

Energy Efficient Warmer Homes

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**Well thought out
Insulated house**

**Poorly
Insulated house**

**Cheaper to run
and less
renewables
required**

**More expensive
to run with more
renewables &
space required**





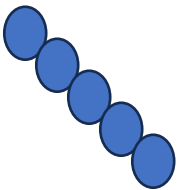
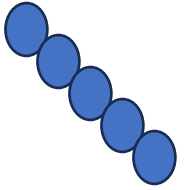
Supported by



The Sustainability Centre



The Environment Centre tEC (Southampton)



So why is
thermal
imaging
important?



When carried out by people in the community, it opens doors.

When it opens doors, it opens minds and conversation.

When conversations start, knowledge is shared.

You are trusted

What do Thermal Images identify:

- Causes of Heat Loss
- Causes of Draughts & Air Ingress
- Assess Insulation Performance
- Identify Thermal Bridging
- Assess Performance of Windows & Frames
- Structural defects

Where heat and money leave your home!

Why do people want to see a thermal image of their home?

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- Curious
 - Save money on bills
 - Make their homes warmer and more comfortable
 - Reduce carbon emissions
 - Improve health

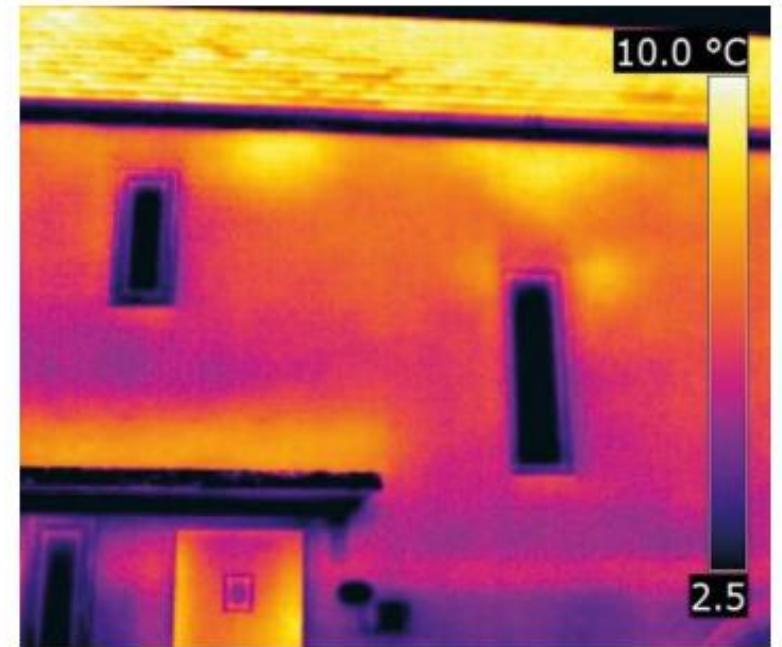




Higher Temperatures

Lower Temperatures

Misleading images



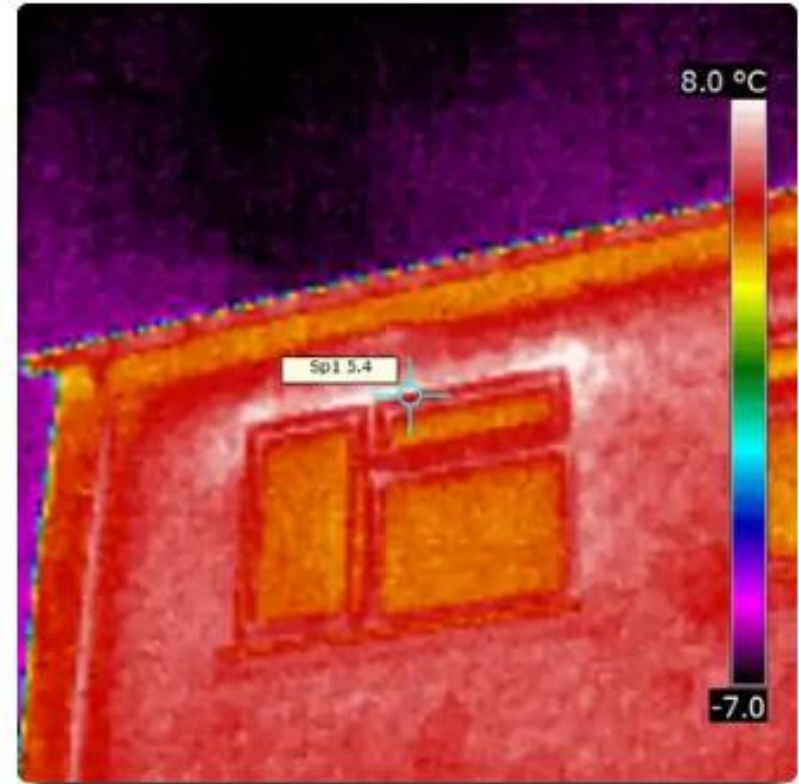
- Reflective surfaces such as glass and metal
- Stored heat (on a sunny day, brick and concrete can store heat and take a long time to cool down)



