Running a thermal imaging project

A practical guide for community groups

Thermal imaging is a powerful way to help people understand how heat moves through their homes. Seeing heat loss visually makes the issue of comfort and energy use feel real and relevant, and often prompts people to take simple, positive next steps.

This guide is designed to help community groups plan and run thermal imaging projects safely, confidently, and proportionately.

What is thermal imaging?

Thermal imaging uses a special camera to show where heat is leaving a building. Every surface gives off heat. The camera detects small differences in temperature and turns them into a colour image, with cooler areas shown in blues and warmer areas shown in reds and whites.

Seen clearly, these images can reveal patterns that are hard to spot during the day, especially on a cold evening.

Why run a thermal imaging project?

Thermal imaging is a powerful way for community groups to start practical conversations about homes and comfort.

When people see images of their own homes, energy efficiency stops being abstract. Cold rooms, draughty doors, and heat escaping through walls suddenly make sense.

A thermal image of the outside of a building can help highlight:

- draughts around doors, windows, and frames
- patchy or missing loft or cavity wall insulation
- areas where insulation may have been bridged by structural elements
- poorly insulated or single-glazed windows
- places where warm air is escaping faster than expected

Used alongside clear, careful explanation, thermal imaging helps residents and landlords understand why a home feels cold or hard to heat – and reassures them that there are often practical steps they can take.

What difference can it make?

With the right support, thermal imaging can help people:

- improve comfort and reduce cold spots
- cut down on draughts and condensation
- lower heating costs over time
- feel more confident about what to do next
- make informed decisions at their own pace

While thermal imaging can also highlight opportunities to reduce energy waste, its real value is in helping people make their homes warmer, healthier, and easier to live in.

Content

Planning your project

There's no single right way to run a thermal imaging project. Different groups take different approaches depending on their capacity, volunteers, and how they want to engage locally.

The most successful projects are well planned, realistic about time and energy, and clear with participants about what to expect.

Timing matters

Thermal imaging only works well in the right conditions, so planning ahead is important.

Cold, dry evenings give the clearest results. This usually means late autumn through to early spring.

A typical project might look like this:

Autumn
Choose the area you want to cover, book a camera, and start letting people know what's coming. If you plan to hold a feedback event, book the venue early.

Early winter
Collect requests or decide which streets to survey. Send clear information to residents about what will happen and when. Recruit volunteers and arrange training if needed.

Mid-winter
Survey on suitable evenings. Keep good records and don't try to cover too much in one go.

Spring
Organise images, prepare feedback, share results, and gather reflections from participants.

Keeping things simple and manageable helps volunteers stay motivated and makes the experience better

Community engagement

Choosing which homes to survey

There are two main ways community groups run thermal imaging surveys. Each has advantages and challenges, and the right choice depends on your group's time, capacity, and goals.

Surveys by request

You advertise the opportunity locally and invite residents to request a survey of their home if they're interested.

This approach can work well because:

- You can arrange visits in advance, making it easier to access all sides of the building if needed
- Residents can be asked to have their heating on, which helps improve image quality
- Pre-survey questionnaires can provide useful background about the property and help explain unexpected results
- You collect contact details, making follow-up and feedback easier
- People who have opted in are often more engaged and more likely to take action afterwards

Things to be aware of:

- It usually needs more lead-in time
- Collecting requests and managing bookings can be time-consuming
- Demand may be higher than your group can realistically cover in one season

Surveying a whole street or area

You choose a particular street or neighbourhood and survey homes from public space, whether or not residents have requested it. Images are then shared with all residents in the area.

This approach can be useful because:

- It can reach people who might not otherwise come forward
- It allows you to compare similar properties and highlight common issues
- It can be a good way to focus on areas where homes are harder to heat
- Surveying nearby homes reduces travel time for volunteers

Things to be aware of:

- If residents aren't already engaged, follow-up action may be limited
- Even though permission isn't required to take images from public land, it's important to let residents know in advance
- A simple letter or flyer explaining what you're doing can help avoid concerns about privacy
- Giving people the chance to opt out helps build trust

Publicity

Clear, friendly publicity helps people understand what you're offering and builds trust from the outset. The aim is to let residents know what's happening, why it's useful, and what they can expect.

