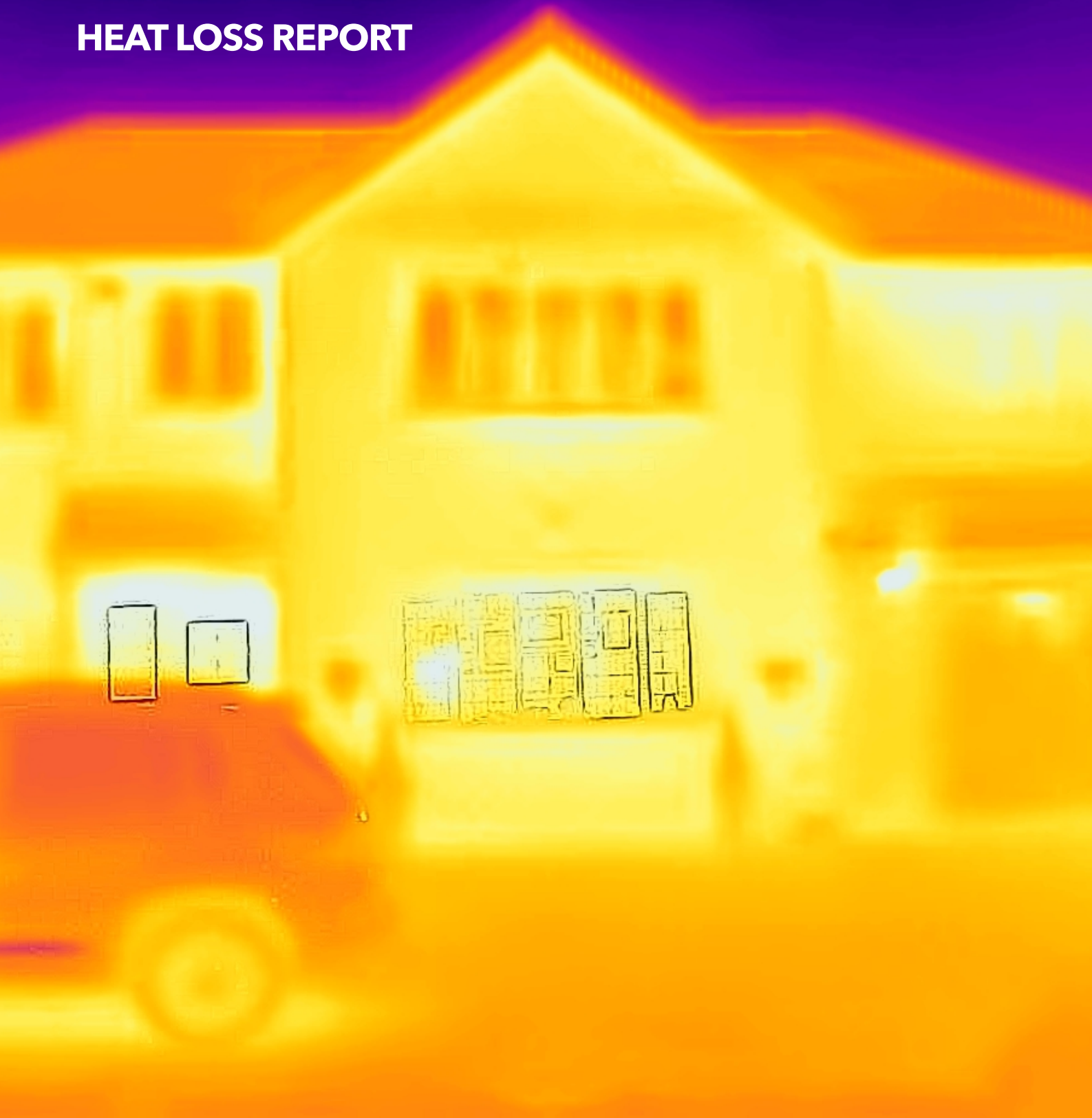




# Energy Savers

## HEAT LOSS REPORT



## ENERGY SAVERS

**Date of survey:** 6th December 2022

**Time:** 5:30pm

**Weather:** Outside 4° Clear and dry with a light breeze, Inside 19°

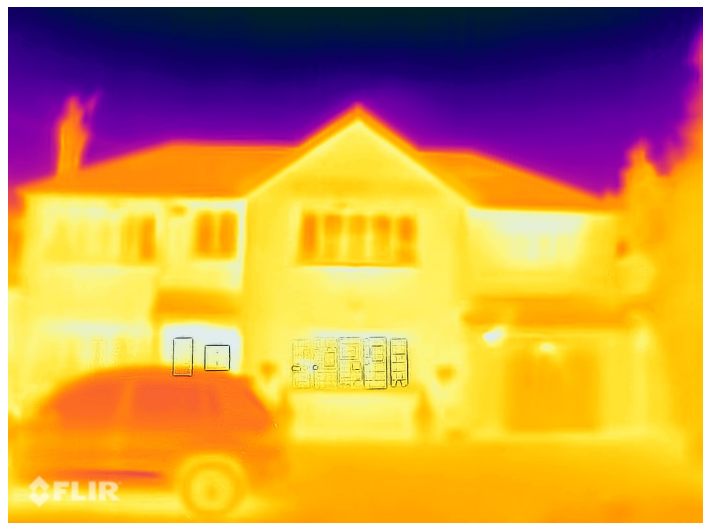
This report aims to assess a homes heat loss and energy consumption. In particular it aims to identify those parts of the building that show excessive heat loss that indicate draughts or poor insulation.

The thermal images show cooler areas in blue and warmer areas are in orange going to white for the hottest surfaces. Please note sometime the scale adjusts on the image so that white on one image doesn't mean it is the same temperature on another photo. This