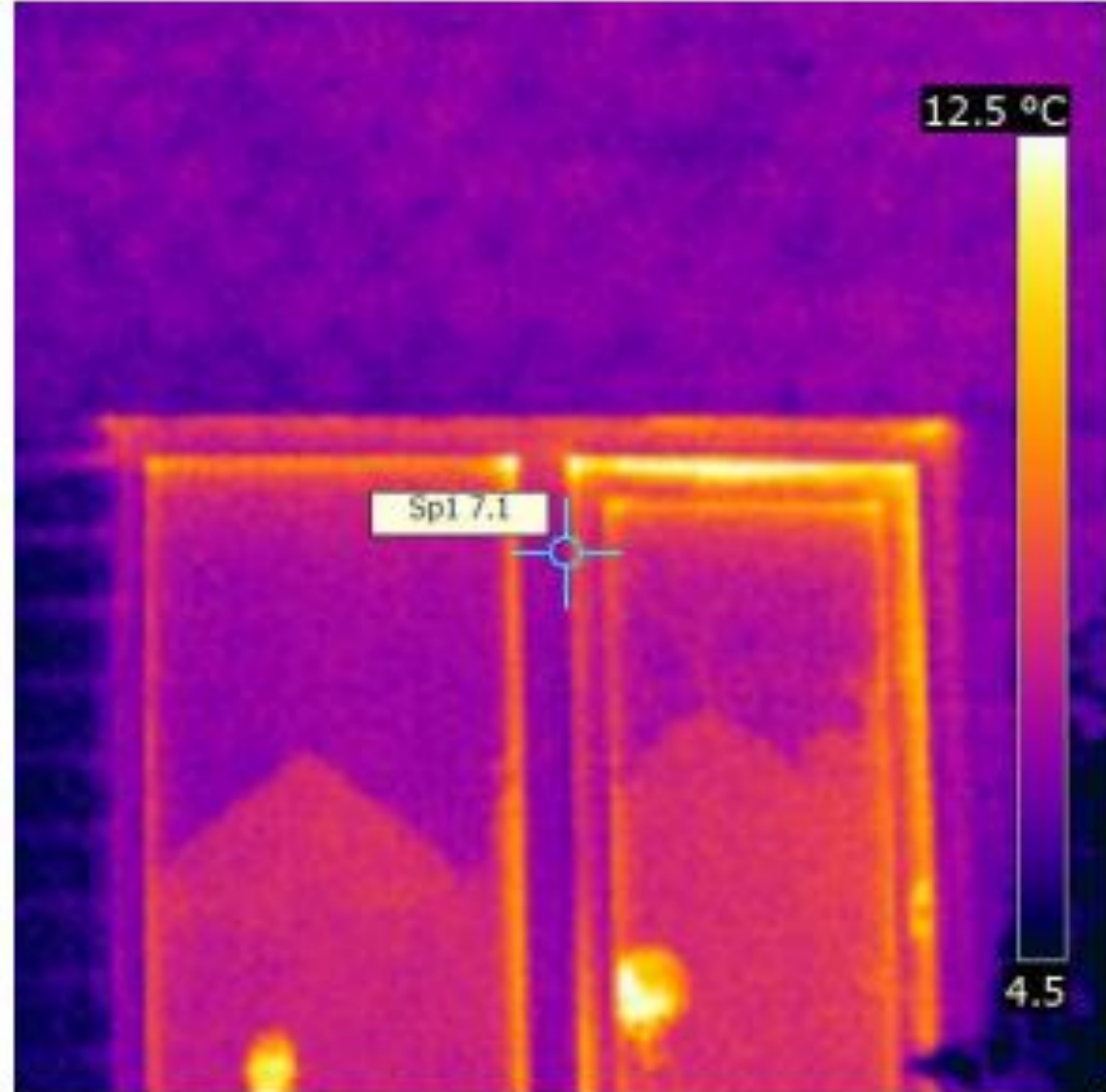
Good insulation as the house walls are a similar colour and temperature to the garden wall and the ground, meaning that the heat is trapped inside the house.

