MULTITECH®

IoT for Smart Buildings

How wireless sensors, gateways and analytics leverage the Internet of Things to enable real-time data collection and analysis

SMART BUILDING IOT

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REVOLUTIONIZING SPACES

The Smart Building market is growing rapidly, poised to reach 265.37 billion by 2028 (Fortune Business Insights). A newfound focus on occupant's well-being, analytics, saving money, environmental concerns, and contactless technology (prompted in part by a worldwide pandemic) combined with the availability of next generation remote management tools are all contributors to this rapid expansion.

The latest smart building technologies, which include wireless sensors, gateways and analytics, to name a few, leverage the Internet of Things (IoT) to enable real-time data collection and analysis that was never before possible. Like Smart Buildings, IoT technologies are exploding in growth with their adoption increasing from 13 percent in 2014 to about 25 percent today with the worldwide number of IoT-connected devices projected to increase to 43 billion by 2023 (McKinsey and Company).

In this new landscape, facilities managers must evolve to source products, connect devices, and implement processes, which in the past, had been siloed or watched over by a single operator. The challenges for facility managers is daunting!

Following is a summary of key points for facility managers to address, as they look to leverage new advances in their planning and execution of a wide range of Smart Buildings technologies. Armed with these new technologies and a better awareness of how they work together, the possibilities are endless.

BUILDING SECURITY

Revolutionizing brick-and-mortar security with wireless sensor technology

Using wireless sensors and **low-power wide area networks (LPWANs),** we are now able to transform everyday objects into Internet-enabled devices that help us protect buildings and homes. Without spending much capital, facility managers can use low-maintenance Internet of Things (IoT) sensors to **monitor diverse environments,** track activity in specific rooms, and identify suspicious behavior around valuable assets.

It is easier now to integrate sensors with existing security systems and create additional layers of protection where needed. In this article, we highlight several security-related use cases for wireless sensors and showcase some of the ways that you can optimize wireless sensor technology for your organization.

Monitoring Commercial Buildings and Facilities of any size

It's important for any security system to monitor both building interiors and exteriors. Fortunately, security teams can configure wireless sensors for many purposes in a variety of settings.

Inside, **wireless contact sensors** are especially useful for detecting opening and closing events for doors and windows. Because wireless sensors are so cost-effective, organizations can deploy many of these devices throughout their facilities, covering all possible entry points.

For example, a **retail business might install sensors** at every ground-level window and any doors that lead to high-value lockboxes or vaults. A jeweler could place **wireless door sensors** on the inside of display cases that alert security staff members if opened unexpectedly. An electronics store with high-value merchandise might want wireless sensors installed wherever expensive inventory sits before it is brought out to the floor. Security teams could cross-reference sensor messages with camera footage or rely completely on sensors to notify of unusual activity.

Wireless tilt sensors can be placed on garage or bay doors to track opening and closing events at large entrances. For example, a retailer with major warehouse operations might want a tilt sensor to alert staff when garage doors open after-hours. Facilities can also use passive infrared (PIR) motion sensors to detect movement in and out of certain areas. PIR sensors can be programmed to send alerts when individuals enter or leave small spaces, which can be helpful for monitoring back rooms and quieter areas in large warehouses.On building exteriors, **wireless push buttons** are useful in security applications as they can be used as small, low-cost panic or notification buttons that can be placed almost anywhere. For example, a bank might install wireless push buttons underneath every desk so that law enforcement could be immediately notified of any attempted robberies. Front-desk staff for any major office building could also alert security if necessary, with the simple click of a button. Additionally, it's becoming increasingly common for hotels to provide cleaning staff with wearable panic buttons to use if they find themselves in dangerous situations.

Acceleration-based movement sensors are particularly effective for brick-and-mortar businesses that leave inventory outside of their physical structures. For example, car dealerships can place wireless accelerometers underneath every car in their lots to quickly detect stolen vehicles. Home improvement retailers that leave large equipment or gardening tools outside could place wireless movement sensors on high-value goods that bad actors might be tempted to steal.

Overall, there are countless ways that commercial businesses and organizations can protect their brick-and-mortar locations. Facility managers now have the tools to easily manage many devices simultaneously and thoroughly cover properties in multiple ways.

Increasing Home Security System Effectiveness

Wireless sensors can also complement home security systems. Although home security providers, such as Honeywell, Interlogix, and DSC, have unique wireless protocols, they typically only support single-direction communication over short ranges. This means no message acknowledgments, downlinks, or encryption, which are all necessary for effective wireless security systems.

Wireless sensors can be used in many ways to bolster in-home security. Again, wireless door and window sensors can be installed at any openings that individuals with malicious intent could use to gain illegal entry to homes. Tilt sensors can be deployed on garage doors and wireless push buttons can replace traditional doorbells for homeowners who want to receive certain alerts on their personal devices.

In private residences, it's also critically important for security systems to include air monitoring capabilities to check for gas leaks. With **wireless air sensors,** home security providers can act quickly and alert the proper authorities if they are notified of certain gases in the air. **Air temperature and humidity sensors** can also be programmed to inform security providers of potential furnace or HVAC issues that could negatively impact homeowners in any way.

Wireless water sensors can **inform providers of flooding** or liquid spillages in their clients' homes. Water rope sensors can be installed in large rooms to cover wide areas and **water leak sensors** can be placed along plumbing lines to check for frozen pipes and pump failures.

With wireless sensors, home security providers can improve the effectiveness of their systems and automate security-related information flow. With real-time alerts and notifications, these agencies can take better care of their clients and their properties.

Enhancing Building Security with MultiTech Reveal Wireless Sensors

At MultiTech, we design and manufacture a wide array of low-cost, long-range sensors that can be deployed for security-related applications.

Our sensors can be configured for the leading LPWANs using our proprietary Device Management Console. With this web-based platform, solution providers can provision, monitor, and configure wireless sensors to boost building security and protect valuable assets.

TEMPERATURE CONTROL

Most businesses take calculated measures to protect their property from threats like theft and physical damage. However, a significant portion of your inventory and physical assets also need protection from the elements. This means not only keeping them inside, out of the rain and snow, but also guarding against extreme temperature fluctuations that could spell disaster if you aren't well-prepared.

Of course, no one is going to store temperature-sensitive materials in an unheated/uncooled warehouse somewhere, at least not on purpose. Most modern industries, businesses, and retailers invest in reliable climate control systems and storage units that keep everything at the right temperature – most of the time. We rely on these systems 24 hours per day, seven days per week for years on end.

With any system or piece of equipment, however, something is guaranteed to go wrong some day – and often at the worst possible time. Climate control systems are stressed to the max at the most brutal times of year– during crushing heat waves and arctic blasts–and that's often when they fail. According to the **U.S. Food and Drug Administration,** it takes just two hours at room temperature for raw meat, seafood, and other perishable foods to become inedible and worthless. If the temperature hits 90 degrees, make that one hour.

