# Thermal efficiency and secondary glazing





How secondary glazing helps keep heat in and draughts out.

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#### Installing secondary glazing can improve thermal efficiency by more than 60%



#### Continually rising energy costs mean installing thermal efficiency systems is increasingly important.

Clearview secondary glazing improves the comfort of your home and helps to reduce your heating bills, reducing energy consumption and carbon emissions. Clearview's systems are renowned for their thermal efficiency performance and can be further enhanced by utilising Pilkington K or Low E glazing.

After Clearview secondary glazing is installed, a thermal efficiency saving of 60-70% is achievable.



#### Secondary glazing: thermal facts



1 Single pane glazing in buildings is a major factor in heat loss

2 Secondary glazing is ideal for listed buildings, period property and buildings in conservation areas

3 Installing secondary glazing increases energy efficiency and reduces fuel bills

4 Energy efficiency helps safeguard our environment for future generations

5 Efficient secondary glazing can improve the thermal performance of a window by more than 60%

6 Installing secondary glazing can give an annual fuel bill cost saving of up to 15%

7 Secondary glazing means you can seal the gap tighter and see the savings

## How is the thermal efficiency of primary windows calculated?



\*Test based on a 'standard window with an average U-value of 5.8 w/m2K. After Clearview secondary glazing is installed, a thermal efficiency saving of 60-70% Each building is unique, its construction, window style and age. Primary window alass impacts on thermal efficiency, as does effectiveness of heating systems and other existing insulation. Because of this, it isn't possible to give precise thermal efficiency data for a specific building. To benchmark thermal efficiency in a broad form, a European standard has been set: The CEN sized window is 1230mm x 1480mm (1.82m squared), is timber framed, single alazed. The thermal performance of that window is calculated in accordance with a European standard: FN ISO 10077 for the window frame, and EN410 for the alass, and is measured in Watts per Metre Squared-Kelvin w/m2K. Watt is a unit of energy measure, M is the area of the window: width x height, Kelvin is the difference in temperature from the inside to the outside, or the rate of heat loss per metre square of product per 1° difference between external temperature and internal temperature. This enables the window's thermal performance to be calculated and presented often referred to as the window's Uvalue. Simply put, the lower the Uvalue, the better a window is performing in terms of preventing heat loss.

#### Thermal performance. It's all about the U-values.



A U-value is a measure of how much heat will pass through a thermal object, a window or wall. Low U-values means little heat will passes through, therefore it's energy efficient. U-value is measured in W/m2K – that is, Watts per square metre per degree Kelvin (1° Kelvin is the same as 1° Centigrade, but with a different zero).

So if a wall has a U-value of 1.0, then 1 m2 of wall will let 1 Watt pass through it when there is a temperature difference of 1 degree between the inside and outside.

Secondary glazing can yield U-values as low as 0.6, which is more thermally effective than double glazing.



#### What's the most effective way of preventing heat loss through a single glazed window?



Reduction in heat loss through single glazing with option, compared to single glazing

The chart shown here is a excerpt from tests commissioned by Historic Scotland, and can be seen their document 'Thermal performance of Traditional Windows'.

The chart illustrates the reduction in heat loss through single glazing with option compared to single glazing only.

Historic Scotland say: "Installing the secondary glazing clearly gives an improvement which is comparable to the best of the options examined prior to its installation, however the secondary glazing has the advantage that its benefits can be realised both day and night. Augmenting the secondary glazing with the other options gives further improvement, however the insulated shutters give only a small improvement over the original (uninsulated) shutters."





#### Client: The Sitwell family Property type: Stately Home

Renishaw Hall is a beautiful 17th Century Grade I Listed building. Clearview fitted secondary glazing to the family's private quarters, some of the units with a dark wood coloured frame to match to historic woodwork. As the building is Grade I Listed, secondary glazing was the best choice, because it's discreet and the most cost effective way of insulating a room.

Alexander Sitwell says: "The study, stairs and hall were very draughty and cold last winter, so we looked into secondary glazing. It really has worked, and we're now much warmer."





#### Client: Joy & Stuart Property type: Edwardian house

This customer's 6 bedroom house was built in 1902. Over 21 years the owners have replaced the single-glazed windows with replica doubleglazed ones, but had no idea what to do with the very draughty leaded window on their staircase, covering 3 floors of their house.

Says Joy: "The staircase window is beautiful, but it let in draughts - which we really noticed in winter. The window is 12ft high by 5ft wide, and close to the stairs, making fitting a complicated job. The fitting was done in 3 stages, with a section of secondary glazing for each floor.

"It really was a quick and efficient job. Ten days after measuring, the secondary glazing was ready to fit. It only took 4 hours to install, and there was no mess or damage to our decor."



#### Client: John and Julie Burnham Property type: Pre-Georgian house

John and Julie Burnham live in a beautiful old property, parts of which date back to the 17th Century. They love their old home and it's period features, but didn't like the cold that the original window let into the rooms.

Julie Burnham says: "We noticed how cold the stairs were when we first moved in...last winter freezing temperatures made it unbearable. We decided on secondary glazing. The secondary glazing has made our staircase much warmer...easy to open and clean."





#### Client: Mr & Mrs Lindsay Property type: Edwardian house

The Lindsay's home is on the edge of a conservation area, and the couple didn't want to lose the intricate design on the feature bay window of their home.

As Mrs Lindsay said: "We really liked the look of our windows, and didn't want to replace them with wooden replicas. There was nothing wrong with the glass or woodwork, the problem was the draughty single glazing. Our living room is much warmer since Clearview did their work. We can now sit in a chair close to the bay without being frozen."





Client: Rawmarsh Methodist Church Property type: Edwardian church

The church's centre development manager looked into secondary glazing for warmth and to reduce street noise.

They asked Clearview to do the work, and Caroline Langston says: "Before we installed secondary glazing the room was 45° Fahrenheit. It has since risen by 10° to 55°. This is before we put the heating on. Our energy bills are high because of the size of the building, so the cost of the secondary glazing will be paid for very quickly by cutting fuel costs.

Clearview were brilliant to deal with, and we are very happy with their work."



#### Client: Sheffield homeowners Property type: 1920s house

This client's house is in a conservation area, where strict regulations about changing windows had to be observed. In all, eleven windows were secondary glazed, including a 12ft high stained-glass window on the staircase.

The owner says: "My exterior windows have a metal casement, and were fitted in the 1920s. My annual gas bills were predicted to be £1,200, I knew I had to do something about the energy efficiency of my windows. I didn't want to change the exterior look of my home".

For more information and help on secondary glazing and thermal insulation, email: <u>info@clearviewsg.co.uk</u> www.clearviewsg.co.uk

