

Community building energy survey: guidance

Overview

This guidance is to help you complete CSE's [basic community building energy survey](#). The structure of the document follows the order of the survey. We appreciate that you might not be a building surveyor or even know anything about buildings, and we hope that by using this easy checklist and guidance, you might be able to get to know your building better and identify some simple improvements to make it a more energy efficient and healthy building.

The purpose of the survey is to help improve your understanding of your building and your energy use. It will help you to identify some key first-step low and no-cost actions you could undertake to improve the building's energy efficiency and change behaviours around energy use.

Some notes before you start...

- If you have a building manager or caretaker, it might be helpful to undertake this survey with them. We also recommend - where possible - involving some representatives or users of the building in the process.
- You will notice we had included the letter in front of each question which corresponds to the question in the survey. Not all questions have accompanying guidance and so not all questions and letters are listed.
- Where the word 'measures' is used it refers to improvements you might make to the building.
- This new (2024) guidance is part of a suite of resources from CSE to support improvements for community buildings. Check our website for updates.
- If you are viewing this on a screen, the links to CSE webpages go directly to the relevant page if you click them or hover over.
- You might not be able to complete everything in the survey, and that's fine as it won't all be relevant, and it's ok not to have all the answers. The more you can complete, the better informed your future decisions will be.

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Section 1: General information about the building and energy behaviours

1.1 General information

c. Date constructed:

It doesn't have to be the exact date or year, but knowing roughly when it was built (for example after 1900 but before 1930) helps to better understand how it was constructed and what materials and methods are likely to have been used. Finding this out might be very simple - it might say on the building itself. Failing that, try looking at documents relating to your building (depending on when it was built), or if your building was a prominent one within the community when it was built, a quick web-search. Someone in the community may remember it being built, you could look at old maps and historical records – for example oldmapsonline.org.

e. Is the building listed or in a conservation area?

Listed and protected buildings usually require extra types of permissions to undertake any major work. For listed buildings, you will need Listed Building Consent for all work that involves alterations, extensions or demolition and will affect its character as a building of special architectural or historic interest. You will need to apply to your local authority for any permissions. They can also help you to determine what the special interest of your building is.

Some conservation areas are subject to special controls when the local authority wishes to protect particular building features, such as doors or windows. These are called 'Article 4 Directions', and restrict work that wouldn't normally require planning permission, such as replacing a window with one of a similar design.

To find out if an Article 4 Direction exists for your conservation area, contact your local authority. They will be able to tell you what kinds of work you'll need planning permission for. You may also be able to find this information on your local authority's website.

To check if your building has any listings, you can consult the following;

- In [England: historicengland.org](https://historicengland.org)
- In [Wales: cadw.gov.wales](https://cadw.gov.wales)
- In [Scotland: hesportal.maps.arcgis.com](https://hesportal.maps.arcgis.com)
- In [Northern Ireland: indirect.gov.uk](https://indirect.gov.uk)

f. Is the building owned or rented?

Whether you own or rent your building affects what you can do. It will also affect your eligibility for funding for larger measures (funders will often ask how long your lease is if you are renting your building).

However, even if you don't own the building, there are a number of things you can still do – particularly low-risk, low-cost measures and behaviour change measures. These can be identified by going through this survey process. Try to involve the owners as far as possible.

If you are renting your building, it's worth being aware of the non-domestic private rented sector **Minimum Energy Efficiency Standards (MEES)** regulations. These regulations prohibit the letting of non-domestic properties with an Energy Performance Certificate (EPC) rating lower than an E. There are some exemptions to this, such as tenant refusal to carry out work; where works would diminish the value of the property by more than 5%; or where landlords can show that all relevant

improvements have been made (or cannot be made). If you think your building may be non-compliant with MEES regulations then contact your local council for advice. If you're not sure search on [gov.uk/find-local-council](https://www.gov.uk/find-local-council).

- Read more about the MEES regulations at [gov.uk/publications](https://www.gov.uk/publications)
- To find out what your EPC rating at [gov.uk/find-energy-certificate](https://www.gov.uk/find-energy-certificate)

g. Who is the legal duty holder?

This is the person with overall responsibility for the maintenance and repair of the premises, whether that is the owner or the occupied building manager. If you are leasing your building and have permission to carry out maintenance within your lease terms, then the head of your organisation / board of trustees is likely to be the legal duty holder.

h. Does the building have a maintenance plan?

All buildings should have a maintenance plan/checklist that is carried out regularly to prevent any serious issues from developing. Maintenance checklists can be carried out by a designated responsible person at regular points throughout the year (monthly, quarterly depending on your building's needs). This is usually a visual check of the building to identify any areas that need maintenance work, for example, are there any loose roof tiles, damaged guttering, blocked drains, loose brick work. Making small repairs when they are spotted can save a lot of money and prevent major damage in the long run. Historic England provides a simple maintenance checklist [at historicengland.org.uk](https://www.historicengland.org.uk) and National Churches Trust has a more detailed maintenance plan template [at nationalchurchestrust.org](https://www.nationalchurchestrust.org) (this is for church buildings but could easily be adapted for use in most community buildings).

o. Is the building legally compliant with requirements in Health and Safety law?

You can use the Health and Safety checklist at [hse.gov.uk](https://www.hse.gov.uk) to assess your health and safety compliance. It is the responsibility of the legal duty holder to ensure these requirements are met. Information on village and community halls legal responsibilities can be found at [hse.gov.uk/voluntary](https://www.hse.gov.uk/voluntary).