Wireless Temperature Sensors

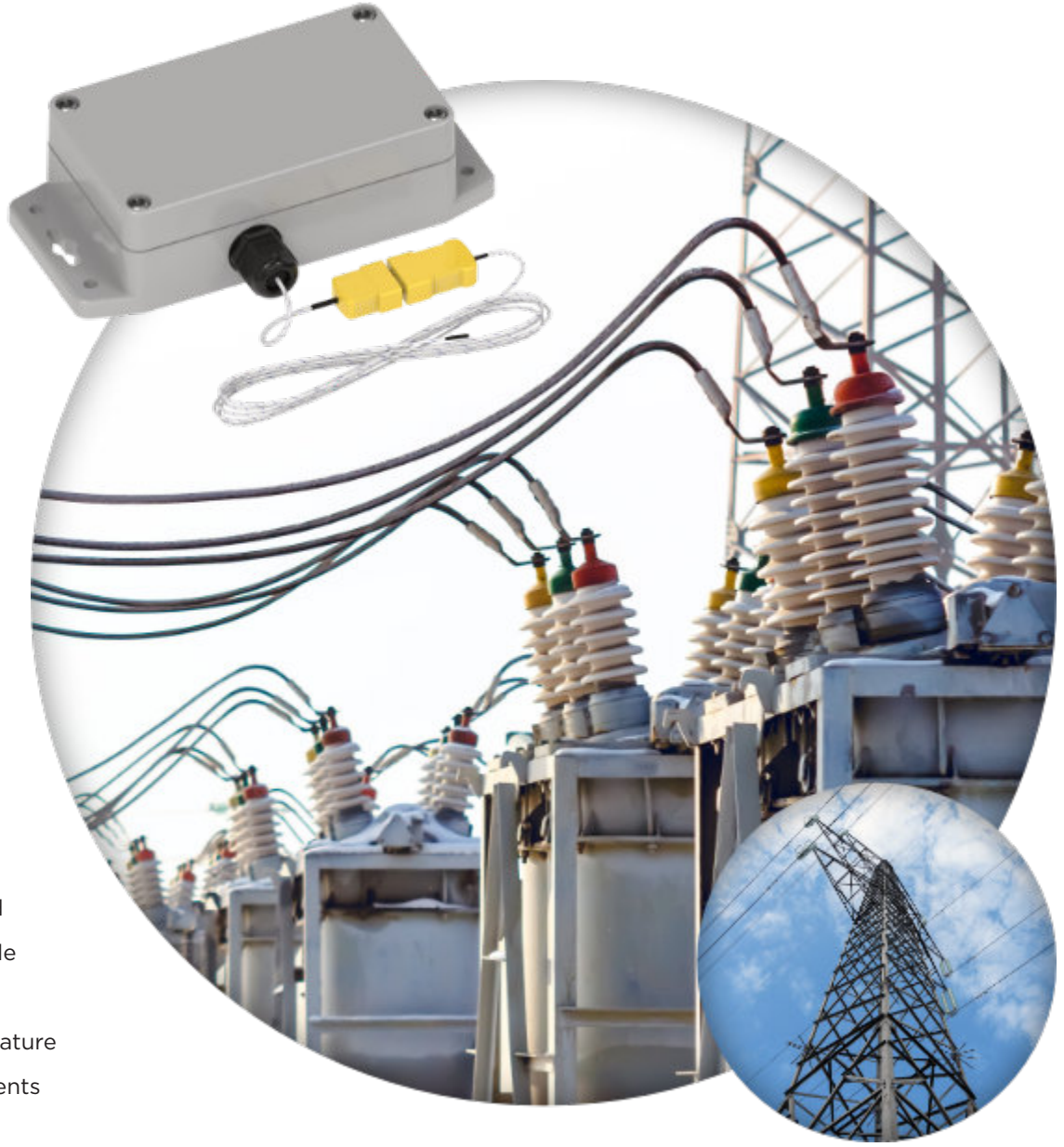
A First Line of Defense for Perishable Items

Never rely on one line of defense when it comes to protecting your inventory and property. Grocery retailers, restaurants, and the food chain operators who supply them can't just assume that their refrigeration systems will always work properly, when one malfunction can result in thousands of dollars in ruined, unsellable product.

That's where **wireless sensors** come in. Wireless temperature sensors let you know immediately when the temperature in a critical area is getting warmer or colder than it should, regardless of what your climate control system is reporting. MultiTech offers a variety of products for a wide spectrum of applications, from food sales and supply chain to indoor and outdoor industrial applications. If maintaining the proper temperature is important to your business, MultiTech has a sensor for that. Grocery retailers, restaurants, and food product distributors, can all protect their inventories with the wireless external probe temperature sensor.

The handy external probe on this device lets you monitor the temperature of specific items and specific areas with ease. And you don't have to rely on your memory to retain those figures, the probe will report the readings wirelessly to your central Radio Bridge dashboard, where they'll be recorded for later use. All MultiTech wireless sensors connect to your dashboard through **LoRaWAN®,** a wireless protocol like Wi-Fi or Bluetooth, but with a longer range and stronger signal.

Reveal Wireless Temperature Sensors Protect Industrial Assets



Food sales and distribution isn't the only business sector with temperature concerns. Industrial operators also need to monitor the temperature of important and expensive equipment. Even assets in hard-to-access positions, like a transformer on a pole, can be monitored continuously for temperature changes with a wireless thermocouple temperature sensor from MultiTech. The sensor's wireless LoRaWAN connection will take regular temperature readings and report back to the central dashboard, so you'll be aware when temperatures begin ranging outside safe levels. This gives you the early warning you need to take appropriate steps when equipment begins to fail or malfunction.

Because many industries rely on critical equipment and assets operating in indoor and outdoor environments, MultiTech thermocouple temperature sensors are shielded for use indoors and outdoors. Their LoRaWAN wireless signals can travel several miles and penetrate walls, floors, and other obstructions to ensure steady, reliable reportage. The unit's armored housing will even report unauthorized tampering. Once you've positioned the wireless thermocouple temperature sensor, you'll rarely need to touch it. Most configurations and adjustments are performed wirelessly, using your versatile LoRaWAN connection.

Reveal Wireless Temperature Sensors Ensure Working Spaces Are Comfortable

Sometimes monitoring temperature is just a matter of physical comfort. Employees are more productive and tenants are happier when they are not too hot or too cold. Customers rarely linger in retail environments that don't maintain a nice, cool temperature in the summertime. Of course, you likely have a heating and cooling system that takes care of much of that. If you're using a smart building network however, you can monitor temperatures in specific problem areas extra closely with a MultiTech indoor wireless no probe temperature sensor. These small, unobtrusive units work quietly in any office or residential environment.

Linking a wireless no probe temperature sensor to your smart building or smart home network with a LoRaWAN connection gives you the edge when you have a concern about heat or cold in a specific area. Worried about pipes freezing? Your sensor will raise an alert when they get too cold. Do you store items in a climate-controlled outbuilding you don't visit every day? Install a no-probe temperature sensor, and that strong, long-distance LoRaWAN connection will alert you immediately when the heating or cooling system fails, even in the middle of the night.

Wireless Air Temperature and Humidity Sensors Offer Extra Protection

Sometimes it's not just the heat, it's the humidity. Many businesses store merchandise or materials that MUST be kept in a low-humidity environment. Once the air gets too moist, deterioration sets in quickly. MultiTech wireless air temperature and humidity sensors monitor both temperature and humidity and let you know instantly when the readings aren't what they should be. If you wait until the air "feels" too moist or until someone notices a reading on a control panel, damage may already be done. A wireless sensor can send you a mobile alert, no matter where you are.

MultiTech wireless temperature sensors protect your property and assets from damage due to heat, cold, and humidity. LoRaWAN technology keeps you connected with each sensor, allowing you to check their status, get regular updates, generate reports, and receive alerts when a problem arises. All temperature sensors are available in both indoor models and armored outdoor models. MultiTech offers a full range of wireless sensors to protect your property from environmental threats and intrusion.

To see what we have to offer, **come check us out.**

Maximizing Efficiencies with Temperature Controls

In today's highly competitive business landscape, maximizing efficiency is critical. From the factory floor to the customer's door and throughout the supply chain, ensuring your products arrive on time and as expected is essential to customer retention – and profitability.

IoT is a major catalyst in this effort, as it provides a newfound ability for the enterprise to monitor everything from machine function to logistics. Such visibility enables companies to make just-in-time business decisions, streamline processes, and delight customers at scale. While this might seem like a complicated undertaking, the technology is highly accessible and cost-effective, opening new avenues for risk reduction and a greater level of control over just about every process.

Why Temperature Sensors?

Wireless temperature sensors are a component of **industrial IoT** that can be leveraged in several ways to achieve maximum profitability and reduce the risk of loss.

A few common use cases for temperature sensors include:

- Food Manufacturing and Packaging
- Residential, Commercial and Institutional Buildings
- Supply Chain and Logistics
- Restaurants
- Grocery Stores
- Factories
- Warehousing
- Agriculture
- Natural Resources
- Manufacturing
- Oil and Gas
- Water Services
- Chemical Processes

With the ability to monitor temperature in these settings, operators avoid machine breakdowns, avert spoilage, and minimize risk caused by temperature fluctuations.

Refrigeration Temperature Monitoring

In the food and restaurant industry, accurate temp monitoring is vital. The federal government issues temperature guidelines for food storage and safety, which is overseen by health and safety inspectors. Fines for non-compliance can be steep and organizations face forced closure for repeated infractions.

Public safety is an important consideration. According to the **Centers for Disease Control (CDC),** food spoilage causes illness in 48 million people every year in the United States. Though this is a number that combines instances stemming from restaurants as well as the groceries we purchase from a store, it's clear that adequate temperature control plays a part in loss mitigation.

However, human monitoring is often unreliable. Even the most diligent workers overlook temperature details at times, and for a high-cost product, that translates to significant potential loss. Wireless temp sensors allow operators to monitor conditions remotely. Sensors issue real-time alerts, notifying stakeholders of temperature anomalies in time to avert spoilage.