Windows

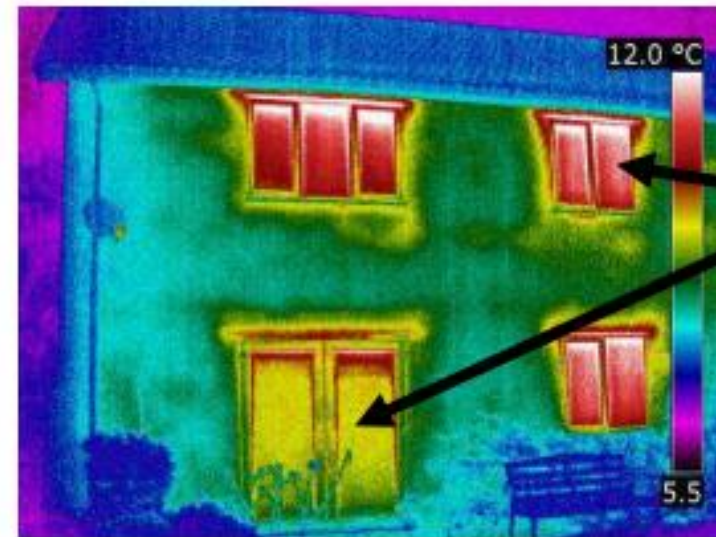
Heat escaping from above and down the side of the window suggesting a bad seal around the frame.



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- Demonstrates the reflective properties of glass as can see the house behind.
 - Leaking from top of door/window can sometimes be corrected by adjusting the hinge.