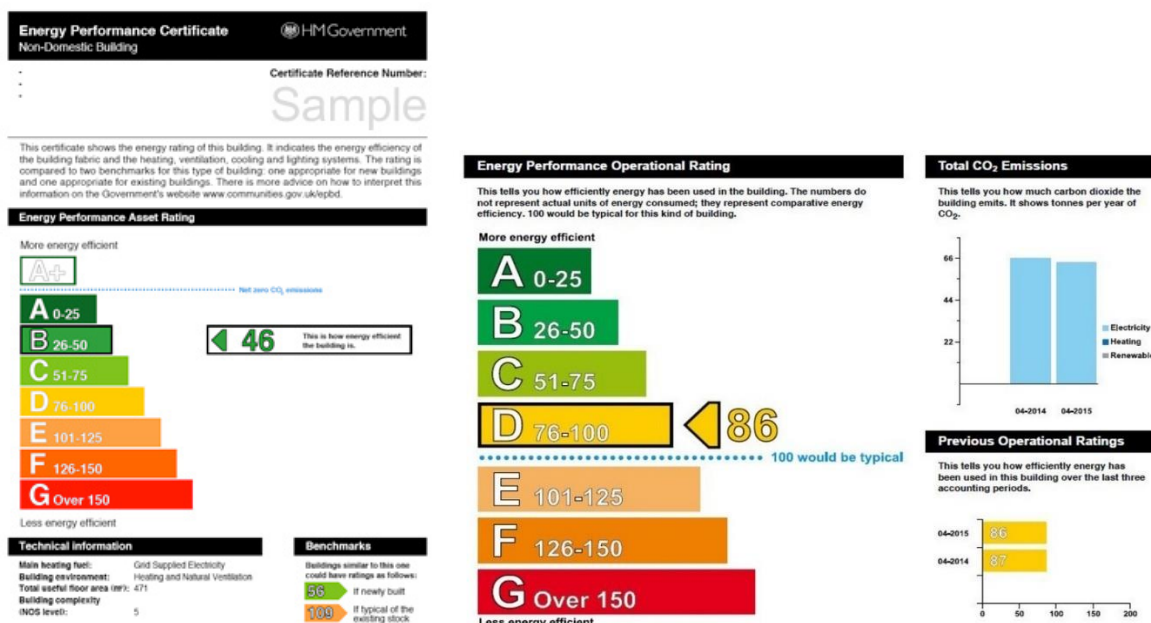
q. Does the building have a Display Energy Certificate (DEC) or Energy Performance Certificate (EPC)

All non-domestic buildings are required to provide an EPC if the building is being sold, rented or under construction. It is a legal requirement for buildings to be rated an E or above. EPCs are based on MEES calculations - referenced in (f) above - and are an indicator of a building's energy efficiency.

All public buildings over 250m² are required to provide and display a DEC. It is a calculation based on a building's actual energy use over the previous year and trend over 3 years. It is designed to reduce a building's energy consumption and increase efficiency.

Both certificates run on the same A-G rating, with A being the most and G being the least energy efficient.

A guide to DEC can be found on [gov.uk/publications](https://www.gov.uk/publications) & EPC on [gov.uk/find-energy-certificate](https://www.gov.uk/find-energy-certificate).



Example of an Energy Performance Certificate (left) and Display Energy Certificate (right)

1.2 General building condition

Before thinking about energy efficiency and renewable technologies, first check the condition of the building. There is no point fitting solar panels on a roof that needs replacing. Similarly, it would be pointless adding insulation to your loft space or walls if the roof leaks or gutters are not working. Wet insulation will increase, rather than decrease, heat loss.

a. Are there any damp and mould issues?

Check if your building has any issues with damp. Damp can lead to mould, which poses a risk to physical and mental health of building occupants, as well as making the building harder to heat. If damp and mould issues are left untreated, it can be very expensive to treat and dry the surfaces.

Mould and damp issues may not be immediately obvious, so have a good look around and check in places not usually inspected (such as the loft space, underneath/behind things such as kitchen units/kickboards, and in rooms used for storage).

Some common signs to look out for include mould growth on surfaces (check on walls, behind furniture, around windows), damp smells (ask users of the building), and high prevalence of coughing/asthma from users of the building (ask them if it's worse in the building).

Identifying types of damp

There are different types of damp to be aware of (they each have different solutions):

- Condensation damp:** this is when moist air comes into contact with colder surfaces (wall, window, mirror etc). Condensation is usually caused by a combination of
 - building occupants producing excessive moisture (through cooking, cleaning, breathing etc)
 - lack of ventilation
 - low heating

- cold surfaces



A common place to find mould is on cold patches (e.g. around window and door frames) or unventilated spaces (e.g. behind furniture).

To prevent condensation dampness, make sure you are adequately heating the building and draught proofing where possible, reducing excessive moisture production (e.g. dry clothes outdoors, put lids on pans) and ventilating (e.g. open windows when producing moisture, use extractor fans, keeping trickle vents open).

- b) **Rising damp:** this is when moisture rises from the ground, usually caused by excessive groundwater, which in turn may be caused by faulty drains or rainwater management, concreting all around a building (which prevents the ground from drying through evaporation) or the external ground levels being raised. Rising damp should not be solved by injecting damp proof courses but instead by understanding the underlying causes and addressing them.
- c) **Penetrating damp:** this occurs when excess water comes into the building through the roof, pipes, guttering, walls, mortar, windows, doors or floors. Identifying the cause of penetrating water can be difficult because water can travel horizontally as well as vertically and the disrepair may not be directly where the damp patch is. But once you've identified the source, you'll be able to carry out repairs to prevent water ingress in the future.

For more information on damp have a look at ukcmb.org.

Risk of energy efficiency measures and retrofit on damp issues

It's essential that any building is repaired and allowed to dry naturally and fully before undertaking energy efficiency improvements. If existing issues aren't tackled, then you run the risk of undoing existing energy efficiency improvements, or new improvements not working effectively. For more information on a common-sense approach to dealing with damp have a look at this guide jointly produced by Historic England, the Royal Institution of Chartered Surveyors, and the Property Care Association: [Investigation of moisture JPS 2022.pdf \(rics.org\)](https://www.rics.org/uk/publications-and-research/research-reports-and-guides/investigation-of-moisture-jps-2022.pdf).

The most significant risk of any retrofit measure is that of increased moisture accumulation as surface accumulation, or moisture accumulation within the building fabric beyond its capacity to readily manage. This increased moisture can cool the fabric, increase the heat loss and energy demand, and give rise to mould formation - with associated health impacts for the occupants.

d. Does it get too hot in the summer?

