

MS Maintenance Solutions Ltd

Energy Brochure



Our Objectives

Efficient energy usage of M&E assets and being on track to hit net zero.

Providing an optimal environment for the wellbeing and productivity of building occupiers.

Concise management & optimal performance of M&E assets.

Introduce more productive planned and reactive maintenance strategies such as condition and business based maintenance.

Working in partnership with our supply chain and clients to achieve Energy reduction goals.



We aim to align our goals with that of our clients. Building strong partnerships and working in collaboration is key to our success.



Our Energy Services

Energy Surveys and Audits

We can provide Energy audits to show significant energy-saving solutions. We will work in collaboration with Energy Specialists to offer a detailed plan and suggestions for simple cost-effective solutions to manage energy usage around the building. Our greener approach has often resulted in reduced operational costs too.

SMART Maintenance

The introduction of SMART Maintenance allows us to identify issues and faults, locate the problem and then repair it before it can bring down your whole system, and potentially even your business. This innovative solution saves time, and money and will support the reduction of carbon emissions for your business.

Energy Projects

MS support in making your building more efficient and sustainable for the future. We provide an enhanced technical and professional approach to all project delivery, from inception to the final handover. We will establish the key driver of the project, whether this be end of the life cycle of the plant or general upgrades to the need of improving energy ratings with sustainability in mind.

Legislation & Compliance

At MS, we understand that compliance is a priority for any business and something that cannot be compromised. We keep up to date with the latest legislation changes, and keep our clients informed, this includes the new Minimum Energy Efficiency Standards (MEES).

Quick Wins

Quick wins such as lagging the pipework in plantrooms to minimise the loss of energy and resetting set points within the BMS to accommodate the movements within the building can significantly save money and reduce carbon usage. Also updating the lighting to LED's as and when needed will allow for a saving on energy usage.



Our Energy Saving Initiatives



Audits

We conduct full dilapidation reports and asset verification. We will recommend upgrades and options to ensure the plant is working to maximum efficiency, delivering the best possible atmosphere with the least carbon effect. We are keen to provide as many energy-saving solutions to a premise via existing plant manipulation. To help meet our client's sustainability ambitions, we can also offer a complete, detailed energy audit to show potential innovative measures which could lead to a reduction in the cost of PPM, a reduction in carbon footprint and an increase in energy efficiency.

Using a simple traffic light system on the condition of the plant, we will highlight any areas of concern.

Reviewing Energy Meter Readings

To ensure continued best practices, our engineers take regular meter readings for review. We can see if there are any anomalies and compare them to previous years and months. This will enable an analysis of the most efficient ways of using energy.

Once energy efficiency improvements have been put in place, any significant drop in the readings should also be visible to show where cost savings have been made.



Updating and monitoring BMS

We will monitor the plant and fine-tune the system to assist in your carbon management plan. We aim to operate the plant at peak efficiency. By reviewing the timing schedules and adjusting set points and running times we can ensure they are aligned, this could also make some significant savings.

Live efficiency monitoring for major plant using actual inputs and outputs can also be introduced. For example, for chillers, by measuring the current flowing into the system and the cooling output from the system both the change in temperature of the water on either side of the coils and the corresponding flow rates can be monitored. For boilers, the gas consumed and the heat output from the boiler can be measured, which will help to create coefficient performance ratings for larger plant.

Once this has all been reviewed and set up, we would be able to introduce both business and condition-based maintenance which allows for major items of plant feeding into the BMS to be controlled as and when is required. Exploring the consequences of modifying maintenance regimes in terms of frequency of planned maintenance depending upon business consequences of plant failure could also be an option as part of our plan in reducing the use of carbon on-site.

Updating to LED

Lighting accounts for nearly 5% of global CO2 emissions – a global switch to energy-efficient LEDs save over 1.4 billion tons of CO2 from being emitted into our atmosphere. Our engineers will continue to swap old fluorescent and incandescent bulbs for LEDs wherever possible across all our client sites. We can also provide full LED lighting upgrades in a one off project.

PIR Sensors or Pneumatic lighting

Subject to survey of the current lighting installations within the buildings, PIR sensors and pneumatic lighting is an optional addition for energy saving. The sensors would allow for the management of lighting timings, in particular in communal areas, toilet lobbies and stairwells and would reduce the amount of time the lights were switched on for.

Automatic flush control

Installing automatic flush controls in the men's urinals where applicable will allow for a controlled flush system to enable the reduction of waste of water and energy depending on the usage.



Installing Inverters

Installing inverters on fans and pumps on chilled water and heating plant will control the speed of the motor. When the plant doesn't need to be running at maximum capacity the inverter can reduce the speed at which the motor is running which in turn will reduce the amount of energy used.

