



The survey specialists...

Property • Infrared • Asbestos • Snagging



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INFRARED **SURVEY**



Customer Details

Client Name: XXXX XXXXX
Address: XXXX XXXX. XXXXXX
XXXX XXXXXXXXXXXXX
XXXXXXXXXXXXXX
XXXXXXXXXXXXXX
XXX XXX
Purpose of Report: BUILDING HEAT LOSS QUALITATIVE INFRARED ANALISYS
Report Reference: IAS/MXF/XXXX
Inspection Date: 22 Jan 2023
Surveyor Name: Philip Milne ISO 18436-7 & BINDT CM/GEN
Thermographer Name: Philip Milne ISO 18436-7 & BINDT CM/GEN
Average Ambient Temperature: 46.4 Fahrenheit
Imager Used: FLIR CX3

Property Image





Type of property: Semi-Detached

No of bedrooms: 2 Bedrooms

State of repair: Good Condition

Services: Electricity-Gas-Mains Water Supply

Tenure: Presumed Freehold

Location: Semi-Sheltered Location

Property Age: 1900

Understanding Building & Roof IR Imagery

Infrared imagery is often a picture where scales (or shades/colours) represent the differences in temperature and emissivity of objects in the image. As a general rule, objects in the image that are lighter in colour are warmer, and darker objects are cooler. No object in the images is detected via Visible light wavelengths (400 700 NANO meter's) rather, only from infrared wavelengths in the 3000 5000 NANO meter's or 8000 14000 micro meter's range. Lights and other relatively hot objects are very evident, but as a result of their heat not light emissions. When an image is taken with our infrared camera, it is digitally saved to an on board media card. The image may be then modified in a number of ways to enhance its value to the end user. In the case of this report, the building images were digitized, colorized, and then adjusted for colour, contrast and brightness before being scaled and placed in this file.

General Description of Property (External)

- The property is a traditional brick built, semi detached house, situated on a level site adjacent to a residential road.
- The roof was a traditional cut timber, dual pitched hipped roof supporting structure with no under-felt and a natural slate finish with a zinc roll top ridge line.
- The property has been extended outwards to the rear adding a kitchen a lounge area.
- Water was discharged into a Square line PVCU gutter section rainwater system secured to a PVCU roof line with outlet downpipes hold fast fixed to the external elevations.
- The external windows and doors to the front and rear of the property were of a mixture of Timber and UPVC frame construction with sealed double glazed units.



