UK Green Real Estate

Realising Potential.

INTRODUCTION

In the UK, powering buildings currently accounts for 34% of the UK's total energy usage. Decarbonisation of large commercial buildings is therefore a significant component of achieving UK's Net Zero Target by 2050.

We are an ISO 50001-accredited company and specialise in providing mechanical and electrical services. We are proud of our technical skillset and expertise in the area of energy management and our digital offering.

We would like to showcase how we can help:

- Reduce your energy cost
- Decarbonise your properties
- Improve your building's performance
- Ensure compliance with existing and future legislation.

ISO 50001
ENERGY MANAGEMENT

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WE CAN HELP TO REDUCE COST AND LOWER YOUR CARBON EMISSIONS

SERVICE	**Decarbonisation Strategy**	**Reducing Energy by Optimising Asset Operation**	**Real-time Energy Monitoring**	**Decarbonisation Projects**	**Condition-Based Monitoring**	**Energy Compliance and ESG Reporting**
DESCRIPTION	We use our carbon modelling tool, to highlight energy improvements required in line with Net Zero and science-based targets	Dynamic adjustments to ensure all assets in the building operate efficiently and reflect the occupancy of the building.	Our digital tool enables automated collection of energy data and helps detect any spikes in energy consumption	Asset replacements and refurbishments to decarbonise and meet Net Zero Carbon standard	AI-powered alerts to prevent equipment failures and, reduce downtime.	Ensuring compliance with Energy Efficiency of Buildings Regulations, MEES regulations etc
SOLUTION	Carbon modelling (CRREM Tool)	Apleona Insights	Enerlutec	Installation of air source heat pumps Lighting installations EV charging point installations On-site Renewables	Eastway	TM44, ESOS Action Plans, ISO 50001

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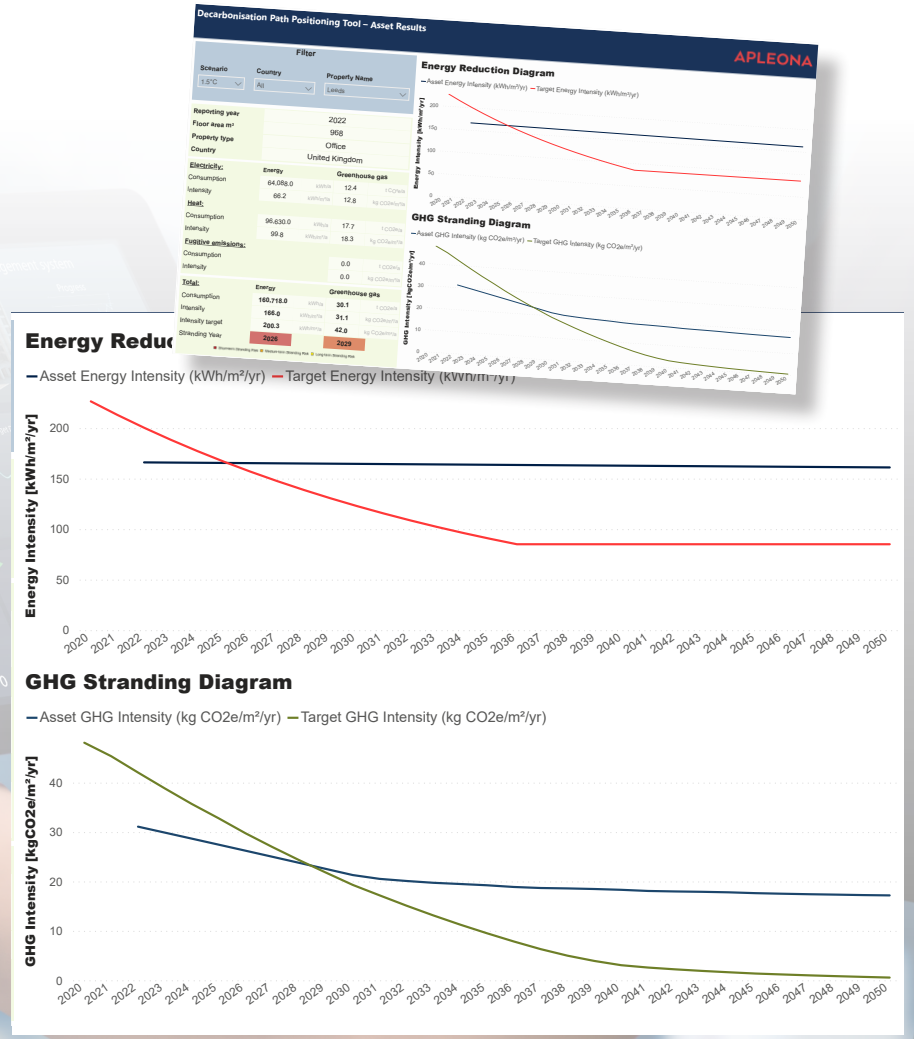
DECARBONISATION ROADMAP USING A CRREM TOOL

