Comparative Thermal Efficiency Assessment of Everest Window Installations

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Water, Fire & Flood Damage Contractors in London

Thermal images taken by Adam Smith (Building Pathologist and Thermographic consultant) of Building Response Ltd with a FLIR T640 thermographic camera

TEST REPORT NUMBER: **29066d**

The thermal imaging energy loss survey was conducted with the intention of highlighting areas of the property showing signs of:

Air Leakage/Energy Loss • Thermal Bridging • Discontinuous Insulation • Structural Defects • Air infiltration

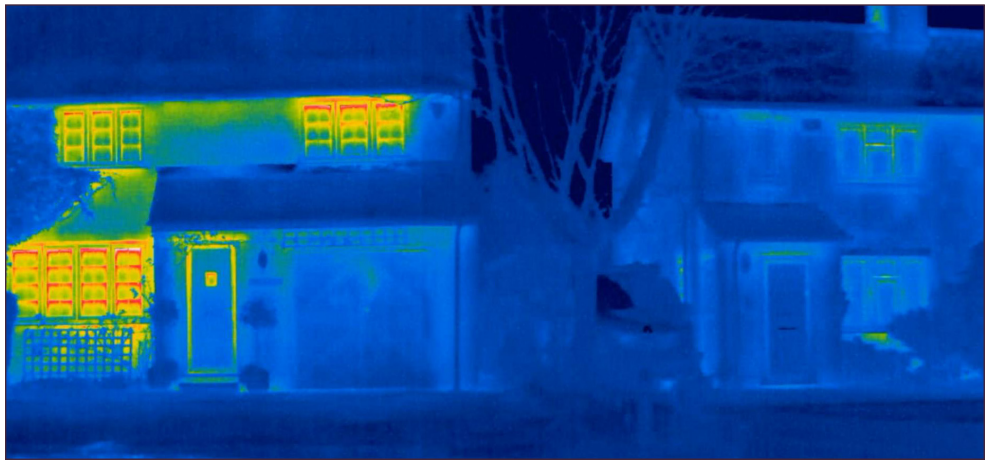
Conditions of comparative assessment.

Date: 11.01.2016 **Time:** 05:30 **Weather:** Overcast, dry at time of survey, precipitation night before. **External:** 6oc & Humidity 94%. **Internal:** 210c-250c variance.

- Non –Everest control window installations (Woodbrook) were C rated uPVC double glazing, installed in 2009. Everest System window installations (Briar Cottage) were A++ rated uPVC Triple glazing, installed in 2016.
- Woodbrook and Briar Cottage were neighbouring properties and assessments were performed at the same time, under identical conditions.
- All data outlined in this white-paper was qualitatively obtained at the time of survey and may not be held as indicative of past or future thermal efficiency performance.

Understanding thermal images.

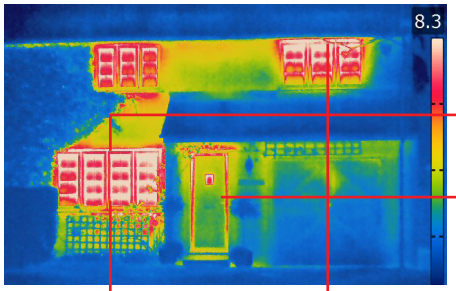
When viewing thermal images, a general rule is that the darker colours represent colder or damper surfaces, and the lighter colours represent hotter or drier surfaces. Where darker colours are observed in the thermal images, these represent areas where heat energy may be being lost at a lower rate comparable to areas of a brighter colour in the same image. These differences in density and energy transfer provide us with patterns observable using thermal imaging.



Non-Everest window (control) installations

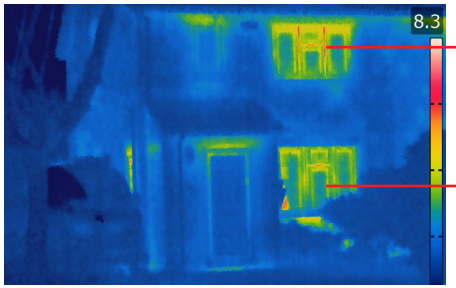
Everest System window installations

Thermographic assessment parameters set at 8.30c-4.20c.



Highest energy temperature reading qualitatively, thermographically measured from non-Everest window; 11.2°c.

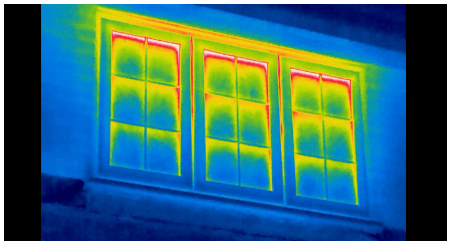
Highest point of heat loss through the glass panes of windows and around doorway jamb and viewing glass.



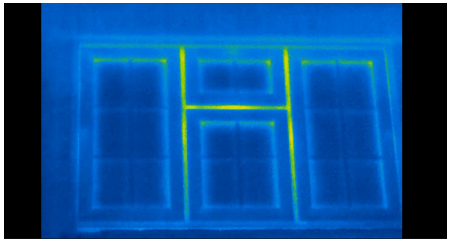
Highest energy temperature reading qualitatively, thermographically measured from Everest window; 6.8°c.

Highest point of heat loss in image are from the addition of electronic 'anti break-in' devices on downstairs windows.

Whilst the windows are still the least energy efficient part of the building because, by their very nature window frames thermally bridge the internal and external environment, the new Everest window system provide a significant improvement in thermal efficiency, and will help reduce the propensity for condensation as well as facilitate in the reduction of energy bills.



Thermal differential visible at the junction between the panes and the window frames; these junctions and their seals are often the areas of windows which deteriorate first, resulting in warping of the window frames, energy inefficiency, draughts, and condensation related problems (mould and water damage staining).



The Everest windows comparatively demonstrate supreme overall energy efficiency and thermal continuity.

Conclusion: Qualitiative comparison of the two properties demonstrated that the new Everest window system greatly faciliated energy retention, had excellent thermal continuity at all of the typically vulnerable junctions (where the non-everest property showed signs of vulnerability), and would therefore play an important role in the reduction of the overall future heating cost of the property.
For decades windows have been the necessary 'holes' in the building which property owners have had to accept were points of great energy loss; in the thermal images above, we demonstrate that the new Everest window system is a bold move toward achieving as close to absolute energy efficiency continuity with its abutting materials as the modern age permits.