

# Appleby's Thermal Imaging Project

## Welcome

Our Thermal Imaging Project has been designed to show how we, as a community, can reduce the amount of energy consumed in heating our houses. We are all conscious of the calls to reduce our carbon consumption but perhaps struggle to find ways as individuals to make a difference.

The thermal images of all the properties in the village help us see where heat, intended to keep us warm, seeps out of the fabric of our houses. This increases the carbon consumption for our community as we burn more fuel to replace the heat loss. The very cold December last year both increased heat loss and our fuel bills.

The pictures you can see in this exhibition show the wide variety of houses within the village. Nearly all of them demonstrate areas where heat loss could be reduced, helping to secure the future for our children's children.

### Carbon Footprint

The Thermal Imaging Project shows most of us could save money and energy. Each kWh of heat saved represents a reduction of 0.3kg of CO<sub>2</sub> and as much as 10p in cash terms!

### What do the images show?

The images show the variation in external temperature of the various elements of each house and present these changes in a colour sequence

### Temperature Scale

The camera measures the temperature of the outside of the house. The higher the temperature the more heat is being lost from inside the house to the outside air.

The colours follow the rainbow, **Red** represents the greatest heat loss, and **Violet** the least.

### Overall House Grading

Two separate calculations of heat loss are undertaken, for the walls and the roof. The combined result is aggregated into an overall grading represented below



### The Survey

The survey was undertaken over 4 nights in January and February 2011.

The weather had to be dry and the air temperature had to be below 5°C in order to give good images.

A special camera was used which detects the infra red range

Nearly 500 images were taken over the 4 nights and have been individually reviewed to give them the house grading.

The exhibition panels give an overall view of the results and show the differences between houses in various parts of the village.

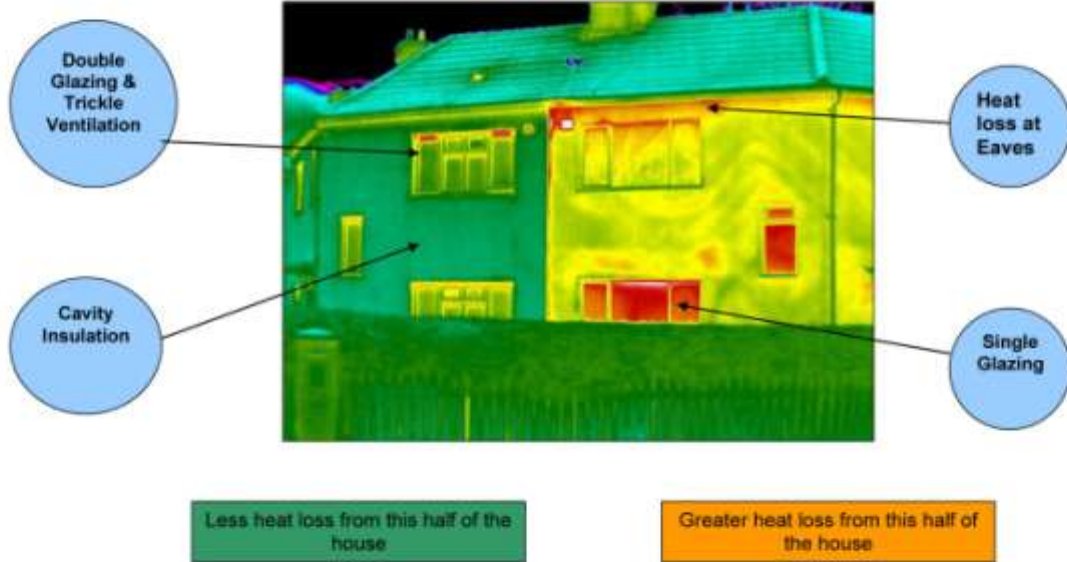
It is possible to see the individual image of your house and we can forward a copy by email, if you would like a hard copy there is a modest charge to cover the printing costs.