is particularly important when viewing the rear of the property that has much better insulation but appears as warm as the front when it is on average 4° cooler.

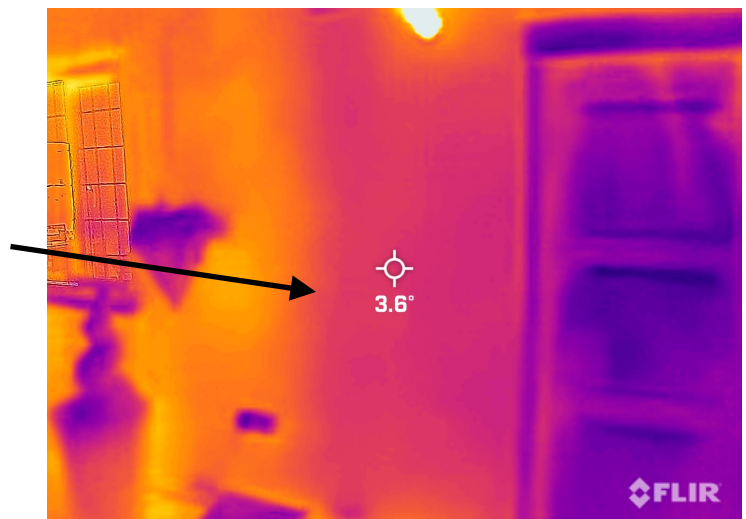
When viewing the images from the outside we are looking for warm spots, gaps in the insulation or draughts that are leaking warm air. When viewing images of the interior, we're looking for areas of relative cold that can be improved upon.

## Exterior

The front of the house shows the majority of the heat loss appears to through the front door and the walls of the property. The house has been extended to the right of the image. The older part of the house doesn't have cavity wall insulation whereas the extended part does.



