



# Bespoke Building Management Systems

## Case Study: Colworth Science Park Air Handling Unit CO2 Control

### Environment

Colworth Science Park is a research and development campus located in the village of Sharnbrook, Bedfordshire, UK. The park covers an area of 71 acres and is home to more than 20 high-tech companies and research institutions.

It specialises in a variety of fields, including food and beverage innovation, biosciences, sustainable technologies, and advanced materials.

The park offers state-of-the-art facilities, such as laboratories, research and development areas, and office spaces.

### Identification

AES Control Systems used multiple software applications to analyse, monitor and identify areas where energy savings could be made.

Following the first quarter of AFM maintenance, it was identified many of Air Handling Unit (AHU) fans variable speed drives were operating the fan speeds at a fixed rate, in most cases 100% of their maximum output.

### Key Statistics

- **Contact Value**  
£20k
- **Job Duration**  
1 Month
- **Location**  
Midlands
- **System Type**  
Trend
- **Sector**  
Laboratories
- **Job Type**  
Upgrades
- **Client**  
Apleona



## Identification (continued)

This highlighted an opportunity for energy savings, by reducing the maximum fans speeds and implementing speed modulation based on building occupancy to achieve maximum energy efficiency.

### AES Control Systems at a glance

**£250m**

BMS Projects  
Delivered

**40+**

Years in  
business

**3,000+**

Control panels  
built inhouse

**15,000+**

Control panels  
serviced

**5,000+**

BMS controllers  
upgraded

**900+**

Combined years  
staff experience

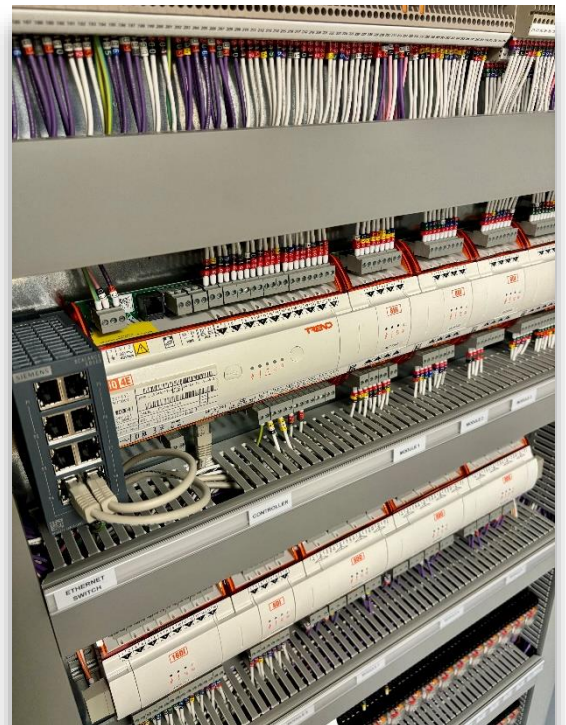
## Solution

The proposed solution was to install sensors in the extract ducts to monitor the CO2 levels in office environments. Our team modified the existing control strategy to allow for reduced maximum fan speeds, with modulation based on occupied area CO2 concentration.

By doing so, we aimed to improve the efficiency of the HVAC system, reduce energy consumption and costs, and create a more sustainable workplace.

The AHU's performance was monitored through our analytical platforms which showed immediate results. With energy consumption and AHU motor speed exponentially related, even a relatively small reduction in speed resulted in a significant energy saving.

We were able to see a minimum of 20% reduction in speed across all AHU's with some areas experiencing a reduction in almost 50% in low traffic areas.



## Get in touch

We are an independent, privately owned, leading Building Management Systems (BMS) company that has been a leading installer, manufacturer and servicer of HVAC controls and smart building systems for decades.

To find out more about our services, visit [www.aescontrols.co.uk](http://www.aescontrols.co.uk) or call us on 01604 790606.