

## Keep School and Church Facilities Safe and Running Strong

Whether public or private institutions, people expect school facilities to run efficiently and safely, providing comfortable classrooms for high-quality education. People can have similar expectations of churches because they believe those buildings are places of refuge and comfort.

Unhealthy or malfunctioning heating, ventilation, and air conditioning (HVAC) systems, plumbing problems, and security issues can disrupt the learning environment for students, teachers, and churchgoers alike. Everyone from janitors and maintenance staff to property managers to principals can get help from the Internet of Things (IoT) to ensure facilities run their best for the people who need them most.

An IoT sensor system can help you keep facilities up and running and know the status of your schools and churches in near real time. Read how we can help you remotely monitor properties 24/7.

*Spoiler alert: The ROI is significant by avoiding major water leak damage, optimizing HVAC systems, and detecting break-ins. It's all easily managed using an online dashboard on a mobile device or computer. Plus, alerts via email, text, or call from a wide variety of fast-install IoT sensors and meters.*

### Challenges



A property management company for charter schools:

- Experienced various plumbing issues that were caught too late after significant water damage was done.
- Needed to upgrade the schools' HVAC systems to meet the latest health code standards and school board requirements due to the recent pandemic.
- Dealt with after-hours access and vandalism in locker rooms, classrooms, and other areas at some schools.

At each charter school, the principals and custodians looked to the property managers to develop solutions for these three areas of concern. One recent issue had heightened the immediate need to prevent plumbing problems from interrupting school time. A clogged toilet and drain in a school's restroom caused flooding damage down the hall and into a classroom during a weekend.

## Solution

After researching and conducting a pilot solution in one of its schools, the property managers found that Remote Monitoring Solutions are perfect for putting proactive measures in place. The solutions with Wireless Sensors provide better security, efficient and healthy HVAC systems, and prevent water damage.

Property managers self-installed the following solution in each of its charter schools:

- Wireless Water Detection Sensors—Water Rope, Water Detect Plus, and Water Detection Puck—to monitor leaks from water heaters, bathrooms, and cafeterias
- Temperature, Humidity, and Duct Temperature Sensors in various rooms and HVAC systems to assess performance, improve comfort, and optimize energy use
- Accelerometers, Differential Air Pressure, Air Quality, and Air Velocity Sensors, Vibration and AC Current Meters on HVAC air circulation fans, pumps, motors, and ducts
- Open-Closed Sensors on the main doors and Motion and Occupancy Sensors strategically placed to detect break-ins and after-hours access
- The Sensor Management and Remote Monitoring Software on property manager, principal, and maintenance staff smartphones, tablets, and computers
- Gateways to protect and communicate data sent from every Sensor and Meter

Sensors sent data wirelessly to gateways in each school. The gateway then sent aggregated sensor data to the software. Using the software, property managers uploaded a graphic showing a school's layout of the monitored areas.

This allowed the managers to drag and drop sensor tags onto the design or map with live data. Then, they could see the performance of the school's plumbing, doors, HVAC systems, and more from an aerial view. Managers set up notifications to alert them, custodians, and principals if readings or assessments fell outside of set ranges and signified any potential issues, allowing them to respond immediately.

## Results

Remote Monitoring Solutions are easy to install and are a fraction of what comparable systems cost. These two facts helped the property management company implement the solutions in the schools quickly while repairing the water damage to the one school. They fixed the toilet and drain, replaced carpets and baseboards, and replaced damaged furniture and school supplies. Now the Wireless Solutions help them prevent this type of costly faulty plumbing or leak damage.

The sensor solutions for the schools' HVAC systems keep them running smoothly. Optimized HVAC systems can equal energy savings. Property managers know better how to keep HVAC systems in shape and up to date to protect people with comforting, healthy air.

Overall, the property manager minimized HVAC system downtime, improved air quality, reduced maintenance costs, and improved equipment reliability and productivity. The Wireless Solution's data helped augment maintenance crews performing routine checks of school HVAC systems. Maintenance staff can easily identify inefficient filters, blocked heat ducts, and HVAC leaks, preventing unexpected and expensive repairs.

Using this comprehensive monitoring solution, these schools can:

- Prevent costly damage due to plumbing leaks, clogs, and malfunctions.
- Ensure that they have efficient and healthy heating and cooling systems.
- Ensure that the school premises stay safe and secure after hours.

**ROI:** After only a couple of weeks of using Wireless Solutions, the company optimized its school monitoring with preventive measures to detect plumbing leaks and after-hours access and improve HVAC system performance.

## Remote Monitoring Mitigates Disruptions and Enhances Facilities Performance



1

### **Water Detection Sensors**

An Wireless Water Detection Puck Sensor is ideal around toilets, sinks, boilers, and water heaters. A Wireless Water Rope Sensor along walkways, walls, and pipes can detect water and help prevent damage from leaks.

2

### **Open / Closed Sensors**

Maintain security across your properties by monitoring the status of doors and windows. Wireless Open-Closed Sensors use a switch and trigger magnet to detect status. Be alerted when a threshold in the software changes.

3

### **Temperature Sensors**

Chart classroom and HVAC system fluctuating environmental conditions at any time. The Wireless Temperature Sensor measures room, area, HVAC unit, and ductwork temperatures with a waterproof lead up to 100 feet.

4

### **Motion / Occupancy Sensors**

An Motion Detection Sensor can tell you instantly if someone has broken into a school or church. Monitor movement in virtually any room, entryway, or area in and around schools using passive infrared technology.

5

### **Air Quality Sensors**

Monitor the particulate matter (PM) in the air that's coarse, fine, and ultra fine inside schools and churches. The Air Quality Sensor uses a small fan to collect an ambient air sample and measures PM levels with a laser.

07/2021