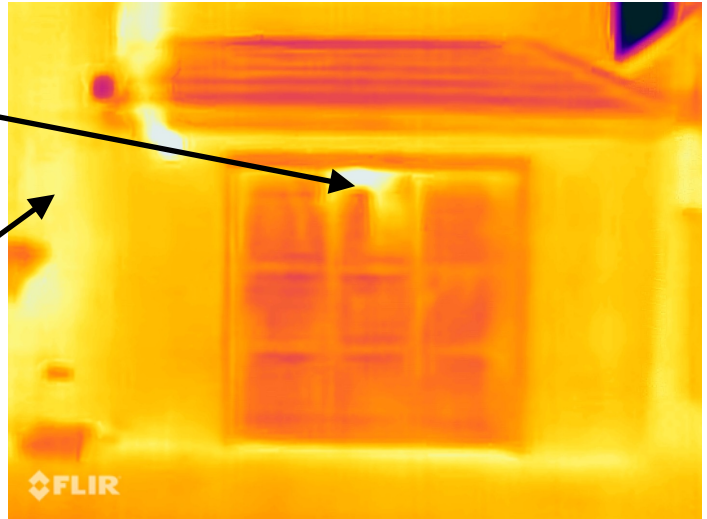
Note the differences in the heat lost in the older build of the house without cavity wall insulation on the left, compared with the newer extension with mineral wool insulation on the right.



**ENERGY SAVERS**

The garage door appears to have a lack of insulation in the middle upper part of it leading to heat loss.

In this image there is also the heat from the boiler pipes coming through the wall below and to the left of the flue pipe.



**Remedy** - This is a faux door that can be removed and appropriate insulation added. Inside the boiler pipes can be insulated to prevent excessive heat being transferred through the bricks.

The front door is a modern composite that has very effective seals and draught proofing. However there is significant heat loss to the side of the door and underneath the window to the left.

**Remedy** - Cavity wall insulation would limit the heat loss through walls. The panel to the side can either be removed and insulated within the cavity or insulation and plaster board can be added on the inner panel to limit heat loss.





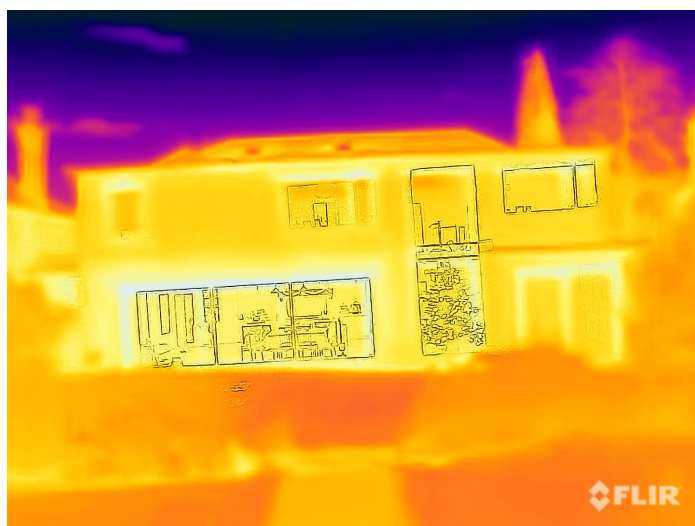
## ENERGY SAVERS

The large window to the side of the house appears to have little or no cavity wall insulation underneath it.

**Remedy** - Injecting insulation through a bore hole



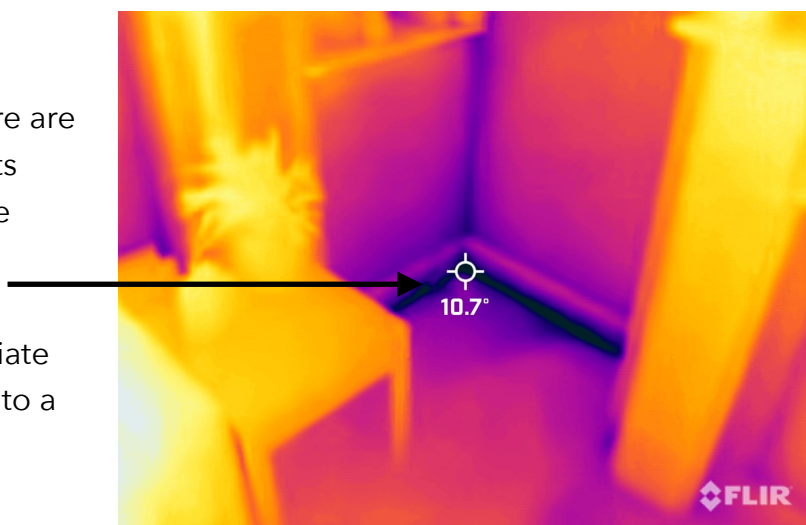
The rear of the property is a newly built extension that is showing excellent insulation with no noticeable gaps or excessive heat loss..