Restaurants that have a lot of money tied up in wine inventory can also benefit from remote temp sensors. When storing high-value wines, both temperature and humidity must remain consistent, or degradation can happen. Sudden temperature spikes can quickly render some wines undrinkable, leading to unrecoverable losses and an increase in the cost of doing business.

In an industry with a **notoriously tight margin,** every dollar counts, and temp sensors are an excellent way for the food and beverage industry to preserve profits, maintain product quality, and satisfy health and safety compliance mandates.

Industrial Use Cases

In industrial settings, temp sensors play various roles. They are a component of machine function optimization. They also help monitor the facility's ambient temperature, which can be a highly critical concern, depending on the industry and product.

Common industrial use cases for temperature sensors include:

- **Refrigerators** Maintain an optimal storage temperature range and prevent freezing.
- **Cold Storage** Maintaining a consistent temperature is essential for many commodities.
- **Boilers** Sensors will indicate leaks and insulation failure.
- **HVAC** Temp sensors help operators monitor systems for leaks, breakage, and energy loss.
- **Electrical** Heat spikes in electrical systems are a precursor to significant safety risks.
- **IT** Computers and servers will malfunction and fail if overheated.
- **Solar Energy** Reduced solar function affects power grids and all connected clients.

Maintaining Optimal Machine Function in Manufacturing

In manufacturing, temperature fluctuations are an indicator of machine overload, power surges, or complete breakdowns – any of which have the potential to disrupt the supply chain, erode profit margins, and cause a ripple effect of customer discontent.

Monitoring temperatures at the machine level helps factory operators save in many ways:

- **Optimize Management Time.** Real-time alerts allow foremen to respond immediately, reducing time spent on manual monitoring and allowing them to focus on higher-value tasks.
- **Improve Worker Safety.** Taking machines offline before they malfunction increases worker safety.
- **Reduce Maintenance Costs.** Temp sensors reduce unnecessary maintenance calls.
- **Maximize Uptime.** When machines are functioning as they should, production levels soar. By some estimates, machine downtime costs manufacturers in the realm of $50 billion each year in the United States, and almost half of that is due to machine failure.

Smart Building Applications

Today's most efficient buildings rely on IoT sensors for a range of functions, and temperature control is among the top concerns. With the ability to monitor and control the temperature in individual spaces – like apartments, offices, **hospitals,** and even jail cells – it is possible to reduce heating and cooling costs and optimize the building's energy usage.

Companies that manage massive complexes, like shopping malls, universities, data centers, storage facilities, or any organization that maintains multiple buildings derive a distinct advantage from temp sensors. With a remotely-monitored solution, it is easy to centralize and simplify oversight and control of everything from comfort to safety, even if the facilities are located on the other side of the world.

With the ability to detect temperature fluctuations and system failure, companies can reduce costs related to daily operations, system failure, inefficient machine function, maintenance, repair, occupant comfort and safety, and loss due to temperature variation.

How MultiTech Reveal™ Wireless Sensors Help

MultiTech offers a range of **wireless temperature sensors** to suit just about every commercial and industrial need. Our sensors are suitable for indoor and outdoor use, and the wireless signal can even penetrate through walls and floors.

Alerts can be configured to trigger when the temperature rises or falls below configured thresholds and sends a notification to your managers in real-time, based on your settings. Best of all, managing and monitoring your temp sensors is easy as your data is centralized into a single pane of glass, optimizing your time and helping you maximize value throughout the organization.

If you would like to learn more about wireless temp sensors and how they can help you, **reach out today.** We'd love to show you what's possible.

WATER LEAKAGE

One type of wireless sensor that is becoming just as important as **building security** for many companies is the **wireless water sensor.** These sensors can detect the presence of water, fuel, and other types of liquids. Using **wireless rope sensors,** building managers can learn of liquid spillages, pump failures, or floods over wide areas. **Wireless leak sensors** can be mounted on walls or along pipes to detect leaks before they cause further damage.

Every day, people are finding new ways to use wireless water sensors. Below are a few examples of how different types of organizations are deploying these sensors to support their existing services and protect valuable assets.

Addressing Leaks More Quickly

When it comes to water leaks — every second counts.

This is especially true in multi-family dwellings, condo buildings, and apartment complexes where a major leak in one unit can wreak havoc on many. Without the right flood detection systems in place, it may take a while before free-flowing water is discovered. As time passes, more damage is caused to building interiors and the underlying infrastructure.

Property management companies are beginning to deploy **wireless water leak** sensors in their client's buildings so that they can learn of floods as soon as they happen. Rather than wait for phone calls from distressed residents and landlords, plumbers can spring into action as soon as water leak sensors go off. This enables them to address flooding quickly and prevent catastrophic damages for their clients.

Wireless water sensors are also crucial for hotels and luxury resorts, where providing high-quality guest experiences is of utmost importance. For property owners in the hospitality space, water damage is one of the most challenging hurdles to overcome. With wireless water sensors, building managers can avoid inconveniencing guests and prevent long-term damage to interior building systems.

Reducing Water-Related Claims and Expenses

Insurance companies are also using wireless water sensors to their advantage.

Traditionally, water monitoring solutions have been expensive and complex to deploy. This has made it challenging for insurers to scale water leak detection capabilities across wide geographic footprints with different types of buildings. With wireless water leak sensors, insurance companies can receive alerts instantaneously when pipes burst, plumbing fails, or pumps malfunction. As a result, they are able to quickly contact the right repair teams to minimize damages. Additionally, insurers can move away from expensive monitoring solutions and deploy cost-effective water sensors that are able to monitor environments 24/7 for several years.

Using LoRaWAN, insurance companies can install wireless water sensors in every customer home to reduce their overall water claims and ongoing expenses in a given market.

Protecting Critical Assets More Effectively

Water damage can cause major disruption for software and tech companies that rely heavily on servers and other electronic components.

Thanks to wireless water rope sensors, these organizations can line entire server rooms with low-cost, leak detection sensors. Rather than monitor a single point with sensor probes, they can place long water ropes and cover entire perimeters. This specific application is also valuable for any companies with virtual data rooms that must protect digital information at all costs.

Water rope sensors can also be used by organizations that need to preserve physical documents and records. Facility managers for libraries, museums, and art galleries can't afford any wasted time when it comes to addressing water-related issues. Leaks and pipe bursts can cause irreparable damages in these settings.

The same can be said for **retailers** with massive ware-houses and storage rooms containing millions of dollars of inventory. With wireless water sensors, management personnel can enjoy peace of mind knowing that automated sensors will send alerts if any leakages or accidents occur.

Wireless water sensors are also valuable for home security system companies. Organizations like Honeywell and Interlogix are able to offer leak detection capabilities as part of their service packages with low-cost water leak sensors. At MultiTech, we have the technology and expertise to bridge home security system water sensors with **LoRaWAN®** or other LPWAN radios.

Monitoring Water Levels In Various Settings

In addition to detecting leaks, wireless sensors can be used to monitor water levels in diverse environments.

Wireless ultrasonic level sensors can be used to track water levels in lakes, reservoirs, storage tanks, and rivers. Property owners can monitor well volumes and environmental professionals can track groundwater throughout the year. This is especially useful in dryer parts of the country where effective resource management is crucial and could even be coupled with **temperature sensors to analyze environmental conditions.**

Boat manufacturers and owners can also install these sensors towards the bottom of their watercraft as a safety precaution. This way, if bilge pumps fail, the appropriate people can be notified instantly before major flooding occurs on board.

SMART RESTROOMS

The World Needs Smart Restroom Management Systems

Due to changes in health and hygiene, restroom management has become a top priority for many facility managers across the globe.

The restroom market historically added small incremental changes and features to differentiate its offerings. The next disruptive leap is to offer connectivity to enable operational efficiencies. The restroom industry is now ready to integrate with facility management platforms. This will enable facility management to pool data from the restrooms and improve overall operational efficiencies.

People are spending more time than ever in the restroom due to increased hand hygiene requirements and health guidelines. As a result, the rate at which supplies are used is different and can be challenging to predict.

Increased usage, paired with the demand for enhanced cleaning and disinfecting, and higher occupant expectations and standards, has driven the accelerated adoption of connected devices in commercial restrooms.

Where and how we work is much different now. For real estate and facilities management professionals, data is key. It's the best way to make critical decisions about when and how to maintain facilities.

