

UK Green Real Estate

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.

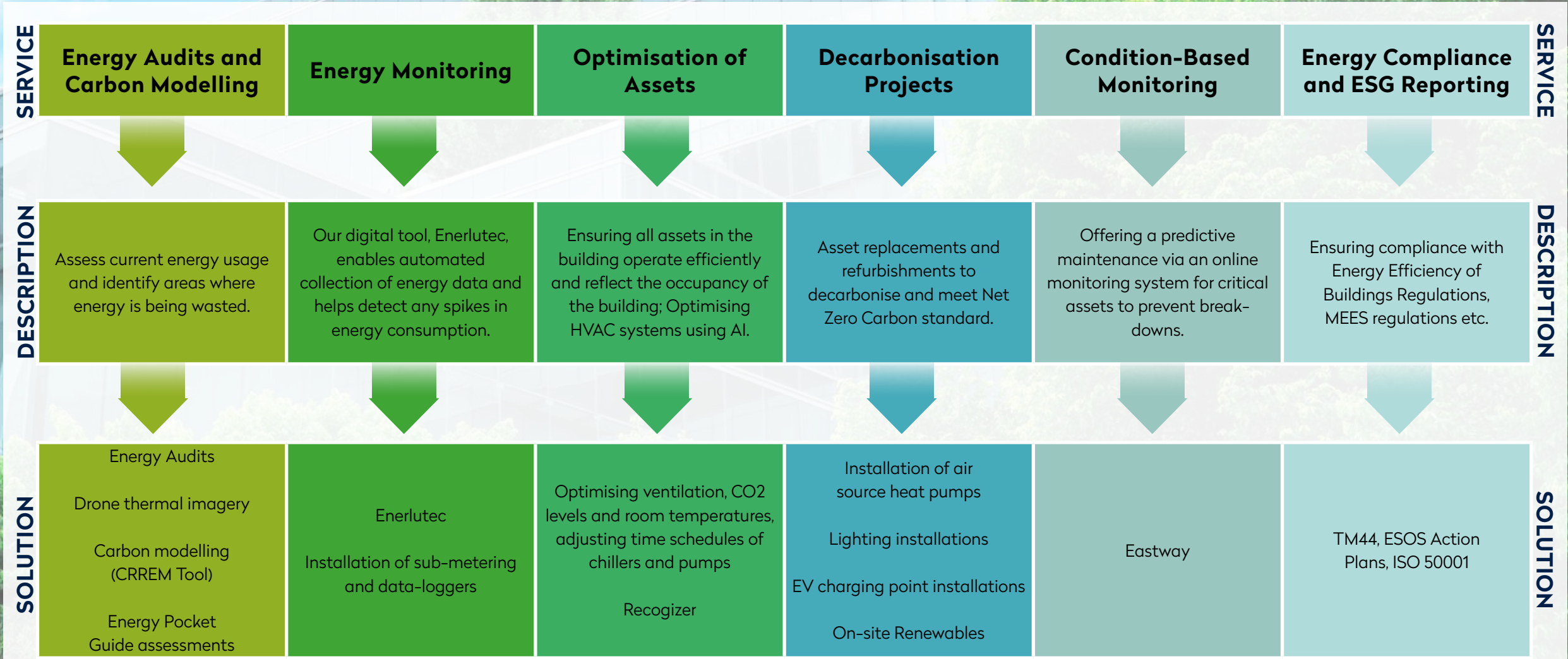
We are an ISO 50001-accredited company and specialise in providing mechanical and electrical services. We are proud of our technical skillset and expertise in the area of energy management and our digital offering.

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.



OUR SERVICE OFFERING TO REDUCE, DIGITISE AND ELECTRIFY YOUR ENERGY USAGE



ENERGY AUDITS & CARBON MODELLING

- › We analyse energy consumption data, operational hours and equipment specifications, followed by an on-site inspection to identify inefficiencies.
- › We compile a list of recommendations, including low-cost operational changes, equipment upgrades, and renewable energy options.
- › We create a strategy for implementing recommended measures with projected savings and time-scales.

BENEFITS:

- ✓ Lower energy bills
- ✓ Reduced carbon footprint
- ✓ Enhanced comfort levels for occupants
- ✓ Meeting energy efficiency standards and regulations

