Milesight

Make Sensing Matter

MILESIGHT PEOPLE SENSING DRIVEN SMART BUILDING

CONTENTS

01

SMART BUILDING GLOBAL INSIGHTS

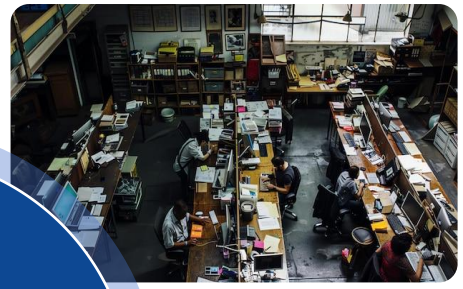
Smart buildings are in great need to reftrofit

DIFFICULTIES IN GLOBAL BUILDINGS

The following difficulties reforced global buildings to looking for digitalisation & retroffiting:

High Building Operating Costs

- Energy Waste
- Maintenance Expenses
- Resource Mismanagement



Poor Living and Working Environments

- Inadequate Climate Control
- Poor Air Quality
- Noise Pollution

IoT Retroffiting

easy connectivity
wireless deployment
smart transformation

Inability to Regulate Building Safety

- Outdated Security Systems
- Preparedness
- Compliance Issues

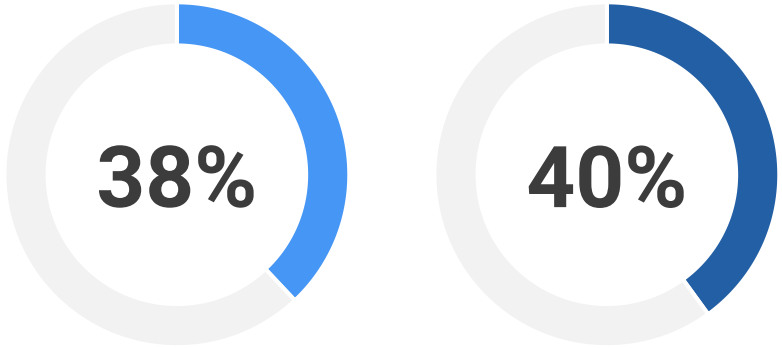
Limited Resource

- Water Scarcity
- Energy Constraints
- Financial Limitations

CURRENT STATUS OF GLOBAL BUILDING MARKET

Energy conservation and emission reduction in smart buildings involve two key aspects: **retrofitting and upgrading existing buildings** in countries with a large stock of such buildings, and e**nsuring new constructions are highly efficient** (zero-carbon, green buildings) in regions experiencing rapid growth.

Buildings are the Biggest Obstacle to Achieving Environmental Goals



Contribute to Greenhouse Gas Emissions

Account for Global Energy Consumption

The Biggest Driving Force in the Smart Building Market: Energy Factors

Overall Goal: *The Paris Agreement (2015)*

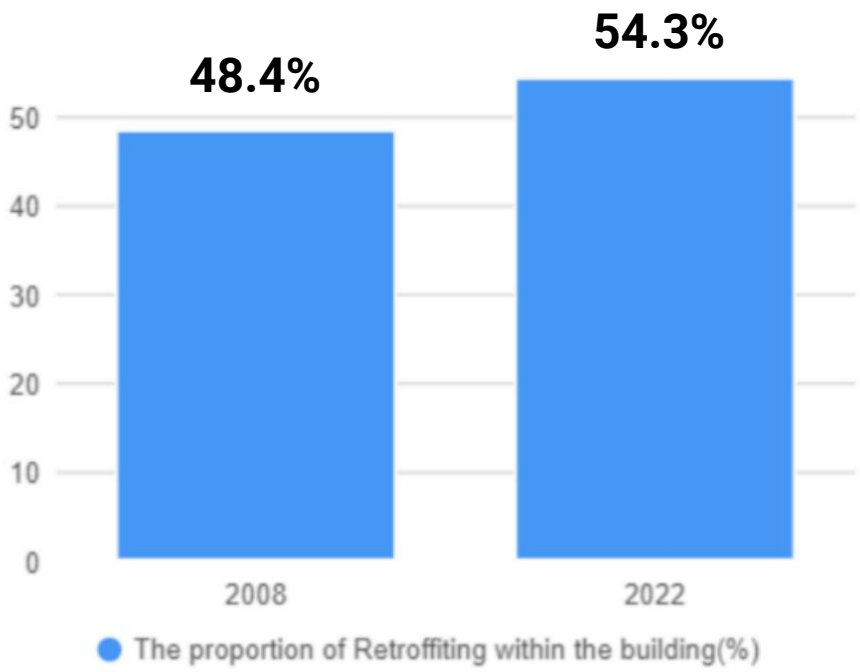
Objective: *To limit the increase in global average temperature to well below 2 degrees Celsius above pre-industrial levels, while pursuing efforts to limit the temperature increase to 1.5 degrees Celsius.*