- We develop decarbonisation roadmaps for different types of buildings, free of charge to our clients.
- Our carbon modelling tool is aligned with science-based targets
- It uses energy consumption per floor area to determine what energy reductions are required for the property to be aligned with Net Zero Carbon transition
- It requires a limited number of data setpoints



BENEFITS:

- ✔ It helps in developing a long-term decarbonisation strategy
- ✔ It suggests carbon reduction targets for the specific property
- ✔ No cost

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DELIVERING ENERGY EFFICIENCY IMPROVEMENTS USING REAL-TIME DATA

Our building analytics system, Apleona Insights, gathers data from across multiple building points, analyses them and indicates where energy optimisation can be achieved.

- It tracks real-time data from utility meters, pumps, boilers, ventilation, air conditioning, and lighting.
- The system detects issues like out-of-hours use, override operations, conflicting valves, sequencing problems, setpoint errors, high fan speeds, and equipment faults.
- It provides targeted recommendations, prioritising high energy users and potential savings, including operational and maintenance actions.
- Connected via secure Ethernet and mobile internet through AWS, the data flows into a cloud-based platform for automated analysis. What took days of manual BMS interpretation, now takes seconds, enabling users to focus their efforts to take action and deliver reductions in energy, cost and carbon.

BENEFITS:

- Identifies opportunities for saving energy and cost
- Real-time data of the building's energy consumption
- Less time spent on energy reporting
- It benchmarks and compare performance and helps with forecast and budges for utility consumption
- Electronic walk rounds for plant checks
- Plant issues can be identified