When thinking about improving the energy efficiency of a building, people often overlook the fact the UK is getting hotter. This effect may increase as our climate changes and poses a real risk to human health. Community buildings often become places of refuge during extreme weather events, and those buildings which can act as a “cool hub” in summer as well as a warm hub in winter provide more benefit to their communities. Actions to address overheating can be as simple as using blinds on sunny sides of the building, opening windows to get through-flow of air, or fitting external shading. Overheating may also be due to equipment or machinery that gives off lots of heat and requires ventilating.

m. Are there solar panels or solar thermal and linked battery storage?

Solar PV (photo voltaic) panels contain photovoltaic cells, or solar cells, which convert sunlight directly into electricity. These are commonly mounted on a roof but can be installed on the ground. They need an electrician to install them and a structural engineer is sometimes advised to assess the stability of the roof. They can be installed with a battery that stores the energy produced by the panels in the day when it's sunny and releases it later or exports it to the electricity grid for revenue.

Solar thermal technologies absorb the heat of the sun and, most commonly, transfer it directly to heating water. A plumber is needed for their installation.

1.3 Ventilation and draughts

a. Is the building particularly draughty?

It's a good idea to identify if your building has any excessive draughts. They can make building occupants feel uncomfortable and users might respond by putting the heating on full blast. Draughts are easy to fix through simple draught proofing measures.

Most buildings, particularly old ones, will have draughts coming from cracks and gaps which allow warm air to escape and let cold air in. Some common places to look for draughts are:

- windows
- unused chimneys
- exterior doors
- interior doors
- around pipework
- floorboards and skirting boards
- redundant extractor fan outlets
- loft hatches
- lighting and electrical fittings
- cracks in the walls
- letterboxes and keyholes.

A simple trick to identifying draughts is holding a thin piece of tissue, a lit incense stick or tea light near a draught zone and watching the movement of the tissue/smoke/flame. You could also use a thermal imaging camera or commission a professional air tightness survey.

c. Is there an identifiable ventilation strategy?

Buildings need adequate ventilation to ensure that condensation doesn't build up in the building, and that safe air quality is maintained for building occupants.

Different types of buildings will require different ventilation systems. For example, most older buildings typically relied upon the draughty nature of the windows, chimneys and air bricks to provide adequate passive (no electricity required) ventilation. However, if an older building is draughtproofed, then this may change the ventilation requirements.

Newer buildings tend to rely on trickle vents fitted into double (and sometimes triple) glazed windows and employ mechanical extractor fans in kitchens and bathrooms. Larger buildings may have ventilation systems which are centrally connected and serve the whole building. Some buildings may have mechanical ventilation with heat recovery (MVHR) but it can be difficult to retrofit these into existing buildings.

If a building uses combustible heating fuels (oil, gas, wood, etc.) then they should have air bricks fitted. If you have any, it's worth checking that they have not been blocked up.

If you have an extractor fan, check that it works properly. It might need a filter change, or it might not even be connected to the outside with ducting.

Ventilation is particularly important in places where lots of people gather and in buildings that have combustible appliances and heating systems such as oil or gas boilers, stoves or wood burners. These appliances consume the oxygen that you require to breathe.

f. Do you have air quality monitors?

Carbon monoxide, carbon dioxide and humidity monitors are very important, alongside adequate ventilation, in buildings that have combustible appliances and oil or gas heating systems. These monitors can often be purchased inexpensively from supermarkets and should be checked and replaced regularly (like a fire alarm). There are building regulations on ventilation for non-domestic buildings, explained in [building regulations part F](#).

Providing training for members of staff or regular building users on the signs and symptoms associated with carbon monoxide poisoning may be worth considering, particularly if you have identified that your building is poorly ventilated. The Gas Safe Charity provides free online and in-person training at gassafetycharity.org.uk.

1.4 Space and water heating

a. What fuel type and system is used for space and water heating?

There are many heating systems out there for both space and water heating. It may seem obvious but the first step to finding solutions for reducing energy wastage from heating is by understanding what the heating system of the building is.

Space heating

- **Wet central heating system:** These are standard systems where a central heat source (usually a boiler running on a specific fuel - gas, electric, oil, biomass, bottled gas, or wood pellets) produces hot water that is distributed around the building to provide both heating (through radiators) and hot water. Some boilers will come with a separate hot water tank, some will produce heating and hot water on demand (combi boilers).



A combi boiler will not have a separate water tank and will have hot water and heating controls on the boiler.

- **Electric panel heaters:** These are individual heaters placed in rooms and are controlled independently of one another. They are often advertised as 100% efficient but that doesn't mean they are cheaper to run (and there are losses in the UK's electricity distribution system).
- **Warm air units:** these are electric systems that produce hot air which circulates around the building.
- **Night storage heaters:** These are electric wall mounted heaters that store up heat in the night and release it in the day. Night storage heaters are probably not appropriate for most community buildings as they are usually paired with cheaper electricity at night and expensive electricity in the day (when most energy is being used). Read more about night storage heaters on the cse.org.uk website.



You can identify if you have a night storage heater as it will likely have clear "output" and "input" dials

- **Heat pumps:** These are low carbon technologies that use electricity to take warmth from the air outside (air source heat pump), the ground outside (ground source heat pump) or water (water source heat pump) and use it to heat the building. These types of systems are becoming more common as more buildings are being encouraged to fit low carbon systems (as opposed to carbon intensive fuels like gas or oil). The heat can be used to warm the water that travels through a central heating system (to radiators) or underfloor pipes. However, they may not be suitable for all types of community building so it's important to get good advice if you are considering moving to a heat pump. Read more about heat pumps on the [cse.org.uk](https://www.cse.org.uk) website.



Air source heat pump

- **Room heaters:** These are used as top up heating to heat a small space and are normally portable or fitted to a wall. They are often used as a secondary heating system alongside the main heating system. They can be powered by electricity, gas or oil. They can be expensive to use but they can work well in community buildings, particularly if you need to heat a small space for a short amount of time. Read more about room heaters on the [cse.org.uk](https://www.cse.org.uk) website.