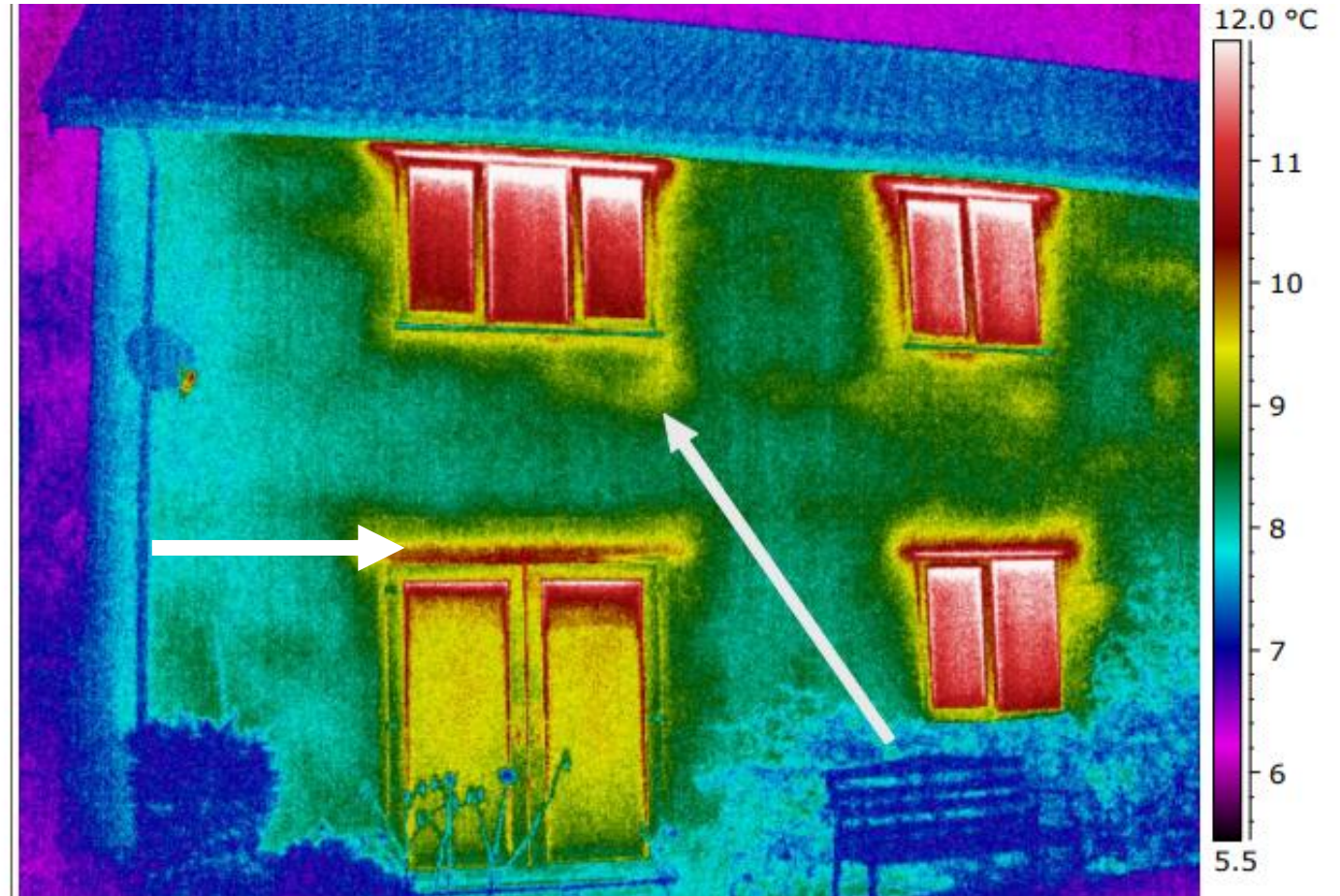


Different effectiveness of double-glazed units in terms of insulation performance. The windows may have lost gas or vacuum over time and now result in higher heat loss. The glazed patio door seems to be a newer unit.



Higher heat loss from windows compared to patio door.

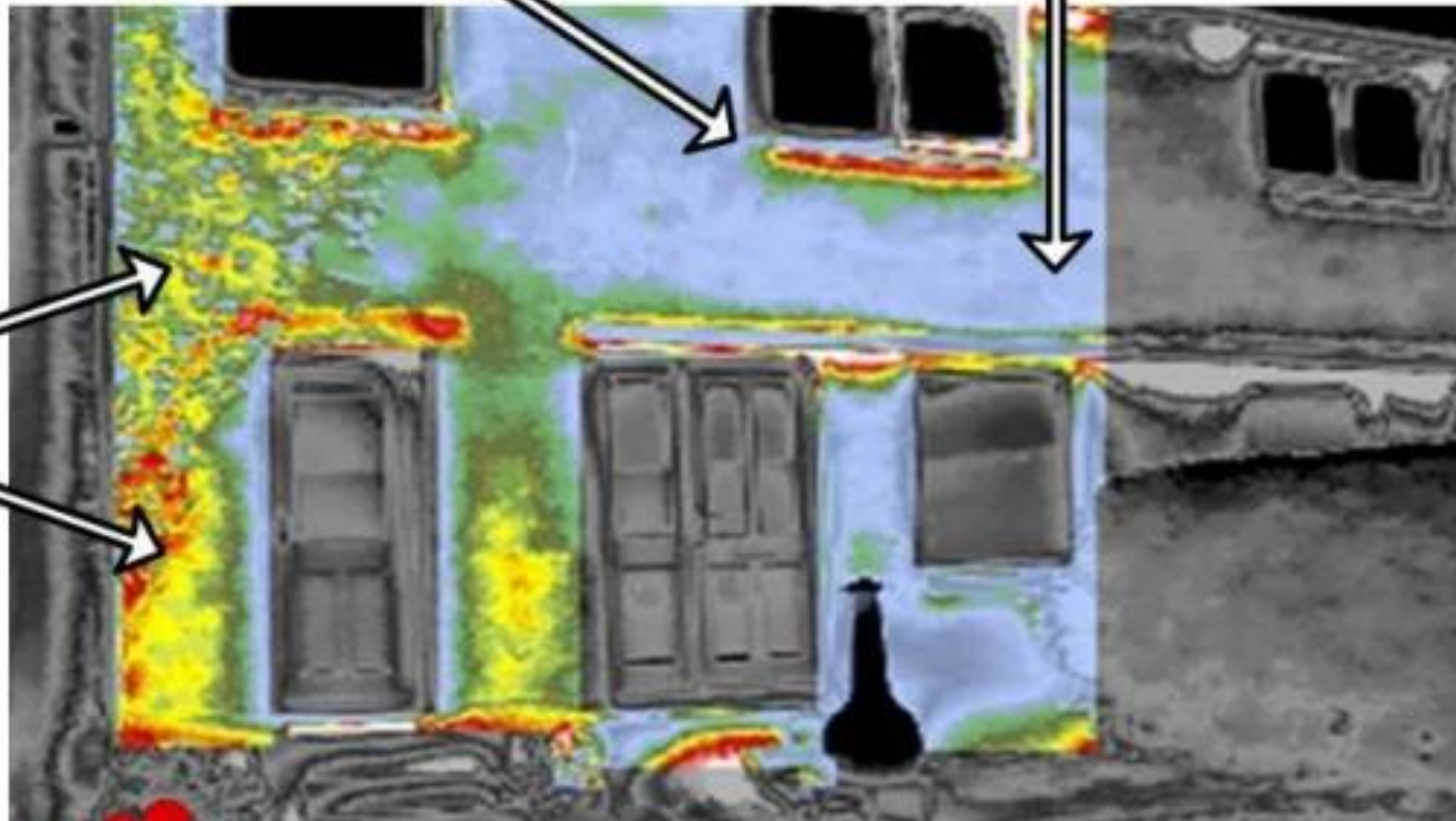
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- Also, the same image highlights possible gaps in cavity wall insulation where it may have settled over time.
 - And thermal bridging above the windows and patio door where lintels or support beams have not been insulated and are conducting heat from the property.