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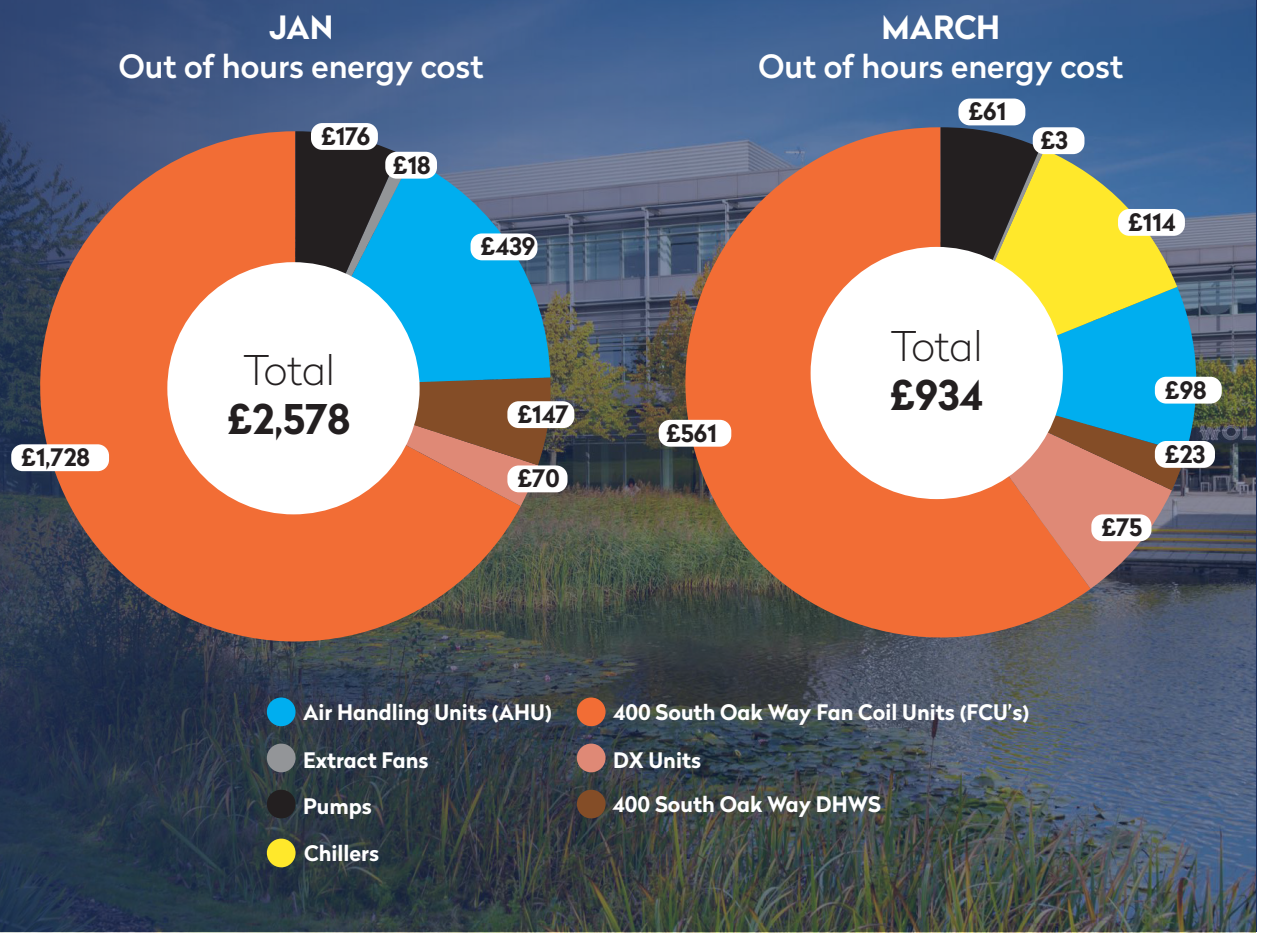
CASE STUDY: GREEN PARK, READING

Installation of Apleona Insights

Apleona Insights was installed for a 6-month period to monitor one of the buildings at Green Park in Reading.

The system highlighted operational improvements, cost savings and areas requiring further optimisation. The plant running time was reduced by 60%, meaning 36 hours of unnecessary plant running time was avoided.

The adjustments in operational hours of the FCUs provided savings of £85.5k per annum. The analysis compares two 7-day periods: 8–15 January 2025 and 17–24 March 2025.



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BMS HEALTH CHECK, ADJUSTING TIME SCHEDULES OF AHUs, CHILLERS AND PUMPS

- Our engineers use their technical skills, experience and the knowledge of the building to ensure the operation of assets is optimised and reflect the building's occupancy.
- We can work with IoT sensors to gather additional data such as occupancy, CO_2 levels and temperatures to support recommendations.

BENEFITS:

- ✔ Meeting carbon reduction targets
- ✔ Reduced energy bills

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RECOGIZER: HVAC PREDICTIVE CONTROL & ENERGY MANAGEMENT

RECOGIZER
Self-Learning Building Solutions

- Recogizer is an AI-supported digital solution for reducing energy of HVAC systems
  - **Service includes:**
    - Predictive control for heating, ventilation and air conditioning
    - Customer portal (savings, consumption & operating data)
    - Expert engineering support
  - **Prerequisites for Recogizer:**
    - Office and retail buildings from 10,000m²
    - Building automation system with open interface

BENEFITS:

- ✔ Meeting carbon reduction targets
- ✔ ROI in <2 Years
- ✔ Automating the control of HVAC systems and ensuring they run efficiently and only when needed

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CASE STUDY: ZF, SOLIHULL

Optimising energy efficiency at ZF

In collaboration with Camfil, we have reviewed the Air Handling Unit (AHU) filters for lowest energy cost, reduced waste and less change-outs. As a result, we have upgraded existing AHU filters at ZF facility in Solihull to Eurovent certified A+ energy-efficient models, with an estimated saving of 90 MWh/year.