ENERGY CHAMPIONS



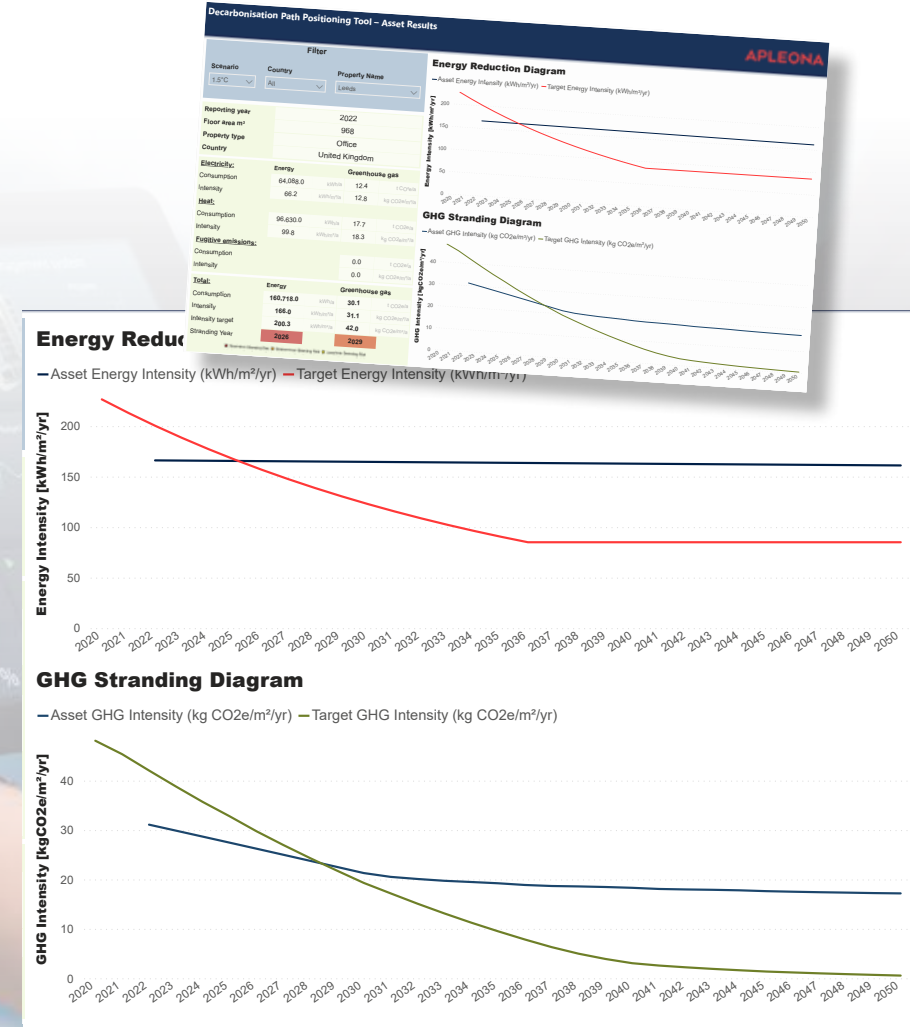
We have over **20 Energy Champions** in the UK business, conducting energy audits across our customer portfolios using our Energy Pocket Guide and identifying areas for improvement and energy inefficiencies.

CRREM TOOL

- > We can develop decarbonisation roadmaps for different types of buildings
- > 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 and is free to our clients

BENEFITS:

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



DRONE TECHNOLOGY

- › We offer the innovative use of drone technology
- › We hold an Operational Authorisation from the Civil Aviation Authority and employ trained Remote Pilots
- › The drones are used
 - › to enhance our security services, avoiding the use of vehicles
 - › to visually inspect roofs, avoiding the need for any lifting equipment
 - › to take thermal images of buildings to check for any heat losses

BENEFITS:

- ✓ Thermal images highlighting any building heat loss
- ✓ Inspection of solar panels



ENERLUTEC: ENERGY CONSUMPTION PROFILING



- › 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



CASE STUDY: ENERLUTEC

Energy Monitoring – Bristol Myer Squibbs, 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 **CO₂**
saved/year



111 MWh
energy
saved/year



£16,580 annual
savings



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, CO₂ levels and temperatures to support recommendations.

BENEFITS:

- ✓ Meeting carbon reduction targets
- ✓ Reduced energy bills



RECOGIZER: HVAC PREDICTIVE CONTROL & ENERGY MANAGEMENT



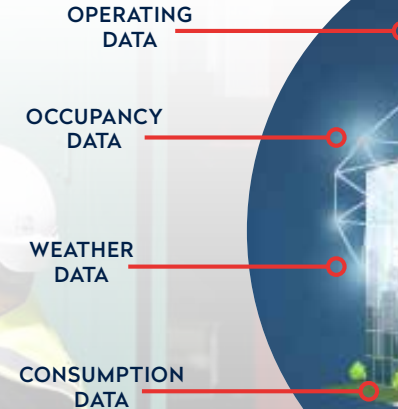
› Recogizer is an AI-supported digital solution for reducing energy of HVAC systems

› **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



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 **CO₂** saved/year



93 MWh energy saved/year



6.70m³ waste saved



CASE STUDY: GLOBAL TECHNOLOGY COMPANY, LONDON

Delivering an energy programme to a clients' headquarters

We delivered 813,678 kWh annual energy savings for a key client. Their HQ is an impressive building with 350,000 ft² on the Kings Cross estate in London.

Our team optimised the operation of key assets by adjusting the time schedules for chillers, air handling units and chilled water pumps.

