



## SITE MASTER PLANNING FOR SUSTAINABILITY

### CLIENT | LOCATION

Global pharmaceutical manufacturer, South East Asia

### SECTOR

Pharmaceutical manufacturing

### PROJECT BRIEF

Our client was planning to build a new manufacturing facility in Asia and requested a complete review of the concept design with evaluated options to optimise the energy performance of the facility.

EECO<sub>2</sub> provided a report, focused in detail on the HVAC system, but also addressing related engineering and utility services for the facility.

### SOLUTION

Review of existing scheme to provide a recommendation for a more sustainable approach to building services including HVAC systems:

- GMP qualification principles
- Building design principles including loads
- GMP & non GMP areas
- Building controls, cooling, heating and dehumidification systems
- Opportunities for heat recovery and renewables
- Low energy ventilation including:- filters, motors, fans and laboratories
- Enhanced / integrated renewable strategies
- Metering and monitoring strategy for future energy control
- A building energy simulation model was created to evaluate design options on life cycle costs and energy consumption and included modelling of variations in building fabric and construction standards, air change rates and specific fan power
- The focus of detail in the report is on the

HVAC. However, there is some discussion and recommendations made for best practices on other utility systems including refrigeration, compressed air and dust collection.

### RESULTS



**60%**

Energy savings (from design optimisation)

**74%**

Energy savings (from design plus HVAC optimisation)

A 74% energy reduction was found to be achievable through risk based approach to air change rates and incorporating high efficiency air handling plant, refrigeration plant and renewable heating technologies.

This comprehensive assessment on the options and impact of technologies and operational strategies enabled the client's design team to understand and quantify the impact of decisions made during detailed design.

### FOR FURTHER INFO

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