



**Case Study Results 2023/24
Imperial College London**

March 2025



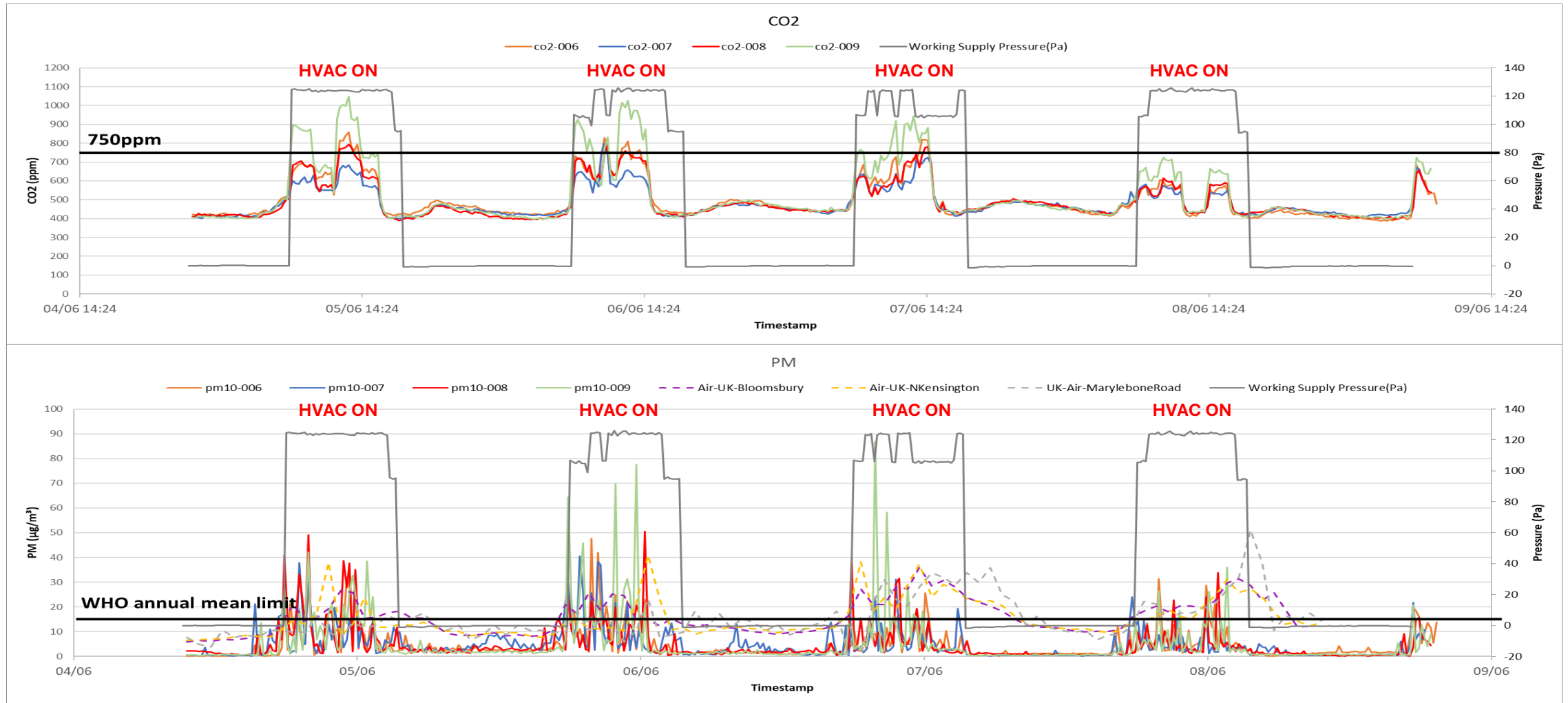
Summary

Butterfly was installed in a 150-seat lecture theatre at the South Kensington campus and results from this trial were used to develop the following system capabilities:

- +40% energy saving
- Improved Indoor Air Quality
- Alignment with corporate ESG targets
- Accreditation by the International WELL Standard