Image Of Roof Area



Thermal Image Shows High Levels Of Heat Loss Through Then Roof Coverings

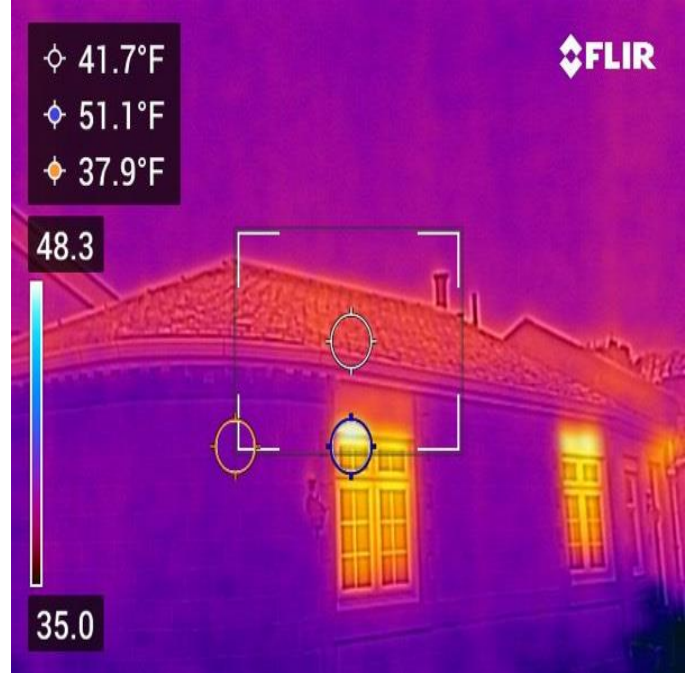




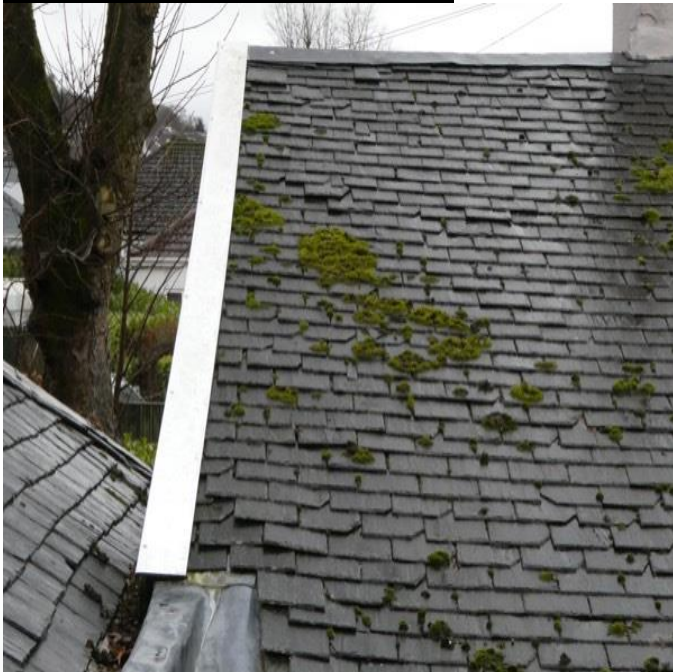
Insufficient Insulation Detected Within The Roof Void



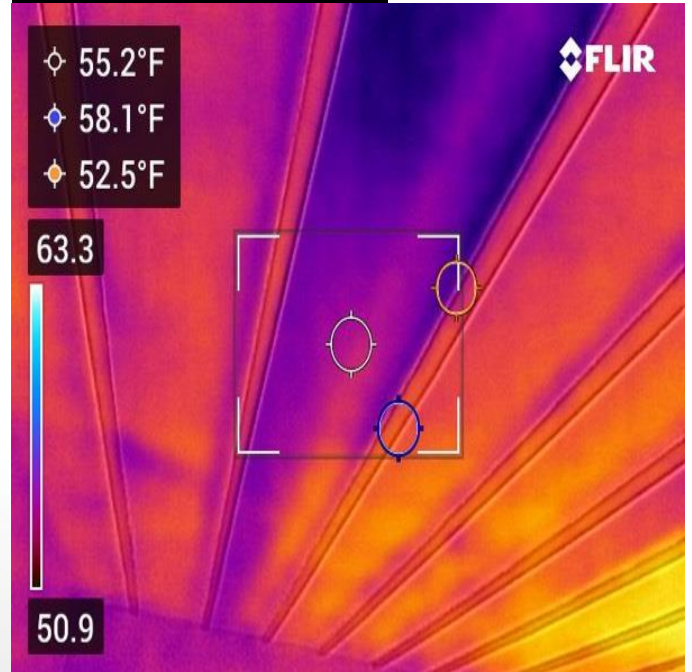
Thermal Image Shows High Levels Of Heat Loss Through The Roof Covering