Some effective ways to promote a thermal imaging project locally include:

- posters on streets and community noticeboards
- flyers delivered door to door
- local newsletters and mailing lists
- information shared through schools, GP surgeries, or community centres
- local social media groups (such as neighbourhood Facebook groups)
- word of mouth, which is often the most effective of all

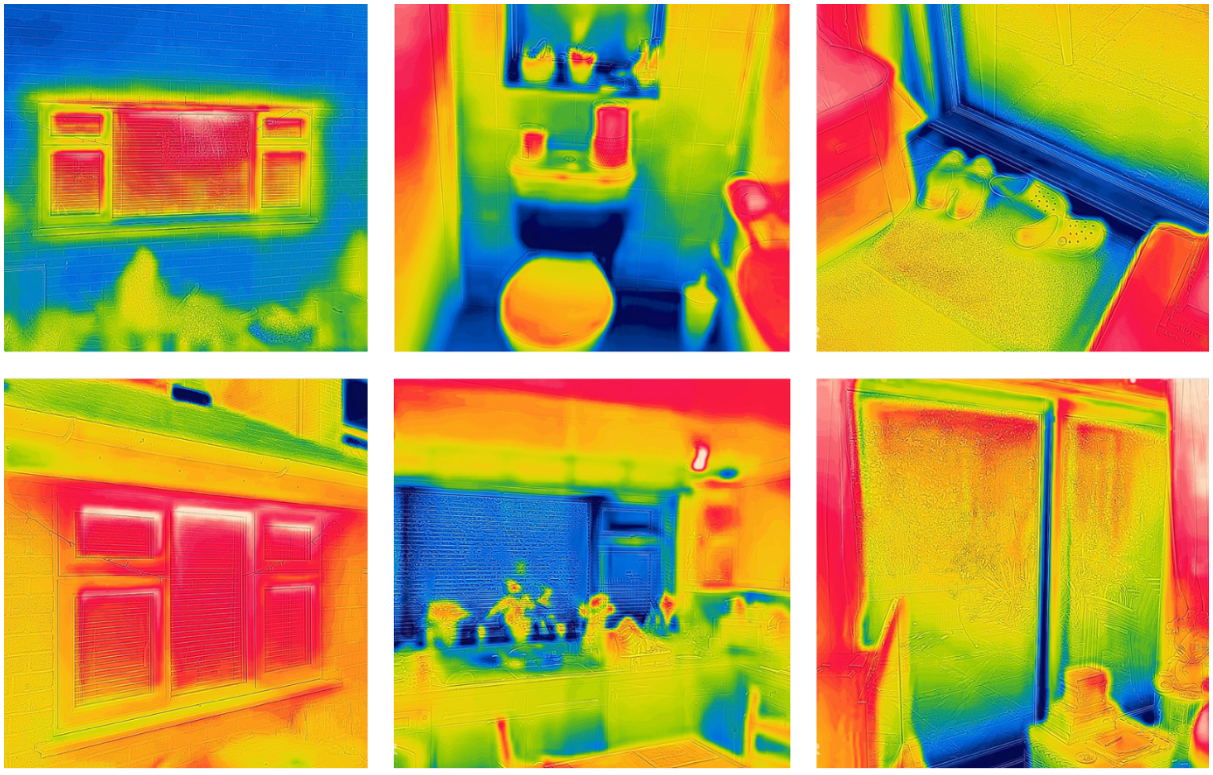
It's worth being clear in all your publicity that:

- the service is free
- you are a local community group
- you are not selling anything

This helps avoid suspicion and makes people more comfortable taking part.

Case study: Low Carbon East Oxford

Low Carbon East Oxford found that a simple way to increase both volunteer numbers and local engagement was to ask for at least one person from each street surveyed to help with the project. This brought in valuable local knowledge and helped residents feel more involved in the process.



Informing residents

It's important to let residents know what to expect before any thermal imaging takes place. Clear information helps people feel comfortable, builds trust, and makes the survey run more smoothly.

Most groups send a short letter or email in advance, covering the points below.

What to expect

- Thermal imaging works best on a cold, dry evening. Let residents know that you'll be in touch by email or phone to confirm a suitable time, or to tell them which evening their street will be surveyed.
- The survey is quick. It usually takes no more than 10–15 minutes per property.
- Residents do not need to be present unless they would like to give access to the side or back of the house.

Reassurance about privacy

It's helpful to explain clearly that:

- the camera does not see through windows, doors, or walls
- it does not record images inside the home
- the survey does not invade anyone's privacy

Thermal imaging only shows surface temperatures on the outside of a building.

How residents can prepare

To get the best possible images, ask residents to:

- have heating on for 2–4 hours beforehand, aiming for an indoor temperature of around 18°C
- move cars or other obstacles that might block views of walls
- open curtains and blinds
- switch off porch and outside lights
- make sure children and pets are safely indoors, as garden gates may need to be opened
- let neighbours know that volunteers will be walking around homes in the dark

Let residents know:

- when and how they will receive their thermal image
- whether there will be a feedback event or written report
- what support or information will be available afterwards

It can also be helpful to ask residents to complete a short pre-survey questionnaire. This provides background information about the property and can help explain unusual features in the images. An example questionnaire is included in: *Pre-visit questionnaire*.