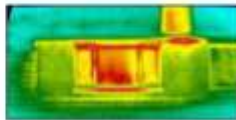
# Appleby's Thermal Imaging Project

## What do the images show?

Typical features to look out for from the thermal images (example only - not an Appleby house)

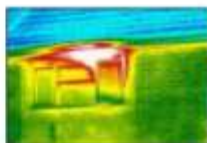
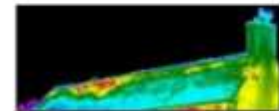


Other detailed features that you might see in thermal images



Heat rising through a dormer window

Missing roof insulation



Open windows

Poorly fitting windows and "thermal bridging"



Poorly insulated front doors

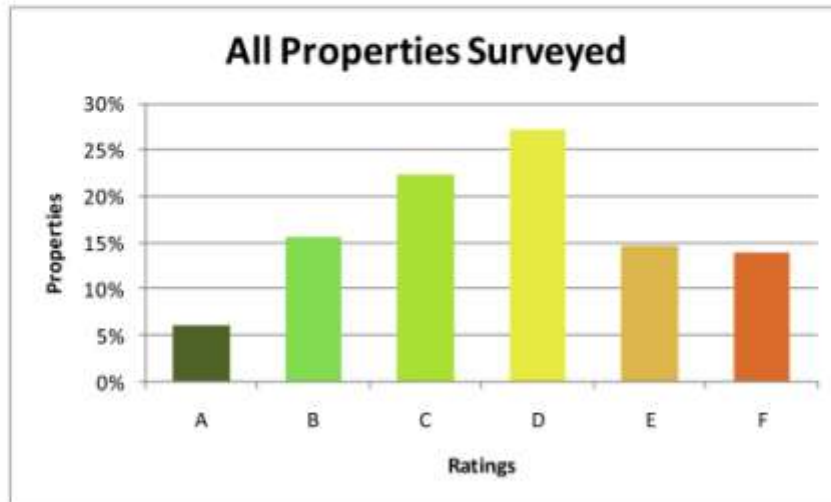
Bay window sills



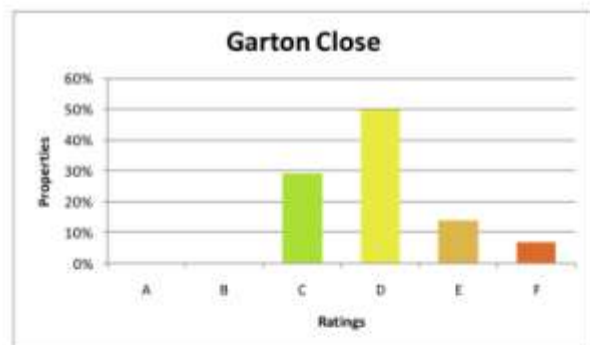
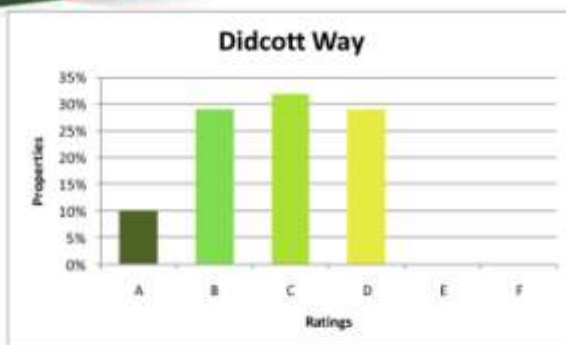
# Appleby's Thermal Imaging Project

## Comparing Housing Types

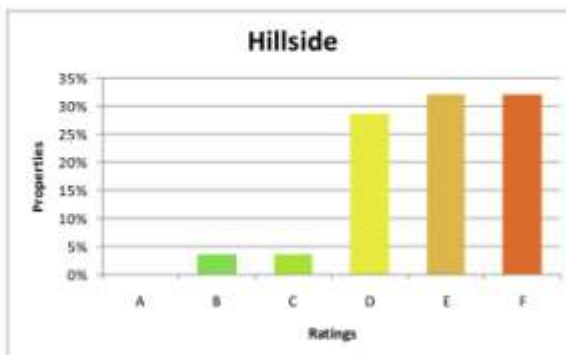
How do the Energy Gradings appear across the village and its various house types?