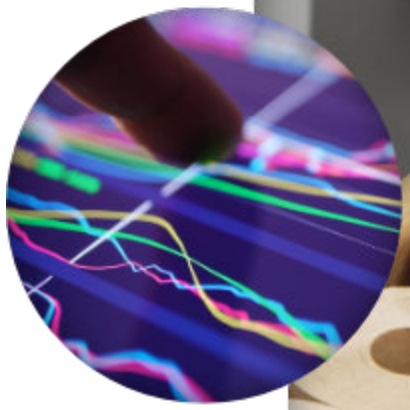
Commercial restrooms have been a source of frustration for property management, cleaning staff, and building occupants and guests. Smart Restroom Management systems provide the data to drive and element or avoid potential frustration events. IoT systems report real-time data to ensure devices are properly functioning and fully stocked. Smart restroom solution helps boost cleaning staff efficiency, lower product waste, and reduce complaints.

Optimized Maintenance Schedules

With detailed product usage and other relevant tracking information data, facility managers can better manage their staff. Understanding the rate of traffic or how and when most people use your restrooms, when stock is about to run out, or if the system battery is low. Facility managers can strategically decide when the cleaning staff needs to service commercial washrooms. By eliminating unnecessary steps to check supply levels in your restrooms, you can redirect your cleaning team to other cleaning and maintenance tasks. The system can offer predictive maintenance intelligence to also help plan staff's activities.

Better Management

While allowing you to reallocate labor, Smart Restroom Systems also help you reduce waste. Labor waste can add a big cost for facilities managers. Also, uniformity of data, and the method of evaluation is essential to drive a universal quality standard baseline for restroom management. Automation can provide a unified way to measure and evaluation of restroom status – instead of relying on individual judgment, which can create variation.



Structured Smart Restroom data allows AI to drive analytics and predictability for the next maintenance schedule. Facility managers can make smarter decisions to restock and trigger a buy event for consumables. However, the staff may still replace the soap or paper goods, like tissues, towels, and toilet paper, before they are fully consumed just because they are there. Premature refills create unnecessary waste. Smart Restroom Systems alert your maintenance team right before an outage so the devices can be serviced at precisely the right time.

SMART RESTROOMS

Fewer Complaints

Commercial restrooms have been a source of frustration for property management, cleaning staff, and building occupants and guests. Not only do alerts from smart restroom devices help eliminate waste by reducing the likelihood of premature refills, but they also reduce complaints from occupants and guests due to out-of-stock or broken devices.

Improved Facility Appearance

Clean restrooms have a big impact on occupant and guest satisfaction. With smart restroom systems, you can eliminate out-of-service dispensers that could otherwise leave guests with a negative impression of building maintenance. Additionally, many Smart Restroom Systems offer a single pane of glass where all data can land and be analyzed. With the advancement in data integration, restroom data can pool in with additional facility management data to look for trends and ways to drive efficiencies.

Catch Water Leakage Before It Catches You

Few of us think about the impact of water damage to our properties until it's too late and the damage is done. According to a report from ConsumerView, titled 'Quantitative Assessment in Europe', 50% of households in Europe have experienced water damage. Similarly, the Insurance Industry Research organization estimates that 14,000 people in the US experience a water damage emergency at home or work every day and the annual cost to insurance companies is approximately US$2.5 billion. When it comes to water damage, there is no doubt that the cost to owners and insurers can be crippling for citizens throughout the world.

Doing nothing and assuming that it can't happen to you is the worst course of action. Fortunately, proactive, preventive measures that utilize leading IoT technologies are now available and more and more households and businesses are adopting them to set up warning systems to prevent impending disasters. IoT solution provider, iioote, has developed a preventative solution that uses Semtech's LoRa® devices and wireless radio frequency technology. iioote's newest preventative solution, SenseIoT, utilizes LoRaWAN®-enabled temperature and humidity sensors, LoRaWAN gateways and the SenseIoT sensor-to-platform system, which detects and addresses water leaks in private buildings before damage can occur. Sensors are installed in risk areas in the vicinity of water and sewage pipes, such as in kitchens, bathrooms and basements. A LoRaWAN network connects sensors to the backend where data is analyzed, visualized and acted upon. iioote's LoRaWAN gateway of choice is the MultiTech Conduit®, an award winning, programmable gateway for the Internet of Things. The Conduit is a configurable, manageable and scalable LoRa gateway for industrial IoT applications. iioote's SenseIoT is a system that monitors moisture and mold in properties with wireless sensors using the LoRaWAN standard. The solution has been tested by the Research Institute of Sweden (RISE) in a four-month test of a warning system for moisture and water damage. The conclusion of the measurements found that, when appropriate and correctly placed sensors are used, a water leak can be detected at an early stage thereby avoiding consequential damages. Minimization of the expansion of a water leak can also be enabled.

iioote – make sense of IoT

How iioote Works

Humidity and temperature sensors are installed in places where there is a high risk of water leakage, for example in bathrooms, kitchens, attics and building basements. The sensors report their measured values on a regular basis and in the case of excessive values, based on monitoring values set in the device, will send immediate alerts. By monitoring the trends of humidity and receiving leakage alerts property owners and landlords can avoid serious damage or respond ultra-quickly in case of an incident. In this way, expensive moisture and mold damage can be avoided or minimized. The sensors are wireless and battery powered with a lifespan of up to ten years depending on configuration. Moreover, installation is straightforward and does not require a plumbing technician or electrician. The sensors are connected to a public LoRaWAN radio network built for IoT, or can use a residential or private LoRaWAN network. The humidity and temperature information are transmitted wirelessly to the cloud-based SenseIoT monitoring and alarm solution in which thresholds can also be set to match the local monitoring conditions, as we can expect bathrooms to be more humid than an attic or basement.

The sensors' data values and trends are made available in easy to understand reports and alarms or notifications can be configured for different threshold values. The system is easily accessible via web readers and mobile devices. Depending on where one sits in the value chain, the return on investment (ROI) for a full solution is measured in months rather than years due to the cost effective LoRaWAN sensors, gateways and software solutions. For insurance companies the number of claims would come down substantially and in case of an emergency leak the damages will be much lower given the immediate response. For building owners and landlords, the trend analysis will make sure buildings remain in good shape and do not need major repairs after many years of exposure to out of band humidity and fast responses to leakages will limit the resulting damages and create better customer satisfaction. Humidity is often also related to health risks and loss of irreplaceable materials which is not reflected in amounts.

Problem

Water damage to properties causes billions of dollars in damages

Solution

MultiTech Conduit®

Benefits

- Proactively detects water damage using humidity and temperature sensors
- Trend analysis as well as immediate alerts
- Easy installation without a technician or plumber

SenseIoT In Action

Recently the SenseIoT solution was installed in the renovation project of a 1938 tenant-owned apartment building situated in the suburb of Kålltorp in Gothenburg, Sweden. The project included updating of all drainage pipes and the electrical system as well as building refurbishment.
A water leak in such a house, which in some cases could take three to five years to detect, would be extremely expensive and would make it very difficult to dry and rebuild. With this in mind, the installation of the new SenseIoT system was a very good solution for detection of water leaks and prevention of prolonged damages. In the bathroom, the sensors were placed in the wall near the bathtub tap and in the floor construction near the floor drain. There is also a reference sensor placed in the same floor construction section where the floor drain was placed eight feet away. The reference sensor is used to monitor the development of humidity spread in the construction during leakage. In the kitchen, the sensor was placed in the space under the sink cupboard and floor. The sensor is used for detection of both dishwasher leaks as well as leakages from the sink for pressurized and passive water intrusion. “The SenseIoT solution gives us security against unpredictable costs for the estate when it comes to water leaks and it is also a quality label for each tenant-owned apartment. We get constant information about humidity, temperature levels and more, enabling us to know the status in the building at all times. As an extra bonus, we will receive a discount on the insurance,” says Henrik Berntsson, the chairman of the board of the tenant association within the building. Discounts from insurance providers are significant, as the solution provides a metric to ensure the cause of damage is accurately determined. “The saving can be huge and should be de-facto for all real estate owners, insurance companies and others,” adds Berntsson. The charge for a system varies with volume. The average size of a building is 20 apartments for tenant-owned apartments in Sweden. Such a system would cost around a US $1,500 one-time fee and around US $1,000 yearly for the SenseIoT subscription. An option is offered for monitoring of data and site visits when a leakage is assumed.