Surveying

Practicalities

Timing

Be realistic about how many homes your group can survey in one evening or across a season.

As a rough guide:

- groups taking around ten images per home might survey three to six homes in an evening, and around 25 to 50 properties over a winter
- groups taking just one or two images of the front of each home along a single street have surveyed up to 80 properties in one evening

Before you start, think about how you plan to give feedback to residents. Preparing personalised reports can take anywhere from 15 minutes to an hour per property, so it's easy to underestimate the time involved.

It's good practice to survey in small teams of three or four, sharing tasks such as taking images, keeping records, and watching out for safety.

Conditions for imaging

Thermal imaging works best in cold, dry conditions.

Ideally:

- air temperature should be below 5°C
- it should be dry, with no rain or fog in the previous 24 hours
- surveys should take place at least two to four hours after sunset, once any warmth from the sun has dissipated

For good results, there should be a temperature difference of at least 10–15°C between the inside and outside of the building. Remember to keep the camera dry at all times.

Safety

The CAG Project provides public liability insurance for thermal imaging activities, but it's still essential to carry out a risk assessment and make sure all volunteers follow agreed procedures.

Key points:

- never survey alone
- let someone know where you're going and how long you expect to be out
- do not enter residents' homes
- if access to the side or back of a property is needed, do not go through the house

An editable risk assessment template is included in: *Risk assessment template* and: *On-the-night safety checklist*.

Using the camera

Before surveying, read the camera's instruction manual. Models vary slightly in how they operate.

Consistency matters more than precision. Use the same settings throughout the survey, including emissivity, temperature scale, image mode, and colour scale (many groups use a rainbow scale).

Good practice also includes:

- saving all images to a dedicated folder on the camera
- using a survey record sheet (see page 20: *Survey record sheet template*) to link images to addresses, with notes on weather and settings
- using a simple numbering system if images are not automatically numbered
- taking images from across the street where possible, as many cameras have a narrow field of view
- avoiding reflections by not standing directly in front of windows or glass
- photographing the front door before knocking, to limit heat loss
- taking a standard photo alongside the thermal image if helpful
- allowing time for the camera to recalibrate between shots
- downloading images and recharging the camera at the end of each session

Managing images and data

Community groups in Oxfordshire can register for free at the Community Energy Manager (CEM) tool, developed by Bioregional, can help community groups organise and manage thermal imaging projects.

It allows you to:

- store thermal images and survey records
- organise data by area
- visualise results alongside other neighbourhood data
- collect survey responses directly from residents

Top tip

Rather than using a fixed temperature scale, you can improve accuracy by adjusting the scale manually on the night. Measure the temperature of a wall, then set this as the lower end of the scale, with the upper end set around 10°C higher.

Equipment checklist

- thermal imaging camera, fully charged, with space on the memory card
- high-visibility vest
- warm clothing and hot drinks
- torch
- map
- pens and clipboards
- copies of residents' pre-survey questionnaires
- survey record sheets
- completed risk assessment

Interpreting images

As a community group, you are not expected to provide professional analysis. Your role is to offer general interpretation and help residents understand what their images might be showing.

There are common patterns and features that appear in most homes, and learning to recognise these will help you explain images with confidence. Many camera manufacturers also provide simple software tools that can help with viewing and basic analysis.

General points to bear in mind

- Thermal images are calibrated from hot to cold. If you are using a rainbow colour scale, white and red areas show warmer surfaces, while blue and black areas show cooler ones. The temperature scale on the image shows the upper and lower limits for that particular image.
- Images show *relative* temperatures across a single building. They are not designed to compare one house with another. Look for differences across walls, windows, and other surfaces to understand where heat may be escaping more quickly.
- Different building materials can appear as different colours even when they are at a similar temperature. This is because materials emit heat differently. For example, bare breeze block may appear warmer than painted render, and metal surfaces often appear colder than they really are.

Interpreting areas of concern

- White or dark red areas usually highlight places where heat is being lost more rapidly and are worth discussing with residents.
- Windows, glass, and most roofs often appear colder than walls because they reflect the temperature of the sky. This is normal and does not always indicate poor insulation.

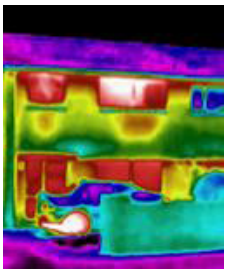
Top tip

Rather than relying on a fixed temperature scale, you can improve accuracy by adjusting the scale manually. Measure the temperature of a wall, set this as the lower end of the scale, and set the upper end around 10°C higher. This can make patterns easier to see on the night.