Content: *Countries set their own emission reduction targets (Nationally Determined Contributions, NDCs), which are to be updated every five years to progressively increase the ambition of emission reductions.*

PARIS2015
UN CLIMATE CHANGE CONFERENCE
COP21·CMP11

GLOBAL BUILDING RETROFITTING MOMENTUM

With the clear momentum and significant potential in the global building retrofitting sector, and the market share of building renovation projects increasing year by year.



Retrofitting Proportion Annually

- To meet global climate targets (IEA), over 2% of existing buildings worldwide need to be retrofitted annually over the next decade.
- Currently, the global retrofit rate is less than 1%, but this is expected to increase due to climate agreements.
- Europe has a retrofit rate of 3%, and the US is at 2% (with around 5 billion buildings globally as of 2022).

ü Existing stock of buildings to be retrofitted

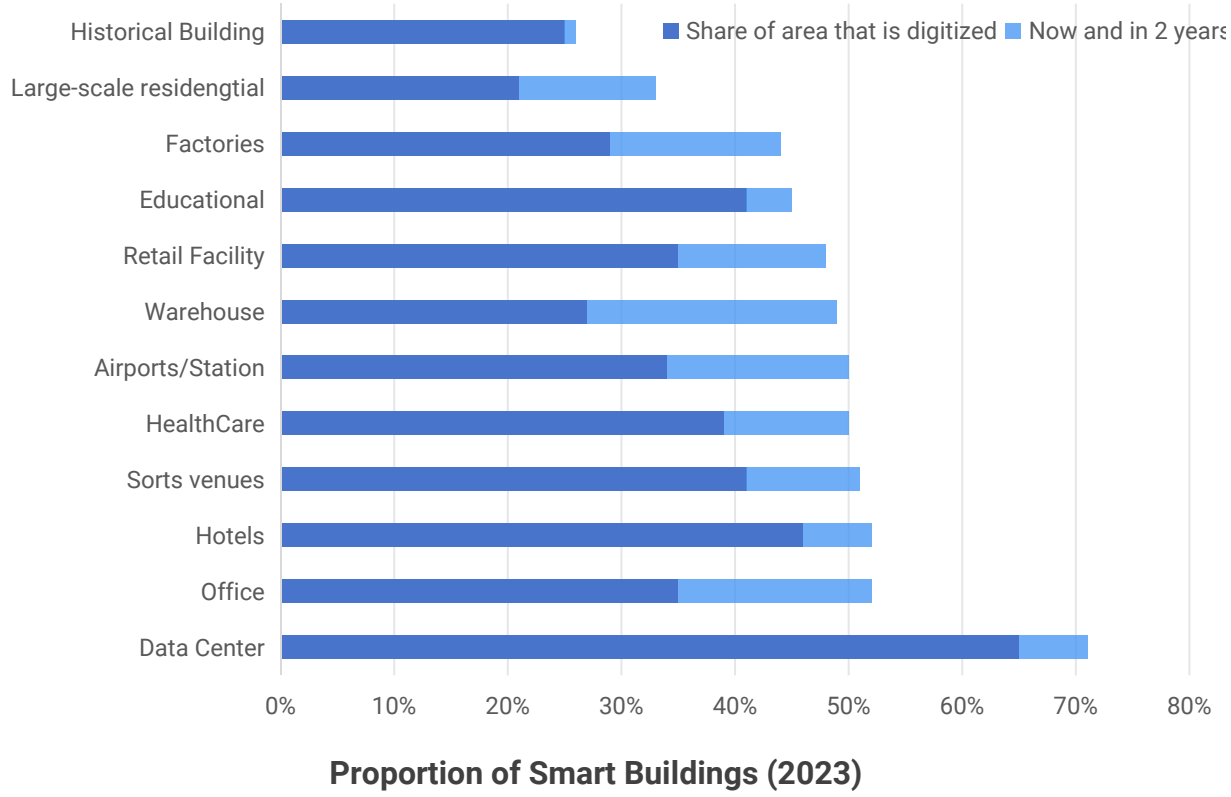
- By 2030, the global goal is to have 20% of existing buildings retrofitted for energy efficiency, with regional differences.
- The EU aims to retrofit 35% of its buildings.

