# A Self Energy-Saving Audit

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# Introduction

A self-energy saving audit is a good way to familiarise yourself with how your building works from an energy viewpoint. Answering this series of questions will help you systematically document:

* what the energy uses of your building are
* what is the energy efficiency equipment and fabric throughout the building
* how the building occupants use the building

Completing the audit will throw up what is known and unknown about how the building works from an energy standpoint and where opportunities lie for operational energy saving and where the priorities might lie for investing in building upgrades.

Once you have completed the survey – pull out the 5-10 key learnings and use these as a starter for your energy-saving action plan. For the action plan – identify who is responsible, the time frame by which the action should be taken and if necessary allocate some budget to be able to progress the action.

# Basic information

What is the building name and address?

What is the building used for (office, factory, warehouse etc.)?

Are building plans available?

What is the floor area?

Is historic energy use data (gas and electric) available (e.g. from bills, spreadsheets, sub-meters, how far back)?

What is the annual use of gas and electricity (in kWh)?

Have there been any previous energy surveys (DEC, ISO14001, ISO 50001 etc.), and when?

What are the major uses of energy in the building (heating, cooling, process, computers, lighting etc.)?

What in your opinion is where the most waste is or where the opportunities for savings are?

What is the current metering (main incomers, sub-metering)?

Do you have an energy policy?

Do you have an energy management plan?

What data is analysed and who does it?

What budget does energy management have?

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# 1 - Heating, Ventilation and Air Conditioning Equipment

What is the approximate age and condition of the boiler or other source of heat?

What is/are the boiler size(s)?

Has the system been serviced in the last 12 months?

Are radiators fitted with Thermostatic Radiator Valves (TRVS)?

Are motors and pumps fitted with variable speed drives?

Are filters and grills clean and maintained?

Is the boiler room fully insulated?

What is the size of your chiller (in kW)?

How many split systems do you have?

# 2 - Heating, Ventilation and Air Conditioning Controls

Are there any areas of over- or under-heating?

Have timers been set to match the hours of occupancy?

What are the heating and cooling set points and dead-bands?

Is there a risk of heating and cooling operating in the same area?

Are any unoccupied areas being heated?

Are windows and doors often left open in conditioned spaces?

Do you recirculate air or use 100% fresh air?

# 3 - Building Fabric

Is the roof insulated to modern thermal standards?

Are windows at least double-glazed or with secondary glazing?

Are there any uninsulated cavity walls?

Are there any air leaks at windows and doors or other openings?

Do all exterior doors close automatically and quickly?

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# 4 - Hot Water

What is the age and condition of water heating equipment?

Has the timer been set to match occupancy?

Are the hot water cylinder and valves fully insulated?

Are all hot water distribution pipes insulated?

Have energy-saving taps and shower heads been fitted?

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# 5 - Lighting: Lamps

Are there any areas of over-or under-lighting?

What proportion of lights are LED?

Can light output be reduced in any exterior lamps?

# 6 - Lighting: Control

Are there any unused areas being lit?

Can occupancy sensors control intermittently used areas?

Can daylight sensors be fitted to lights adjacent to windows?

Are occupancy sensors used?

And are windows and skylights cleaned regularly?

Are manual switches accessible and clearly labelled?

Is there a switch-off policy in place?

Are all exterior lights controlled by timers or daylight sensors?

# 7 - Other equipment

Does all IT equipment have energy saving features enabled?

Is all other equipment switched off when not in use?

Has an expert in lift energy efficiency assessed the lifts?

Is all refrigeration equipment A-rated or better?

When were refrigerators last maintained?

Are vending machines and coolers fitted with timers?

Is there a switch-off policy in place?

* Is there communication and labelling on equipment and lighting about switching off?
* Is there communication to internal people on switch-off practices?
* Is there communication to external people using the space (e.g. visiting technical teams?) on switch-off practices?

# Further resources

One you have completed the survey, further resources available for gaining a fuller understanding of your building’s energy use and saving opportunities are to use:

* [Equipment asset worksheet](https://juliesbicycle.com/our-work/arts-council-programme/buildings-net-zero-energy-part-2/)
* [Night-time energy worksheet](https://juliesbicycle.com/our-work/arts-council-programme/buildings-net-zero-energy-part-2/)