The site has seen positive results from the upgrade, including:

- Air filtration cost savings
- Increased AHU efficiency
- Improved air quality for health benefits and employee satisfaction
- Reduced carbon emissions, waste, energy
- Less air filter change-outs

Impact:

21,7 tonnes of **CO_2** saved/ year

93 MWh energy saved/ year

6.70m³ waste saved

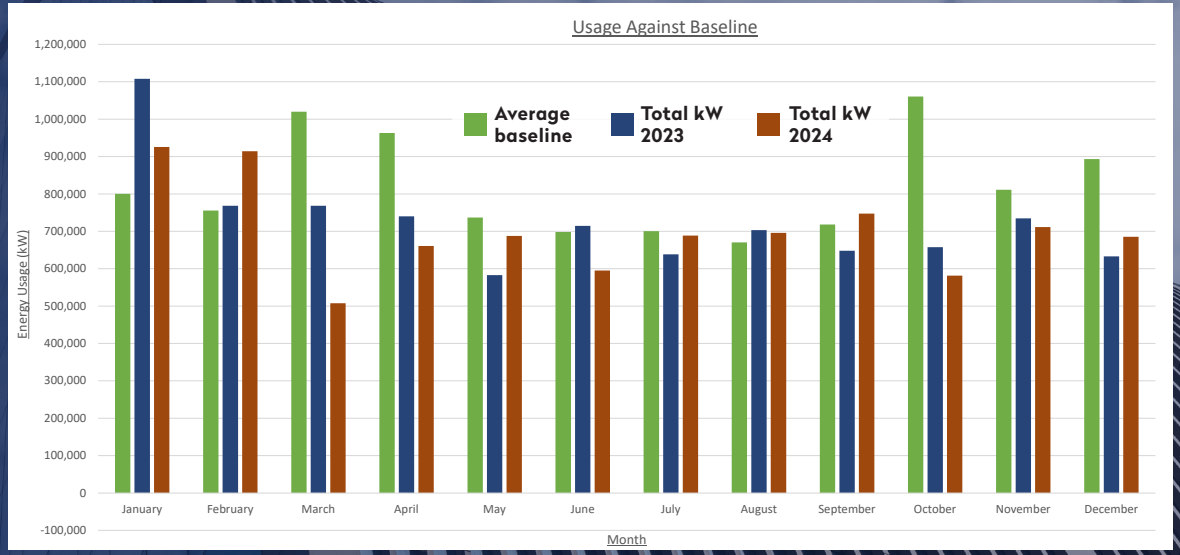
CASE STUDY: 70 ST MARY AXE, LONDON

Optimising assets to save energy

Since acquiring the 70 St Mary Axe contract in 2022, we have achieved substantial energy savings for our client, highlighted by the successful installation of a BMS Timeclock in May 2023, which saved £309,000 on an investment of less than £9,000.

Additionally, the installation of CO_2 sensors in the extraction ducting for AHU 5 and AHU 6 has led to over 78% energy savings and a remarkable ROI of just one month. The recent BMS upgrade from Trend 963 to Vision, completed at the beginning of Q4 2024, enhances control over building systems and is expected to further reduce energy consumption in 2025.

Overall, these initiatives have resulted in a total saving of £373k.



Impact:

1,865 MWh energy saved

443 tonnes of **CO_2** saved

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ENERLUTEC: ENERGY CONSUMPTION PROFILING

enerlutec BY APLEONA

- Enerlutec is our digital product which enables automated collection of energy data from meters, loggers and IoT sensors
- It can track usage of electricity, gas, water, steam at each meter level and display additional data sets obtained from IoT sensors, such as temperatures and occupancy
- Energy data in Enerlutec is presented in a user-friendly visual format
- Data is monitored to detect any consumption anomalies
- Enerlutec supports optimisation measures by highlighting exactly where, when and how much energy is used

BENEFITS:

- ✔ All energy data in one central database
- ✔ Active energy management in real time
- ✔ Individual data access on demand
- ✔ Intuitive carbon reporting