## Interior

In the lounge and the playroom there are significant cold spots due to draughts through between the skirting and the suspended wooden floor.

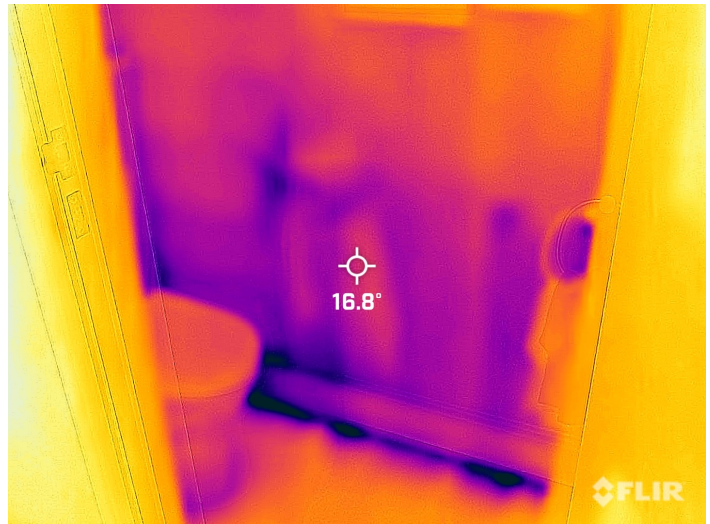
**Remedy** - Fill the gaps with appropriate insulation. Also consider upgrading to a thicker, higher tog underlay.



## ENERGY SAVERS

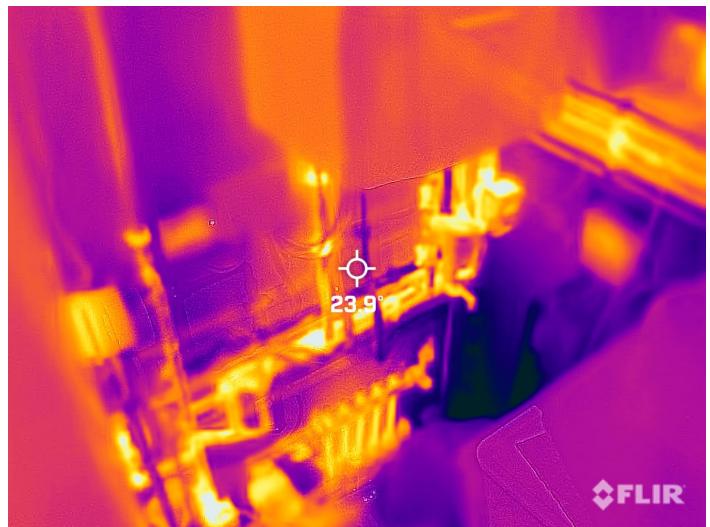
There are significant cold spots in the downstairs toilet. There appears to be patchy insulation which correlates with the heat losses on the garage door.