IOT PRODUCT PERFORMANCE IN RETROFITTING PROJECTS

IoT Devices Retroffiting Benefits

A. Facilitates data acquisition, providing a factual basis for building operations.
B. Easy to install, does not affect normal building operations, and does not require changes to the building structure or wiring, resulting in relatively low costs.
C. Even for newly constructed buildings with the latest equipment, it allows for further optimization of equipment performance.

Currently, 65% of retrofit projects utilize smart building automation (primarily IoT products)



02 MILESIGHT STRATEGY

Pay attention to Milesight's **F**acility Management, **E**nergy Management, and **S**pace Management Solutions in **People Sensing Driven Smart Building** solution.

DEVELOPING STAGE OF SMART BUILDINGS

Automation

Stage I

Traditional Building

Standalone systems

Informatization

Stage II

Connected Building

Single dashboard
Opimized for energy
Two or mone systems manually integrated

Intellectualization

Stage III

Smart Building

Intelegent and coordinated workflow
Artificlal inteligence (Al)-Emerging
Most building systems integrated with discovery
Cloud integrations (e.g utiity, weather)

Autonomization

Stage IV

Autonomous Building

Autonomous workflow
Artlficial inteligence(Al+)-Advanced
Continuously learn, adapt and automatical
respond to needs of the occupants

THREE STEPS IN BUILDING RETROFITTING

Basic Step

Ensure the optimal operation of building systems by using data-driven approaches to increase efficiency and reduce human involvement.

Key Step

Reduce energy consumption to save costs and money for buildings.

Advanced Step

Enhance reputation, increase attractiveness, expand influence (boost revenue), and create social impact.

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People Sensing

Autonomization

Stage IV

Autonomous Building

Autonomous workflow
Artlficial inteligence(Al+)-Advanced
Continuously learn.adapt and automatical
respond to needs of the occupants

Benefits of People Sensing

People sensing makes every step of the smart building retrofit adapt to people's behaviour, distribution and utilization of the building. Based on those aspects, IoT devices can cooperate together and achieving autonomization responding to occupants timely.

Occupant-centric

Security

Comfort

Efficiency

Space Utilization

Resource Allocation

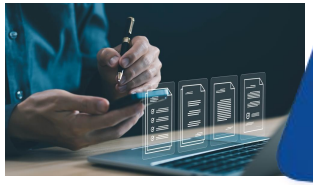
Industry-specific

Smart Buildings and Facilities Management

Retail and Customer Experience

Smart Homes and Security

Healthcare and Elderly Care



Research and Data Collection

MILESIGHT PEOPLE SENSING DRIVEN SMART BUILDING

The three main modules in Buildings are the core, and People Sensing empowers, creating a differentiated advantage.

Facility Management

Facility Protection & Maintenance	Efficiently Management	Meter Retrofits	Smart Restroom Management

Energy Management

HVAC Management	Lighting Management	Energy Monitoring & Management

Value-Driven Space Management

Environmental Comfort Improvement	Office/Workspace Space Management	Smart Restroom Comfort
People Caring	Human Well-being Certification Assistance	

