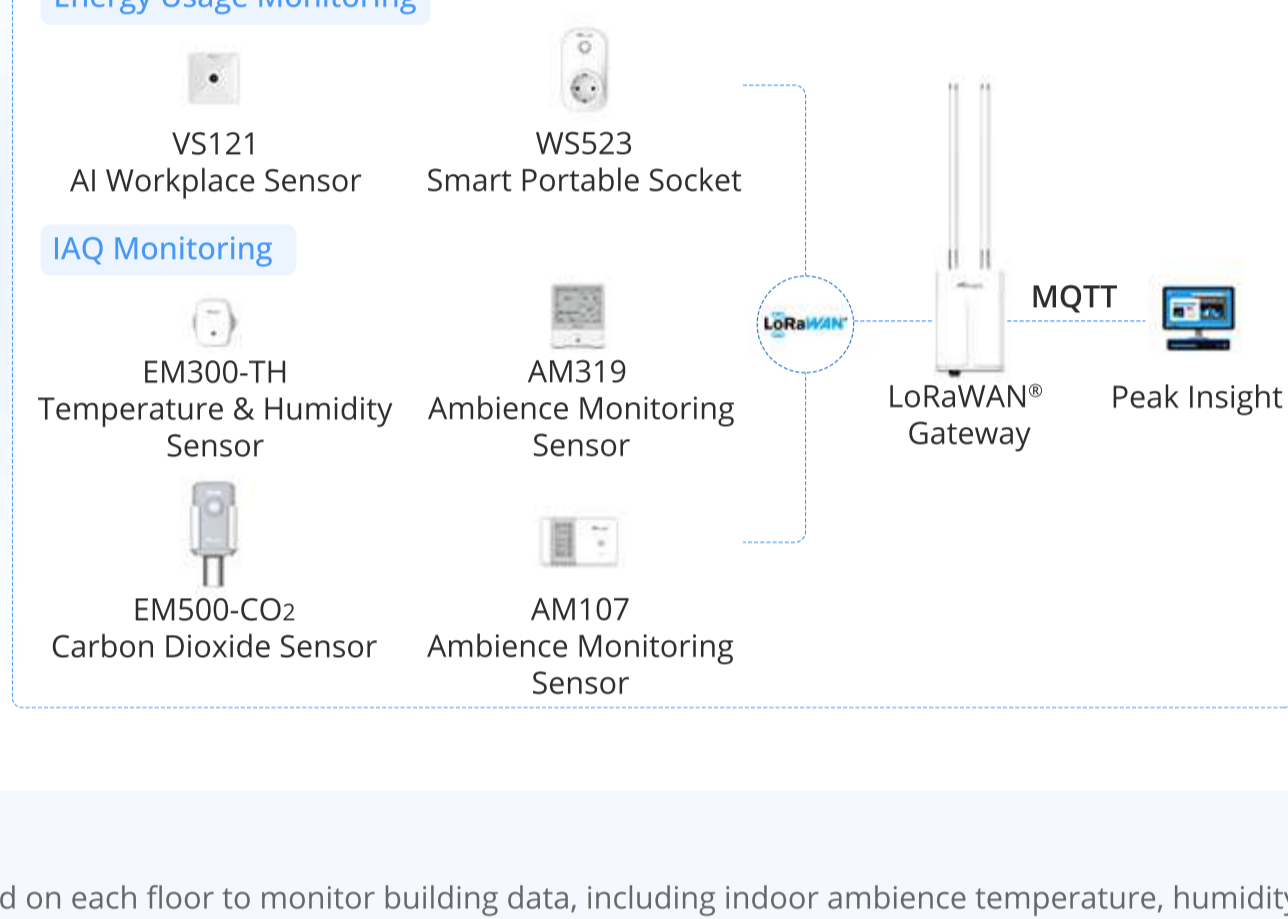
PROJECT

PEAK POWER Milesight's partner, Peak Power is a Canadian cleantech company at the forefront of the energy transition. They are pushing the envelope of what distributed energy resources can do in the built environment. They were one of the first companies to aggregate battery storage, grid interactive buildings, and bi-directional electric vehicles with a single decarbonization platform for partners to achieve net zero goals, cut operating expenses, and unlock new revenue opportunities.



In Ontario, Canada, Milesight partners Peak Power tailored a Smart Building Solution for more than 62 buildings including commercial offices and educational campuses.

