

Energy Efficient Design & Build Project Combined with ICCS® Delivers Ultra-Low Energy Life-Science Cleanroom

CLIENT | LOCATION

Cambridge Pharma | Cambridge, UK

SECTOR

Life Science – Sterile Fill-Finish

PROJECT BRIEF

Driven by the need for a new fill-finish facility, Cambridge Pharma was established by SMC Ltd as a new contract manufacturing organisation to provide sterile filling for a range of standard and non-standard primary drug containers. The need for a purpose-built cleanroom space to deliver this was evident.

Cambridge Pharma had the chance to cut costs and save energy by implementing night-time setbacks due to the nature of batch manufacturing. But after consulting with EECO2, they decided to use a more innovative method - the Intelligent Cleanroom Control System (ICCS®) - which was integrated into their new facility. This ground-breaking Pharma 4.0 cleanroom innovation controls the air change rate of the room based on the particle concentration, resulting in lower energy consumption due to a lower air change rate most of the time.

METHODOLOGY

Not only were EECO2 involved with integrating the ICCS®, but they were also awarded the contract to complete the design and build of the new facility.

EECO2 worked closely with Cambridge Pharma across all stages of the project to ensure that the new facility met the user requirement specification (URS) and would serve as a compliant and high-quality space for sterile fill-finish, these stages included:

- Preparation and Brief
- Concept Design
- Developed Design
- Technical Design
- Construction

EECO2 provided careful project management, including programme management, budget management and site supervision.

Throughout the project, EECO2 were keen to demonstrate their decades of experience in designing highly efficient energy systems for pharmaceutical sites. As such, they were instrumental in creating a highly-efficient cleanroom.

SOLUTION

EECO2 delivered a best-in-class cleanroom facility - which even as a static cleanroom, consumes 64% less energy than a comparable industry-standard cleanroom space.

In terms of contamination performance, the space typically operates at around 5% particle concentration for the classification limit, and even upon significant emissions events, only briefly reaches up to 20% of the class limit before rapidly returning to normal operating levels. Thanks to the ICCS®, the room recovery rate following a spike in particles is significantly better optimised than that of a cleanroom using a fixed air change rate.

Ultimately, the ICCS® is an innovative cleanroom digitalisation that enables adaptive and dynamic airflow, providing an ultra-low-energy and high-quality cleanroom space with reliable, consistent and real-time assurance of compliance across all cleanroom classes.

FOR FURTHER INFO

T: +44 (0) 1625 660 717 E: info@eeco2.com



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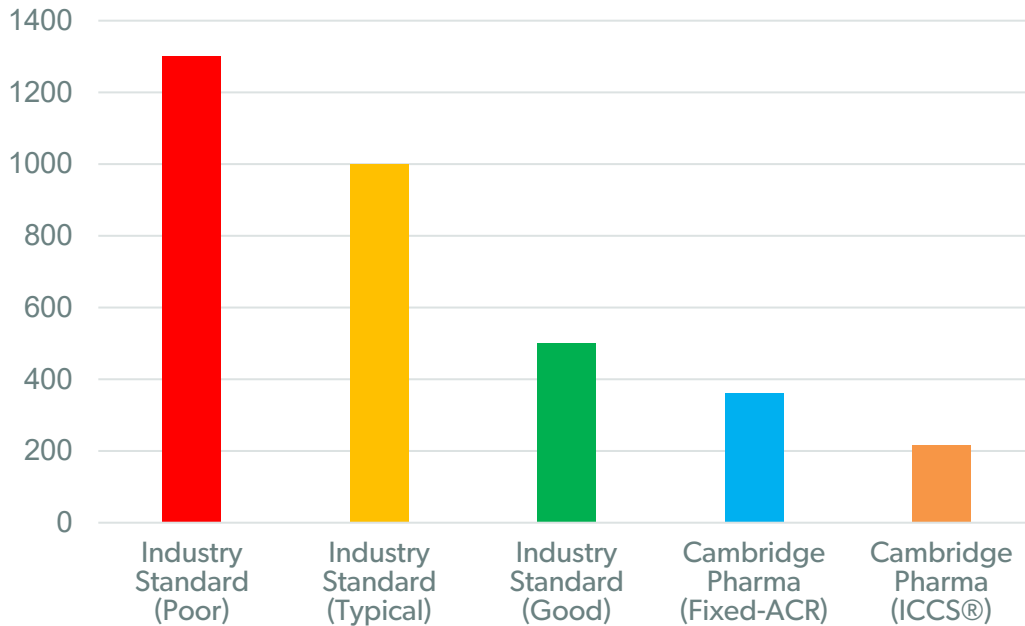


RESULTS

Annual energy savings compared with a typical life science cleanroom:

783 kWh/m² (78% reduction)

Annual Cleanroom Energy Intensity (kWh/m²/yr)

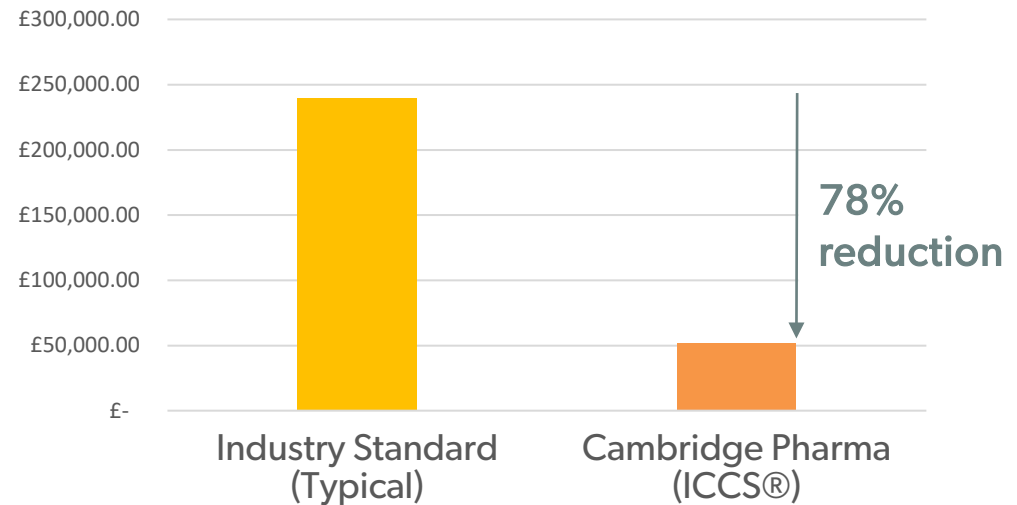


RESULTS

Annual HVAC cost savings compared with a typical life science cleanroom:

£190k (78% reduction)

HVAC Annual Running Costs



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