Impact:



**173 tonnes of
CO_{2e} saved/year**



**813 MWh
energy saved/
year**



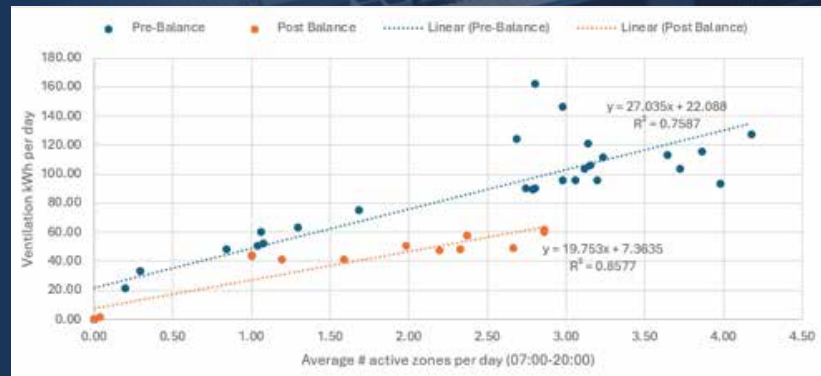
CASE STUDY: UNIVERSITY OF HERTFORDSHIRE

Reducing energy by balancing works

We have worked with the University to ensure the correct ventilation, CO2 and temperature is being provided to each room of their building.


This involved installing additional sensors and rebalancing the chillers and ventilation to ensure that air is directed to areas where it is needed.


As a result we have saved 40% energy reduction whilst maintaining CO₂ levels and temperature setpoints.



You can see demand-based operation before and after balancing. Blue is before which has more zones requiring the demand of the chillers and ventilation. Whereas the Orange after, is significantly lower in energy consumption and less zones in demand.

Impact:

 **40% energy reduction**

 **9 MWh energy saved/year**



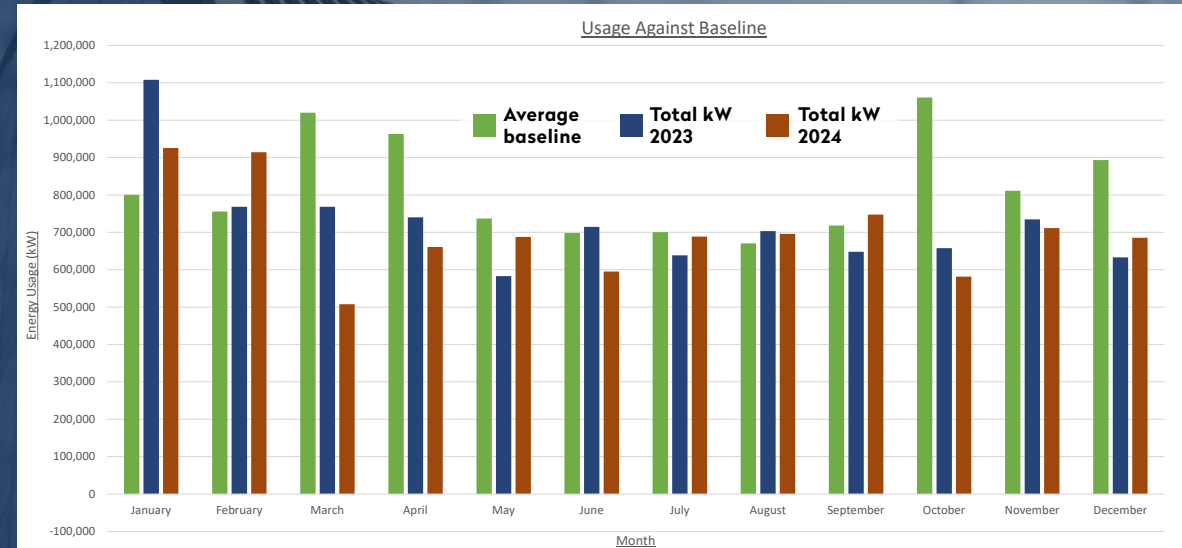
CASE STUDY: 70 ST MARY AXE, LONDON

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 CO₂ 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 £715,466.



Impact:



3,208 MWH
energy saved



612 tonnes
of CO₂ saved



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



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



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.

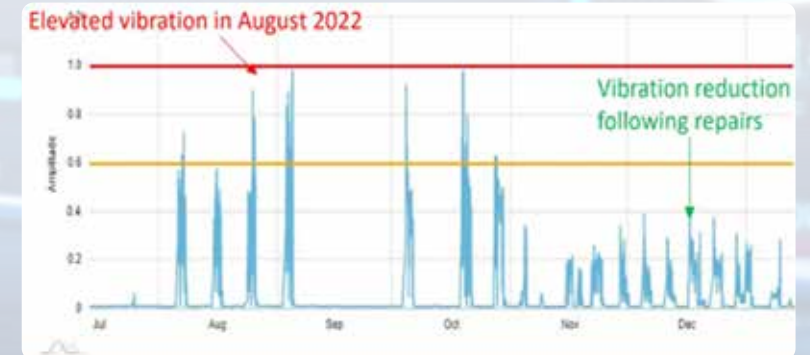
Completed within the timeline dictated by university term dates, the installation has effectively eliminated the hot/cold reactive call-outs previously experienced with natural gas boilers and heavy refrigerant chillers, providing efficient heating and cooling to the Weston Auditorium Building.



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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