Energy Grade distribution for all houses in Appleby



Didcott Way and Garton Close – similar age houses with different developers



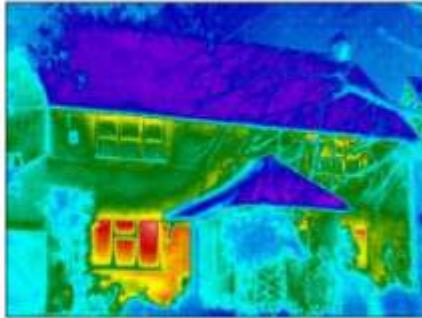
Hillside and Church Street houses, built 100 years apart

# Appleby's Thermal Imaging Project

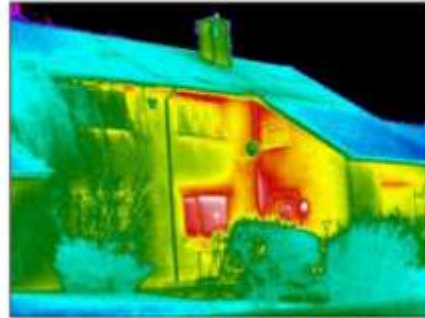
## A selection of thermal images

The following images are reproduced with the owners' permission

Note – pictures are not directly comparable because of different temperatures on the night. Grading makes an adjustment to take this into account