Water heating

- **Combination boilers:** These produce hot water on demand. When the hot tap is turned on, the boiler turns on.
- **Hot water cylinder (or tank):** this is where you have a separate tank that holds your hot water (as opposed to having a combi boiler which does both heating and hot water). The

tricky thing with cylinders is that they hold hot water and can lose heat. They should be insulated and properly controlled. Hot water tanks that are powered by electricity only are called immersion heaters. Read more about hot water cylinders on the [cse.org.uk](https://www.cse.org.uk) website.

- **Electric immersion:** Immersion heaters have a metal element which is immersed in water stored in the cylinder. It's separate from a central heating boiler or radiators. You can switch an immersion heater on and off easily or connect it to a timer to heat at specific times.
- **Solar thermal:** This is a way of producing hot water using the sun. Panels are installed on the roof which absorbs heat from the sun to pre-heat water that is either fed into a hot water storage cylinder or directly into a combination boiler. This reduces the amount of fuel needed to bring the hot water up to a useable temperature, saving money on heating bills and reducing carbon emissions. Read more about solar thermal on the [cse.org.uk](https://www.cse.org.uk) website.
- **Electric instantaneous water heater:** These can be used for tap or shower outlets and produce hot water instantaneously. These are common in community buildings, particularly in kitchens, where people can get instantaneous hot water for teas/cooking. These are particularly useful in community buildings that are large where the kitchen is far away from the boiler, and hot water is used a lot for teas and cooking throughout the day.

e. Are adequate protections in place to prevent legionella?

Legionella is bacteria that spreads in water systems with an ambient temperature of 20-45 degrees Celsius and can lead to health conditions such as Legionnaire's disease. Having a hot water tank may increase the chances of legionella if the temperature is not properly managed and maintained at 60 degrees or above. Cold water tanks should store water below 20 degrees. Buildings need to have a risk assessment in place and carry out regular checks to ensure these temperatures are maintained. Guidance on managing legionella in hot and cold water systems can be found at [hse.gov.uk](https://www.hse.gov.uk) and the responsibilities of the duty holder can be found at [hse.gov.uk/pubns](https://www.hse.gov.uk/pubns).

g. Is it easy to heat up the building?

It's important to understand how quickly your building warms up. That way you will know – for example – that if the heating has been on for 5 hours and the building still can't reach 19°C then something might be wrong and need investigating. Talk to other users of the building and find out whether they have any comments on how easy it is to feel warm whilst using the building.

h. Type of pipework

If your pipework is visible, look at what kind of pipes they are. This will help you decide whether it is worth lagging them.

Pipe lagging can help keep the heat in, save energy and give some protection from freezing. Lagging simply means adding insulation to the water pipes around your building. Materials you can use include:

- Polythylene (flexible plastic foamed insulation) – most widely used
- Mineral/glass wool – a popular choice (thermal, acoustic and fire-retardant)
- Flexible elastomeric foam – rubber like material
- Rigid foam – for really large pipes

o. What controls are used for heating/hot water?

There are a variety of heating and hot water controls available, some of which you may already have. One quick way to save energy is by understanding how to use your heating and hot water controls.

Central heating controls

The best option for you will depend on your individual needs and system set up. We recommend you get advice from a heating expert. There is more information about these at [cse.org.uk](https://www.cse.org.uk) to get you started.

- **Room thermostats:** These are usually found in specific rooms of the building or the hallway. Their job is to monitor the temperature in the house and send a signal to the boiler telling it to switch off when the house is warm enough. Thermostats are normally set between 18 and 21°C. This is a comfortable temperature for most people. However, if your space is being used by people with vulnerabilities (e.g. health problems, older people or small babies) then you may want to set it higher. Some modern heating controls now combine the timer and the thermostat, allowing you to set different temperatures for different times of the day.
- **Timers/programmers:** A timer or programmer allows you to control when your heating and hot water comes on and when it goes off. The general rule of thumb is to have the heating only on when people are using the building and to build a lag time on either side of the heating coming on and off. For example, if you know the building is going to be used from 9am, have it come on around half an hour before (8.30am), and if you know that the building will be empty from 5pm, set it to turn off half an hour earlier (4.30pm).
- **Thermostatic Radiator Valves (TRVs):** These allow you to control the temperature of a room by regulating the flow of water through the radiator. If, for example, there are some rooms that rarely get used in the building, you can leave the TRVs in those spaces on low. It's not a good idea to turn radiators off completely for weeks at a time because very cold rooms can develop damp and mould. Instead, set the radiators in rooms you're not using to low, and close the doors so that the heat from your warm rooms doesn't travel there.



Thermostat (left), timer/programmer with thermostat (middle), TRV (right)

Heat pump controls

It's important to understand and learn how to use heat pump controls as they operate differently to traditional central heating controls.

- Heat pumps maintain a set temperature throughout the day and are meant to provide constant background heat.
- They shouldn't be turned on and off as with other types of heating.
- When heat pumps are installed, installers should set the controls and explain how to use them properly.
- Understanding new technology properly from the beginning is a key component to maximising energy efficiency and reducing future costs.

Night storage heater controls

- **The input dial** allows you to regulate the amount of heat the heater stores overnight. If it's not that cold, or you'll be out of the building for most of the day, you should keep the input dial on low.
- **The output dial** allows you to regulate the amount of heat that the storage heater releases in the day. The higher the setting, the quicker the heat is released. How you set this will depend on when you need most of the heat.
- **Modern storage heaters** have improved in terms of efficiency and how easy they are to control. New models can hold more heat for longer periods and include better insulation to ensure heat is only released when it's needed (often via a fan-assisted system). Many modern storage heaters also feature a thermostat and timer through a programmer or mobile app. This means you can set heat to be released at a time that suits your building users' needs.