Detailed interpretation guide

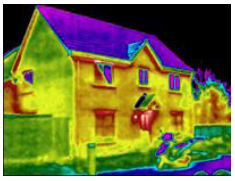
Radiators
Look for hot spots beneath windows where radiators may be losing heat through the wall. This can happen if there is little or no insulation behind the radiator.



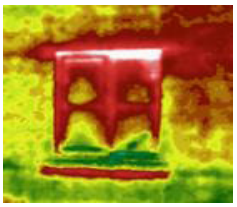
Bay windows
Double bay windows are often uninsulated below the windows. Single bays frequently lack insulation in the roof space, which can show up as heat loss.

Uninsulated walls
Cavity walls may not be insulated, and solid walls are often uninsulated. Differences can sometimes be seen between neighbouring houses, for example where one has cavity wall insulation and the other does not.

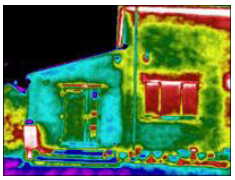
Sheltering effect
Areas under eaves, window ledges, sheltered corners, and porches may appear slightly warmer than surrounding walls. This is usually due to reduced air movement rather than heat loss.



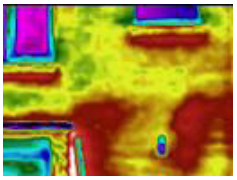
Thermal bridges
Hotter areas may be caused by thermal bridges, such as lintels above windows or where floors meet walls. Corners are a common type of thermal bridge and often appear warmer than flat wall sections. These are structural features and are not usually easy to fix.



Extensions
Modern extensions often appear colder than the original house because insulation standards have improved over time. Older extensions, particularly those over 20 years old, may be built with uninsulated solid walls and therefore appear warmer.



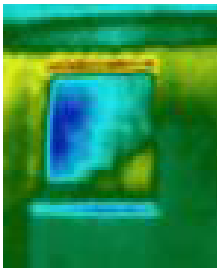
Patchy insulation
Uneven temperatures across a wall can suggest patchy or incomplete cavity wall insulation, or areas where insulation could not be installed around structural features such as windows.



Ventilation and other anomalies
Extractor fans, air bricks, and vents often appear hotter than the surrounding wall because warm air is being exchanged with the outside. Some ventilation is necessary, so these features need careful interpretation.

Outside lights, boiler flues, and waste pipes can also show up as hot spots. A warm stripe along a wall may be caused by a drain from a sink or bath. These features can skew the image and should be identified before drawing conclusions.

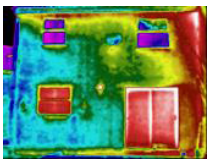
Windows
Glass reflects infra-red light, so windows often appear very cold on thermal images, especially upstairs, roof, and dormer windows where the sky is reflected. This doesn't always mean heat loss.



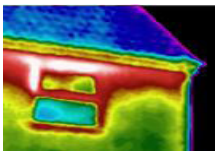
That said, dormers can show genuine heat loss where they meet the roof. Warmer edges around window glass may point to heat escaping through seals or frames and are often where condensation forms.

Well-insulated windows, such as triple glazing, usually appear colder, which is a good sign.

Patio doors and French windows
These often appear warmer than standard windows, particularly around frames, indicating greater heat loss through seals or frames.

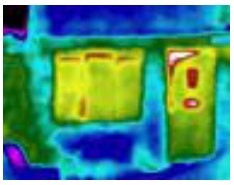


Window frames and vents
Hot spots along window frames can suggest draughts or gaps in seals. Many modern windows have air vents above the frame, which often show up as clear warm lines. Open windows are usually obvious, with warm air visibly escaping.



Doors
Compare doors with the surrounding wall. Warmer lines around edges, letterboxes, or cat flaps often indicate draughts. Glass panels may reflect infra-red light and appear misleadingly cold.

If a door has been opened recently, the edges may appear warmer due to recent heat loss.

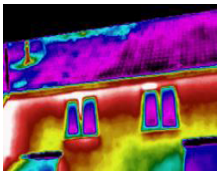


Porches and door canopies create a sheltering effect, so doors beneath them may appear slightly warmer even if insulation is adequate.

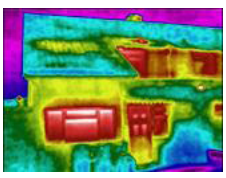
Roofs generally appear colder than walls because they reflect the sky. Compare temperatures within the roof rather than between roof and wall.