iiOOTE
iioote – make sense of IoT

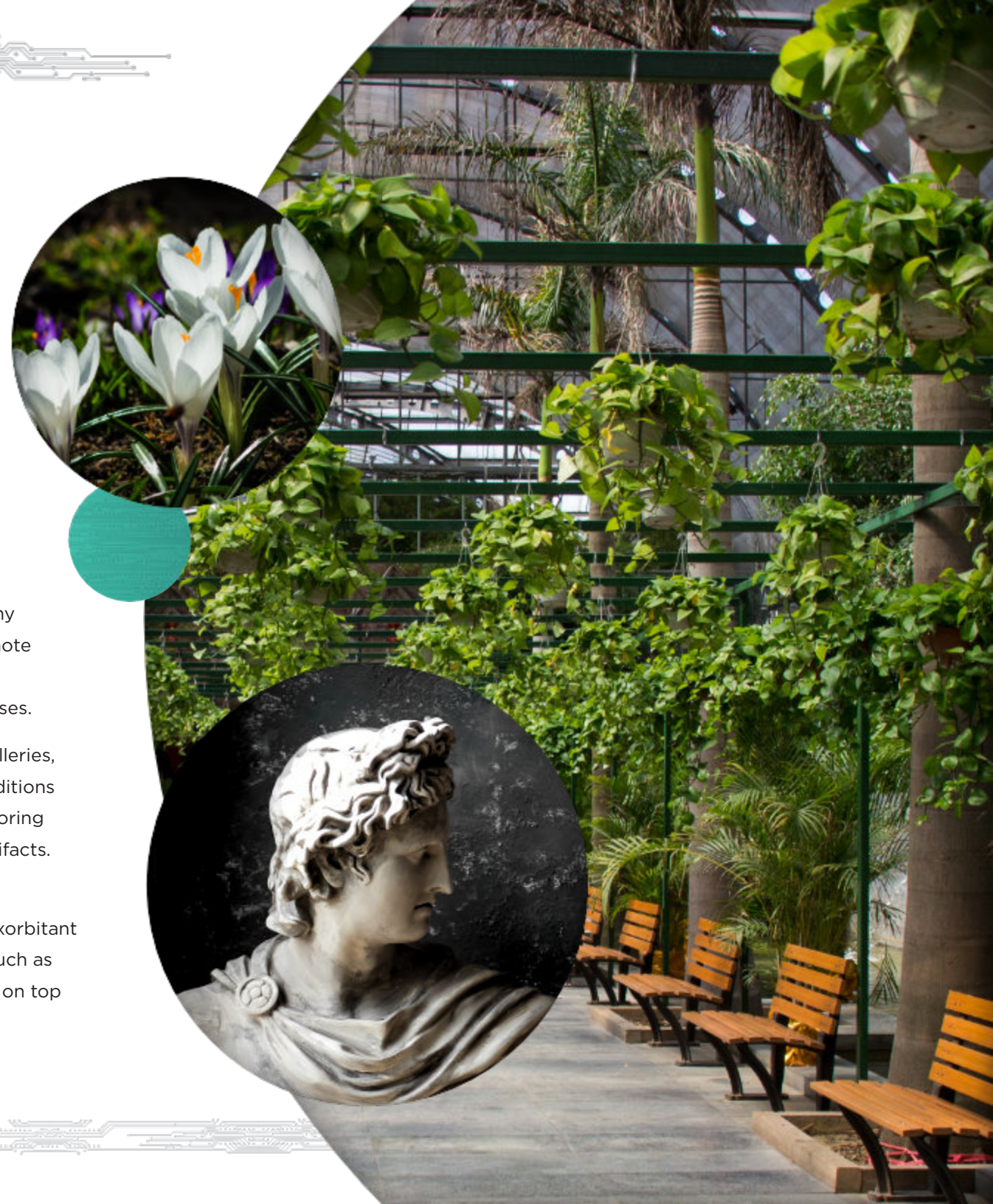
ART & CULTURE

Many times, we forget that the Internet of Things (IoT) can enable innovation outside of SaaS and “smart” applications. We primarily associate digitization with next-generation cities, new-age security, predictive maintenance, and automated supply chain management. However, this thinking can be expanded to many other innovative use cases.

The IoT and smart sensor technology can be used in many ways that aren’t immediately apparent. For example, remote monitoring has implications for cultural institutions and experiences, as much as in industrial plants and warehouses.

Today, we can install wireless devices in museums, art galleries, botanical gardens, and more to track environmental conditions and protect important assets. We can supplement monitoring systems and enable caretakers to preserve important artifacts.

Modern LoRaWAN® networks can support hundreds or thousands of devices simultaneously without incurring exorbitant infrastructure costs. With low-power, low-cost sensors, such as those offered by MultiTech, organizations can easily stay on top of the precious items, relics, and antiques that they own.



Protecting Art Galleries

For obvious reasons, environmental monitoring and preservation is incredibly important for art galleries. Many collectors and art owners won't loan their collections to others that don't have a sophisticated monitoring solution in place.

Wireless IoT sensors offer a reliable, cost-effective approach and safety net for institutions that display art. For example, curators can use **wireless temperature sensors** to track internal climate and ensure that ideal conditions exist in every room for certain types of pieces. Experts believe that air temperature should remain between 70 and 72 degrees Fahrenheit at all times. Temperature sensors can send alerts whenever data readings fall above or below this narrow range.

Tracking humidity levels is also crucial. **Wireless humidity sensors** can help curators ensure the right level of moisture exists in the air for different forms of art. Too much humidity can warp wood, damage metal sculptures, and facilitate mold growth. Too little humidity can cause paintings to dry out or crack. Fortunately, cost-effective wireless sensors enable curators to mitigate risk in this area.

Wireless air quality sensors also play an important role in art galleries. Air-based pollutants can permanently contaminate canvases and other art surfaces. On the guest experience side, these sensors can also protect people from harmful gas leaks by warning official personnel of potential leaks. With wireless bridges, facility managers can connect any third-party, off-the-shelf gas leak sensors directly to LoRaWAN networks.

Preserving Plant Life at Botanic Gardens

Botanic gardens and biodomes can also benefit in many ways from using wireless **IoT sensors.** Remote monitoring systems are crucial in these settings because the facility managers must maintain ideal growth conditions while preventing diseases. Too much humidity allows **different molds, mildews, and diseases** to flourish, which can wreak an entire greenhouse in a short period.

In the same way that wireless humidity sensors monitor internal air moisture in art galleries, they can also track conditions in greenhouses. Onsite managers can configure humidity sensors to report levels at regular intervals. These levels can be adjusted throughout the year to align with the broader climate and seasons.

Biodomes that support diverse ecological systems with many different plant and animal species must also be cautious about maintaining certain environmental conditions. " **External-probe air temperature and humidity sensors** or similar sensors built for “outdoor” environments are especially useful in these settings.

Facility managers can deploy the same sensor in different areas and configure each one differently depending on the needs of the unique species in those areas.

Outdoor botanic gardens can also take advantage of wireless **water leak sensors.** Water systems that aren’t functioning properly can easily overwater and damage plants. Wireless water sensors can help protect against this by alerting facility leads of potential flooding. **Water rope sensors** placed along longer pathways can help monitor larger areas or walkways.

By using water sensors, facility managers not only protect flora, but also minimize wasteful utility expenses. They can catch leaks or other system-level issues quickly that would otherwise cost money to fix on the back end.

Monitoring Museum Artifacts

Museum facility managers can also benefit from IoT sensor technology. In addition to the environmental monitoring solutions described above, these institutions can supplement security protocols with wireless sensors that detect motion and opening and closing events.

Security teams can install **wireless door and window sensors** at any potential entry points for thieves. **Wireless proximity sensors** can also protect certain rooms or areas where guests aren't allowed. In these instances, it may not make sense to pay a security guard to watch over a prohibited area that a wireless sensor could easily monitor. Both of these devices will send messages directly to the cloud about potential break-ins over LoRaWAN or other wireless protocols.

Security leaders can also place **wireless acceleration-based movement sensors** on platforms that support larger artifacts that mischievous guests may be tempted to move. Or, they can install **wireless panic buttons** throughout buildings for guests or security personnel to trigger in the event of an emergency.

All of these devices are useful for bolstering onsite security in different ways. Each can be configured to detect security threats that would otherwise compromise museum artifacts and possessions. Overall, wireless sensors are a tremendously cost-effective way to protect high-value items that are, by definition, impossible to replace.