Smart controls

- **Smart heating controls:** where the heating system can be controlled with an app which allows you to turn heating and hot water on and off or adjust the temperature from wherever you are (as long as you're connected to the internet). Some systems will even respond to weather forecasts so if, for example, some warm weather is on the way, the app will reduce the temperature setting of your heating.
- **Multi-zone heating (or zonal heating controls):** These are smart technologies which allow you to set different temperatures for different rooms in the building. These are useful for multi-use community buildings where you will have different activities happening in different rooms of the building. You can create multi-zoned heating systems by having smart thermostats in different parts of the building (e.g. upstairs and downstairs) controlled by an app. If you want even more control you can use smart TRVs on every radiator, giving you room-by-room control of your heating.
- **Weather and load compensation:** These are devices that can help reduce the amount of energy used by the boiler by adjusting the boiler thermostat and therefore the flow temperature of the water in response to conditions either outside or inside your home. A weather compensator monitors the temperature outside and will automatically reduce the flow temperature when the weather is mild. Load compensators adjust the flow temperature in response to changes to the indoor temperature. When the heating first comes on, the flow temperature will be set higher to warm your home more quickly, but when the desired temperature has nearly been reached, the flow temperature will be reduced which will avoid overheating. These devices work differently to room thermostats or thermostatic radiator valves which only affect whether the boiler is on or off, or water flows to an individual radiator.

Hot water controls

- **Combination boilers:** Most combi boilers have a thermostat built into the boiler itself where you can adjust the temperature of the water.
- **Hot water tank/cylinder thermostats:** These regulate the temperature of your hot water by switching off the heat supply from your boiler once the set temperature has been reached. They can save you money and avoid wasting energy by over-heating your water. If your hot water tank has its own thermostat, set it to 60°C: that's hot enough to kill harmful

bacteria like legionella, but not so hot that you're wasting energy. If you find 60°C too hot, mixer taps can help. Read more about hot water cylinders at [cse.org.uk](https://www.cse.org.uk).

1.5 Lighting

This part of the survey asks you to describe what lights you have and how the lights in and outside your building are controlled. With community buildings, people come and go and it's common for lights to be left on, so the controls may be as important (or more so) than the light fittings.

Some community buildings opt for motion sensor light controls or smart light switches to allow more automation and remote control of lighting systems. If it's not possible to have smart or motion sensor lighting, you could consider signage to encourage behaviour change or assigning a responsible person to check the lights before leaving the building.

Read more information on lighting at [cse.org.uk](https://www.cse.org.uk).

1.6 Water use

a. Is there a water meter?

Understanding how much water users of your building need will help you identify potential for improvements. Community buildings are varied in their uses and in some cases a lot of water is required (if for example the building is used for leisure activities or hospitality services). Use this section to outline where in the building uses water and for what activities.

c. Are there any leaks?

Fix any dripping taps. Taps can drip around 90 litres of water every week – that's a whole bath of water. Another thing you can check is whether your toilet cistern tanks are working properly and not leaking water into the toilet bowl. You can buy toilet leak detection tablets or try this DIY method: pour a few drops of food colouring or similar into your toilet cistern and wait 15 minutes. If the water in the bowl has changed colour it means you need to adjust the stopcock in the cistern.

f. Are any water-saving devices fitted?

- **Low flow/aerating taps:** these reduce the volume of water passing through. Aerating taps force air into the water stream which reduce the volume of water but not the pressure.
- **Push button taps:** these are common taps found in commercial settings and allow water flow to stop after a certain time.
- **Dual flush:** a lot of water you use will come from the flushing of toilets. If you don't have dual flush toilets consider fitting dual flush controls or placing a water saving bag (sometimes called a 'hippo' inside the cistern).

For more tips on saving water visit [cse.org.uk](https://www.cse.org.uk).

1.7 Energy use behaviours

Buildings don't use energy, people do! We all use buildings differently and this can drastically affect how much energy is used. A lot of the first steps to take for improving the energy efficiency of your building will be around behaviour change.

Understanding the users of the building, and their energy needs, will help you identify where it is feasible and appropriate to make changes. You can use the additional 'monitoring building use'

timetable in Annex 1 below to help better understand how your building is being used at different times throughout the week, and for what purposes.

c. Is your building used for purposes or use appliances that have high energy or water requirements?

A lot of energy gets wasted on the use of appliances in community buildings. Because community buildings are used by so many different people, ensure that you provide adequate signage and training to users of the building to ensure efficient and energy saving behaviours when it comes to the use of appliances.

This section of the survey asks you to outline all the appliances that use energy in your building and how they get used. This is a chance to reflect on whether you think they are being used efficiently.

Appliances to consider:

- IT equipment (e.g. computers, printers, projectors)
- Entertainment (e.g. TV screens, TV boxes, video game consoles)
- Lighting (e.g. lamps, fairy lights)
- Kitchen appliances (e.g. kettles, fridge/freezer, microwave, oven, dishwasher)
- Cleaning appliances (e.g. washing machine, dryers)
- Bathroom appliances (e.g. hand dryers)

It's good practice to switch off appliances when not in use (switch off at the plug and not left on standby). One device that can help with this are remote/timer plugs. These are plugs you can plug appliances into to ensure that the appliances get turned off at a certain time (or can be done using a remote control).

More tips for efficient use of appliances can be found at [cse.org.uk](https://www.cse.org.uk). The CSE webpage <https://www.cse.org.uk/advice/how-much-electricity-am-i-using/> can help you to understand how much energy different appliances use.

h. Are bleach or other cleaning products that are harmful to human health used?

This question is a prompt around the health and safety of how chemicals are used and stored in the building. It is unrelated to energy but is a legal requirement so good practice to consider as part of a holistic building survey. More guidance can be found on the Control of Substances Hazardous to Health (COSHH) at [hse.gov.uk](https://www.hse.gov.uk).

Section 2: Additional supporting documents

The basic community building energy and health monitoring survey comes with additional (optional) supporting documents to paint a more detailed picture of what is going on. These won't be required for all buildings, depending on what the motivations of the survey are. The following four documents are in Annexes to this document and can be completed in conjunction with the building survey.

