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## WHAT'S NEW?

### WEMS PROVIDES ARCHAEOLOGY MUSEUM WITH WIRELESS CONTROL SOLUTION

A London-based museum housing collections of Egyptian and Sundanese archaeology, is benefiting from the introduction of WEMS wireless building control technology.

Located at University College London (UCL), the Petrie Museum, which hosts an estimated 80,000 objects that illustrate life in the Nile Valley from pre-history right through to the Islamic period, had to think carefully about providing the right atmosphere to ensure preservation for future generations.

As a result, the museum recently opted to invest in two new air handling units (AHUs) with heat recovery thermal wheels, as well as a new chiller for CHW (chilled water) supply. Linked to this investment was the requirement for a BMS upgrade to control the new equipment efficiently, while maintaining the correct temperatures and humidity levels imperative to the museum's environment.

Kendra Energy Solutions was tasked with the upgrade and explored the option of using WEMS wireless sensors, as the company was unable to install conventional hard-wired thermistor-type sensors due to the sensitive nature of the items in the museum.

#### The solution

With previous experience of WEMS wireless equipment, Kendra had the confidence that the technology would be sufficiently resilient and accurate within a challenging operating environment, where the signal must penetrate the building and walls from the rooftop down to the individual rooms.

Wireless temperature and humidity space monitoring sensors were quickly and easily installed in each of the rooms with minimal disruption to the museum, enabling the BMS to control the temperature and humidity effectively in the different zones. A wireless WEMS BACnet Gateway was located in the control panel on the



rooftop. Commissioning and testing were completed within a matter of hours; the sensors were instantly detected by the WEMS BACnet Gateway, so it was just a matter of testing the signal.

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In addition to providing critical temperature and humidity readings, the battery voltage value is imported into the BMS as a BACnet object so that the head end will generate an alarm when the batteries are nearing the end of their useful life, typically three to five years. This functionality ensures that climate control with the space is always maintained. As aesthetics are of paramount importance to the museum, the discrete design and flexibility of the sensors is hugely beneficial.

#### The result

With the system now installed for several weeks, the sensors have been

logging accurately and robustly with stable and consistent readings that have been validated by a reference probe. This set up is allowing control of the space conditions to within  $\pm 0.5^{\circ}\text{C}$  of the desired set-point, which is well inside the required levels for a building of this type.

Importantly, the Kendra engineering team has created a graphic pop-up window on the BMS that allows the user to view more detail of each WEMS wireless space sensor, so an instant picture of an area can be easily generated.

Ultimately, using the WEMS BACnet Gateway with wireless sensors has provided an easy-to-install solution for the Petrie Museum. The WEMS-based solution put forward by Kendra neatly side-stepped a problem that often arises when upgrading a BMS to legislate for the installation of new plant or equipment, namely the need for traditional hard wiring, which in the case of a building such as a museum is neither a realistic nor cost-effective option.

[www.wems.co.uk](http://www.wems.co.uk)