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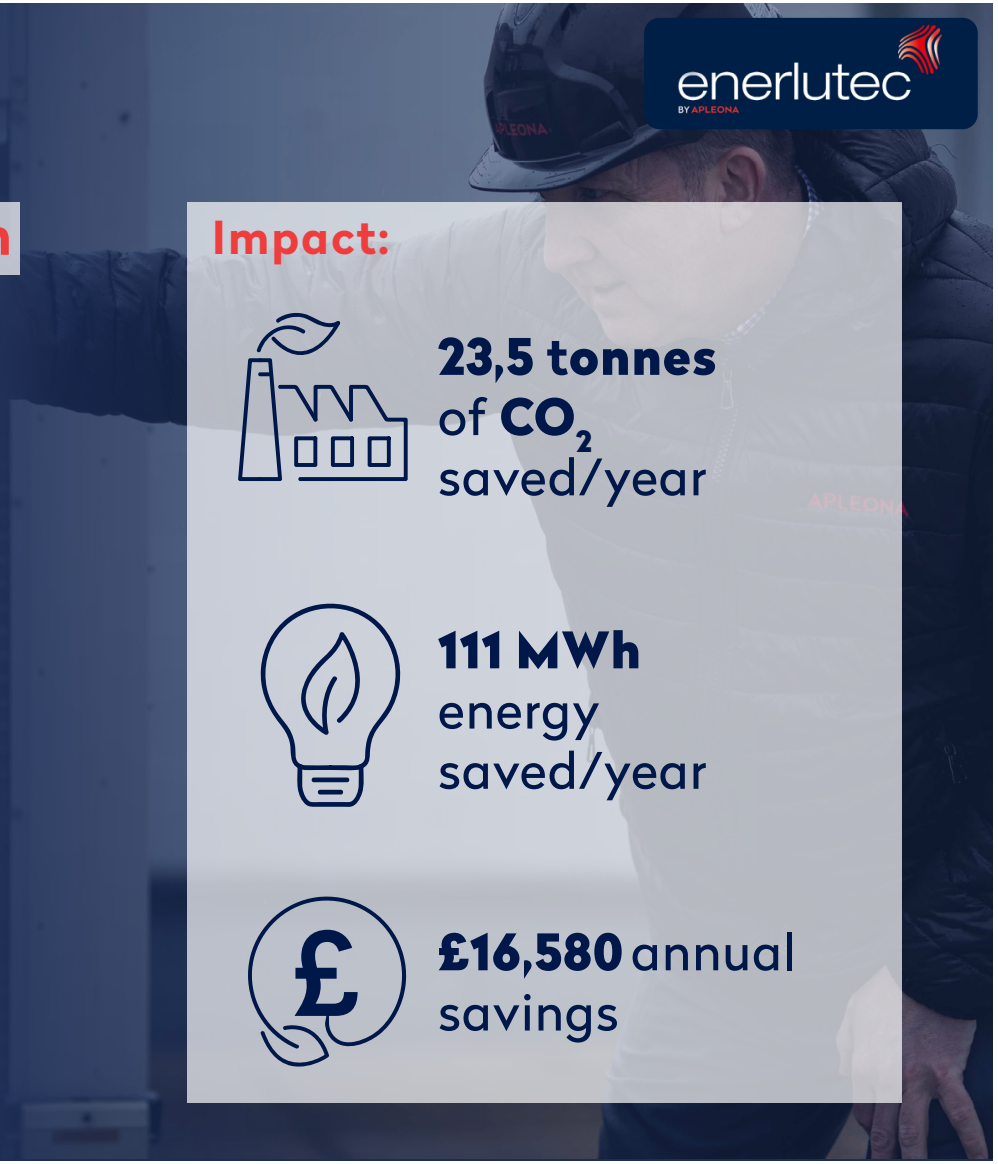
CASE STUDY: ENERLUTEC

Energy Monitoring – Bristol Myers Squibb, Moreton

After monitoring the Enerlutec Energy Dashboard, Apleona conducted an initial examination of the electricity usage in the Transition Building. The study revealed a significant use of electricity during periods of low occupancy or after hours. Further investigation uncovered that all electrical assets, including wall heaters and AC units, were operating continuously without any implementation of time-zone control.

After evaluating the data captured from the sensors, it was determined that implementing Time Zone Control for its electrical assets was necessary to address the issue. The control was set to operate from Monday to Friday, between 6am – 7pm, with no activity during weekends. This resulted in a total of 107 hours of non-electrical activity per week.