2.1 [Annex 1 – Monitoring building use](#)

We understand that community buildings come in all shapes and sizes and that they get used for a great deal of different and varied activities. We recommend mapping out the typical weekly use of each room/space to help understand the different requirements of different groups at different times. Unlike homes, which are in most cases used for the same thing, community buildings may be used by a parent and toddler group in the morning that requires heating and a comfortable temperature, followed by a keep-fit or similarly active group that wants a lower temperature and more ventilation. Understanding how your building is used, when and by which group will all influence the heating and ventilation requirements, and subsequently what type of heating may be most suitable/flexible to your needs.

2.2 [Annex 2 - Indoor air quality assessment](#)

This document will help you identify if any of your spaces have poor air quality and may therefore benefit from improved ventilation. This will also help you meet your health and safety duties. Air quality monitors can be purchased for little cost or possibly borrowed from local energy organisations. CSE has created a specific guidance on monitoring indoor air quality at [cse.org.uk](https://www.cse.org.uk).

2.3 [Annex 3 – Monitoring meter readings](#)

It is a good idea to keep track of your energy use. Then as you progress through your journey you can use these records to track any progress being made.

Meter readings: You can keep track of your energy use by taking regular meter readings (or look at what readings are used in your energy bills) and logging it into the table in the survey. If you have lots of old meter readings then maybe just put in the start and end of year figures so you can calculate usage per year, or if you are only just getting started you could always do this monthly. If you have a smart meter, your meter readings will be taken automatically by your supplier, but you can still read them directly from the meter (or contact the supplier for historic readings).

Total energy use over time: A second table has been provided to summarise energy use across different fuel types over a longer period (e.g. by quarter or by year, over several years).

Help with readings:

- For guidance on how to read your meters see further information at [cse.org.uk](https://www.cse.org.uk).
- For guidance on how to convert your gas meter readings into kWh see further information at [gov.uk/guidance](https://www.gov.uk/guidance).
- For electricity, you should be able to get kilowatt-hour (kWh) figures straight off your utility bills.

- Oil and LPG are usually billed in litres, so for oil multiply number of litres by 11.84 to get kWh, and for LPG multiply number of litres by 7.08 to get kWh.

2.4 [Annex 4 – Building awareness and comfort survey](#)

This can be a useful exercise to complete with building staff or volunteers to see how they feel about the comfort of the building during different times of year. This can reveal important information that was not obvious from a visual walkthrough. It is also helpful to better understand how staff feel about how the building controls should be used, what the safety features are, and therefore if further awareness is needed. This could be a particularly useful exercise if your building is used by a large number of different staff, volunteers or occupiers.

Section 3: Identifying actions

This section is all about reviewing your findings to identify key actions you wish to take under each heading of the survey. At this stage you probably want to prioritise identifying the easiest first steps and low or no cost actions that you could take. A lot of these actions will not only reduce your energy bills but will also provide a range of co-benefits particularly around providing a more comfortable and healthy space for building users.

In the survey you will be asked to complete a table like this, identifying actions for each section of the survey, who the responsible person is, and a timeframe for completion.

	Action	Responsible person	Timeframe
General building condition	<i>Implement a maintenance plan to be completed every month. Find out about options for a building condition damp survey</i>	<i>John Doe</i>	<i>1 month</i>
Ventilation and draughts	<i>Add a new extractor fan in the bathroom and make sure it leads outside the building.</i>	<i>John Doe</i>	<i>3 months</i>
Space and water heating	<i>Put heating on a daily timer to match the use of the building and put-up signs asking people not to adjust settings.</i>	<i>John Doe</i>	<i>1 month</i>
Lighting	<i>Apply for funding to switch over to LED lighting.</i>	<i>John Doe</i>	<i>6-12 months</i>
Water Use	<i>Fix leaky tap in the kitchen.</i>	<i>John Doe</i>	<i>2 weeks</i>
Energy use behaviours	<i>Put up signs to remind people to turn all non-essential appliances off at the plug at the end of each day e.g. computers. Buy some blankets!</i>	<i>John Doe (signs) & everyone</i>	<i>Immediate</i>

3.1 Examples of low-cost actions

- Clear and repair blocked/broken guttering
- Draught proofing measures e.g. secondary glazing, draught excluders, thicker curtains, window and door seals
- Behaviour changes e.g. signs to remind people to turn the lights/appliances off, implement a timer system for heating management around your operating times
- Implement a maintenance plan and assign a responsible person to carry out at regular intervals throughout the year

3.2 Examples of high-cost actions

- Repair leaky roof tiles

- Implement ventilation system e.g. fans in toilets, bathrooms and laundry rooms, dehumidifier in damp rooms
- Repointing building using lime plaster
- Consider energy efficiency options e.g. solar panels, heat pump, insulation
- Contact an expert for further investigation or feasibility e.g. heating engineer, surveyor, architect

3.3 What now?

You may want to check out other resources on the CSE website, look up documents referenced in this document, and start engaging with people who can help to make it happen.

We'd love to hear how you get on, and share your experiences to inspire others.

communities@cse.org.uk

Good luck!

Non-domestic energy efficiency glossary

This document is to help you understand some of the various terms and tools used in the survey and guidance document






Battery Storage	Battery storage, or battery energy storage systems (BESS), are devices that enable energy from renewables, like solar and wind, to be stored and then released when the power is needed most
Building Condition Survey	An assessment of the condition or health of a building or part of a building. It is necessary to undertake a condition survey before any retrofit measures are installed to ensure that the retrofit doesn't cause the building to decay. The building needs to be in a good state of repair before any insulation is installed.
Building fabric	Refers to the components and materials that the building is made from e.g. walls, floors, doors.
Building Regulations	A document or series of documents that specify how approvals under Building Regulations may be complied with; known as 'Approved Documents' in England and Wales 'Building Standards' in Scotland and 'Technical Booklet' in Northern Ireland. There are 18 parts to the regulations Approved Documents Part A to Part R. Each covers a different aspect such as ventilation, fire safety, structure, workmanship etc.
Carbon Monoxide	Carbon monoxide (chemical formula CO) is a poisonous, flammable gas that is colourless, odourless, tasteless, that occurs as a result of incomplete combustion.
CO₂e	The universal unit of measurement to indicate the global warming potential (GWP) of GHGs (greenhouse gases), expressed in terms of the GWP of one unit of carbon dioxide. A standardised unit is used to enable a comparison between all GHGs. This includes CO ₂ , methane (28X GW potential of CO ₂), nitrous oxide, HFCs, etc.
Community building	Building owned or run by the community for the benefit of the community.
Community Energy	Community energy refers to the delivery of community-led renewable energy, energy demand reduction and energy supply projects, whether wholly owned and/or controlled by communities or through a partnership with commercial or public sector partners.