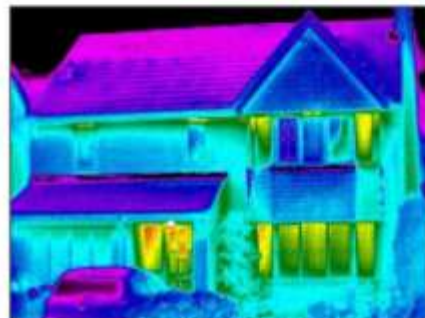
Grade E, old house in village centre



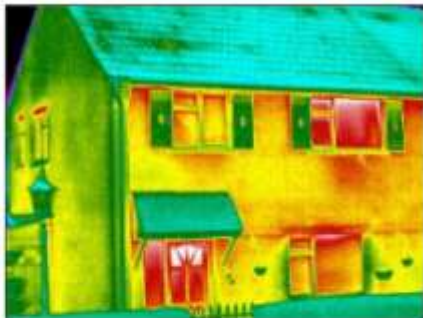
Grade E, Measham Road



Grade F, Top Street



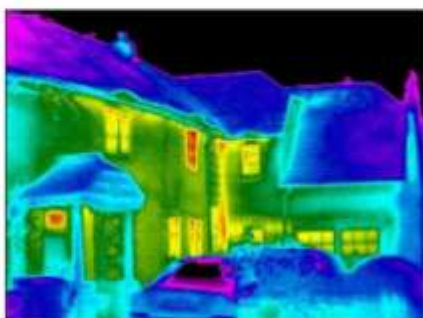
Grade C, Didcott Way



Grade D, Parkfield Crescent



Grade F, Top Street



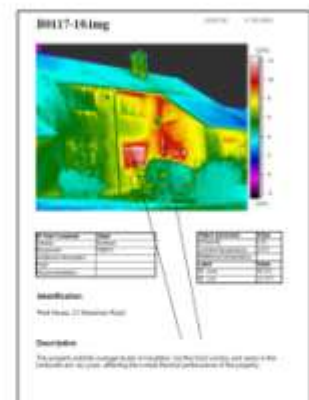
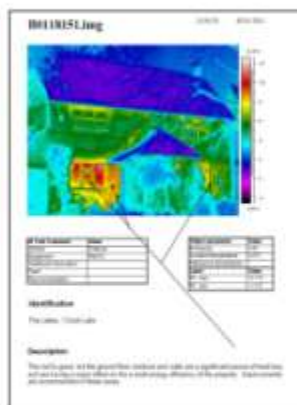
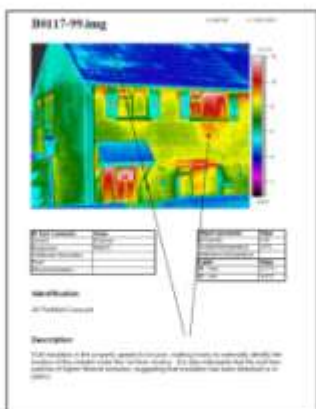
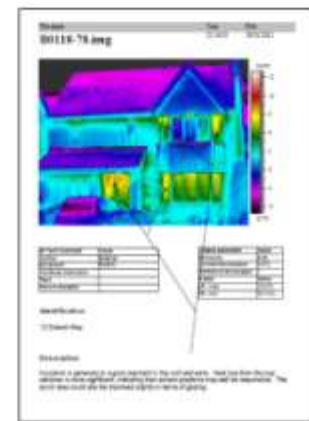
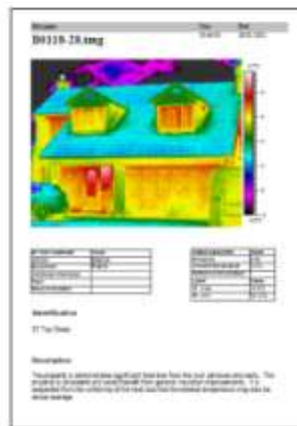
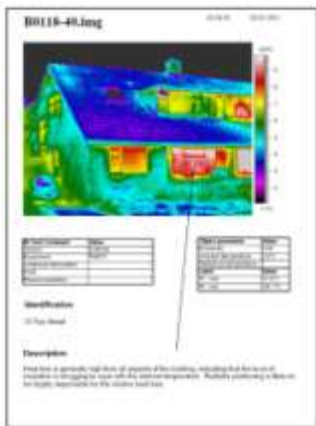
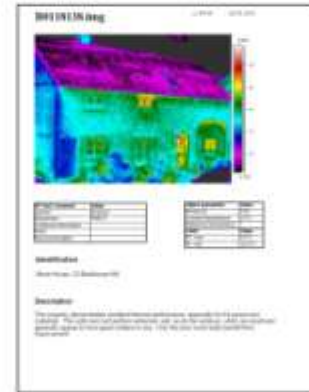
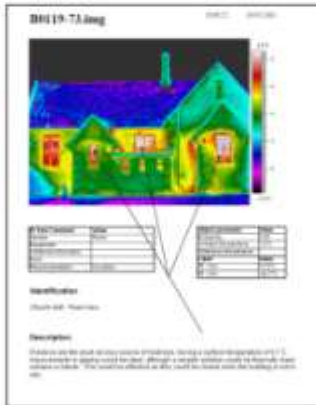
Grade C, older property



Grade B, old refurbished property

# Appleby's Thermal Imaging Project

## Extracts from detailed survey reports:

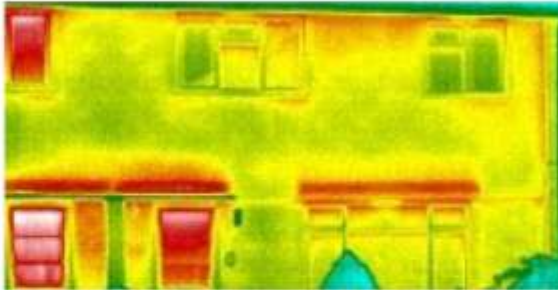


Adopting the ideas highlighted in the detailed reports will reduce fuel bills and help reduce our carbon footprint.

Copies of the complete reports are available and you can also order one for your own house.

# Appleby's Thermal Imaging Project

## Energy saving tips & examples



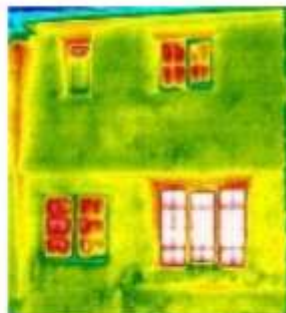
We can all close the curtains upstairs when the sun goes down



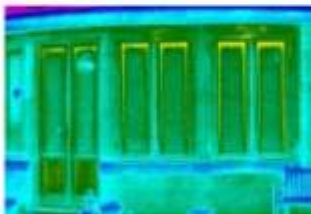
If you have cavity walls, insulate them. This house is Grade A