FACILITY MANAGEMENT

Efficient Management

Centralized HVAC Control

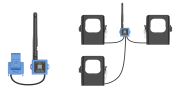
WT Series

Centralized Lighting Control

WS Series

Facility Protection & Maintenance

Power Status Monitoring



CT Series

HVAC Performance Monitoring

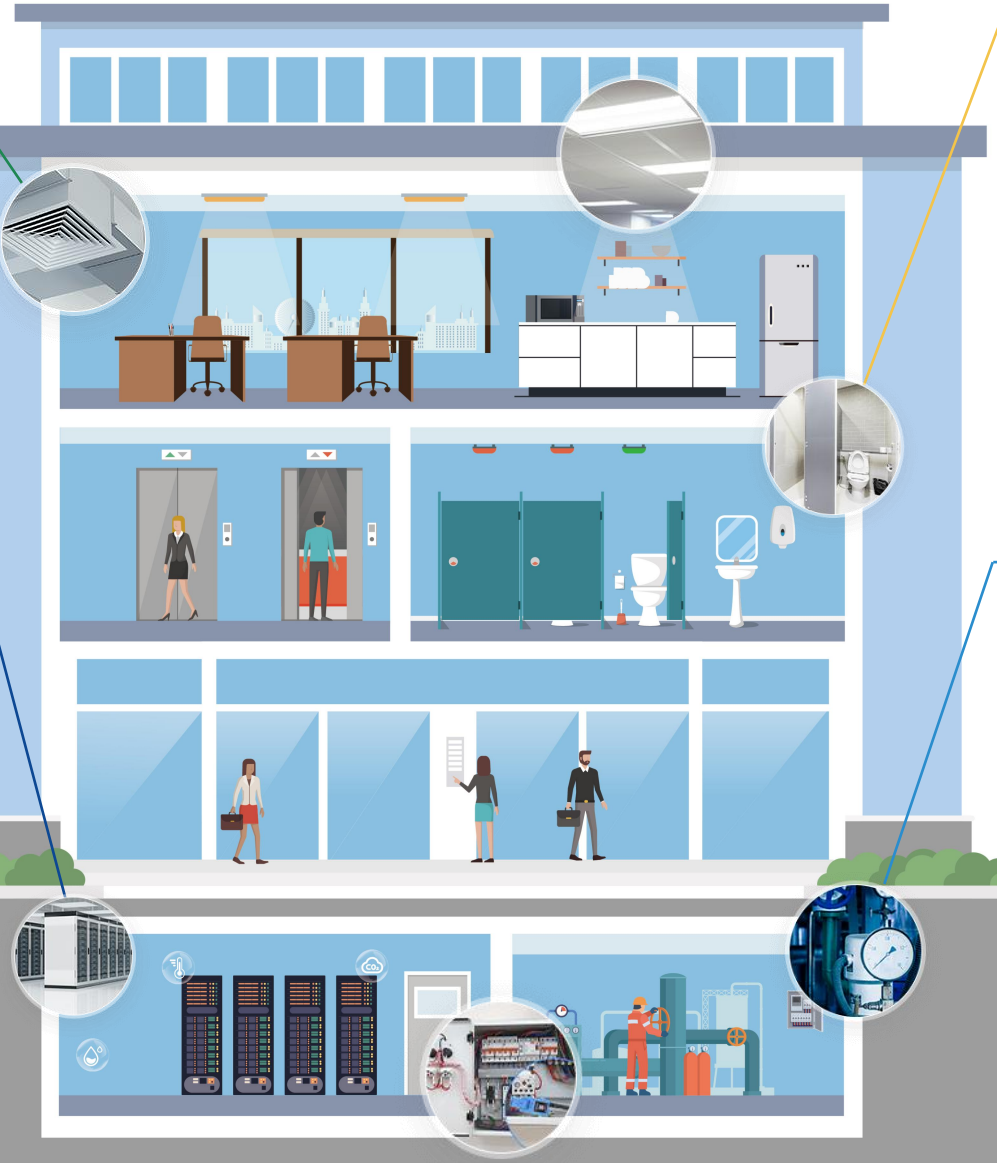
WT Series

IAQ Series

HVAC Pipe Monitoring

TS Series

EM Series



Restroom Management

Restroom Cleaning Schedule Management

People Sensing

WS Series

Restroom Supplies Management

WS Series

Meter Upgrades

Remote Metering

EM300-DI

UC Series

ENERGY MANAGEMENT

HVAC Management

Unified Manual Dispatch & Local Automation Adjustment

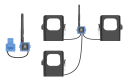
WT Series

Data-Driven Control: Real-Time Local Interaction

IAQ&WS Series

VS Series

Data-Driven Control: Energy-Saving Strategy Optimization



CT Series

TS Series

EM Series

Lighting Management

Smart Lighting Control

WS Series

VS Series

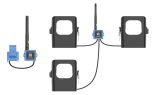
Energy Monitoring

Data-Driven Control: Real-Time Local Interaction

WS Series

Data-Driven Control: Energy-Saving Strategy Optimization

WS Series



CT Series

SPACE MANAGEMENT

Milesight

Environmental Comfort

Temperature and Humidity Control

IAQ&EM Series

VS Series

WT Series

Noise Monitoring

WS302

(E-)Cigarette Detection

NEW

GS601

Workspace Management

Space Optimization

VS&DS Series

Footfall Monitoring

VS Series

Sanitation Management

VS Series

People Caring

Human Comfort & Safety

NEW

VS373
Fall Detection

Smart Restroom Comfort

Restroom Air Quality Management

GS301

User Satisfaction Management

VS350

Display

03 SUCCESS STORIES

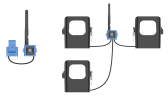
·Get to know people sensing driven smart building in all aspects

Facility Management

Milesight

Facility Protection & Maintenance

Power Status Monitoring



CT Series

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WS Series

Meter Retrofits

Remote Metering

UC Series

EM300-DI

Smart Restroom Management

Restroom Cleaning Schedule Management

People Sensing

WS Series

Restroom Supplies Management

WS Series

SUCCESSFUL CASES-FACILITY PROTECTION & MAINTENANCE

Position

1111 Atwater St., Montreal, Quebec, Canada

Milesight Partner

Thingsfactory

Background & Challenges

1111 Atwater St. is a marquee 38-floor condominium and rental building with 238 units, located in the heart of Montreal. Construction began in early 2020, and in early 2021, our partner, Thingsfactory, was asked to provide a comprehensive solution for water leak detection and protection.

Solutions & Products