Heat loss through lintels

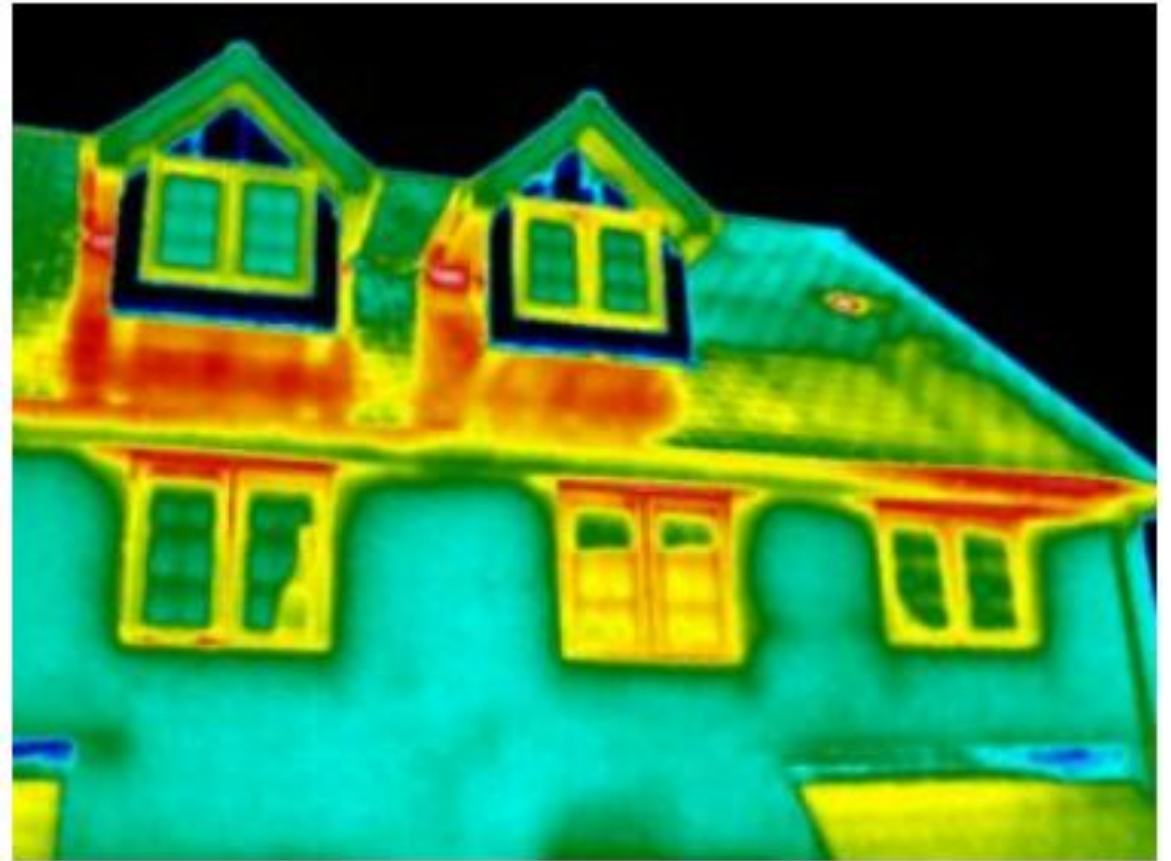
Low heat loss

Potential
deteriorated
insulation



Poorly insulated dormer space

Windows also losing heat

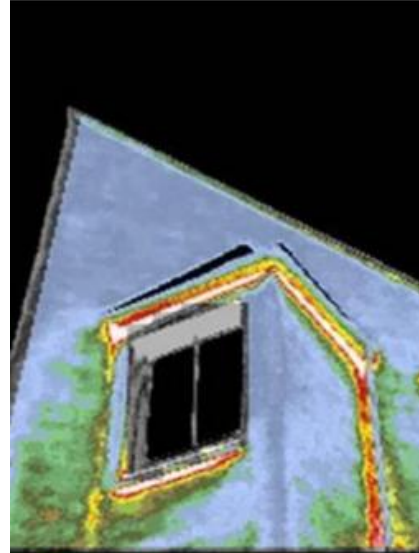


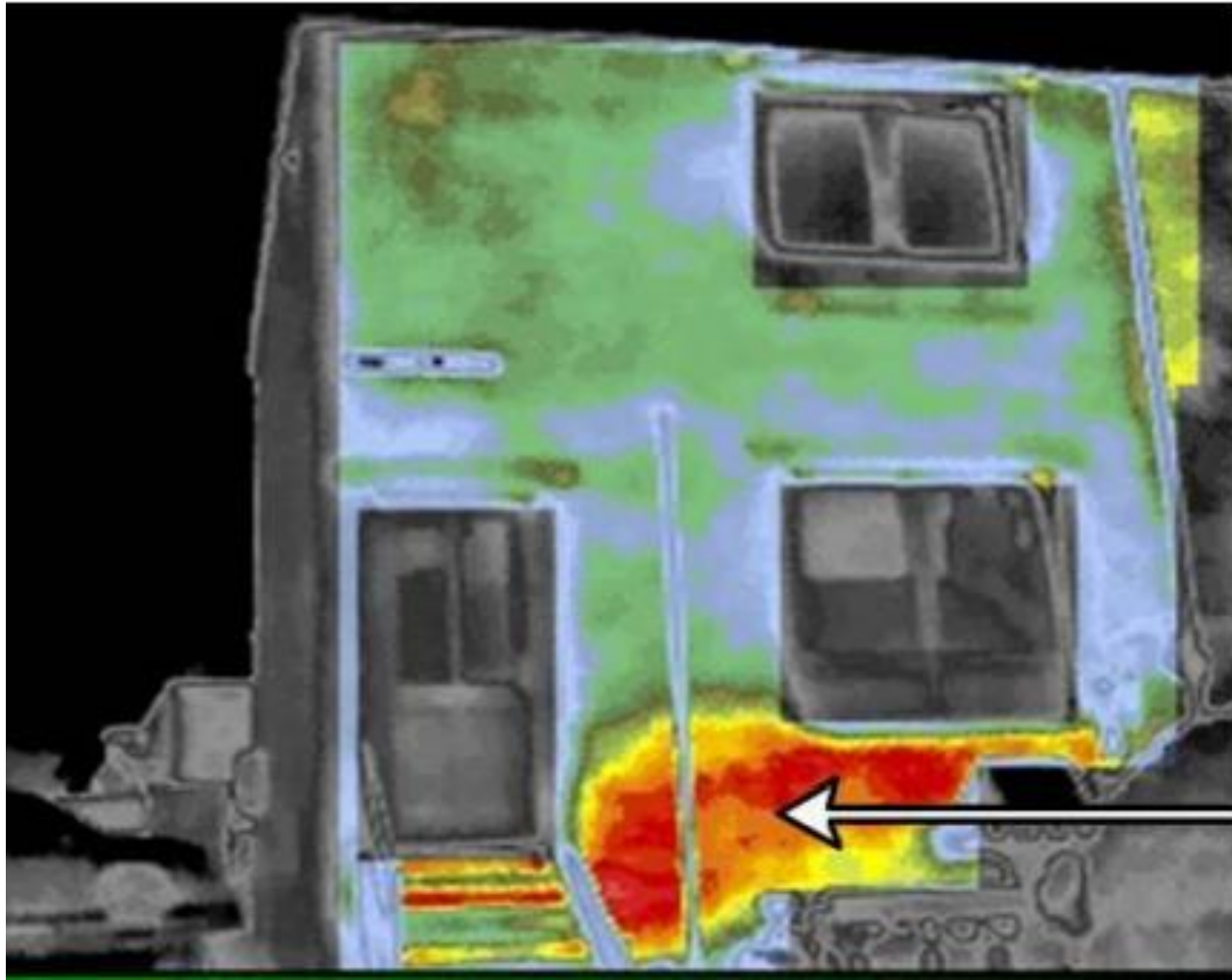
- Insulation has not reached the roof apex