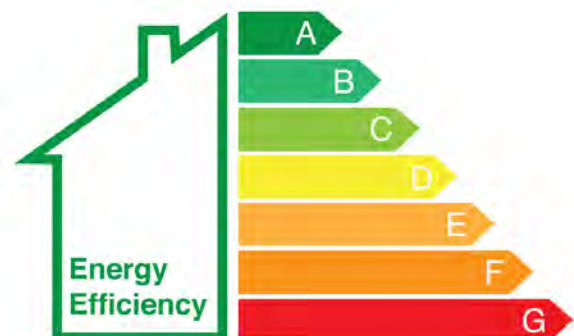


Upgrading water heaters

The upgrade of water heaters allows for the isolation of heating plant within a building. This will allow for the heating plant to be switched off during the summer months, saving significant energy with a large reduction in utility bills.

Updating calorifiers

There is an option of adding electric elements on calorifiers to enable the switch of electric to gas feeding to plant. On projects where this has been successful, there has been savings as significant as £700 per week. This is because it allows for the heating plant not to run 24/7. This upgrade would only be effective in a building where the boilers do not need to be running at all times.



Innovation and Approach



MS are committed to offering the highest level of service to our clients and as such, invests time and resources to develop additional services and ways of working, that benefit our clients.

MS work with condition-based maintenance (CBM) which is a maintenance strategy that monitors the condition of an asset to determine what maintenance requires carrying out. CBM dictates that maintenance should only be completed when certain indicators show signs of decreasing performance or upcoming failure. Checking a machine for these indicators may include non-invasive measurements, visual inspection, performance data and scheduled tests.

Condition data can then be gathered at certain intervals. Condition-based maintenance can be applied to critical and non-critical assets.

To allow for condition-based maintenance to be successful, there are elements of the maintenance operation that need to be in place. This includes having a scheduled maintenance strategy that allows you to inspect and spot anomalies in equipment and trigger timely follow-up orders. To take the next step and predict which work orders will lead to asset failure, AI-powered work order reports can produce this detail.





Innovative 'condition-based' maintenance solution

- Integrates with all Building Management Systems
- Real time automatic fault detection on HVAC plant
- Standard and customised faults
- Links to CAFM systems for automatic reactive job card generation
- Ensures BMS optimisation 24/7 and thus prevents energy decay
- Saves 10-15% of a buildings total energy spend

Outside the parameters of the CBM, MS can also offer solutions to cover other fields, one of these being that MS are currently in the process of implementing a smart bin maintenance system at one of our clients' static sites.

- **Predict failure before equipment malfunctions** and reduce reactive callouts. Working to prevent potential issues and allowing for analysis of the risk and the relative impact so clients can be proactive in prioritising work orders.
- **Benchmark performance across sites.** Allows for an in-depth breakdown of work orders by site so clients can spend time, budget, and other resources where they'll make the most impact.
- **Boost time without sacrificing quality.** Identifying work that is consistently taking longer than normal and the root cause of delays allowing MS to fix the problem, improve processes, and complete the job faster.
- **Parts forecaster** allows the use of historical data to accurately predict the parts required for maintenance work.

8 Old Jury

March 2018

Smart Maintenance System



MS Maintenance has held a maintenance contract at 8 Old Jewry since March 2018. We attend the site twice a week for planned preventative maintenance.

In 2020, we advised our client to implement the use of our smart maintenance system after discussions for a more proactive approach to sustainability. Our “insights-based maintenance” system combines IoT sensors, AI-enabled analytics, and remote monitoring. The use of this system can significantly reduce operating and energy costs and increase efficiency by moving from routine frequency-based, labour-intensive maintenance to flexible, data-driven, predictive maintenance.

The system triggers any warnings, if there is a potential fault or allows us to see inefficient usage of energy throughout the building. The assets that have had sensors installed are the Boilers, Air Con Units, Chillers, Fan Coil Units and Pumps. Our smart maintenance system could extend to other key plant, water systems and measure waste disposal.

The system is fully accessible via software, providing visual dashboards on the smart installations. It has allowed us to predict faults and plan ahead to enable measures in reducing the use of energy / carbon. Our 24/7 helpdesk, can either resolve a problem remotely by reviewing the report and liaising with the CM, or issue a work order through our integrated CAFM system for an engineer to investigate and resolve on-site.

Benefits

- **Less disruption for tenants.**
- **Reduction in energy usage.**
- **Reduction in operational costs.**



By installing the Smart System, there would be an estimated saving of £51,247 per year



Belmont House, Uxbridge

December 2016

Building Services – On-site Engineer



When we initially took over the site, it was empty which led to managing the building as more of a caretaker role, however now it is at full occupancy, we manage all floors to SFG20 standard.