Applied Products	Installation location&Results
EM300-SLD*1200	Over 1,200 Milesight EM300-SLD Spot Leakage Detection Sensors were installed in bathrooms, laundry rooms, kitchens, and mechanical rooms.
UC502(UC1114)*100 UC300*40	UC1114 IoT Controller control 1.5 inches ball valves and 2 1/2 inches butterfly valves on risers. UC300 IoT Controller also control dual hot and cold 3/4 inches ball valves in condominiums.
UG56 & UG65 & UG67	UG67 serves as a master (fleet mode) controlling the data received by UG56 & UG65 for building a LoRaWAN network.

Benefits

Early detection of leaks can save time and money in the long run, as administrators can take steps to prevent further damage. Building owner can get informed in real-time and make it predictive.

SUCCESSFUL CASES-CENTRALIZED HVAC CONTROL

Location

A tourist apartment building in Bilbao, Spain

Milesight Partner

SPHINX Computer Vertriebs-GmbH, S-CONNECT S.L., Nexmachina

Background & Challenges

Green Room Temperature Control in new build-to-rent promotion for tourist apartment is vital. Company that manages the apartments needs remote control and schedule heating and air conditioning of each apartment.

Solutions & Products

Applied Products	Results
WT30x @90 pcs	In this project, 90pcs smart fan coil thermostats installed, controlling heating and air conditioning for each apartment with different schedules.

Benefits

- **Smart Climate Control for Tourist** : Remote control and blocking option to prevent undesired uses are now possible.
- **Deep Insights**: Manager can obtain data in real time for better understand customer behavior to save energy.

SUCCESSFUL CASES-METER RETROFITS

Position
Trieste, Italy

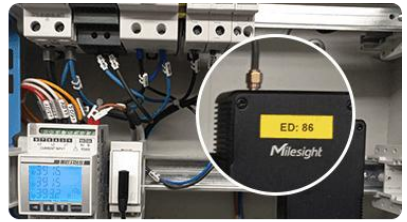
Milesight Partner
OpenSense

Background & Challenges
Over 100 existing residential buildings needed an electricity and heat consumption monitoring system. These buildings are residential condominiums where hundreds of people live, so it was not possible to carry out cabling and building work.

Solutions & Products

Applied Products	Installation location	Results
UC100-868M	Meter Box (Multimeter & Heat Meter)	The UC100 IoT Controller collects data via Modbus from the field instruments in mechanical rooms and boiler rooms
UG56-868M	Meter Box	Given that Milesight UG56 Industrial LoRaWAN® Gateway supports for BACnet/IP to integrate into existing Building Management System (BMS).

Benefits
Easy intergation with BMS using BACnet and allows the rea-time monitoring without interruption. The smart transformation has accelarated its ability with centrailized platform.