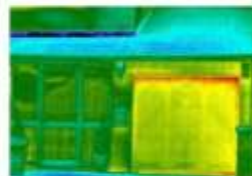
Improve glazing if you can



Everyone can improve window and door fitting to avoid draughts



Porches reduce heat loss, but note the heat loss from the integral garage



**Would you like a more detailed analysis of the heat loss from your house?**

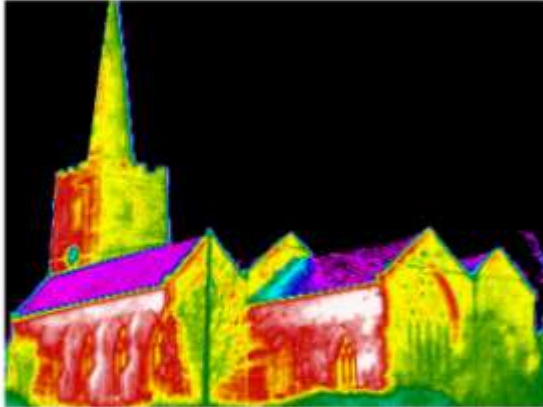
**The cost is just £20!**

**Compare the price with the £250 quoted in the article above.**

**Please see us if you require more information**

## Appleby's Thermal Imaging Project

### The Church and surrounding buildings

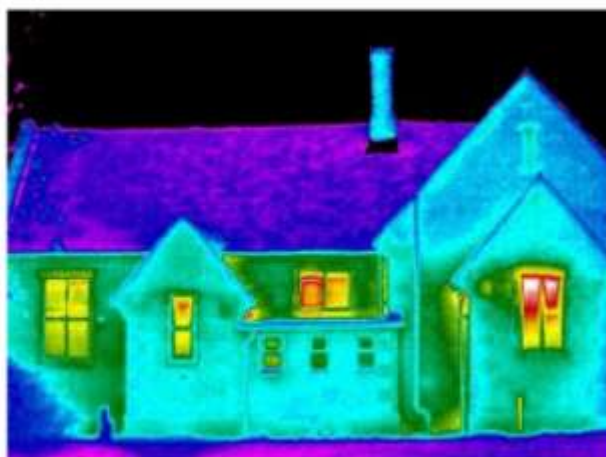
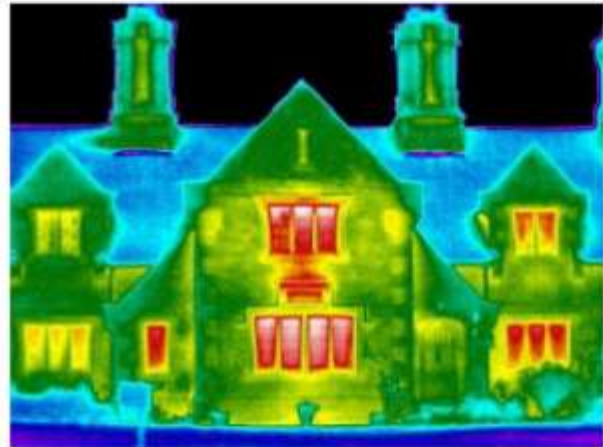


As those who frequent the Church know, this is not a well heated building!

In this case the high external temperature is less to do with loss of internal heat. Stone buildings have distinctive properties – absorbing heat during the day and losing it at night. See the different faces of the steeple – which side is South?

#### The Alms Houses

The options for listed buildings can be limited. Thick curtains might be just as good as double glazing.



#### The Church Hall

The roof of this building has recently been repaired and well insulated.

Now they need a grant to do the windows!