As each floor became occupied, MS supported each fitout to meet the tenant's needs. Our full-time on-site engineer assists with the daily PPM and reactive tasks, and the supervision of any specialist sub-contractor visits. We are able to boast a reduction in reactive callouts being resolved on the first visit due to our on-site engineer being multi-skilled and storing spare parts on-site.

Belmont House has recently won the 2021 Green Apple award for its efficiency and energy saving initiatives in sustainability.

The building now titles as a technical intelligent building.

In 2021, we took on the task of monitoring the plant and evaluated where significant changes to set points could be made throughout the building, depending on usage and footfall in various offices and floors. The results showed us that by adjusting certain set points and time zones over the plant, we were able to make considerable reductions and cost savings in electricity at a 33.5% reduction and gas consumption at 77.8% over a 3 month period in 2022.

At MS we pride ourselves on our collaborative approach with our clients to boast these reductions.

Benefits

- **Significant reduction in energy usage.**
- **First Time Fix at reactive callouts, due to the storage of onsite spares.**
- **Now an intelligent building.**



With savings of 33.5% reduction in electricity consumption and 77.8% in gas consumptions.



Leavesden Park, Watford

September 2022

Chiller Replacement Project



MS carried out a chiller replacement project in September 2022 as part of an ongoing energy reduction plan.

Following several discussions with the client, they requested Energy saving suggestions to reduce their building’s EPC energy rating to a C.

The Account Manager gave a detailed report on where significant savings could be made. He brought the chiller to their attention, it was no longer running efficiently and had come to the end of it’s lifecycle.

This installation was the second of 2 chillers to be updated. The client needed minimum disruption to the building’s day to day operation during installation, due to the tenants’ nature of business. MS made recommendations for the Carrier chiller based on the potential energy savings it could provide.

The potential savings of the newly installed chiller are based on the notional ESEER load profile and on the chiller being operational 24/7.

		OLD	NEW
ESEER	<i>kW/kWe</i>	4.03	5.3
Average PI	<i>kWe</i>	61.4	46.7
Annual Hour Operation	<i>Hours</i>	8760	8760
Energy Used	<i>kWh</i>	537,599	408,778
Electricity Rate	<i>£/kWh</i>	£0.1733	£0.1733
Cost	<i>£</i>	£93,165.87	£70,841.22
Notional Annual Saving	<i>£</i>	<i>£</i>	£22,324.65

The above energy savings could be realised based on 8760 hours of operation (24/7). The old chiller had an ESEER of 4.03 when brand new, and the new chiller’s ESEER is 5.3.

Benefits

- Upgrade the building’s EPC rating to a C.
- By further adjusting the set point on the chiller, we can ensure it is working to maximum efficiency.



The notional annual saving is £22,324.65



1 New Fetter Lane

June 2020

Building Services and Upgrade Projects



In June 2020, MS was awarded the M&E contract as CBRE's Building Services provider at 1 New Fetter Lane. MS supplies a full-time on-site, multi-skilled engineer that completes all PPMs to SFG20 standards and reactive works as and when a callout is raised.

MS have focussed on building strong relationships with CBRE's employees and their main tenant. We pride ourselves on how we communicate on-site. Our multi-skilled engineer has very good building knowledge and is able to focus on quality, through his experience and expertise.

The main tenant is a highly respected American Solicitors, so we have worked hard to run time schedules for the plant that reflect their work patterns, which are not average 9-5 working hours. We monitor this regularly to ensure plant is being utilised efficiently and make adjustments where fit.

As part of the tenant's new lease agreement, a full Dilapidation report was conducted to build

a 5-year plan for the future of the building. All plants' life cycle was reviewed to ensure optimal efficiency for the smooth running of the building.

We have now carried out several large projects including, Chiller replacements and improvements, Fire Alarm Slow Reacting Detectors Works and Fixed Wire Testing remedial works.

MS are currently in the process of several large projects at New Fetter Lane, including a 5 phase BMS Upgrade, and AHU refurbishment, in line with the plan. The boilers will be replaced within the next 2 years and we are currently in talks of SMART meters across the building.

Chiller replacement and improvements
Fire Alarm Slow Reacting Detector works
Fixed Wire Testing remedial works
5 Phase BMS upgrade
AHU refurbishment

£180k
£34k
£10k
£450k
£98k

Benefits

- **Closely monitor plant running schedules to reduce energy usage.**
- **Multi-skilled engineer on-site to manage reactive callouts.**
- **5 year lifecycle plan to improve efficiency.**



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