- Insulation not between the ceiling joists creating a bridge

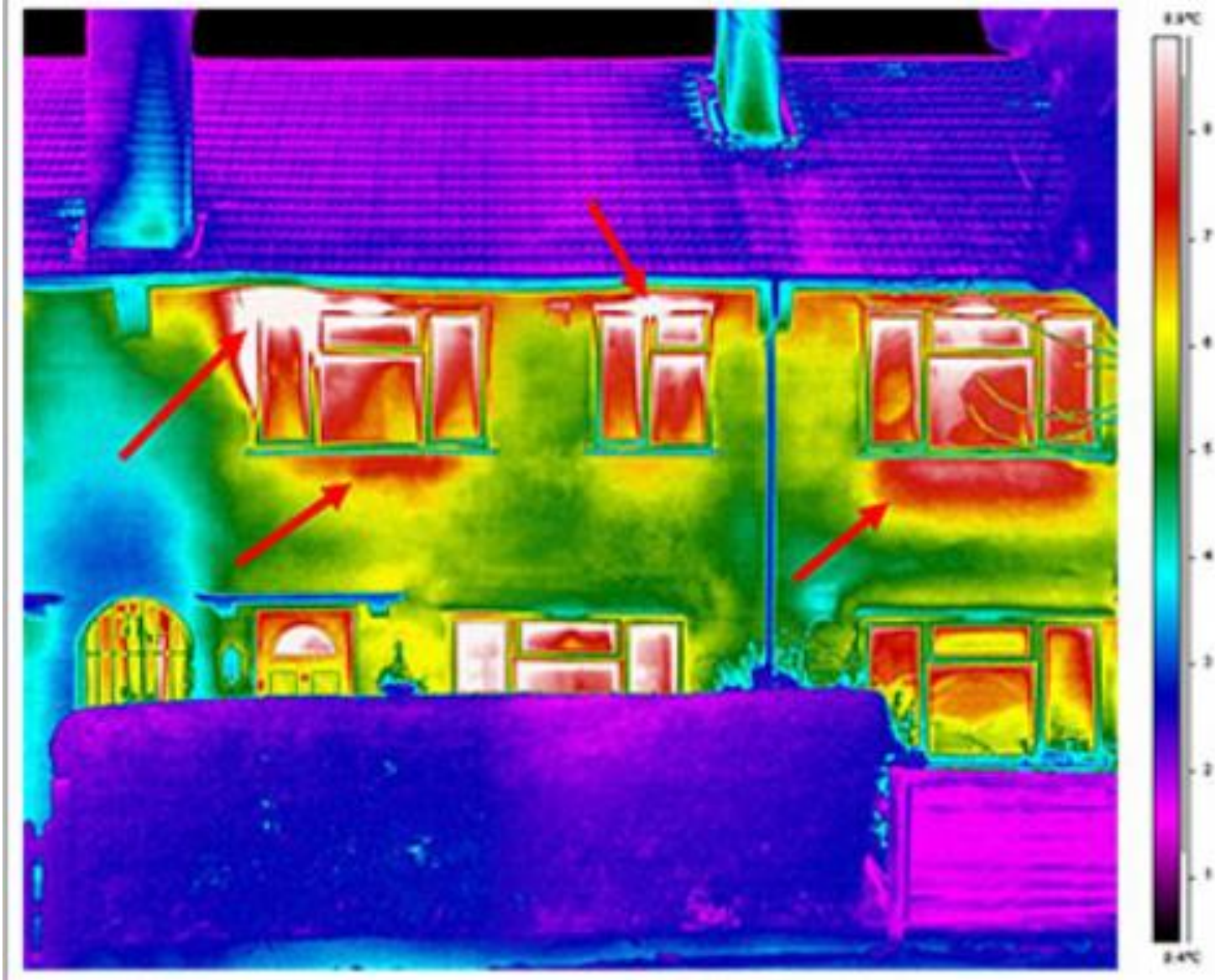


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- Heat leaking from where different sections of the building join incorrectly allowing heat to escape





Possible
heat loss
from radiator



Blocks to change

- money (or lack of it)
- worried about making big changes to their homes we understand a conservatory but are less sure about insulation techniques
- Don't know which surveyors to trust
- Don't know which installers to trust
- Products have huge delays which puts people off
- Don't want the upheaval of clearing the loft or rooms for internal insulation
- Some people are renting so do not have full control

A 3D rendering of a city with many grey houses and one red house. The houses are arranged in a grid-like pattern, and the red house is the only one of its color, standing out from the rest. The background is a light grey color.