**Remedy** - Insulating behind the garage door. Insulate the gaps between the floor and the skirting board.



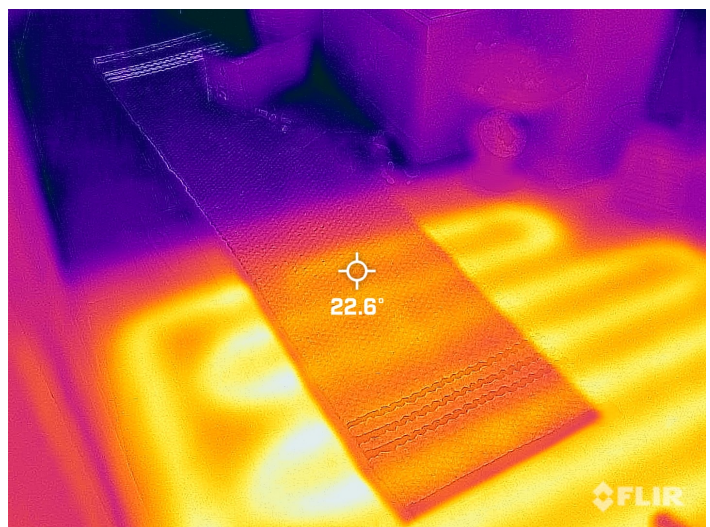
The boiler room shows a very cold spot where there is a gap in the floor with no insulation and this gap penetrates the internal skin causing the warm patch on the outside. The pipes are also very hot and heating this space rather than the rooms.

**Remedy** - Fill and insulate the void, then add cover panels. Lag and insulate all pipework.



There are several rugs positioned over the underfloor heating. These are limiting the effectiveness of the UFH to transmit the heat to the room.

**Remedy** - Remove the rugs or only position them on the non heated part of the floor. Only use natural fibres with a high capacity to transmit the heat through the material.

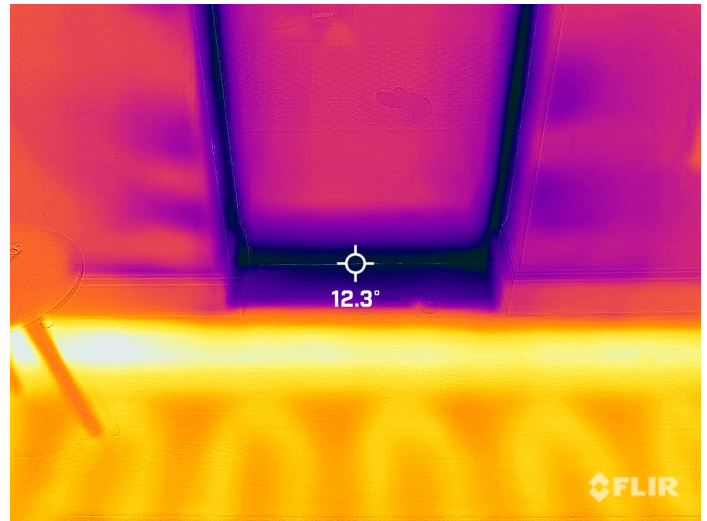




## ENERGY SAVERS

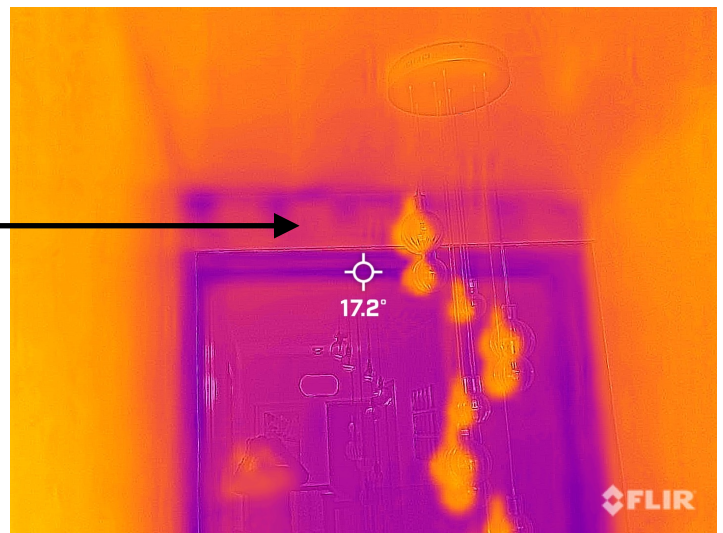
Cold uninsulated spot next to the large kitchen window as per outside view.