SUCCESSFUL CASES-RESTROOM SUPPLIES MANAGEMENT

Location

Italy

Milesight Partner

YouTissue

Background & Challenges

Smart restrooms differ from traditional ones, which rely on manpower and face various issues. Utilizing smart sensors and technology, administrators can better achieve cleanliness and hygiene goals, enhancing user experience and sustainability.

Solutions & Products

Applied Products	Results
WS201	Integrated sensors continuously monitor the filling of paper products in the dispenser.
UG65	This real-time data is securely transmitted via LoRaWAN to our centralized platform, enabling facility managers and distributors to monitor dispenser status from anywhere.

Benefits

The smart dispenser solution streamlines workflows by minimizing manual checks, optimizes resource management through real-time paper usage tracking, enhances hygiene in high-traffic areas, supports sustainability goals via waste reduction, and improves staff work-life balance by automating routine maintenance tasks.

Energy Management

HVAC Management

Unified Manual Dispatch & Local Automation Adjustment

WT Series

Data-Driven Control: Real-Time Local Interaction

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VS Series

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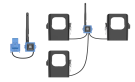

CT Series

TS Series

EM Series

Lighting Management

Smart Lighting Control

WS Series

VS Series

Energy Monitoring

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WS Series

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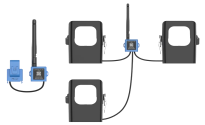
WS Series



CT Series

SUCCESSFUL CASES-UNIFIED MANUAL DISPATCH

Position

Don S. Bavaro-Marconi" Middle School
Bari, Italy

Milesight Partner

Marcom srl

Background & Challenges

The aim was to optimize the school's energy consumption by applying a system that was as least invasive as possible on existing structures and could be integrated into the existing BMS system

Solutions & Products

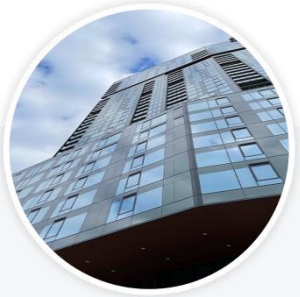
*The thermostatic valve was the ideal solution for the installed radiators

Applied Products	Installation location	Results
WT101-868M	Classrooms and common areas	Punctual temperature control in every place
UG65-868M-EA	Technical room	With a gateway coverage entire building

Benefits

Using LoRaWAN technology has reduced building work to zero with a significant reduction in costs. Furthermore, BACNET protocol in the gateway has simplified integration with existing BMS.

SUCCESSFUL CASES-SMART LIGHTING CONTROL



Position

Dubai, UAE

Milesight Partner

Sensgreen

Background & Challenges

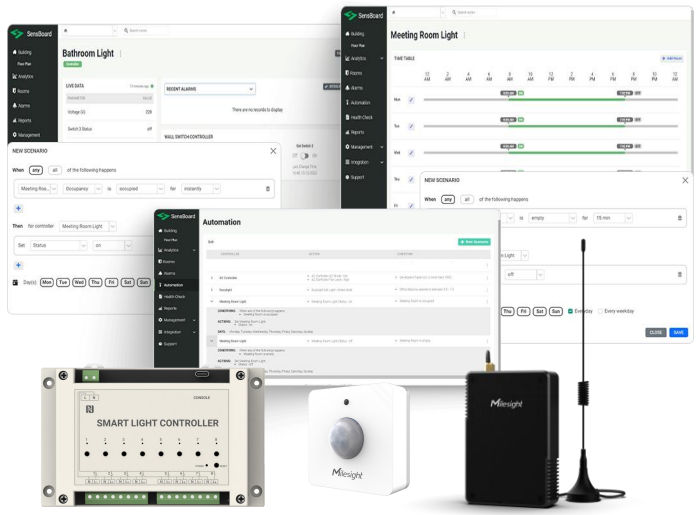
The office building in Dubai aimed to improve its energy efficiency while lowering operational costs. Our partner Sensgreen has helped their client successfully deploy and retrofit the building with a cost-effective smart light control solution.

Solutions & Products

Applied Products	Installation location&Results
WS558 Smart Light Controller	This allowed centralized control over lights across eight circuits with 15 controllers efficiently managing 87 light units.
WS202 PIR & Light Sensor	Lighting patterns were set up on the system to align with WS202 PIR & Light Sensor, natural daylight, and business hours, ensuring energy conservation while maintaining high-quality lighting.
Industrial LoRaWAN Gateway UG56	Network provider for smooth connectivity and wide coverage.