# Appleby's Thermal Imaging Project

## Some of our important listed buildings

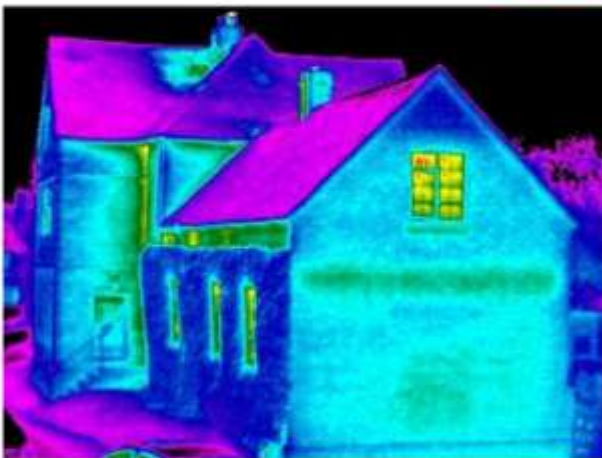
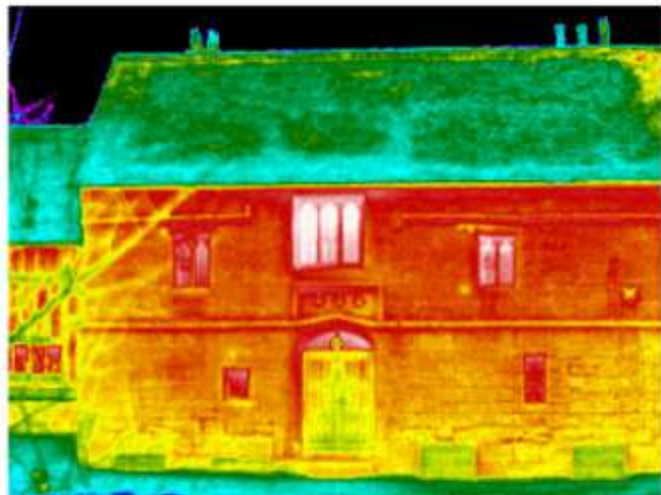


Sir John Moore School

Teachers working late into the evening?

The Moat House

The thermal properties of the stone can be having an effect here – see comments on the Church

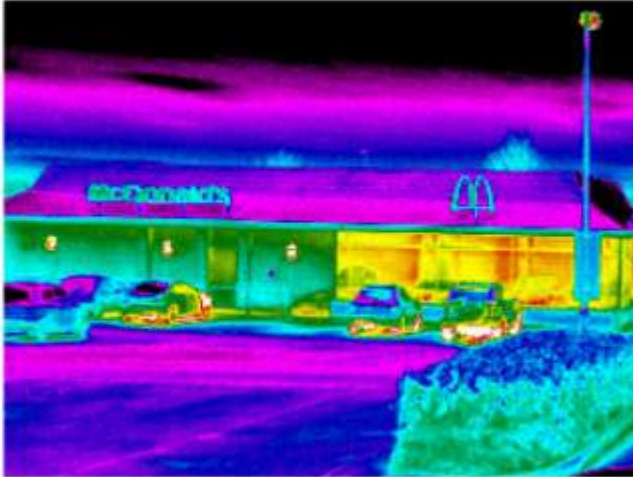


Church Farm

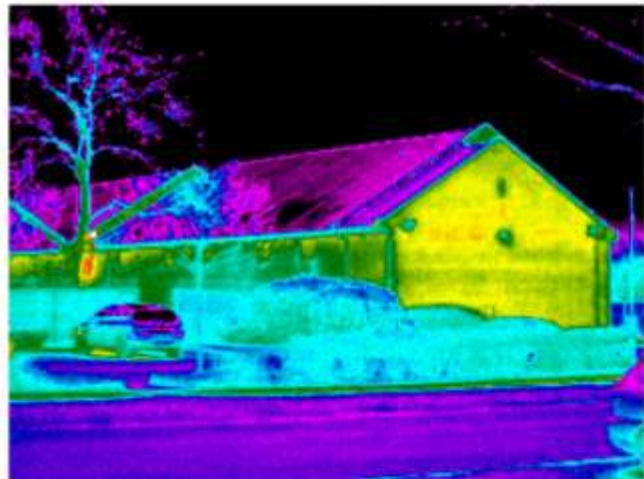
A traditional farm house, refurbished to a family home

