

Application Solution

Environmental Control in Historical Buildings

Historic Building Retrofits Come With Challenges

You've just been awarded the job of upgrading the HVAC system in a historic building and, as a national historic landmark, there are limitations on what you can do in terms of drilling holes or changing the structure of the building.

As is the case with many older buildings, every effort must be made to protect the historic materials and architecture in place with minimal intrusion from the new system you've been selected to install. Add to that the complication that some buildings will have art collections that need special climate control.

Balancing Energy Efficiency with Historic Preservation

Today's facility managers are faced with the constant juggling act of lowering energy costs, gaining greater control of the indoor environment and working within budgetary constraints. Those in charge of historic buildings have the added complexity of preserving the building's historic structure. Many historic buildings rely on aging control systems that are inefficient and often do not communicate with one another.

Air quality, temperature, and humidity must be controlled with great precision in historic buildings in order to avoid excessive heat, cold or moisture. Too much of any of these three can easily accelerate the aging process of the building interior and exterior facade as well as rare objects and artifacts that may reside in some historic buildings.

Solution

Spinwave's mesh-based wireless sensor networks can provide control and monitoring of environmental variables such as temperature and humidity in areas where wired sensors are not feasible or are prohibitively expensive.

Flexible, Scalable Solution Makes for Quick and Easy System Expansion: The flexibility of Spinwave's wireless mesh sensor networks makes it easy to add and relocate sensors. No drilling through concrete or marble - as a matter of fact, no disturbing of the building's original architecture at all! Expansion of your system over time is quick and easy with a Spinwave wireless sensor solution.



Reliability of Mesh Networks Provides Peace of Mind: It is well known that structural elements of a historical building as well as the people and items inside the building have the potential to stop wireless signals in their tracks.

Mesh networking, an architecture for addressing the problem of reliability in wireless networks, forms the backbone of Spinwave's wireless sensing solutions and puts to rest any concerns about the performance and reliability of wireless sensors for building automation applications.

Application Solution

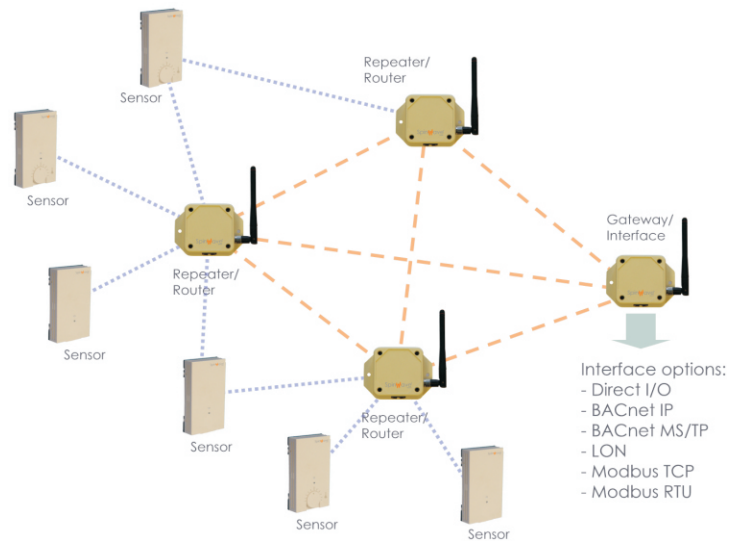
In a Spinwave wireless mesh sensor network, each device or point in the wireless network can communicate with one another, so that if any point within the network fails, the signal can continue to move toward its destination by finding another point in the network through which to travel. Spinwave's wireless mesh sensor network will automatically "heal" and reconfigure itself if a communication path is obstructed.

Non-Invasive Installation Process: Installing a Spinwave wireless mesh sensor network is virtually transparent to the building's occupants. There is no inconvenience to them and business operations are not disrupted during installation and commissioning of a Spinwave wireless mesh sensor network.

Building Automation System Integration: Temperature and humidity sensor data collected from within a historic building can be easily integrated with virtually any new or existing building automation system through Spinwave's wireless LON, BACnet, Modbus or direct I/O interfaces. Wireless sensor data can be configured to trip a system alarm, notifying facility managers and other building personnel when out-of-range temperature or humidity levels occur.

The Bottom Line

Spinwave's wireless mesh sensor networks are ideal for historical buildings - they save on installation costs and eliminate the need to alter the structure. They are easy-to-install and provide a cost-effective way to increase control over your building's interior, resulting in energy savings as well as optimal indoor air quality and comfort.



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