Roof Area Above The Lounge



Vaulted Ceiling In Lounge Shows Missing Or Inadequate Insulation





Severe Decay Detected To Lounge Timber Windows



High Levels Of Heat Loss Detected To Lounge Window

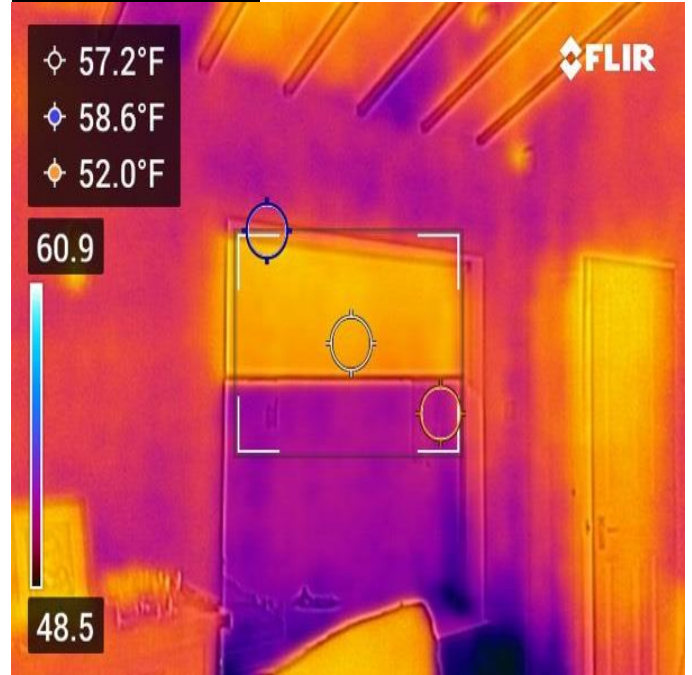


Image Of Glazed Roof Panels In Kitchen

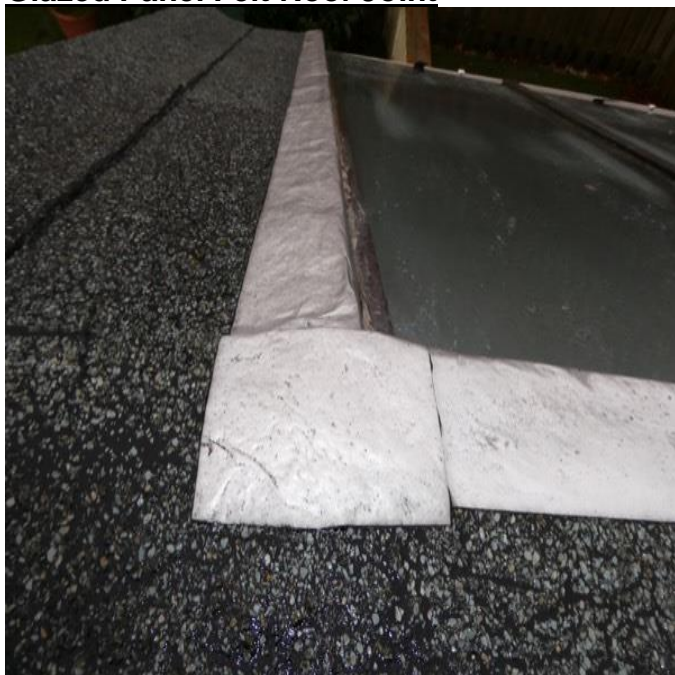


High Levels Of Heat Loss Detected To The Kitchen Glazed Panels





**Aqua Seal Tape Detected To The Kitchen
Glazed Panel Felt Roof Joint**



**Exposed Timber Roof Bar Joints Detected
To Kitchen Glazed Panel Roof**



**Unsealed And Open Facia Abutment Joint
To Wall**



**Unsealed And Open Facia Abutment Joint
To Wall**





Timber Construction Front Entrance Door



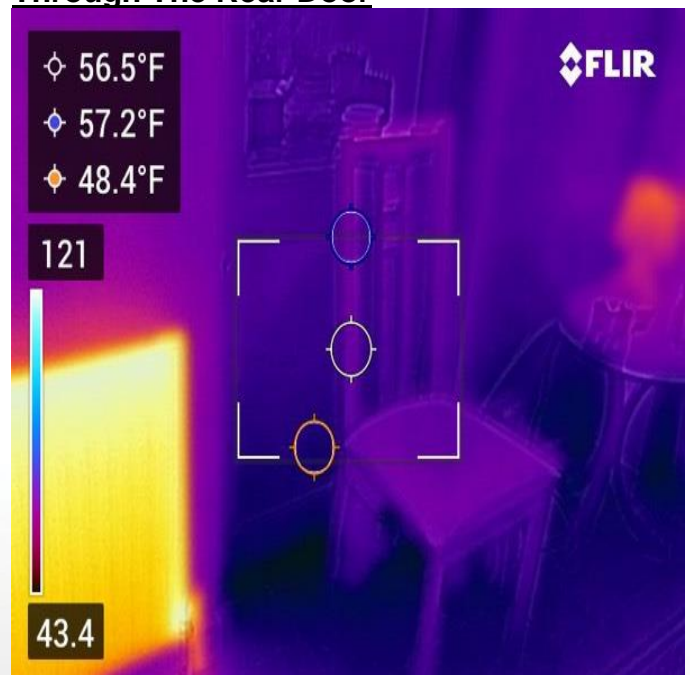
High Levels Of Air Filtration Detected To The Base Of The Door Threshold