Wireless sensors also complement camera systems well because they can automatically alert security teams when something is wrong. Therefore, facility managers do not have to allocate human resources to constant video surveillance or spend additional capital on expensive video systems.

PHARMACIES

One of the most significant concerns of the pharmaceutical industry is proper medication storage. Pharmaceutical products need to be kept within a specific range of temperature and moisture levels. Outside of these conditions, medications may not maintain their integrity, with active ingredients degrading over time. Pharmacies can preserve their products' integrity through appropriate storage techniques. Learn how to manage pharmacy room temperature with the aid of wireless temperature sensors.

Temperature Control and Pharmaceutical Drug Storage

Most medications need to be stored in a dry, dark and cool place. High temperatures can **chemically alter medications,** while high moisture can cause tablets to degrade. Most prescription medications are stored in one of **four types of conditions:**

- **Room Temperature:** Most medications are designed to be stable at room temperature, so this is a common storage requirement. Room temperature for pharmaceuticals is defined as 20 to 25 degrees Celsius or 68 to 77 degrees Fahrenheit.
- **Cool Storage:** Cool storage conditions are defined as 8 to 15 degrees Celsius or 46 to 59 degrees Fahrenheit.
- **Cold Storage:** Cold storage is considered 2 to 8 degrees Celsius or 36 to 46 degrees Fahrenheit. These conditions are optimal for inhibiting chemical reactions and microbial growth. Cold storage is often required for highly degradable drugs and vitamins.
- **Fridge Storage:** Fridge storage is another common pharmaceutical storage requirement and is defined as -4 to 2 degrees Celsius or 25 to 36 degrees Fahrenheit.

Many manufactures recommend discarding medications if they are stored outside their recommended temperature range for **five hours or more.** Exposure to higher temperatures can result in the active chemicals in medications changing at a molecular level. Sometimes, this can result in the medication decomposing, making it less potent or even changing its effects. Medications known to be affected by temperatures include injectable diabetes treatments, eye-drop medications, inhaled drugs, birth control and various antibiotics. Degraded medications can be life-altering or life-threatening, so they must be stored properly.

Pharmaceutical Drug Storage Best Practices

It's easy for individuals to expose their medications to heat and humidity accidentally – a hot car ride or an open bathroom medicine cabinet is often all it takes. But heat exposure can also occur in a pharmacy. Power outages, heatwaves and malfunctioning equipment can all result in heat exposure within a pharmacy building and destroy pharmaceutical supplies. To protect against temperature exposure, pharmacies can employ a few best practices:

- **Packaging:** Ensure medications are packaged properly, complete with suitable coverings and seals. Avoid opening new packages unless necessary and double-check that containers are adequately sealed when not in use.
- **Airflow:** Proper airflow can help dissipate heat within a pharmacy. To this end, take advantage of windows and air vents. Make sure screens are installed to prevent bugs from entering the pharmacy and leave windows open when possible. Try to circulate this airflow as much as possible using fans.
- **Placement:** Tightly packed boxes and shelves can trap heat, causing medications to overheat over time. Place shelves and boxes in the pharmacy so there is enough room for air to flow between them.
- **Air Conditioning:** Ensure your pharmacy has a functioning air conditioner available to handle particularly hot days. Schedule regular maintenance for your air conditioning system to ensure it is properly functioning at all times.

On top of these best practices, implementing a temperature monitoring system can help ensure that medications are stored at proper temperatures.

The Role of Temperature Monitoring Systems

Monitoring temperatures and conditions manually is a common method for maintaining pharmacy room temperature range. This manual recording can be inconsistent or inaccurate. It is also limited to working hours when someone is present in the pharmacy to record temperatures. As an alternative, many pharmacies have turned to automated temperature monitoring systems.

Temperature monitoring systems use wireless sensors to record environmental conditions in a space. Using a wireless network, these sensors can monitor the temperature in a pharmacy storage area, sending records to a database. Some systems can also measure humidity. The system sends automated alerts when a space's measurements fall outside thresholds so someone can quickly come and resolve the problem before medications are negatively affected.

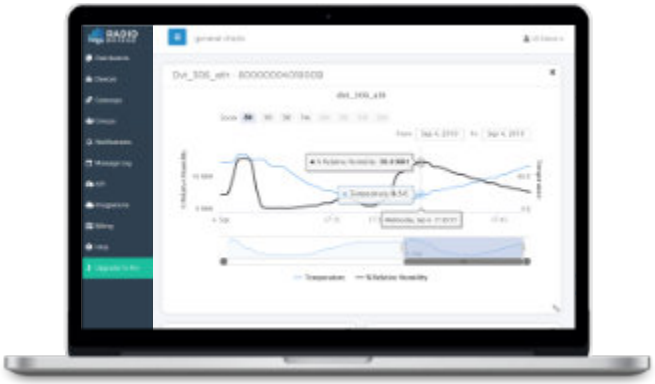
MultiTech offers a range of **temperature monitoring sensors** that can be used in pharmacies. Based on LoRaWAN® wireless technology, these sensors provide wireless penetration through walls and floors and have excellent range. They can also be configured remotely. If measurements fall above or below preset thresholds, the sensors use the system to send out an alert.

PHARMACIES

MultiTech Sensor Options Include:

- **Wireless Air Temperature and Humidity Sensor:**
  This sensor uses airflow to measure temperature and humidity levels in an indoor space.

- **Wireless Air Temperature and Humidity Sensor:**
  This external probe sensor uses a porous stainless steel filter to measure humidity and temperature using airflow. This sensor is rated to be used in both outdoor and industrial environments, with a weatherproof enclosure and cable and an IP54-rated filter.



- **Wireless No-Probe Temperature Sensor:**
  This probeless temperature sensor measures the temperature of the air around the sensor.

- **Wireless Thermocouple Temperature Sensor:**
  The wireless thermocouple temperature sensor uses an external thermocouple to measure temperatures. This sensor can be configured with a variety of thermocouple types, including B, E, J, K, N, R, S and T. It also features a weatherproof enclosure, making it suitable for both outdoor and industrial use.

- **Wireless External Probe Temperature Sensor:**
  The external probe temperature sensor uses an external probe to measure temperature. It features a weatherproof enclosure, making it useable for outdoor and industrial uses.

- **Wireless External Probe Temperature Sensor:**
  This external probe temperature sensor uses an external probe for temperature measurement and is ideal for low-cost indoor applications.

Temperature Monitoring Solutions from MultiTech

Temperature monitoring is a necessity for the storage of antibiotics and other medications. If you're looking for a temperature monitoring product to help with pharmacy storage management, MultiTech has solutions to help.

At MultiTech, we design and produce long-range wireless sensors for various industries. Our sensors are designed with the LoRaWAN wireless standard to ensure reliability and signal strength, making them an ideal choice for a variety of applications.

Our temperature sensors are an excellent choice for the pharmaceutical industry, with a range of options to handle practically any environment and monitoring need. Our sensors are linked to our convenient web-based console, which serves as a hub where you can set up sensor configurations and alerts, monitor activity and enjoy other features.

Contact MultiTech today to learn more about our temperature monitoring solutions.

RETAIL

One thing that all brick-and-mortar retail establishments have in common is the need to monitor the movements of store merchandise and business assets. Managers need to know when merchandise is safely where it is supposed to be and when it is being moved to a location where it should not be. Unauthorized movement could indicate a theft in progress, or it might just be a well-intentioned employee moving something to the wrong location. Either way, the result could be stolen merchandise, a lost sale when the desired item can't be found, or lost productivity as employees are occupied by inventory checks to locate misplaced merchandise.

Managers also need to keep an eye on the movements of store assets. Company vehicles, tools, and other equipment are all vulnerable to pilfering and unauthorized use by intruders or employees. According to the National Retail Federation, each dishonest employee costs retailers an average of more than $1,200 each year. And while we tend to picture shoplifters as small time thieves hiding a few items under their clothing, NRF surveys indicate that the average shoplifting incident costs a store more than $500.

Wireless movement sensors are a vital part of a comprehensive loss prevention strategy

Every retail operation should devise a comprehensive loss prevention strategy that combines multiple tactics. The exact methods needed will naturally vary from business to business, but common measures include security cameras, security tags on merchandise, and in-store security personnel trained to detect suspicious activity. Another versatile tool retailers can deploy to ensure that merchandise and store property stay where they are supposed to be is the **wireless movement sensor.**

First, let's make it clear that we are not talking about motion sensors. Motion sensors are stationary devices that detect moving objects within a particular range. They react to any sufficiently large moving object. Motion sensors are great for detecting an intruder in a closed store or a wayward customer or employee in a restricted area. All retailers should consider using them.