**Remedy** - Cavity underneath to have appropriate insulation blow to fill the void.



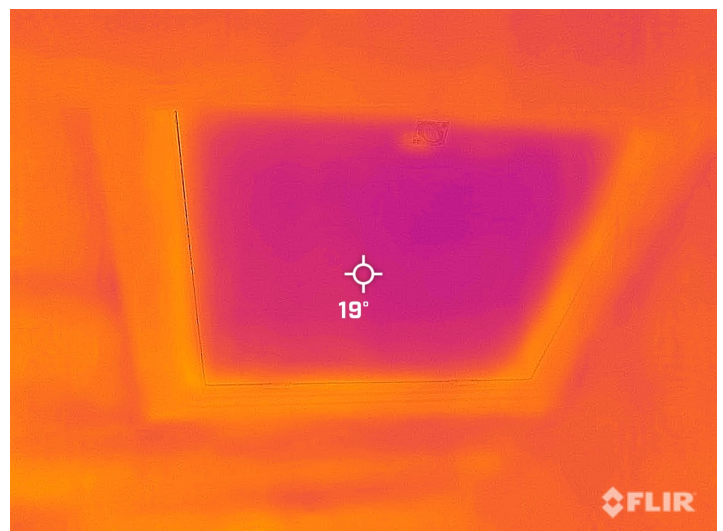
The large window in the hallway is lacking insulation in-between the frame and the roofline.

**Remedy** - Local Cavity wall insulation injected.



The loft hatch is a cold spot despite it having a thin layer of insulation on it. It doesn't however have any draught seals.

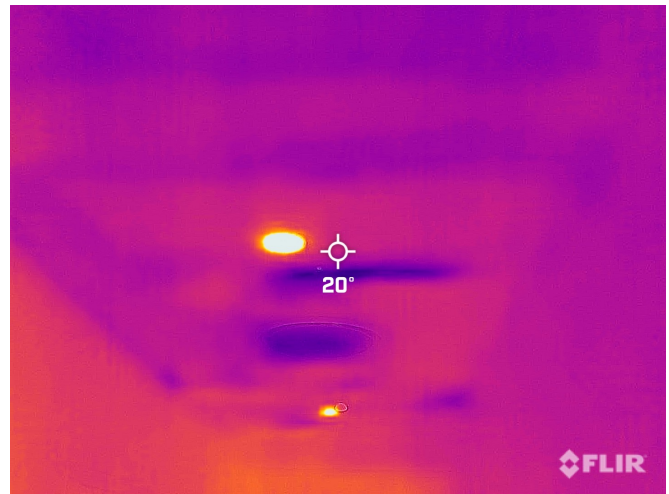
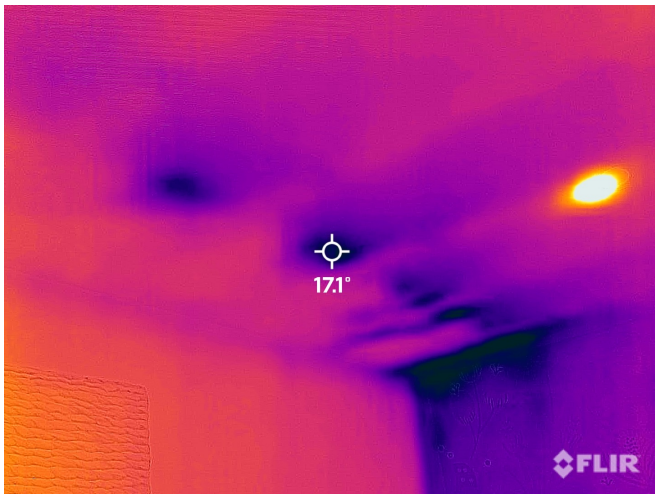
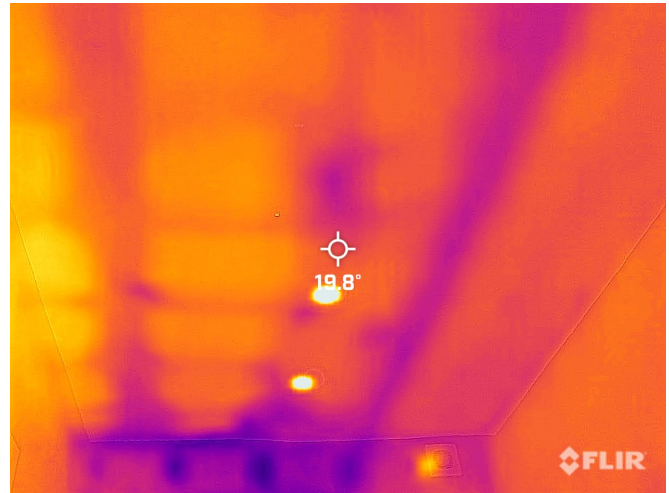
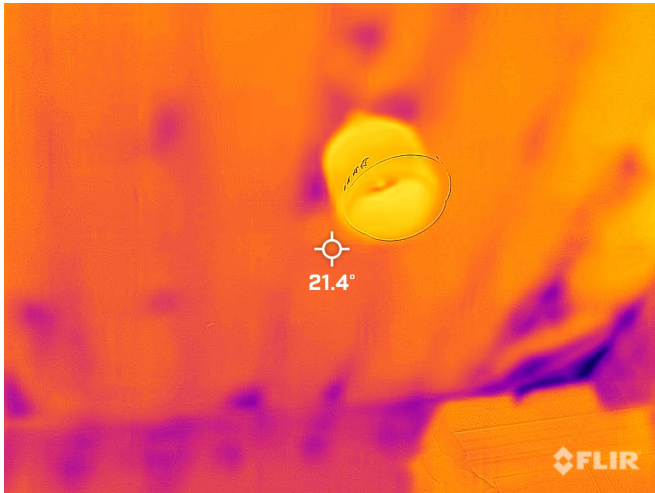
**Remedy** - Thicker insulation to be installed on the hatch and draught seals to be put around the edges.