Look for:

- warm spots along the ridge may be warm air escaping from the loft
- warmer areas under the eaves that exceed normal sheltering effect
- isolated hot spots caused by flues or hot water tanks



Single- and two-storey roofs
Pay close attention to junctions between single- and two-storey sections. Warmer patches here can indicate missing or poorly installed insulation, particularly over extensions or entrance halls.



Feedback to residents

There are two main ways to share thermal images and talk through what they show. Many groups use one approach, while others combine both. Each has advantages and challenges, depending on your time, volunteers, and the level of engagement you're aiming for.

Written feedback

Thermal images are sent to residents by email or post, along with written information to help them understand what they're seeing.

This might be:

- a short, personalised note highlighting areas worth paying attention to in their image, or
- a general guide explaining common features to look for and typical next steps

This approach can work well because:

- it's quicker to provide general guidance if volunteer time is limited or if you've surveyed many homes
- it ensures everyone receives feedback, including those who can't attend events due to work, caring responsibilities, or other commitments

Things to be aware of:

- people new to thermal imaging may find it harder to interpret images without someone to talk them through
- without face-to-face contact, it can be harder to tell whether residents have understood the information or feel confident about next steps

Feedback in person

Residents are invited to a meeting or event where they receive their image and can discuss it one-to-one with a member of the group. This might be done through short-booked slots of around 10–15 minutes, or as an open drop-in session.

This approach can be valuable because:

- it allows residents to ask questions and get reassurance
- you can tailor explanations to each home and situation
- events can include additional talks, stalls, or practical demonstrations
- bringing people together often strengthens neighbourhood connections
- events are a good opportunity to raise awareness of your group's other activities and recruit new volunteers

Things to be aware of:

- events take time to organise and usually need more volunteers
- venues may charge for room hire
- turnout can be unpredictable

Top tip

You can adapt the interpretation table in this guide to create a simple written explanation to share with residents alongside their images. An example of a more detailed, tailored report is included in on page 21: *Example tailored interpretation report*.

Case study: Local Environmental Action Florence Park

Some groups combine both approaches. For example, Local Environmental Action Florence Park emailed residents their thermal images with a standard interpretation guide, and also invited them to a community event where they could get further advice and talk through options in person.

Energy efficiency advice

Quick wins

Based on what you see in the thermal images, you can offer residents general advice on simple steps that may help make their homes warmer, easier to heat, and cheaper to run.

These are not recommendations to do everything at once. They are practical options people can consider, starting with the easiest and most affordable.

Some common points you may want to cover in feedback sessions or written reports include:

- **Cavity wall insulation:** Where suitable, cavity wall insulation can significantly reduce heat loss. Thermal images often show a clear difference before and after installation.
- **Solid wall insulation:** Solid walls, especially beneath single bay windows, can be very cold. These areas may be improved with internal or external insulation. Insulated wallpaper can help take the chill off very cold walls.
- **Loft insulation:** Topping up loft insulation to around 300 mm can reduce heat loss by up to 20%. It's important that insulation reaches right to the edges, as even small gaps can lose heat.
- **Draught-proofing:** Draughts around doors and windows are a common cause of cold rooms. Simple measures such as draught-excluding tape, door brushes, fabric draught excluders, and letterbox brushes can make a noticeable difference.
- **Curtains and window coverings;** Thick curtains, particularly over large windows and French doors, help reduce heat loss. Thermal or lined curtains can be bought ready-made or added to existing curtains.
- **Radiator reflector foil:** Reflective foil behind radiators on external walls helps reflect heat back into the room. This is a low-cost measure that's often easy to fit.
- **Thermostatic radiator valves (TRVs):** TRVs give better control of room temperatures and help avoid overheating less-used spaces.
- **Radiator fans:** Radiator fans sit on top of radiators and circulate warm air more quickly, helping rooms heat up faster.
- **Secondary glazing film:** Specialist glazing film fitted to the inside of single-glazed windows can reduce draughts and improve comfort.
- **Chimney draught blockers:** Chimney balloons, wool blockers, or even a temporary solution like a cushion can reduce draughts from unused chimneys.
- **Hot water insulation:** Insulating hot water tanks and lagging pipes helps keep water warmer for longer and reduces wasted heat.

Grants and other resources

Support and funding for home energy improvements change over time, and it can be hard for residents to know what's current or relevant to them.

Rather than trying to list everything, it's often more helpful to point people towards trusted services that can help them understand their options and decide what to do next.

What to do after a thermal image

Seeing a thermal image can raise questions. It can be surprising, and sometimes worrying, but it's also a useful starting point.

We've brought together clear next steps, local help, and support for people who want to go further. The focus is on practical actions that improve comfort and help residents move at their own pace.