Conservation Area	<p>Conservation areas exist to manage and protect the special architectural and historic interest of a place - in other words, the features that make it unique. Every local authority in England has at least one conservation area and there are around 10,000 in England.</p> <p>In conservation areas there are some extra planning controls and considerations in place to protect the historic and architectural elements which make the place special</p>
COSHH	<p>COSHH stands for the Control of Substance Hazardous to Health.</p> <p>The information on a COSHH datasheet outlines:</p> <ol style="list-style-type: none"> 1. the health and safety hazard posed by chemical/substances of a product 2. the control measures for their use 3. the disposal requirements <p>All materials and substances used in construction and retrofit projects should have a COSHH data sheet.</p>
DEC	<p>Display Energy Certificate shows the energy efficiency of a building based on actual metered use over 12 months. Legal requirement for buildings over 250m² occupied by public authorities that are frequently visited by the public.</p>
Draught Proofing	<p>Draught proofing is the act of installing measures to prevent cold air from entering a building through gaps around entry points such as doors, windows and fireplaces.</p>
EPC	<p>Energy Performance Certificate rates the energy efficiency of a building from A-G (A being the most efficient). It is based on a SBEM (Simplified Building Energy Model) calculation. Assessed insulation, heating, cooling, lighting, and ventilation. Makes recommendations for improvement. It is a legal requirement to have an EPC if you are selling or leasing a building and it must be at least an E to lease.</p>
Flood Plain	<p>A flood plain is an area of land adjacent to a river or body of water. In the UK the level of risk is split into zones (zones 1,2,3 & 3b) by the environment agency with 1 being the most at risk</p>
Historic / listed building	<p>A building or structure that is 'listed' and/or valued because of its historic, archaeological, architectural, or artistic interest and/or is situated in a conservation or similar area. A historic building may not be built using traditional building methods, and a traditional building may not be classed as historic.</p>
HSE	<p>Health and Safety Executive. The HSE is the national independent regulator of health and safety in the workplace.</p> <p>The Health and Safety at Work etc Act 1974 is the primary piece of legislation covering occupational health and safety in Great Britain. All reportable injuries, diseases, and dangerous occurrences (RIDDOR) need to be reported to the Health and Safety Executive.</p>




Indoor air quality monitor	<p>These can be expensive scientifically calibrated or a low-cost basic version for home use. Usually measure and display air temperature, relative humidity, and CO₂ levels.</p> <p>Pros – Good indicator of if a building is adequately vented. Helpful to detect overheating in summer. Good practice to use in winter to help assess indoor air quality, heating levels, and moisture management.</p> <p>Cons – Not particularly useful if the windows are open during monitoring.</p>
Listed building categories (England and Wales)	<ul style="list-style-type: none"> • Grade I: buildings of exceptional interest (2.5% of listed buildings). • Grade II*: particularly important buildings of more than special interest (5.8% of listed buildings). • Grade II: buildings that are of special interest, warranting every effort to preserve them (91.7% of listed buildings). <p>Estimated to be 500,000 in England (Historic England).</p>
Listed Building Consent	<p>If you want to alter or extend a listed building in a way that affects its character or appearance as a building of special architectural or historic interest, or even demolish it, you must first apply for Listed Building Consent from your local planning authority. When the planning authority considers whether to grant or to refuse an application, it must give particular attention to the desirability of preserving the building, its setting and those features which make it special</p>
Mechanical extraction	<p>Mechanical extraction is the use of machines to ventilate a space, for example a kitchen extractor fan.</p>
MVHR	<p>Mechanical ventilation with heat recovery</p>
Retrofit	<p>The addition of technology or feature to an existing building e.g. loft insulation, solar panels.</p>
Risk	<p>How likely it is that someone could be harmed, and how seriously they could be harmed, by that hazard.</p>
Risk Assessment	<p>A risk assessment is a review of all the potential hazards that there could be in undertaking an activity, and assessing how likely and seriously someone could be harmed by those hazards. Part of the risk assessment is to outline how to reduce the risk of someone being harmed (e.g. by removing the hazard altogether or by reducing the likelihood that someone will come across that hazard). This is called mitigation.</p>
Solar Photovoltaic (PV)	<p>Photovoltaic cells, or solar cells, convert sunlight directly into electricity. These are commonly mounted on a roof but can be installed on the ground. An electrician is needed for their installation and a structural engineer is sometimes advised to assess the stability of the roof.</p>
Solar Thermal	<p>Solar thermal technologies absorb the heat of the sun and, most commonly, transfer it directly to heating water. A plumber is needed for their installation.</p>

Solid Fuel	Solid fuel refers to various forms of solid material that can be burnt to release energy, providing heat and light through the process of combustion
Thermal imaging cameras	<p>Thermal imaging cameras help you detect the temperature without touching. It can be you, an object, liquid, or gas.</p> <p>Pros – can be very helpful to observe if there are any issues in your building, including wire connection, leaks, a water leak in the pipes, cold spots, and more. Useful for empowering community groups and building managers to identify priorities in their building.</p> <p>Cons – Can often mislead people as they don’t work well on shiny surfaces such as tiles or glass. They usually show things as relative to the things around thus sometimes making the information hard to interpret. They usually require a 10°C temperature difference between inside and out so generally only useful in winter. Images may be further confused if a building has been in the sunlight, it’s therefore usually best practice to carry out assessments early in the morning.</p>
Traditional building	A structure that is designed and constructed using materials, methods, and architectural styles that are characteristic of a specific region, vernacular, or historical period. Traditional buildings may be constructed of vapour-permeable materials that absorb moisture and readily allow its evaporation, for example, solid brick, earthen or stone external walls bedded and surrounded in a true lime mortar, or old (typically categorised as pre-1919/1945) timber-framed walls with infill or early cavity walls.