Benefits

- 25% Improvement in Lighting Efficiency: The Smart Light Control system achieved a notable 25% reduction in energy consumption for lighting within just one month of deployment.
- 11,000 Hours of Lighting Use Saved Each Month: Optimized lighting schedules resulted in a substantial reduction in operational hours. $3,000 Annual Savings on Electricity Bills: With the average energy cost per kWh in Dubai estimated at $0.06, the client experienced immediate monthly cost savings of $250.



SUCCESSFUL CASES-ENERGY-SAVING STRATEGY OPTIMIZATION

Position

Spain

Milesight Partner

Aritium

Background & Challenges

A central healthcare institution managing 213 clinics across 10,000 km² serving over 1 million people faces complex control challenges due to widespread locations, necessitating 24/7 remote management of HVAC, lighting, and equipment through data-driven systems to enhance efficiency, user experience, and energy sustainability.

Solutions & Products

Products	Installation location&Results
WS301	Magnetic Contact Switches are installed to detect if a door or a window is open to adjust environment conditions.
WS523	Portable Socket are installed to monitor the consumption of electric radiators
WS558	Light Controllers are Installed to control illumination in the shared areas
WS50X	Smart Wall Switches are installed to control illumination in rooms and information desk
WS202	PIR & Light Sensors are installed to detect the presence and to activate the illumination

Benefits

- Forming an integrated system for offering real-time facility status
- Improving energy efficiency in a better way
- Well matching the existing facilities without undertaking works of replacement
- Integrating information on different aspects to have a comprehensive vision of the facilities

Space Management

Environmental Comfort

Temperature and Humidity Control

IAQ&EM Series

WT Series

VS Series

Noise Monitoring

WS302

(E-)Cigarette Detection

NEW

GS601

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Human Comfort & Safety

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Fall Detection

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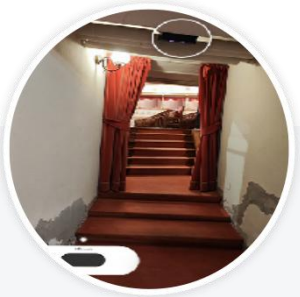
GS301

User Satisfaction Management

VS350

Display

SUCCESSFUL CASES-SPACE OPTIMIZATION



Position

Rome, Italy

Milesight Partner

iComfort

Background & Challenges

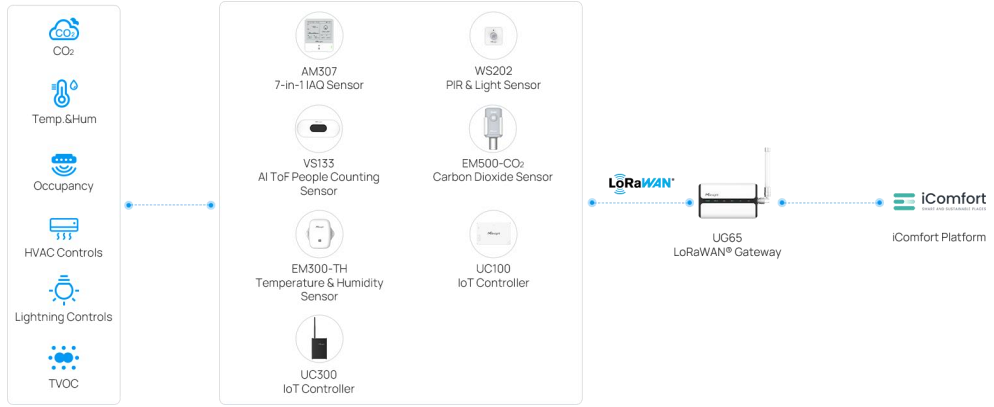
A historic Italian theater, inaugurated in the mid-1800s, is a cultural jewel deeply intertwined with the heritage of its city and people. The challenges is to optimize energy consumption and managing guest flows remained due to the building's historical nature and infrastructure.

Solutions & Products

Products	Installation location & Results
AM107 & EM500-CO2 & EM300-TH	Air quality monitoring for helping the theater maintaining optimal air quality, increasing the comfort and safety for audiences.
WS202 & VS132	WS202 PIR & Light Sensors were placed in every balcony and bathroom to monitor occupancy and manage lighting effectively. VS132 is for monitoring the people flow.
UC100 & UC300 & UG65	Doing wired transformation considering the cabling difficulties in the old building. Integrate different data with platforms for integrated management.