Thermal images show where heat is escaping. They don't tell you exactly what to do, but they do help point you in the right direction.

Start with simple, low-cost fixes

Many homes lose heat through small gaps and thin insulation. These are often the quickest and most affordable things to tackle.

Learn more about insulation

- Energy Saving Trust – insulation guide
- Centre for Sustainable Energy – loft insulation
- Centre for Sustainable Energy – cavity wall insulation

Reduce draughts and air leaks

- Energy Saving Trust – draught-proofing guide
- Centre for Sustainable Energy – DIY draught-proofing guide

Get hands-on help locally

Some residents prefer practical help rather than doing things themselves. In parts of Oxfordshire, local groups offer hands-on support with draught-proofing and small improvements.

- DraughtBusters network
- Kidlington DraughtBusters
- Sustainable Wantage DraughtBusters
- Abingdon DraughtBusters
- Sustainable Wallingford DraughtBusters

If a home is hard to heat

If residents are still struggling with cold, damp, mould, or high energy bills, free and independent support is available.

Better Housing Better Health
This service helps people understand their options, check eligibility for support, and connect with trusted local schemes. See: welcomethewarmth.org.uk, call for free: **0800 038 6775** or email: info@welcomethewarmth.org.uk

Speak to an energy adviser
Residents can also talk things through with a trained adviser for personalised advice at the Centre for Sustainable Energy advice line: **0800 038 6345** or email: cosierhomes@cse.org.uk

Planning bigger improvements

Thermal images often lead to questions about larger upgrades, such as insulation improvements, heating changes, or taking a more joined-up approach.

Local retrofit support
Oxfordshire County Council provides information on retrofit services and support available locally.

Independent help to plan improvements
Cosy Homes Oxfordshire is a consultancy service that helps homeowners plan energy improvements in the right order, suited to their home and goals.

Help with costs and funding

Funding schemes change over time, but these are some of the main routes currently available.

- Warmer Homes: Local Grant – the main current route for eligible households, delivered locally through Better Housing Better Health
- Boiler Upgrade Scheme – support towards the cost of installing low-carbon heating, such as a heat pump
- Great British Insulation Scheme – still exists, but access can be limited depending on supplier availability
- Winter Fuel Payment: Overview This is a government scheme that can help older people with heating bills
- Cold Weather Payment: Overview You could be eligible if the temperature in your area goes below zero for a number of days
- Warm Home Discount Scheme This is a one-off £150 discount off your electricity bills, depending on eligibility

If residents are unsure what applies to them, or whether it's better to act now or wait, an adviser can help them make sense of the options.

Take your time

It's important to remind people that they don't need to do everything at once.

A thermal image is not a diagnosis. It's a prompt. Even small steps can improve comfort and help people make more confident decisions about what to do next.

Measuring impact

Participant evaluation

It's important to understand what difference your project has made, both for residents and for your group.

Collecting feedback from participants helps you:

- see whether people found the activity useful
- understand what residents did or plan to do next
- improve how you run future projects
- demonstrate impact to funders, partners, and supporters

A short evaluation questionnaire is often enough. An example questionnaire is included on page 22: *Participant evaluation questionnaire* and can be adapted to suit your project.

Using ResourceCIT

The Resource Community Impacts Tool (ResourceCIT) is an online tool designed to help community groups monitor and report on the impact of activities such as thermal imaging and energy advice.

It can be used to estimate:

- energy savings
- cost savings for residents
- carbon savings
- the value of volunteer time

To calculate projected impacts, you'll need to ask participants about which measures they plan to take following the survey. ResourceCIT uses this information to estimate likely outcomes based on typical uptake.

If you don't already have access, contact the CAG Project team for a login.

What to record

To make impact reporting straightforward, it helps to keep a simple record of:

- the date of each activity
- the number of organisers involved
- the average number of hours spent per organiser
- the number of participants (for example, homes surveyed or residents attending events)
- the average time spent with each participant

Keeping these details up to date makes it much easier to report on your work and reflect on what's been achieved.

