MONNIT®
USE CASE

Improve the Quality of Student Life in College Dormitories

Many variables contribute to a student's decision to attend a particular college or university—academic programs, finances, scholarships, location, career plans, campus life, and many more. Increasingly though, student housing is also a key consideration of young people envisioning their college experience. They know that other than the campus and classrooms, where they live will be the most significant part of their lives.

That's why college and university students expect their dormitories to be both comfortable and filled with modern-day amenities. The Internet of Things (IoT) can help student housing management create and provide a college-living experience that appeals to today's students.

IoT sensors that keep dorm building heating, ventilation, and air conditioning (HVAC) systems adapting on demand to different student climate comfort preferences can help student housing managers shine. The same goes for sensors that help plumbing systems, appliances, and electricity run smoothly. Read how Monnit® can help you remotely monitor dormitory and residence hall operations 24/7.

Spoiler alert: The ROI is significant by optimizing dormitory maintenance, avoiding water leak damage, and improving HVAC performance. It's all easily managed usingan 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

With student housing amenities constantly top of mind, residence hall and facility directors for a prominent university searched for a solution that would allow them to stay ahead of threats to common student comforts. Based upon surveys conducted by resident assistants, students had requested that the quality of life in the university dormitories needed to be more similar to what they were accustomed to at home.

While university housing management focused on upgrading dormitories, they also sought a solution to improve various HVAC and plumbing maintenance problems. One of the largest student dormitory buildings recently had an issue with a boiler pump malfunction that caused significant heating fluctuations and subsequent student complaints.

Housing leaders needed a solution that would help them track both the temperatures of their boilers' output and the vibration intensity of their pump motors. Their overall goal was to find a solution that would allow them to monitor HVAC and plumbing system operation and catch issues early enough to prevent downtime and minimize maintenance costs.

Solution

University facilities managers discovered that Monnit Remote Monitoring Solutions are perfect for putting predictive maintenance measures in place and helping fix issues before becoming more significant problems like a boiler failing in the middle of a cold night.

The managers opted for solutions with ALTA® by Monnit Wireless Sensors and Meters that would boost HVAC system performance and prevent plumbing leak damage. Facilities managers self-installed:

- Temperature Sensors throughout the dormitory buildings to monitor HVAC system efficiency in common areas and dorm rooms and boiler output pipe temperatures
- Accelerometers, Differential Air Pressure Sensors, Vibration Meters, and AC Current Meters on HVAC air circulation fans, pumps, motors, and ducts
- Wireless Water Detection Sensors—Water Rope, Water Detect Plus, and Water Detection Puck—throughout the buildings to monitor water heaters, boilers, and bathrooms for leaks
- The iMonnit Sensor Management and Remote Monitoring Software on facilities manager and resident assistant smartphones, tablets, and computers
- Gateways to protect and communicate data sent from every Monnit Sensor and Meter

Sensors sent data wirelessly to gateways in the maintenance and utility closets of each dormitory building. The gateways then sent aggregated sensor data to iMonnit. Using iMonnit, facilities and maintenance managers uploaded a graphic showing the dormitory building 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 building's plumbing, doors, and HVAC systems from an aerial view. Managers set up notifications to alert them if readings or assessments fell outside of set ranges and signified any potential issues, allowing them to respond immediately.

Results

Soon after implementing Monnit Wireless Sensors, the university caught several instances when boilers were not functioning optimally. This allowed maintenance crews to make adjustments proactively. Housing facilities managers also detected two cases of boiler pumps reaching near failure. They were able to make repairs before a complete breakdown occurred, saving time and money.

After monitoring HVAC systems for a few weeks using Monnit Sensors, the university replaced several malfunctioning boiler pumps based on the analyzed trending data. Their experience with Monnit was positive and prompted them to expand their wireless dormitory building monitoring system with additional sensors.

Using Monnit's comprehensive monitoring solution, the university can:

- Prevent downtime and costly damage due to malfunctioning boilers and related equipment.
- Ensure students have efficient and comfortable heating and cooling in the dorms.
- Monitor dorm temperatures and HVAC and plumbing systems.

ROI: After only a couple of weeks using Monnit Solutions, the university optimized its dormitory building monitoring with predictive measures that improved energy efficiency and student comfort.

Monnit Remote Monitoring Helps Keep Students Comfortable and Satisfied

1

Temperature Sensors

Chart your room and HVAC systems' fluctuating environmental conditions. The Temperature Sensor measures various HVAC split and packaged, hybrid heat pump, and ductless mini-split heat pump systems with a waterproof leadup to 100 feet.

2

Duct Temperature Sensors

Monitor your HVAC system right in its ducts. ALTA Duct Temperature Sensors with 8-foot leads can be inserted between vents, near fans, and under small spaces while maintaining a sealed environment. Get reports and alerts wherever you work.

3

AC Current Meters

Analyze HVAC system power consumption and predict problems before they occur with our AC Current Meters. Knowing current use by root mean square (RMS) average and amp hours helps you manage performance. Measure boiler pump power draw too.

4

Vibration Meters

Detect the slightest disturbances in vibration, speed, duration, and frequency for all three axes with an ALTA Vibration Meter attached to virtually anything mechanical. Fix issues long before they become boiler kettling, fan rattling, or motor rumbling.

5

Water Detection Sensors

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

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