Benefits

The LoRaWAN® based people counters offering a flexible and non-intrusive solution, overcoming cabling difficulties and operational constraints by eliminating the need for extensive wiring and power outlets.



CLASSROOM | ENVRIONMENT COMFORT

Location

Warsaw, Poland

Milesight Partner

Acte Poland.

Background & Challenges

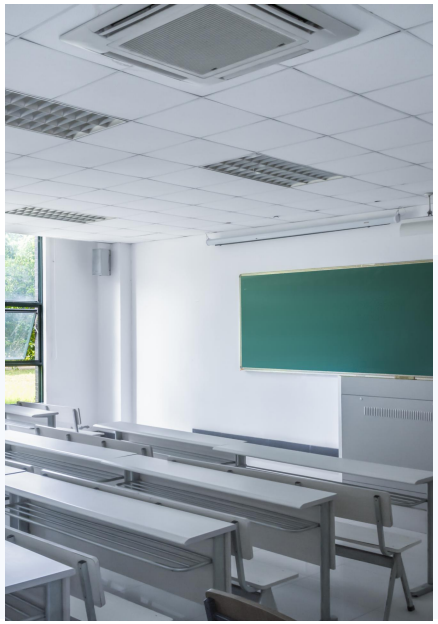
- Lack of monitoring measurements of classroom air parameters and environment
- Too high level of temperature and CO2 can reduce student's perception and teaching abilities.

Solutions & Products

Products Applied	Installed Places	Results
WS301 x 170pcs	Classrooms	Windows open/close status monitoring
AM103 x 34pcs	Teacher's desk in Classrooms	Temperature, huminity and CO2 level monitoring
EM300-TH x 52pcs	Classrooms	Temperature monitoring
UG65 x 2pcs	School	Network provider for smooth connectivity and wide coverage in schools

Benefits

- Reduction of heating costs for around 20% yearly
- Improvement of student's learning abilities occupants' comfort
- Data-driven decisions and abilities to analysis with real-time data



POWERING PEOPLE SENSING WITH MILESIGHT VS SERIES

People Caring

VS373

People Counting

VS125

VS135

VS133

VS350

VS351

VS360

People Presence

VS370

VS121

VS340/341

PEOPLE SENSING | RETAIL

Location

Barcelona, Spain & Europe

Milesight Partner

TC GROUP

Background & Challenges

- Limited space and restricted installation positions;
- Inability to ensure an obstacle-free zone around the sensor;
- Inaccuracy caused by a glare from lamp tubes;

Solutions & Products

Applied Products	Installation location	Results
VS133 PoE & VS135-PoE	High Ceiling Mounting	Optimized AI & Grayscale Image Recognition Algorithms
UR32L-L04EU-PoE	Above the Celling	Cellular Router with PoE interfaces for stable power supply and data collection, providing wirless 4G data transmission

Benefits

- Security, Availability, and Reliability:
- No connection to store's existing IT systems;
- User data protection and confidentiality guarantee;
- Higher counting accuracy data contributes to better decision-making.

PEOPLE SENSING | RETAIL

Location

Vodafone, HappyCasa ,
Mas movil, Spain

Milesight Partner

TC GROUP

Background & Challenges

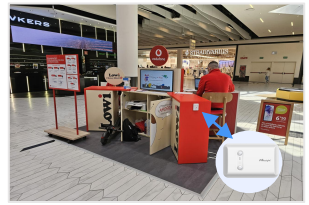
- Vodafone has installed more than 3000 units of people counters in Europe;
- In some open counter aisles, over-head mounting installation is not possible;
- Battery-powered people counters are preferred in those open areas;

Solutions & Products

Applied Products	Installation location	Results
VS350	The sensor is attached to the side of the counter near the aisle using 3M adhesive for people counting	Proof of Concept (POC) for VS350 & VS341 Desk Occupancy is currently in progress
VS341	The sensor is affixed under the counter with 3M adhesive, detecting occupancy when a customer approaches and stays for a while.	
UG56 Gateway	Inside the counter because of the compact design	

Benefits

- Footfall counting in open counter aisles for side or wall installation
- Customer trend and dwell time tracking
- Sales conversion rate data & employee performance evaluation



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