Pre-visit questionnaire

This questionnaire gathers basic information about your home to help us interpret the thermal images accurately. Please circle or highlight your answers. *Please circle or highlight your answers where appropriate.*

Return this questionnaire to: _____
[email or postal address]

Age of your home? Pre-1900 / 1900–1930 / 1930–1995 / post-1995

Property type: Detached house / Semi-detached house / End-terrace house / Mid-terrace house / Detached bungalow / Semi-detached bungalow / Maisonette / Flat / Mobile home /

Is your home: Owner-occupied / Privately rented / Council or housing association

What type of walls does your home have? Cavity wall / Solid wall

Wall insulation (cavity or solid): Yes / No / Don't know

Wall material: Brick / Stone / Timber frame / Breeze block / Other: _____

Windows: Triple glazed / Double glazed / Single glazed / A mix of double and single

Roof: Slate or tile / Thatch / Other: _____

Loft insulation Yes / No / Don't know

If yes, do you know how thick it is, and whether the whole loft is covered? _____

Main heating type: Gas central heating / Electric heaters / Oil-fired boiler / Wood-burning stove / Wood chip boiler / Other: _____

If you have a gas boiler, approximately how old is it? _____

Energy-saving measures already installed.
(for example, loft insulation, radiator foil, pipe insulation): _____

Areas of concerns to check (for example, cold rooms, draughts, damp or condensation)?

If your home has been thermally imaged before, please tell us when and what work has been done since: _____

How aware do you feel about improving comfort and efficiency?
Not aware / Somewhat aware / Already aware

Any hazards we should know about? (ie. ponds, dogs, uneven paths)? _____

Your details

Name: _____

Address: _____

Phone: _____ Email: _____

Age group (optional): Under 30 / 31–40 / 41–50 / 51–60 / 60+

This information will be kept confidentially and will not be shared with any third party

Risk assessment template

This template is provided as a starting point only. Each group must adapt it to reflect how their own thermal imaging project will be run, where it will take place, and who is involved.

Thermal imaging surveys are generally low risk, but they do take place outdoors, often after dark, and usually involve volunteers working around homes and streets. A simple, proportionate risk assessment helps keep everyone safe and confident.

CAG name:
Date(s):
Risk assessment completed by:

Activity: Thermal imaging survey
Location(s):
Reviewed by:

Risk	Who may be affected	Control measures
Trips and slips (uneven ground, steps, pavements, equipment)	Volunteers, residents, public	Brief volunteers on footing; keep equipment clear of walkways; use torches; give verbal warnings
Working outdoors in cold or wet conditions	Volunteers	Survey only in suitable weather; advise warm, waterproof clothing; hot drinks and breaks; pause or cancel if needed
Road safety when working near streets, especially after dark	Volunteers, members of the public	High-visibility clothing; road-safety briefing; work in small groups; avoid standing in the road
Personal safety when working around homes and members of the public	Volunteers	Never work alone; no entry into homes; rear or side access only with permission; leave if uncomfortable; someone off-site informed of locations
Use of thermal imaging equipment	Volunteers	Show safe use; check equipment before use; do not use in rain or near water; faulty equipment not used
Residents' privacy and concerns	Residents	Clear information in advance; explain camera cannot see inside homes; opt-out available; images stored securely

Use the space below to note any additional hazards or control measures identified during surveys.

Guidance on risk scoring (optional)

If your group uses numerical scoring:	As a guide:
• **Likelihood:** 0 (unlikely) to 5 (very likely) • **Severity:** 0 (minor) to 5 (severe) • **Risk score:** likelihood × severity	• **Low risk:** activity can proceed • **Medium risk:** proceed with care and review conditions • **High risk:** do not proceed

On-the-night safety checklist

Before you start:

- Check weather conditions are suitable (cold, dry, not icy or hazardous)
- Confirm survey area and end time
- Make sure someone not on the survey knows where you are and when you expect to finish
- Check all equipment is working and fully charged

What to wear and carry:

- High-visibility clothing
- Warm, weather-appropriate clothing
- Torch
- Fully charged thermal imaging camera
- Clipboard, pens, record sheets
- Risk assessment and contact details

While surveying:

- Work in pairs or small groups – never alone
- Stay aware of traffic and avoid standing in the road
- Use torches and high-vis at all times
- Watch for uneven ground, steps, and obstacles
- Keep equipment out of walkways
- Do not enter homes

Around homes:

- Only access side or rear of properties with clear permission
- Respect privacy at all times
- Be ready to explain what you're doing if asked
- Leave immediately if anyone feels uncomfortable or unsafe

Using the camera:

- Do not use equipment in rain or near water
- Allow the camera to calibrate between images
- Avoid reflections from glass and shiny surfaces
- Stop if equipment appears faulty

If something doesn't feel right:

- Stop the survey
- Move to a safe place
- Leave the area if needed
- Report any issues back to the project lead

After the survey:

- Download and back up images
- Recharge equipment
- Note any issues or near misses
- Feed back anything that would improve safety next time

Survey record sheet template

This record sheet helps keep thermal images organised and makes later interpretation and feedback much easier. Try to record information as consistently as possible across the survey.