Feedback is as important
as the imaging

<https://greening-campaign.org/home-thermal-imaging-feedback/>

Simple Home Hacks



Simple and no cost or low-cost things that we can all do to save money, energy and carbon emissions

Quick wins! - Good for us and good for reducing energy consumption and carbon emissions

Health & Climate Change

24 degrees is risk

Those outside
Those with existing
conditions

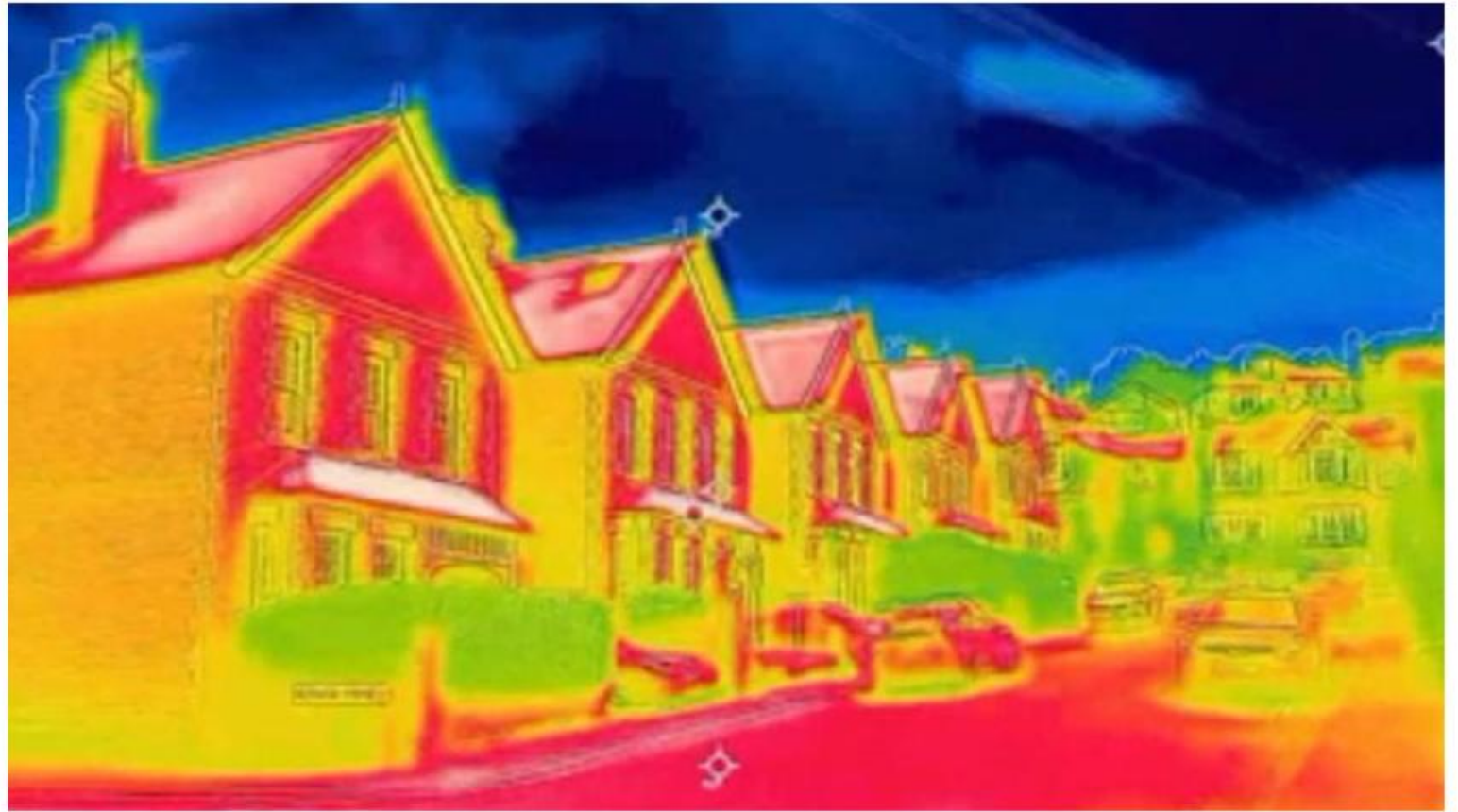
Young children

People 65+

Pregnant

Homeless folk

Those exercising in heat



A thermal image showing a street, with houses and the road radiating heat

On a thermal camera it's clear to see the heat radiating from hard surfaces such as brick, steel, concrete and asphalt.

ALWAYS

If in doubt about anything structural or about anything you do not fully understand

GET AN EXPERT TO PROVIDE ADVICE

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