Chiller plant energy audit

Improve energy efficiency, reduce emissions and save costs

Your proactive approach to reduce your energy consumption and anticipate european regulations

HVAC* installations represent approximately 35% of buildings energy consumption**, a real challenge considering critical energy cost increase we are facing in Europe.

Climate change and environmental degradation are an existential threat to Europe and the world. To overcome this challenge, the European Commission, with the Green Deal and REPowerEU initiatives, proposes ambitious targets in terms of energy efficiency and greenhouse emissions.

The Climate Change Bill, contains provisions that will set a legally binding target for reducing UK carbon dioxide emission by at least 26% by 2020 and at least 80% by 2050, compared to 1990 levels.

An **energy audit** is an assessment of the current performance and operation of a chiller plant, highlighting areas of concern and potential improvements, to propose our customers with suitable measures for energy conservation, sustainability and decarbonisation.

Our service team can conduct an onsite health check and present you an audit report.

* Heating, Ventilating and Air-Conditioning.
** U.S. Department of Energy Buildings Energy Data Book, 2015.

Our solution to improve your plant's efficiency

ENERGY AUDIT
Our team of experts will conduct an energy audit, first step in establishing the existing performance baseline to provide recommendations for appropriate energy saving measures.

AUDIT REPORT
Energy conservations measures, incorporates controls, and system operations optimisation to improve overall plant efficiency.
We provide innovative solutions to maximise overall building efficiency while providing a strong return on investment.

Advanced Calculation Tool:
- Advanced and easy-to-use calculation tool: collection of basic necessary data.
- Remote data collection via GMS and connected services.
- Generate a clear automated report with key information.

Key Benefits:
- Enables planning for modernisation.
- Report with clear recommendations and projected results.
- Visualisation of plant's efficiency improvement, energy savings, payback period, and CO2eq savings.
- Support and expertise from our Service team.

IMPROVE ENERGY AND OPERATIONAL EFFICIENCY

REDUCE GAS EMISSIONS

COST SAVINGS

With our expertise, achieve benefits and positive impacts in net earnings, key performance indicators and corporate social responsibility, based on your chiller plant requirements and sustainability goals.

Audit report

Benefits from our report, with clear recommendations and projected results.

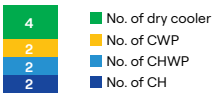
EXECUTIVE SUMMARY

Proposed system

Chiller plant configuration	2 x 934 kW cooling
Peak building cooling load	1030 kW cooling
Design chilled water supply temperature	8°C
Design outdoor air cluster temperature	25, 33, 38.6, 45°C

*Above performance data are nominal reading.
Actual performance may deviate subject to operating condition.

Final configuration

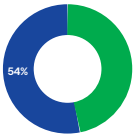


Energy conservation measures

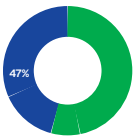
Design, supply, installation of high efficiency water cooled chiller, primary chilled water pump fitted with VFD, dry cooler fitted with VFD and plant system manager optimization control.

£ 1.3 M Capital Investment

Energy bill savings (%)



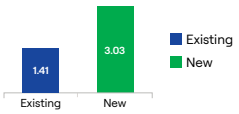
Return on investment (%)



Projected payback period (Yrs)

Projected efficiency

COP 1.41 to 3.03
Efficiency improvement = 115%



Projected energy (kWh/year) & cost savings (£/year)

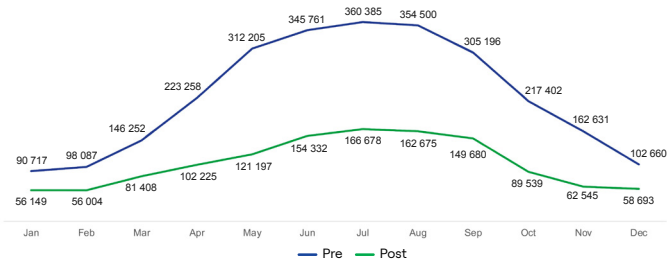
1.46 M 626 k

Projected CO2e savings (kg/year)

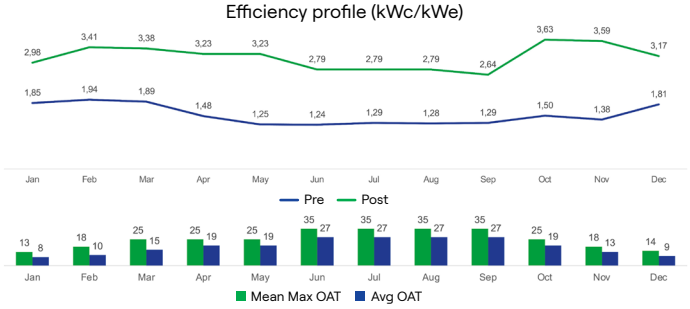
CO_2 51,0275 kgCO2e

EXAMPLE OF GRAPHS PRE/POST RETROFIT

Energy consumption profile (kWh)



Efficiency profile (kWc/kWe)



Case study

HOSPITALITY

Our customer is one of the largest and famous hospitality companies in the world. Delivering exceptional guest experience is part of their main value.

One of its hotel localised in the city center of Rotterdam (the Netherlands), Approached our team for an Energy Audit of its old chillers (other brand chillers).

The Objectives was Simple: first, to meet the requirements of the company in satisfying guest's comfort with lower noise. Secondly, to be compliant with the new regulations in terms of energy efficiency and gas emissions.

After conducting an energy audit, our service team based in the Netherlands, recommended to replace the existing chillers system by a **complete and optimal solution,** including 2 x optimized air-cooled scroll chillers with new control for plant room supervision and new variable speed pumps.

Targets have been met, and our customer could benefit from:

- 72% of energy savings.
- A ROI (return on Investment) < 3 years.
- Low sound for its guest's comfort and localisation in the city center.

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