

COLLABORATIVE STUDY ON IMPACT OF REDUCING ROOM AIR CHANGE RATES ON CLEANROOM CLEANLINESS

CLIENT | LOCATION

3 global pharmaceutical companies, UK

SECTOR

Pharmaceutical manufacturing

PROJECT BACKGROUND

The HVAC energy demand of classified cleanrooms has only recently come into focus, yet electrical and heat energy used to condition, supply, filter and remove the air typically equates to 50-75% of a facility's total energy costs.

Prior to this study, there had been limited scrutiny of air change and air velocity requirements when experience shows cleanrooms are operating far and above the levels required for regulatory compliance.

PROJECT BRIEF

The aim of the project was to identify by scientifically based experiments, the impact of reducing room air change rates and unidirectional airflow on cleanroom cleanliness.

The prime objective was to identify optimum settings to safely reduce HVAC energy demand without compromising on product safety, quality and regulatory compliance.

SOLUTION

In order to carry out this study, we first established collaboration between three highly influential pharmaceutical companies to set a precedent for the industry.

Real cleanroom operations were carried out throughout the experiment so operators were recruited, trained and validated in cleanroom gowning and cleanroom etiquette.

Once the pre-designed experiments had been carried out and the data collated, we then carried out a full data review and determined the key findings.

The final report document and data was then presented for peer review (ISPE).



RESULTS



£15,500,000

Energy cost savings identified (per year)

118,000 tonnes of CO₂

Emissions reduction (per year)

£400,000

Further energy savings (reduced capital spend on new build)

“ The findings of this novel study have huge implications for the industry and have added significantly to the knowledge base.

FOR FURTHER INFO

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