General details			
Camera model and lens:		Date: Volunteer names:	
Software used (if applicable):		**Weather conditions:** (e.g. dry, frosty, windy, recent rain)	
Camera settings: (e.g. emissivity, temperature scale, colour scale)		**Air temperature:** High: _____ °C Low: _____ °C	

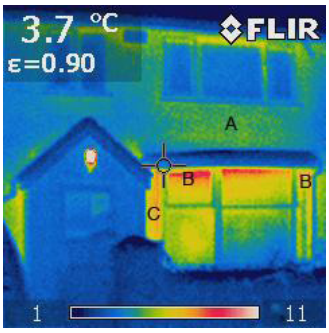
Image record				
Image no.	Time	House address	Orientation / direction	Notes

Notes may include:

- surrounding environment
- building materials
- known internal temperature (if available)
- reflections, outside lights, flues, vents, or other anomalies

Example tailored interpretation report

Date: _____. **Address:** _____

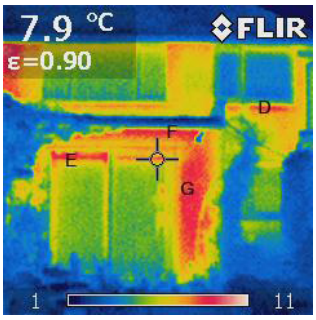


Front elevation

What we noticed
There appears to be a warmer area below the first-floor window (A).

What this might mean
If there is a radiator beneath this window, some heat may be escaping through the wall behind it.

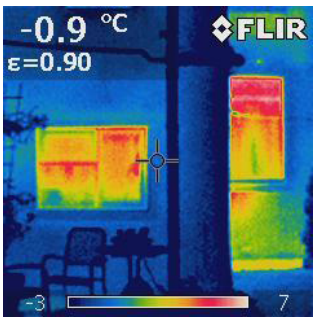
Things you could check or consider
A reflective panel behind the radiator can help reflect heat back into the room and reduce minor heat loss in this area.



There is also noticeable heat loss around the bay window, even with curtains closed. The warmest areas appear towards the top of the window (B).

What this might mean
Heat loss around bay windows is common, particularly near opening sections.

Things you could check or consider
You may want to check whether any draughts can be felt here, and whether the upper opening windows are fully closed and sealing properly.



Rear elevation (from garden)

What we noticed
There is localised heat loss beneath the right-hand first-floor window (D). The left-hand French window appears warmer at the top edge (E). The strongest heat loss is visible to the right of the French window (G) and above it (F).

Participant evaluation questionnaire

Thank you for taking part in our thermal imaging project. **Your feedback helps us understand what worked well and how we can improve future projects**. This questionnaire is short and confidential. Please circle the answer that best applies to you.

1. After seeing your thermal images and discussing them, how aware do you feel about things you could do to improve comfort and reduce heat loss in your home?
Not aware / Somewhat aware / Very aware

2. How would you rate the information and explanation you received about your thermal images?
Not very helpful / OK / Very helpful

3. As a result of the survey and advice, are you considering any of the following?
(Please tick one option for each)

a. **Solid wall insulation**
Yes, I plan to because of this survey / I was already considering it, but this helped /
I had already planned this / I already have this / No

b. **Loft insulation**
Yes, I plan to because of this survey / I was already considering it, but this helped /
I had already planned this / I already have this / No

c. **Cavity wall insulation**
Yes, I plan to because of this survey / I was already considering it, but this helped /
I had already planned this / I already have this / No

d. **Window improvements (for example, better glazing, secondary glazing, or curtains)**
Yes, I plan to because of this survey / I was already considering it, but this helped /
I had already planned this / I already have this / No

e. **Small changes to how you use energy at home**
Yes, I plan to because of this survey / I was already considering it, but this helped /
I already do this / No

4. Were you given information about support, grants, or advice services that could help with improvements? Yes / No

5. Did taking part help you feel more connected to people in your neighbourhood or local community? Not really / A little / A lot

6. As a result of this project, are you more likely to get involved in local community or sustainability activities? Yes / Maybe / No

7. Would you recommend the thermal imaging survey to a neighbour or friend? Yes / No

8. Would you be interested in joining with others locally to explore group offers or shared approaches (for example, bulk-buying insulation or shared installer quotes)? Yes / Maybe / No

9. Do you have any comments or suggestions on how we could improve this project in future?

About this guide

This guide was originally compiled in 2018 using resources developed by several Community Action Groups in Oxfordshire, including Sustainable Didcot, Greening Chinnor, Low Carbon East Oxford, Low Carbon Headington, and Local Environmental Action Florence Park (LEAF).

It has since been updated to reflect current practice, language, and support available to communities.

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