

Case study - 500,000sq ft Commercial Office

Landlord HVAC Demand Strategy

Technik provides an intelligent way of autonomously connecting day-to-day operations. We provide real-world solutions to sustainable plant operation through BMS/IIoT integration. We utilise an 'On Demand' methodology which aims to efficiently run equipment only when you actually require it without sacrificing comfort control.

Real Time Management

The commercial offices sector is frequently unable to tap into dedicated engineering experts in the field of demand strategy. Technik focuses on being the link between remote sensor specialists and the correct application of IIoT technology.

Challenges

We were tasked to implement a wireless and adaptable solution to allow the Landlord to integrate an on-demand HVAC solution for their primary air handling units on site.

Solutions

To meet the challenge, we utilised Pressac's wireless air quality sensors integrated through the Landlord's BMS to ensure that the AHU's were running to meet real-time occupancy.

A wireless network was designed to place 70 IAQ sensors and wireless gateways across the entirety of the occupied space.


The system has the capacity to interact with the Landlord BMS live, allowing for additional demand-based energy initiatives to be implemented in the future.





The wireless sensors allow the building's software to gain visibility of the real-time HVAC requirements per core and floor.

When the space is unoccupied, dampers controlling the volume of supplied air modulate and in turn ramp down the associated AHU.

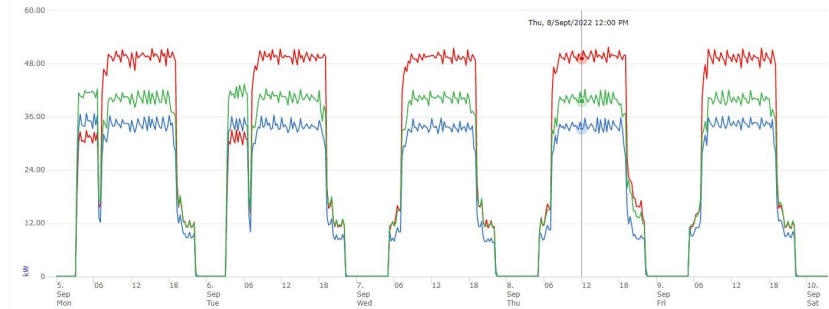
Considerations

 It was key that we could trend the data we were receiving to help the team forecast future savings

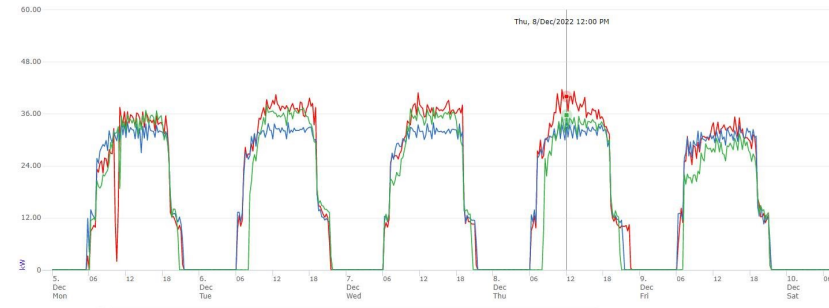
 Successful integration with the Landlord BMS was key to this project being successful

 The system's design had to be transparent and fully integrated with the Building Operations Platform

Prior to Implementation AHU kW profile



Post Implementation AHU kW profile



Investment

Comprehensive site metering indicates an annual AHU mechanical energy reduction of approximately 75,000kWh per year, with an equivalent amount of energy to be saved through preventing unnecessary heating/cooling of excess outside air. This projected 150,000kWh per year reduction will drive a rapid ROI.

Sustainability

In line with the Client's sustainability objectives, we have clearly demonstrated their focus on reducing their carbon intensity.

Open-Protocol

By using open protocol products, we were able to show our willingness to only install equipment which can be maintained by the incumbent BMS company.

Development

To develop this package into a scalable retrofit solution for existing commercial offices wishing to reduce their unnecessary energy consumption, run hours, and associated wear and tear.

A proficient example of innovative demand strategy implementation. Collaboration through multiple parties has resulted in best practice energy management.
Phil Draper FCIBSE CEng