## ENERGY SAVERS

All of the bedrooms had cold patches where the loft insulation had either been removed or wasn't effectively placed.

**Remedy** - On closer inspection this is due to the insulation being moved and not installed correctly. This would need a new layer to increase the thickness especially over the gaps and a repositioning to those areas that are lacking.



## Existing Home hardware

Hardware	Model	Efficiency	Comments
Boiler	Ideal vogue max system 32	93%	No improvements required
Hot water cylinder	Albion ultra steel 300l 2.24kwh / 24hrs		No additional insulation needed
Smart Meter	Shell	N/A	Keep
Smart Thermostat	n/a		Upgrade to save approx 10-20% off energy bill * - Approx £320 - £640
Smart Radiator Valves	n/a		Upgrade to save up to 40% off heating bills * - £40 each - Approx £1280
Washing machine	Samsung eco bubble 9.0kg wf9ef5e3u4w/eu	A	Keep
Drier	Beko dhx93460w	A++	Keep
Fridge	Prima Larder Fridge PRRF210	F	Upgrade to a D rated fridge to go from 287kwh to 156kwh per annum (approx £50 saving)
Freezer	Prima Larder Freezer PRRF209	A+	Keep
Oven	Neff - B57CR22NOB	A+	Keep
Hob	Neff Induction Hob model: T58FD20X0		Keep
Lighting/Bulbs	All LED/energy saving	A	Keep

Note these savings are from the manufacturers of the devices and can be optimistic. The vast majority of studies do however show that smart thermostats and radiator valves save a minimum of 8% on energy bills and for some users, as much as 40% depending on current energy use and demands.