Timber Construction Rear Entry Door



High Levels Of Air Filtration Detected Through The Rear Door





Findings

- A Thermal image inspection of the roof covering revealed high levels of thermal heat loss emissivity to the roof area inspected suggesting missing or insufficient insulating materials, these will require improvement to meet with current building regulations.
- Inspection within the loft space has found thermal anomalies in loft space area at the time of survey, inspection revealed missing and insufficient insulation material within the ceiling ties resulting in significant heat loss through the room ceilings exiting through the roof coverings.
- Consideration should therefore be given to ensuring that the wool insulation material has an even distribution level of 300mm depth to meet with current building regulation standards.
- A Thermal image inspection of the external elevation revealed high levels of thermal heat loss emissivity to the wall area inspected suggesting missing or insufficient insulating materials, these will require improvement to meet with current building regulations.
- The 2014 Building Regulations state that the U-values that building materials must meet, A U-value relates to how effective an insulator or material is. The required U-value for new or replacement flat roofs is 0.20W/m²- this refers to the rate of heat flow, in watts, through 1m² of roofing material. The U-value reflects the increased heat retention capabilities of insulation over the years, which has led to lower energy costs and reduced CO₂ emissions.
- Inspection however has revealed excessive energy loss emissivity around the window and door openings, the dominant cause of break down is confirmed to be resultant from distortion of the UPVC window frame opening sashes, inefficient window seals with holed and missing mortar and mastic seal detected to the frame perimeters at the reveal abutment.
- Inspection of the window and door frames revealed decay and distortion to the timber construction window and door frames due to age.
- Recommend the window frames/seals are replacement or upgraded to a more thermally efficient grade with cam mechanism adjustments carried out mitigate the Heat Loss and create an enhanced compressed seal to all window and door opens to reduce excessive energy loss through the building envelope.
- Consideration should also be given to the replacement of the existing timber construction windows and doors to a modern thermally efficient UPVC high performance secure locking system to enhance the energy efficiency of the building envelope.
- Consideration should also be given to the replacement of the plywood panels located above the front elevation windows to a modern PVCU cladding system.

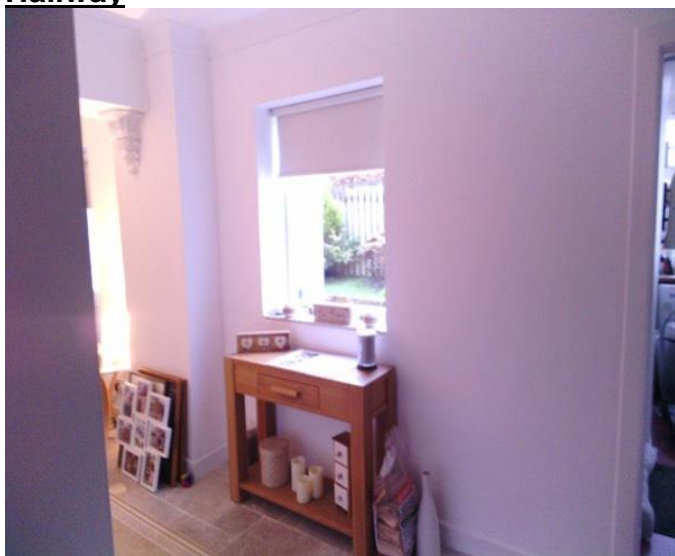


General Description of Property (Internal)

Hall

- Following inspection it was noted that the ceiling and walls had a plaster decoration finish, wall mounted radiator and a mixture of timber and UPVC windows and doors.