Wireless movement sensors, on the other hand, are attached to specific items like merchandise, equipment, or vehicles, and raise an alert when they begin moving. When a motion sensor activates, you know something or someone is moving in a certain space, but you don't know who or what. When a wireless movement sensor raises an alert, you know precisely which item is in motion.

LoRaWAN® is the ideal wireless standard for wireless movement sensors

All wireless sensors must be connected to a wireless network of some sort in order to function. There are numerous wireless standards currently in use. Wi-Fi, Bluetooth, Zigbee, and Z-Wave, are all capable protocols that function well for certain applications and environments. For movement sensors and other wireless sensors used in retail locations, the LoRaWAN® protocol is a particularly effective choice.

What is LoRaWAN? Let's break it down. "LoRa" is short for "long range," and long range is exactly what a retailer needs when something valuable is headed out the door or off the lot. A LoRa signal can reach up to six miles or more. That's a major advantage over other protocols like standard Wi-Fi, Bluetooth, or Zigbee, which sometimes have trouble covering an entire house. LoRaWAN also does a better job of penetrating walls, shelves, rows of merchandise and other obstructions.

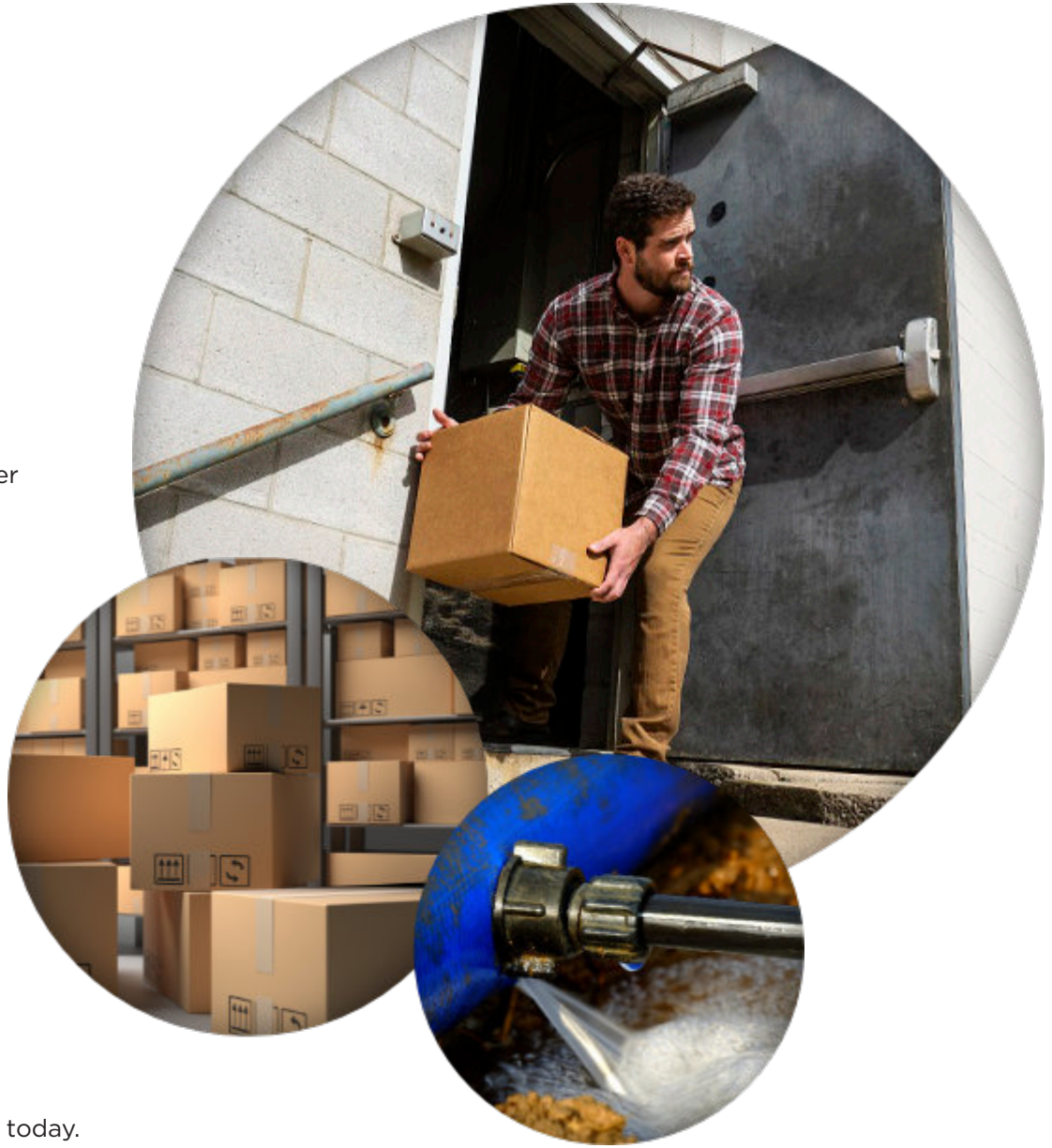
WAN is the commonly used acronym for Wide Area Network. Your wireless motion sensors, along with other **wireless sensors** you may be using, all connect to one central LoRaWAN gateway and from there to your local server or the internet. Most wireless sensors, like those offered by **MultiTech,** then report to a web-based console app that lets you know what's happening when a sensor is triggered.

Different Movement Sensors for Different Needs

MultiTech offers several movement sensor models. The **standard wireless acceleration-based movement sensor** is ideal for indoor use. Affix one of these to a high-dollar item on the sales floor or in your storage area, configure it remotely using your Radio Bridge console, and you'll receive an alert when the item starts to move. As the name suggests, the sensor has its own internal accelerometer that activates when it begins moving at a rapid clip, so you won't be bothered if someone simply scoots the item to a different position or bumps into it. However, if the item is picked up and carried a significant distance or ends up in a moving vehicle, you'll know immediately.

For company vehicles, merchandise, or equipment stored outdoors, MultiTech also provides an **outdoor/industrial movement sensor.** This model offers all the protection of the standard format in an armored casing that resists the elements and attaches firmly to the item you want protected. Finally, if you have vehicles or equipment stored behind garage-style doors, you'll want to know when someone is opening those doors, especially after hours. A **MultiTech wireless tilt sensor** will alert you when an overhead garage door lifts into the open position or lowers into the closed position. An **armored outdoor industrial version** is also available.

Protect Your Profits with MultiTech



Thefts in the retail space frequently go undiscovered until long after they have occurred. At that point, the missing items are unlikely to be recovered. MultiTech wireless movement sensors alert you the moment an item starts moving, giving you time to do something about it. The LoRaWAN wireless protocol keeps you connected to your most valuable assets with a strong, secure signal that can travel for miles.

MultiTech also offers other LoRaWAN-connected security products to protect your profitability, your assets, and your employees. Some are designed to **defeat criminals,** while others safeguard your premises and property from environmental threats like water leaks and excessive humidity or heat. Other MultiTech products for retail environments include wireless push button systems and wireless bridges that let you connect third-party devices to your LoRaWAN network. For more information on what MultiTech has to offer, check us out today.

HEALTHCARE

Healthcare is another sector that will be transformed by **Internet of Things (IoT) technology.** Low-cost wireless sensors supported by **low-power wide area networks (LPWANs)** are enabling many applications in a variety of healthcare settings, from hospitals to senior living communities.

Wireless sensors help healthcare institutions take better care of patients and staff, while also preserving delicate assets, such as medications and blood samples. They are enhancing both inpatient and outpatient experiences by automating information flow in such a way that allows medical professionals to focus more on providing high-quality care for patients.

In this article, we take a look at various use cases for wireless sensors in healthcare and highlight the many ways that they will change the industry forever.

Enhancing Hospital Operations

Wireless sensors can play many different roles in hospitals. Some directly support patient care while others help facility managers protect the integrity of core buildings.

Wireless air sensors can be installed all over hospital campuses in order to monitor air conditions in a low-cost, energy-efficient manner. These sensors can detect the presence of harmful gases and indicate when temperature or humidity levels move past certain thresholds.

Air sensors can help facility managers maintain comfortable temperatures in patient rooms and monitor conditions in environmentally sensitive areas. For example, lab technicians may rely on air sensors to send alerts if air conditions change and jeopardize blood samples, vaccines, or medicines.