Organisations working to support building energy efficiency

STBA	The aim of the Sustainable and Traditional Building Alliance is to deliver a sustainable traditional built environment in the UK.	
Tywi Centre	The Tywi Centre objectives are to ensure everyone who is responsible for looking after, or working on an old building has the right information, skills and materials for carrying out sensitive and appropriate repairs. This will ensure that the our old buildings, both listed and non- listed, are around for a further 100 years and more.	
Historic England	Historic England recognises the need for urgent action and is committed to achieving net zero. We are researching and advising how the historic environment can positively contribute to overall global sustainability.	
BAFE Fire Safety Register	A register of competent organisations working on fire safety.	
BBA	British Board of Agrément. The BBA issues an agrément certificate for an approved retrofit product. Not all retrofit products are approved by the BBA, but without this approval the material selected may well not be eligible for grant funding under ECO.	

BSI	British Standards Institution. The BSI produces impartial technical standards on a wide range of products.	
CSE	Centre for Sustainable Energy Resources for improving community buildings.	
Planning portal	For England: Planning Portal For Wales: Planning Portal For Scotland: Getting Started on ePlanning Scotland For Northern Ireland: Planning Portal nidirect	
FMB	Federation of Master Builders	
The Green Register	A list of construction professionals working in energy saving and energy generation installations to create more sustainable buildings.	
IAA	Installation Assurance Authority.	

NBS	National Building Specification provides construction specification information used by building professionals to describe materials, standards and workmanship of a construction project.		
Retrofit Academy	Provider of training and professional development on building retrofit.		
UKCMB	UK Centre for Moisture in Buildings		

Sources:

- [RICS Residential Retrofit Standard](#)
- [Welcome to RICS](#)
- [Historic England - Championing England's heritage | Historic England](#)
- [CIBSE - Chartered Institution of Building Services Engineers](#)
- [HSE: Information about health and safety at work](#)
- [Home | Tywi Centre](#)
- [CIOB Home Page | CIOB](#)

Annex 1- Monitoring building use

This table will help you identify which spaces in your building are being used and at which times of day, and for what activities. For example, on a Monday morning the main hall is used as a warm hub. This does not need to be exact; it's designed to help you think about how and when each space is used. This could help you manage your heating controls for maximum efficiency and comfort.

Time of Day		Room or Space									
		Main hall									
Monday	Morning	Warm hub									
	Afternoon										
	Evening										
Tuesday	Morning										
	Afternoon										
	Evening										
Wednesday	Morning										
	Afternoon										
	Evening										

Thursday	Morning										
	Afternoon										
	Evening										
Friday	Morning										
	Afternoon										
	Evening										
Saturday	Morning										
	Afternoon										
	Evening										
Sunday	Morning										
	Afternoon										
	Evening										

Annex 2- Indoor air-quality assessment record

Refer to our online guidance for more information on how to complete this assessment www.cse.org.uk/advice/testing-the-air-quality-temperature-and-humidity-of-your-home/

Location	Date	Time	Air temperature	Relative humidity	CO ₂ concentration	Comments

Monitoring energy use over time:

Month/billing period + year	Quantity of gas used (kWh)	Quantity of electric used (kWh)	Quantity of LPG (bottled gas) used (kWh)	Quantity of Oil used (kWh)	Quantity of solid fuel (or pellets) used
Totals					

Annex 4- Building awareness and comfort survey

The tables below are for you to assess people's (including external organisations and lead staff) awareness of energy use in the building, and to rate how comfortable the building is to use and control in both winter and summer.

Awareness						
Do people wear appropriately warm clothes when it's cold?						
No	1	2	3	4	5	Yes, everyone, all the time.
Are people generally good at switching lights off and not wasting energy?						
No	1	2	3	4	5	Yes, things are always switched off.
Do people understand how the heating controls work?						
No	1	2	3	4	5	Yes, everyone is aware.
Are people generally good at using water efficiently?						
No	1	2	3	4	5	Yes, it is used wisely.

Rating of noise overall						
Unsatisfactory	1	2	3	4	5	Satisfactory

Rating of lighting overall						
Unsatisfactory	1	2	3	4	5	Satisfactory

Controls						
Heating						
No control	1	2	3	4	5	Full control
Cooling						
No control	1	2	3	4	5	Full control
Ventilation						
No control	1	2	3	4	5	Full control
Lighting						
No control	1	2	3	4	5	Full control
Noise						
No control	1	2	3	4	5	Full control

Comfort in Winter						
Temperature						
Uncomfortable	1	2	3	4	5	Comfortable
Too hot	1	2	3	4	5	Too cold
Stable	1	2	3	4	5	Varies during day
Air Movement						
Still	1	2	3	4	5	Draughty
Dry	1	2	3	4	5	Humid
Fresh	1	2	3	4	5	Stuffy
Odourless	1	2	3	4	5	Smelly
Overall satisfaction						
Unsatisfactory	1	2	3	4	5	Satisfactory
Does the heating pattern match the demand for heating?						
No	1	2	3	4	5	All the time

Comfort in Summer						
Temperature						
Uncomfortable	1	2	3	4	5	Comfortable
Too hot	1	2	3	4	5	Too cold
Stable	1	2	3	4	5	Varies during day
Air						
Still	1	2	3	4	5	Draughty
Dry	1	2	3	4	5	Humid
Fresh	1	2	3	4	5	Stuffy
Odourless	1	2	3	4	5	Smelly
Overall satisfaction						
Unsatisfactory	1	2	3	4	5	Satisfactory
How well do temperature control systems match the demand for cooling?						
Not at all	1	2	3	4	5	All the time