Hallway



High Levels Of Air Filtration Around The Window Location



Findings

- Inspection revealed excessive energy loss emissivity around the window and door openings, the dominant cause of break down is confirmed to be resultant from distortion of the window frame opening sashes, inefficient window seals with holed and missing mortar and mastic seal detected to the frame perimeters at the reveal abutment.
- Inspection of the door frames revealed decay and distortion to the timber construction door frames due to age.
- Recommend the window frames/seals are replacement or upgraded to a more thermally efficient grade with cam mechanism adjustments carried out mitigate the Heat Loss and create an enhanced compressed seal to all window and door opens to reduce excessive energy loss through the building envelope.
- Consideration should also be given to the replacement of the existing timber construction doors to a modern thermally efficient UPVC high performance secure locking system to enhance the energy efficiency of the building envelope.



Kitchen

- Following inspection it was noted that the ceiling and walls had a plaster decoration finish, wall mounted radiator, timber construction windows and door.
- The Kitchen has a range of matching fitted base and wall units with modern laminated worktops.

Kitchen Area



Heat Loss Detected To The Glazed Roof, Windows And Entrance Door



Findings

- Inspection revealed excessive energy loss emissivity around the vertical and sloping window and door openings.
- Inspection of the door frames revealed decay and distortion to the timber construction door frames due to age.
- Consideration should also be given to the replacement of the existing timber construction doors to a modern thermally efficient UPVC high performance secure locking system to enhance the energy efficiency of the building envelope.
- Consideration should also be given to replacement of the felt flat roof due to age related decay, this would facilitate the introduction of additional Celotex insulating boards to further enhance the room energy efficiency reducing heat loss significantly



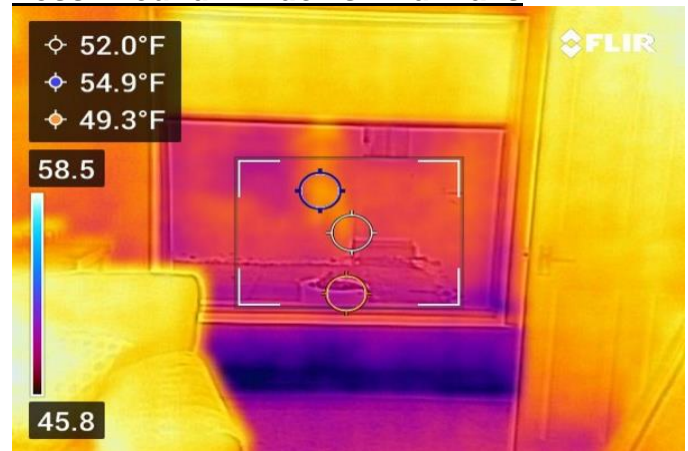
Lounge

- Following inspection it was noted that the ceiling and walls had a plaster decoration finish, wall mounted radiator and a mixture of timber and UPVC windows.