Wireless humidity sensors can also play a crucial role in hospitals and other healthcare facilities as humidity levels need to be closely monitored. Pathogens, allergens, and other bacteria can develop quickly if humidity levels are too high. In critical care environments, it is particularly important for relative humidity levels to be set appropriately at all times, which is easier with wireless humidity sensors.

As with any building, **wireless water sensors** can also help mitigate flood damage from accidental leaks and plumbing issues that may arise in the hospital. **Wireless rope sensors** can detect liquid spills or pump failures over wide areas and **leak sensors** can be mounted near pipes to notify of frozen water in colder months. These sensors are also important for server centers and data rooms that house PHI.

Wireless push buttons can be deployed in hospitals and programmed to function as silent alarms that healthcare professionals can activate when necessary. These sensors are especially valuable in departments where doctors and nurses may need security guard assistance on a regular basis. For example, emergency rooms and behavioral health unit staff may want small wireless push buttons that can be easily activated if additional help is needed with unstable patients.

Caring for the Elderly

Wireless sensors are also being used in many ways to help care for the elderly.

Wireless push buttons can also be used as Personal Emergency Response Systems (PERS) and panic buttons that seniors can push whenever they need help. Users simply have to press a button in order to instantaneously alert or call family members or staff to their aid. These sensors are very important for individuals who have a high risk of falling and hurting themselves.

Push sensors can be used by home care providers or senior living community staff who want to ensure that their elderly clients can reach them at any time. These devices can also be used as silent alarms in case onsite professionals need access to security services. MultiTech offers **wireless single push button sensors** that can be configured for different purposes depending on the application.

Wireless motion sensors can also help staff monitor residents by tracking their physical activity. With **wireless acceleration-based movement sensors,** nurses can see if clients have been still for an unusually long time, indicating a potential problem. Wireless accelerometer sensors can also detect rapid movement and impact, which could mean someone has fallen.

Additionally, senior living homes can install **wireless door and window sensors** that monitor opening and closing events at certain locations. For example, staff could place wireless window sensors in every room to help ensure security of the seniors. Wireless door sensors can also be used to monitor activity in and out of recreational spaces or areas where visitors come and go on a regular basis.

Supporting Pharmaceutical Development

Pharmaceutical manufacturers are also turning to wireless sensors to enhance drug development processes and protect valuable inventory.

Wireless temperature sensors can help manufacturers optimize temperature control in their facilities. **Wireless thermocouple temperature sensors** and probes are able to withstand extreme temperatures, making them effective at monitoring delicate, temperature-dependent reactions.

Pharmaceutical manufacturers, distributors, and retailers can all use **wireless proximity sensors to bolster building security** in order to protect against theft. Those who carry large quantities of medications or highly expensive drug therapies need to be able to monitor their locations in a cost-effective manner. **Wireless proximity sensors** can be installed on exterior and interior surfaces to help security teams do their jobs more effectively.

Keeping Organs and Vaccines Safe in Transit

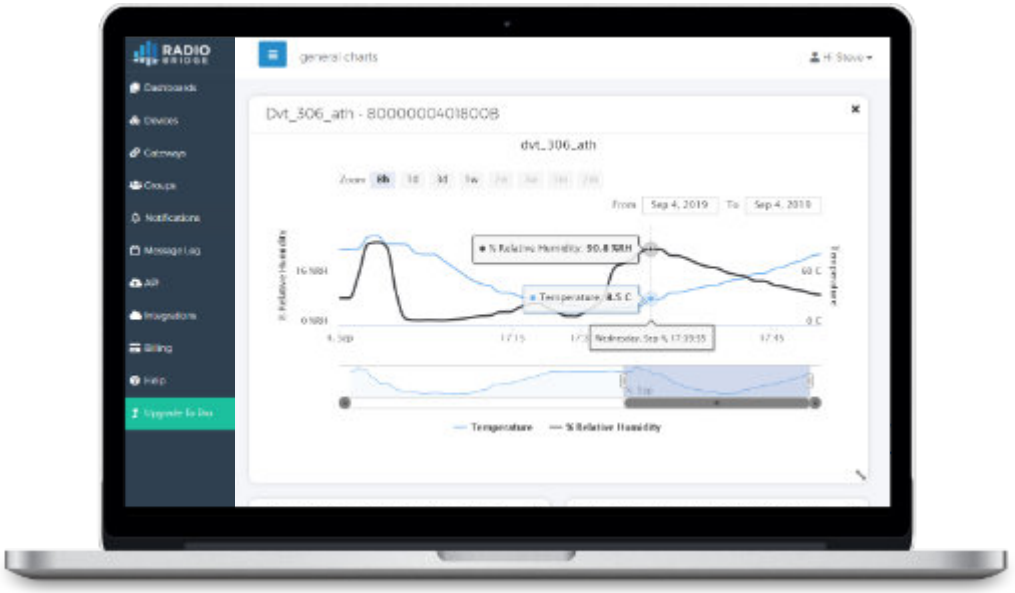
Wireless temperature monitoring is also changing the cold chain game, which has implications for the healthcare space.

Organ transport service providers can install temperature sensors across their entire fleets to ensure that organs are well-preserved while in transit. These sensors will send alerts if temperatures change around predefined thresholds, indicating that refrigeration or HVAC units may be failing. With this real-time information, transporters can act quickly in order to prevent organs from expiring before they reach their destinations.

Wireless temperature sensors are also useful for public health organizations that send temperature-sensitive vaccines to remote parts of the world. The Bill & Melinda Gates Foundation has invested heavily in innovative refrigeration technology, pointing to the importance of safe vaccine transportation. With air temperature sensors, smaller public health agencies can also send critical medications across the globe and take advantage of new-age cold chain monitoring techniques.

Deploying Wireless Sensors for Healthcare with MultiTech

At MultiTech, we have a deep catalog of long-range, low-cost wireless sensors that can be deployed for numerous IoT healthcare applications. We design and manufacture wireless sensors using the leading LPWAN technology, LoRaWAN. Using our Device Management Console, network engineers can easily configure and monitor wireless sensors that are already in hospitals, senior living communities, or other healthcare sites.



To learn more about how our wireless sensor technology can enable your organization's healthcare IoT application, **contact our team today.**

Breathing Easy

Tenant Health Takes Centre Stage in an Enlightened City

The impact of poor air quality for all ages, cannot be under-estimated. According to a report published by the European Environment Agency, most people living in European cities are exposed to poor air quality with an estimated number of 428,000 premature deaths attributable to its effects. This silent killer also negatively impacts the economy, increases medical costs, reduces workers' productivity and damages soil, crops, forests, lakes and rivers. While cities world-wide work feverishly to reduce emissions and improve the level of toxins in the air, there is one place where we all expect to seek refuge from these airborne toxins, our homes. Unfortunately, however, home dwellings are far from safe when it comes to avoiding the negative impacts of airborne pathogens. In fact, homes too often become breeding grounds for molds proven to cause grave illnesses in children and adults. For large apartments in city dwellings often housing thousands, these challenges are exacerbated by the fact that monitoring the inside of apartments is an enormous task – both costly and intrusive for its tenants.

It was the Scottish government; numerous forward-thinking investors; and one US IoT technology company, that thought otherwise when they set forth to protect the citizens by backing iOpt, a Glasgow-based IoT technology innovator, with investment to make it all happen. This in turn led to iOpt winning a £1M contract with a Scottish local government authority.

Working with Renfrewshire Council, a value-focused council committed to its citizens and social housing, iOpt, set forth to create a solution for monitoring 2400 social homes over four years to measure temperature, humidity and the carbon dioxide levels in the properties. Already significant ROI is being shown in building maintenance, but the aim is to show this across the whole of the portfolio management side of the business.

"During these unprecedented times it is hugely encouraging to see Scotland continue its proud tradition of world leading innovation," said Minister for Trade, Investment and Innovation Ivan McKee. "iOpt's pioneering IoT technology, being delivered in partnership with Renfrewshire Council, is a fantastic example of how innovation and collaboration can help people live healthy lives at home, supported by remote monitoring."

SUMMARY

With a passion for service, a 50+ year history of relentless innovation, operational agility and proven award-winning products and solutions, MultiTech is an ideal partner for organizations looking to leverage the exploding Smart Buildings market. We're committed to making your work and all of our lives better by leveraging sensor and communications technology to bring systems and processes into the future, and drive revenue streams and efficiencies with actionable data. Ready to get started?

Contact us today at
MULTITECH.COM