Learnings from SK

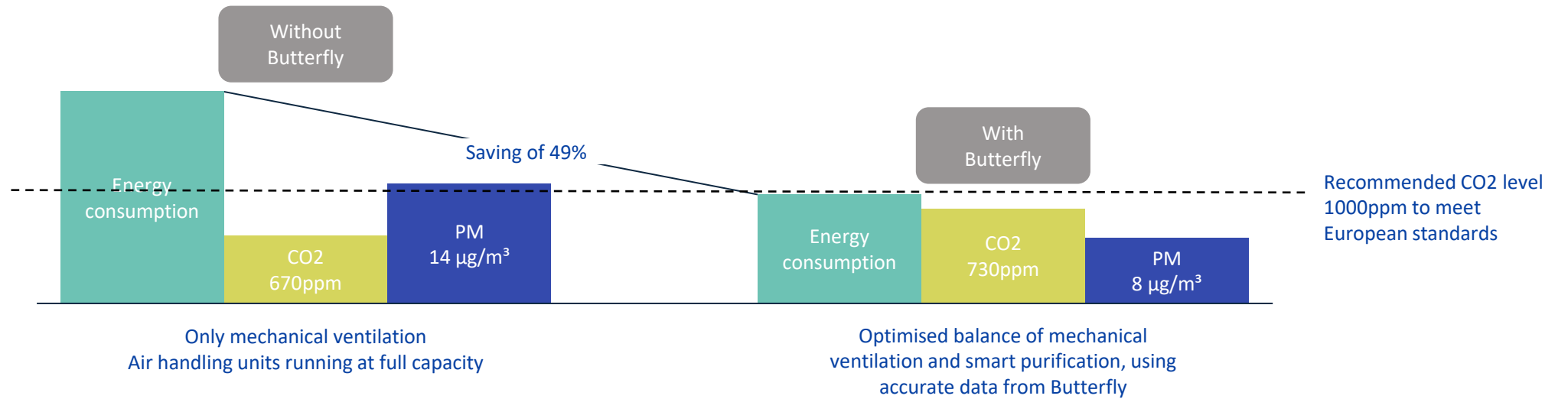


PM spikes outdoors correspond with PM spikes indoors to levels which exceed WHO guidelines i.e. the BMS imports harmful PM spikes because it uses CO2 as a proxy for IAQ and over-ventilates to suppress levels below 750ppm to meet the 1995 British Standard (2018 EU standard is 1200ppm).



Conclusion

Mechanical ventilation was reduced by 80% and Rensair purifiers were introduced resulting in optimised ventilation and reduction of PM levels, **which in turn demonstrated significant energy saving potential.**

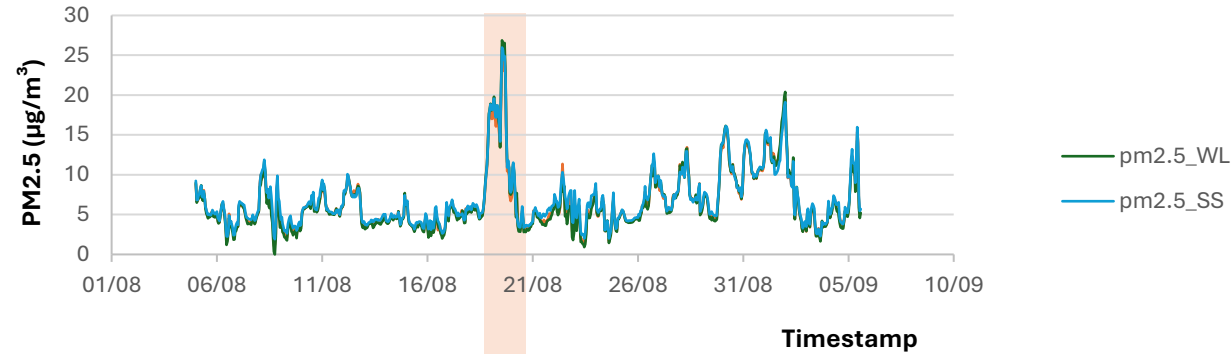


ROI: Significant reduction in energy consumption, while maintaining good and compliant indoor air quality

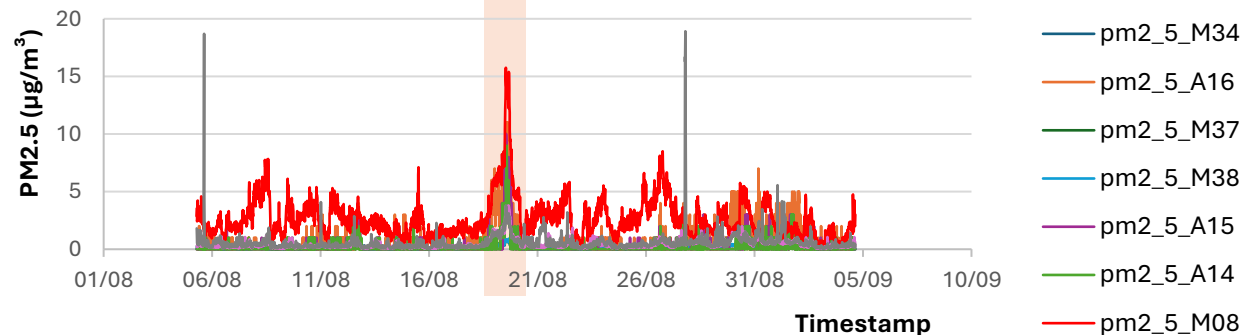
Learnings from WC



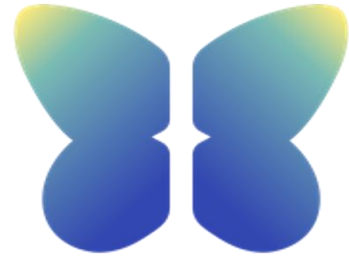
Outdoor PM2.5 by Breathe London



Indoor PM2.5 by Butterfly



We deployed Butterfly in a number of locations across WC and correlated IAQ from our monitors with OAQ from Breathe London nodes which demonstrated the same issues as found at SK i.e. over ventilating to meet 750ppm CO2 introduces harmful spikes in PM such as happened on 19th August 2024



Butterfly

Thankyou