Lounge Area



Thermal Image Shows High Levels Of Heat Loss Around Windows And Walls



Findings

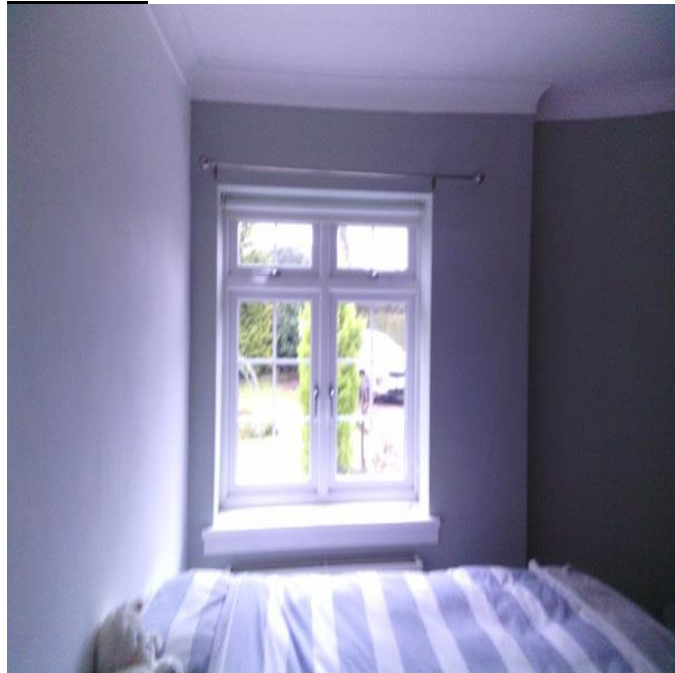
- Inspection revealed excessive energy loss emissivity around the window and door openings, the dominant cause of break down is confirmed to be resultant from distortion of the window frame opening sashes, inefficient window seals with holed and missing mortar and mastic seal detected to the frame perimeters at the reveal abutment.
- Inspection of the window frame revealed decay and distortion to the timber construction window frames due to age.
- Thermal images show missing or insufficient insulation to the vaulted ceiling area confirmed by large areas of cold spots detected, recommend that the ceiling is over boarded with the introduction of a 50-75mm Celotex insulation PIR board to enhance the room energy efficiency and increase warm air retention.
- Recommend the window frames/seals are replacement or upgraded to a more thermally efficient grade with cam mechanism adjustments carried out mitigate the Heat Loss and create an enhanced compressed seal to all window and door opens to reduce excessive energy loss through the building envelope.
- Consideration should also be given to the replacement of the existing timber construction window to a modern thermally efficient UPVC high performance secure locking system to enhance the energy efficiency of the building envelope.



Bedroom 1

- Following inspection it was noted that the ceiling and walls had a plaster decoration finish, wall mounted radiator and UPVC window.

Bedroom



Thermal Image Shows High Levels Of Heat Loss And Excessive Air Filtration



Findings

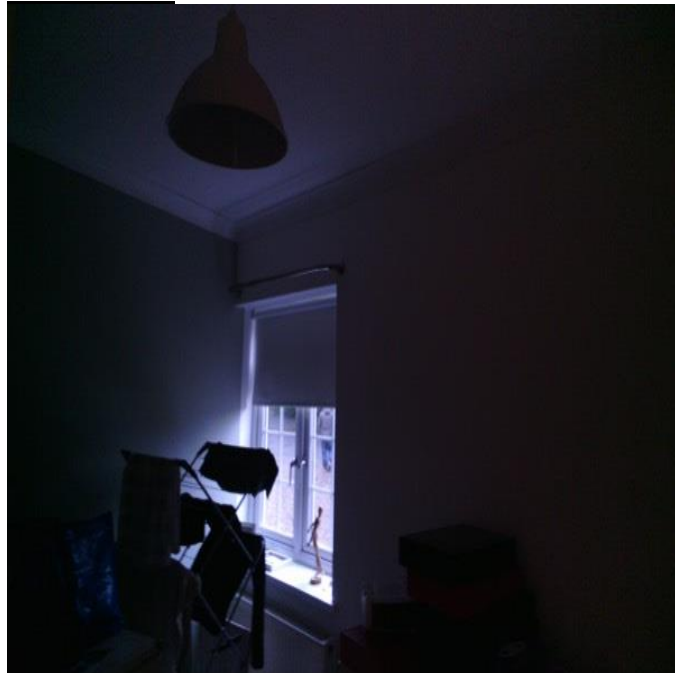
- Inspection revealed excessive energy loss emissivity around the window and opening, the dominant cause of break down is confirmed to be resultant from distortion of the window frame opening sashes, inefficient window seals with holed and missing mortar and mastic seal detected to the frame perimeters at the reveal abutment.
- Thermal images show missing or insufficient insulation to the ceiling area confirmed by large areas of cold spots detected.
- Consideration should therefore be given to ensuring that the wool insulation material has an even distribution level of 300mm depth to meet with current building regulation standards.
- Recommend the window frames/seals are replacement or upgraded to a more thermally efficient grade with cam mechanism adjustments carried out mitigate the Heat Loss and create an enhanced compressed seal to the window sash to reduce excessive energy loss through the building envelope.