## Appleby's Thermal Imaging Project

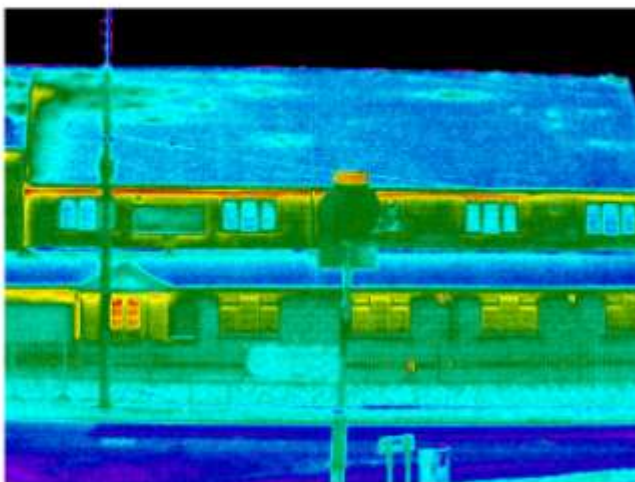
### Commercial buildings along the A444



McDonald's



Ramada Hotel

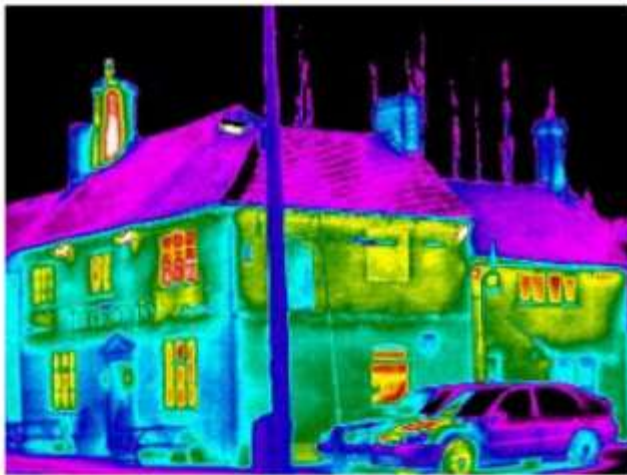
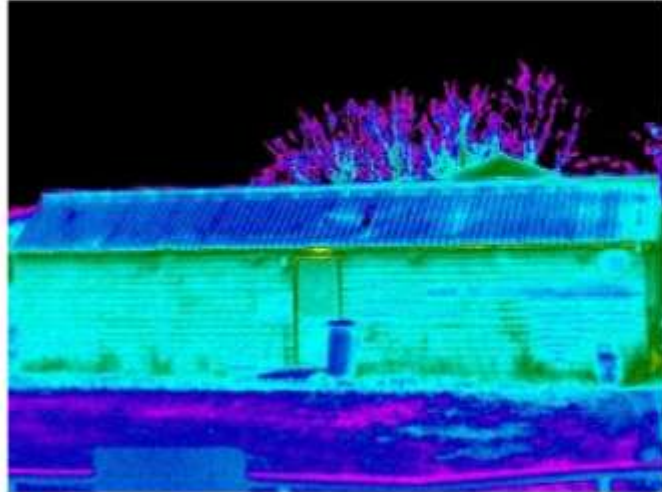


Appleby Inn

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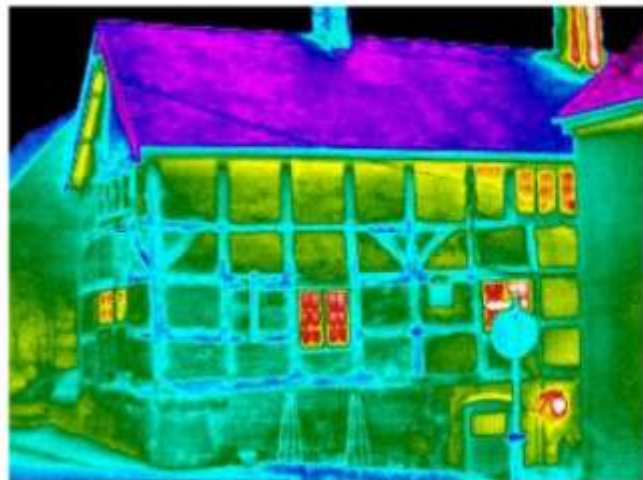
## Scout hut and local pubs

Scout Hut



The Crown

Black Horse Inn



# Appleby's Thermal Imaging Project

## Our thermal community 2011



This is what Appleby Magna looks like today.

How will it look in 2021? It's up to YOU!