## Energy Action Plan

Location	Issue	Remedy	Estimated Cost	Estimated Saving per annum*
Hallway and kitchen	Rugs limiting UFH effectiveness	Remove or replace rugs	£0	£20
Exterior Toilet extractor	Large gaps	Insulating foam to fill	£25	£25
Radiators	Heat absorbed into walls	Radiator reflector panels placed behind radiators	£50	£25
Boiler Room	Cold void bleeding heat to outer wall	Fill with insulating foam and board out	£50	£5
Boiler Room	Heat lost through pipes	Lag/insulate pipes	£100	£10
Loft Hatch	Cold panel and draughts	remove existing insulation and put 50mm insulation board on. Line with draught excluding foam tape.	£100	£25
Lounge and downstairs toilet	Draughts beneath skirting board	Insulation tape to fill the gaps	£50	£45
Upstairs rooms	Patchy cold spots and patchy insulation	Redistribute and increase insulation layers in the loft space	£350	£225
Extension - underneath and over picture windows	Lack of cavity insulation	Local cavity insulation	£300	£20
Garage Door	Spot thermal bridging	Remove and re insulate cavity	250	£10
Original house cavity walls	Open cavity	Cavity wall insulation	1100	£395
<b>Total</b>			<b>£2375</b>	<b>£805</b>

\* Based on your energy usage and typical % savings listed on the Energy saving trust (an independent, impartial organisation).

## Free Energy Saving

Remember there are many different ways in which you can minimise your energy usage simply by changing some habits. Getting a smart meter and having it visible, usually in the kitchen, will give you a better understanding of what activities use the most energy to help you save where you can. All energy companies now offer free smart meters. Here are some other tips

Action	Energy Saving *	Estimated Saving per Annum *
If you have a condensing boiler turn it down to 60°	8-13%	£530
Turn down the thermostat especially when out of the house	5-10%	£350
Turn down/off radiators in unused rooms and close the door. Understand and accurately set the valves to the correct temperature 1 - come on under 10-15°C 2 - come on under 15-17°C 3 - come on under 18-20°C (around 68°C) 4 - come on under 21-22°C (around 77°C) 5 - max (valve is always open)		
Cooking tips - Use the right size pan with a lid on, Cook in bulk and freeze		£230
Change cooking methods to reduce energy use Cost per day Microwave - 8p Air Fryer - 14p Slow Cooker - 16p Gas Oven - 33p Electric Oven - 87p Microwaves, air fryers and slow cookers are a more efficient way to cook so will use less electricity.		£300
Take shorter showers, perhaps get a shower timer		£95
Dry washing on the line when possible		£70

## ENERGY SAVERS

Action	Energy Saving *	Estimated Saving per Annum *
Turn off appliances on standby like the TV, computer, phones, recorders, games consoles etc.		£65
Wash on a 30° cycle		£35
Turn off lights when you leave a room		£25
Take showers not baths (swap one bath with shower)		£20
Choose eco setting on dishwasher		£17
Only boil the water you need (instant hot water taps are very efficient)		£13
<b>TOTAL</b>		<b>£1750</b>

Note these are estimated savings based on figures from the Energy saving trust, an independent impartial organisation. Savings will only be realised if the actions are not already in place.

## Summary

Energy Use	Average Gas Use (kWh)	Average Electricity Use (kWh)
Low (1-2 people in Flat or 1 bed house)	8000	1800
Medium (2-3 people in 3 bed house)	12000	2900
High (4-5 people in 5 bed house)	17000	4300
Your Use	30925	5426

Relatively large improvements in reducing heat loss can be made through dealing with the small draughts noted in the table above. These should be made a priority and can be done quickly and cost effectively.

For bigger budget improvements, It is unusual for a new extension to have areas missing insulation but this also needs to be tackled. However the largest losses will be through



## **ENERGY SAVERS**

the loft and the exterior walls of the old part of the house. Additional mineral or natural wool in the Loft and solid insulation on the loft hatch, with draught proofing, would be an effective use of time and money and if the budget stretches, to then tackle insulating the cavity walls.