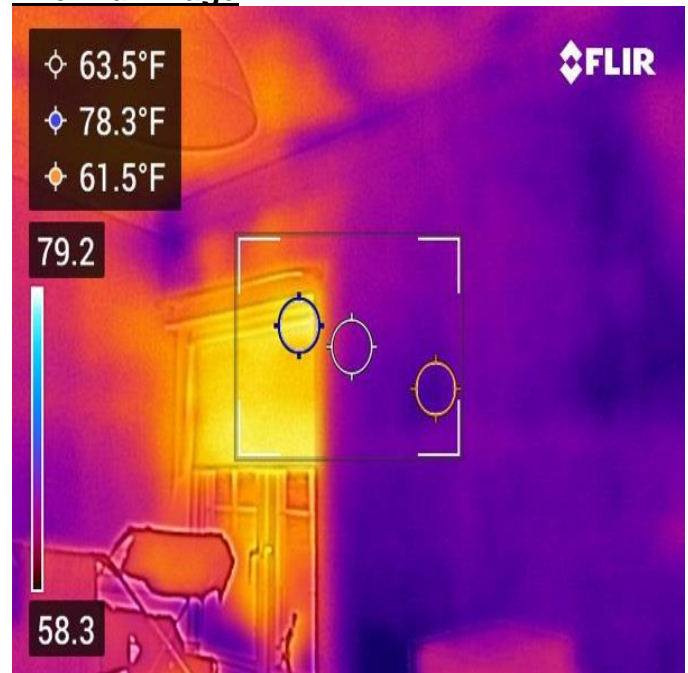
Bedroom 2

- Following inspection it was noted that the ceiling and walls had a plaster decoration finish, wall mounted radiator and UPVC window.

Bedroom 2



Thermal Image



Findings

- Inspection revealed excessive energy loss emissivity around the window and opening, the dominant cause of break down is confirmed to be resultant from distortion of the window frame opening sashes, inefficient window seals with holed and missing mortar and mastic seal detected to the frame perimeters at the reveal abutment.
- Thermal images show missing or insufficient insulation to the ceiling area confirmed by large areas of cold spots detected.
- Consideration should therefore be given to ensuring that the wool insulation material has an even distribution level of 300mm depth to meet with current building regulation standards.
- Recommend the window frames/seals are replacement or upgraded to a more thermally efficient grade with cam mechanism adjustments carried out mitigate the Heat Loss and create an enhanced compressed seal to the window sash to reduce excessive energy loss through the building envelope.



Bathroom

- Following inspection it was noted that the ceiling had an emulsion smooth plaster finish, painted architraves, ceramic wall tiles, Obscure PVCU window, Basin, WC, Bath.

Bathroom



Thermal Image



Findings

- Inspection revealed excessive energy loss emissivity around the window and opening, the dominant cause of break down is confirmed to be resultant from distortion of the window frame opening sashes, inefficient window seals with holed and missing mortar and mastic seal detected to the frame perimeters at the reveal abutment.
- Thermal images show missing or insufficient insulation to the ceiling area confirmed by large areas of cold spots detected.
- Consideration should therefore be given to ensuring that the wool insulation material has an even distribution level of 300mm depth to meet with current building regulation standards.
- Recommend the window frames/seals are replacement or upgraded to a more thermally efficient grade with cam mechanism adjustments carried out mitigate the Heat Loss and create an enhanced compressed seal to the window sash to reduce excessive energy loss through the building envelope.