SOLUTION



Milesight sensors are installed on each floor to monitor building data, including indoor ambience temperature, humidity, carbon dioxide concentration, occupancy, etc. Milesight UG67 LoRaWAN gateways are installed approximately every 3-stories with PoE power input to provide wide signal coverage. With embedded network server and 4G module, UG67 LoRaWAN gateway can forward data collected by the sensor by MQTT to Peak Power's platform—Peak Insight via cellular network.

Device Deployment



Toronto Metropolitan University

RESULTS

<p>Data-Driven Analyses</p>	<p>With qualified data, the AI-powered platform can forecast the peak hours of energy usage and deliver data-driven recommendations to reduce lighting or HVAC usage. The platform will also send alerts when indoor temperature leaves the range of 21°C-26°C, or humidity falls below 40%, which makes occupants more vulnerable to viral respiratory infection, or when CO2 levels exceed 800 ppm which aggravates SBS.</p>
<p>Accurate Insights</p>	<p>AM319, AM107, EM300-TH and EM500-CO2 collect indoor air quality parameters including temperature, humidity, and CO2. VS121 monitors the occupancy of the space. This data is forwarded to gateways in real-time. Building operators are able to gain actionable insights on indoor air quality.</p>
<p>Remote and Automated Management</p>	<p>Building operators can remotely turn on/off the devices through WS523 Smart Portable Sockets based on the recommendations, thus optimizing and reducing energy consumption. Also, when receiving IAQ alerts, operators can control the HVAC system remotely to provide improve</p>
<p>Accurate insights on IAQ, notifications from the platform, and effortless remote control over HVAC systems together ensure optimal air quality for tenants, which not only improves comfort level but also productivity.</p>	<p>Superior Indoor Air Quality</p>
<p>The solution is composed of three key elements which are accurate and actionable insights on energy usage and IAQ, data-driven analyses, and remote management. This has greatly improved the energy efficiency of buildings and saved hundreds of thousands of Canadian dollars every year.</p>	<p>Energy-efficient and Eco-friendly Building</p>
<p>Building operators can remotely turn on/off the devices through WS523 Smart Portable Sockets based on the recommendations, thus optimizing and reducing energy consumption. Also, when receiving IAQ alerts, operators can control the HVAC system remotely to provide improve ventilation.</p>	

DIALOGUE WITH PARTNER

Unveil the details of the success story through dialogue, rather than monologue

What are the benefits Milesight brings to the project?

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- "Data Availability and Accuracy"**

"After we finished the first building, we could directly notice the difference in the data quality compared with Zigbee in both availability and accuracy."
- "Unbeatable Battery Life"**

"After we finished the first building, we could directly notice the difference in the data quality compared with Zigbee in both availability and accuracy."
- "Rock-solid Coverage"**

"Milesight products and solution provide rock-solid single coverage. With just a few gateways we can cover the entire building. Before that we needed two sim cards for each sensor. Now we only need 4 sim cards to achieve the same coverage with much higher data quality."
- "Reduced Maintenance Work"**

"Before partnering with Milesight, our people needed to visit sites every few months to change sensor batteries. Now, the reduced maintenance work for Operations allows them to focus more on deployment to new buildings instead of going back to maintain finished work."

Why LoRaWAN?

Why LoRaWAN?

"We recognize that our previous solution provider was not a good tech fit for commercial buildings. A 2.4Ghz band is not usable when you deal with the steel and cement that are widely used in buildings. We found that a low band 900Mhz based system is a better option for the real working routine. We also needed something with low battery consumption that would reduce routine maintenance work. After research with all 900mhz solutions, we decided on LoRaWAN as our preferred solution to solve the problems listed above."



Why Milesight?

Why Milesight?

"After LoRaWAN" was selected, we started to deal with different vendors and carefully selected a few widely used brands in the industry. Most of those products came with the same framework ARM+Linux+ LoRaWAN stack to gateways, and STM32 MCU based to sensors. The system from Milesight is the most well-engineered in terms of hardware quality, single range, software completion, cloud support, forward options, UI/UX, and most importantly, instance support with a reasonable price (lower than avg)."

"Data is fundamental to everything Peak Power does. The Milesight devices allow us to provide accurate, real-time data to our operations team. Paired with Peak Insight, our building insights software, we can deliver real value to our customers."

WIDE MEDIA COVERAGE

As the energy crisis and the aftermath of the COVID-19 pandemic is affecting much of the globe, Milesight's successful solution to optimize energy efficiency and improve IAQ has attract the spotlight of many media outlets.

