

How to conduct a walk-around energy survey

What is a walk-around energy survey?

A walk-around energy survey is a brief survey of all relevant buildings. This is the primary method of assessing energy use in an organisation. There are three key aims of the survey:

- Identify what equipment uses most energy within your organisation.
- Understand how energy-using equipment is controlled.
- Identify opportunities for savings.

Why carry out a survey?

In most organisations, energy is one of the most significant controllable costs. Saving energy improves profitability as well as decreasing CO₂ emissions and reducing impact on the environment.

Preparing for a walk-around energy survey

To get the most out of your walk around survey, you need to prepare properly.

1. Safety first! Make sure you are aware of any risks that may be present, and follow the safety procedures and methods that are in use. Always wear protective clothing and equipment where appropriate and call in an expert when needed.

2. Review relevant information on energy use, such as utility bills, any sub-metering data, process diagrams and maintenance records. This may give you an indication of high base-load or out-of-hours energy use.
3. Prioritise high energy consuming equipment and processes during your assessment. Plan and agree your assessment with relevant people, operators often have ideas on how to save energy on their equipment so ensure that they are available.
4. Consider carrying out a second walk around survey out of operational hours, to identify any equipment and lights left on unnecessarily.
5. Make sure you have the tools for the job. For example:
 - Relevant safety equipment.
 - Audit checklist.
 - Digital camera.
 - Infrared thermometer.
 - Torch.

You can use the checklist included in this guide or develop one for your own specific business needs.

Checklist

Date: Carried out by:

Heating, Ventilation and Air Conditioning Equipment	Completed	Action
Age and condition of boiler or other source of heat		
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?		

Heating, Ventilation and Air Conditioning Controls	Completed	Action
Are there any areas of over or under heating?		
Have timers been set to match the hours of occupancy?		
Also check 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?		

Building Fabric	Completed	Action
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?		

Domestic Hot Water	Completed	Action
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?		

Lighting: Lamps	Completed	Action
Are there any areas of over-or under-lighting?		
Are there any tungsten lamps still in use – e.g. in desk lights?		
Have T12 fluorescent lamps been replaced by T8 or T5 lamps?		
Can halogen lamps be replaced by CFL or LED versions?		
Can light output be reduced in any exterior lamps?		

Lighting: Control	Completed	Action
Are there any unused areas being lit?		
Can occupancy sensors control intermittently used areas?		
Can daylight sensors be fitted to lights adjacent to windows?		
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?		

Other equipment	Completed	Action
Does all IT equipment have energy saving features enabled?		
Is all other equipment switched off when not in use?		
Have lifts been assessed by an expert in lift energy efficiency?		
Is all refrigeration equipment A-rated or better?		
Are vending machines and coolers fitted with timers?		
Is there a switch-off policy in place?		
Are all exterior lights controlled by timers or daylight sensors?		

Taking action

Once you have completed the walk around survey, summarise your observations and recommendations in an action plan. Discuss the plan with your colleagues at an early stage, to make any amendments that may be needed and to increase their buy-in to the process. An energy meeting may be useful for this, as all colleagues can then agree on which actions will be taken. It is useful to include senior management in such a meeting, as resources may be required to implement the recommendations.

For each of the items on the checklist the finished action plan should set out:

- An observation (what defect or opportunity has been found?)
- A recommendation (what needs to be done to achieve the energy saving?)

- An agreed 'owner' (who is responsible for taking the opportunity forward?)
- A completion date (when will it be done?)

The next step is to prioritise findings on the basis of business benefit against cost and payback. Implement quick wins and share successes. Keep the momentum going; keep people informed and continue to raise awareness of energy use. Maintain a list of the actions still outstanding and conduct regular reviews of progress against the plan.

Schedule the next walk-around, and consider focussing in more detail on a specific area. Feed the findings from further surveys into your current plans and activities. Follow up on the outstanding actions, implementing them over a time-frame according to your action plan.