Analysis and Recommendations

- Inspection within the loft space has found thermal anomalies in loft space area at the time of survey, inspection revealed missing and insufficient insulation material within the ceiling ties resulting in significant heat loss through the room ceilings exiting through the roof coverings.
- Consideration should therefore be given to ensuring that the wool insulation material has an even distribution level of 300mm depth to meet with current building regulation standards.
- A Thermal image inspection of the external elevation revealed high levels of thermal heat loss emissivity to the wall area inspected suggesting missing or insufficient insulating materials, these will require improvement to meet with current building regulations.
- Consideration should be given to the removal of the externally facing plaster wall surfaces and the introduction of a Celotex PIR insulation board.
- Alternatively over boarding the externally facing walls with a Kingspan Kooltherm board.
- Inspection however has revealed excessive energy loss emissivity around the window and door openings, the dominant cause of break down is confirmed to be resultant from distortion of the UPVC window frame opening sashes, inefficient window seals with holed and missing mortar and mastic seal detected to the frame perimeters at the reveal abutment.
- Inspection of the window and door frames revealed decay and distortion to the timber construction window and door frames due to age.
- Recommend the window frames/seals are replacement or upgraded to a more thermally efficient grade with cam mechanism adjustments carried out mitigate the Heat Loss and create an enhanced compressed seal to all window and door opens to reduce excessive energy loss through the building envelope.
- Consideration should also be given to the replacement of the existing timber construction windows and doors to a modern thermally efficient UPVC high performance secure locking system to enhance the energy efficiency of the building envelope.
- Consideration should also be given to the replacement of the plywood panels located above the front elevation windows to a modern PVCU cladding system.
- The 2014 Building Regulations state that the U-values that building materials must meet, A U-value relates to how effective an insulator or material is. The required U-value for new or replacement flat roofs is 0.20W/m²- this refers to the rate of heat flow, in watts, through 1m² of roofing material. The U-value reflects the increased heat retention capabilities of insulation over the years, which has led to lower energy costs and reduced CO₂ emissions.



Limitations to Survey/Terms & Conditions

Our report on the services installations will be based on a cursory inspection only in order to include a general description. We will not test any installations. Unless otherwise instructed, we will not commission the inspection or testing of any installations by specialist contract engineers. If we find visual evidence to suggest that there may be problems with any installations in part or in whole, or if they are particularly sophisticated or complex, we will advise you accordingly, and make recommendations for further investigations or testing by specialists

This was a non-intrusive inspection and limited to commenting upon the location and reporting of anomalies and temperature differences noted and inspected during the visible inspection at that time.

Based on an inspection as defined below, the surveyor will advise the client by means of a written report as to his opinion of the visible condition and state of repair of the subject property.

The surveyor will inspect as much of the surface area of the structure as is possible but will not inspect those areas which are covered, unexposed or inaccessible.

There may be specific areas and items that were inaccessible during our survey. We can make no representations regarding conditions that may be present but were concealed or inaccessible during the survey. With access and an opportunity for inspection, reportable conditions may be discovered.

Inspection of the inaccessible areas will be performed upon arrangement and at an additional cost after access is provided. Also, our report is based on information obtained at the site at the given date and time. Over time, conditions change and the information contained in this report may no longer be accurate. Should additional information become available at a later date, we reserve the right to determine the impact, if any, the new information may have on our discovery and recommendations and to revise our opinions and conclusions if necessary and warranted.

The surveyor will assume that the property is not subject to any unusual or especially onerous restrictions or covenants which apply to the structure or affect the reasonable enjoyment of the property.

The surveyor will assume that all bylaws, building regulations and other required consents have been obtained. The surveyor will not verify whether any such consents, have been obtained. The client and his/her legal advisors should make all necessary enquiries. Drawings-specifications will not be inspected by the surveyor.

The surveyor will assume is unaffected by any matters which would be revealed by a local search (or the equivalent) and reply's to the usual enquiries, or by a statutory notice and that neither the property, nor its condition, its use, or its intended use, is or will be unlawful.)

The client will pay the surveyor the agreed fee for the report and any expressly agreed disbursements in addition.



The report is for the sole use of the named client and is confidential to the client and his/her professional advisors. Any other parties rely on the report at their own risk. The report must not be reproduced, in whole or in part, without the prior written consent, of the surveyor.

Note: A building survey report does not automatically include advice upon value or a reinstatement cost assessment/replacement for insurance Purposes. However, the surveyor will be prepared to provide such opinions-assessments if these are agreed from the outset