Impact:

23,5 tonnes of **CO_2** saved/year

111 MWh energy saved/year

£16,580 annual savings

LIGHTING/LED

- We deliver complete lighting upgrades, including control systems where required.
- We provide lighting design in accordance with BS EN 12464 -Light and lighting. Lighting of workplaces.
- We can carry out inspections ensuring lighting controls operate correctly and lighting dims and turns off in response to daylight levels and occupancy.

BENEFITS:

- Reduced energy, operating and maintenance costs
- Enhanced lighting quality and work environment
- Increase in lighting lifetime
- Reduced carbon footprint

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HVAC SERVICES

- We provide replacement and upgrades of heating systems, ventilation systems and chillers.
- We offer a design and installation service, including full turnkey project management for all building types.
- Supporting government targets, we source alternative heating system options such as heat pumps. This support the Government's plans to phase out the sale of new gas boilers by 2035.

BENEFITS:

- ✔ Reduced energy and maintenance costs
- ✔ Enhanced work environment
- ✔ Reduced carbon footprint

HEATING SYSTEMS

- Complete exchange
- Heating analysis
- Pumps
- Combined heat and power
- MSR optimisation

VENTILATION SYSTEMS

- Complete exchange
- Fans
- Drive technology
- Filter
- MSR optimisation

CHILLERS

- Complete exchange
- Pumps
- Cooling demand analysis
- MSR optimisation

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CASE STUDY: UNIVERSITY OF HERTFORDSHIRE

Design & build installation of an ASHP

The Projects team successfully completed a complex design and build installation of an Air Source Heat Pump (ASHP) for University of Hertfordshire, marking the uni's first project of this kind as part of their Natural Gas Decarbonisation Plan.

Completed within the timeline dictated by university term dates, the installation has effectively eliminated the hot/cold reactive call-outs previously experienced with natural gas boilers and heavy refrigerant chillers, providing efficient heating and cooling to the Weston Auditorium Building.

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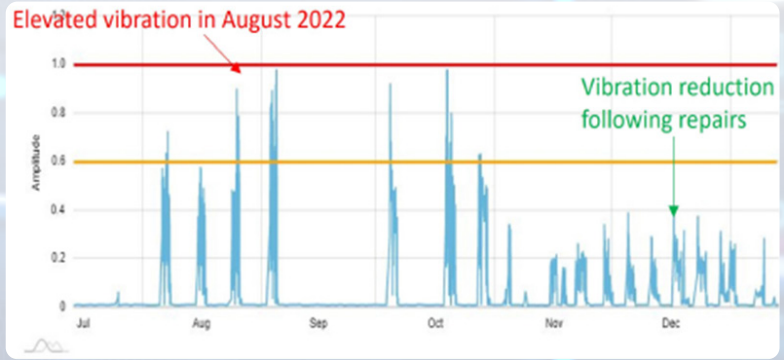
EASTWAY

- Eastway offers predictive maintenance via a 24/7 online monitoring system for critical assets
- Eastway uses IoT technology and AI-learning to monitor machine conditions and detected anomalies
- System predicts failures based on monitoring parameters such as vibration, temperature and acoustics
- Expert team performs root cause analysis for deviations and confirms cause of possible issue



BENEFITS:

- Dramatically reduce unforeseen equipment failures and unplanned downtime
- Prevents collateral damage to equipment
- Reduction of maintenance operations compared to preventative maintenance

ENERGY COMPLIANCE & ESG REPORTING

- We ensure your assets are compliant with the latest energy efficiency standards.
- We can support your commitments under the ESOS regulations.
- We can deliver and support ISO 50001 accreditation for your properties.
- We will monitor energy consumption, identify and implement optimisation measures.
- We will support behavioural change campaigns.

BENEFITS:

- ✔ Supporting energy efficiency
- ✔ Compliance
- ✔ Meeting carbon reduction targets

TM44

- Mandatory inspection of AC equipment with a cooling capacity greater than 12 kW
- Requirement to be completed every 5 years to comply with the Energy Performance of Buildings Directive.

Energy Saving Opportunity Scheme - ESOS

- Mandatory energy assessment aimed at large companies in the UK
- Designed to help organisations improve their energy efficiency and meet carbon reduction targets

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For more details, please contact
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