We have over 15 years of experience working with listed and historic buildings, including several National Trust Properties. We understand the urgent need for insulating British heritage buildings to meet the climate objectives in the UK

The hall's estimated carbon footprint is 23.2 tonnes annually, and its annual fuel bill is £12,290.00. Our proposed solution, in addition to greatly increasing the warmth and comfort of those using the building.

Our solution will significantly reduce heat loss through each **window by between 70% and 80%,** reducing the building's carbon emissions by **2.8 tonnes per year**. Once insulated, the rooms will be much easier to heat, and those using the building will enjoy a significant increase in comfort.

**This proposal is calculated to save the council £1483.00 per year on the building's heating bills by addressing 35% of the windows in the building and 30% of the draughts overall, reducing the building's heat loss by 12%.**

The total cost of this project is £18,215. However, it is projected to yield a significant financial return on investment of 13% per year after the initial payback period of 8 years. This demonstrates the clear cost-effectiveness of our proposal.

We are recommending two different approaches to the two styles of windows.

**Stone mullion insulation 80% heat loss reduction**

Our craftsmen will build elegant custom-made oak frames within each mullion. The teams will secure the frames to the mullions without mechanical fixings and will not damage or alter the stone mullions.

These will be constructed of sustainably sourced European oak and designed to be invisible from the outside of the property and in keeping with the architecture.

Our craftsmen will measure and cut the plexiglass to fit each individual casement window, securing it with high-strength dual-polarity magnetic tape.

Our CosyGlazing is designed to be invisible from the outside and barely visible from the inside.

With a design life of 30+ years, it will maintain optimum thermal efficiency throughout its lifespan, providing a long-term sustainable solution.

**Timber casement insulation 70% heat loss reduction**

We take a slightly different approach with this style of window. Our craftsmen will begin by removing the opening casement and making any necessary adjustments to ensure it fits correctly. They will then install rout-in concealed draught-proof brushes in the opening casement before reinstalling them into the window.

We will then carefully measure and cut the magnetic tape to hold the 4mm plexiglass in place. This will be carefully installed with mitred edges. Our craftsmen will then measure and cut the plexiglass ready for installation.

Once installed, these windows will have a 70% reduction in draughts and a 70% reduction in heat loss. The system is designed to stay in place all year round. If you ever wish to remove it,  use the supplied glass suction tool to detach the plexiglass from the window. When reapplying, the duel polarity magtape will ensure the plexiglass always snaps on perfectly.

All of our systems rely on the inherent thermal performance of the plexiglass and the airgap is makes with your origional glazing. This means the system will perform at peak efficiency throughout its entire design life 30 years +.

If we were to implement our insulation solutions to all the windows in the building, we would significantly reduce your carbon emissions from 23.2 Tonnes per year to 13.92 Tonnes per year. This represents a substantial 40% reduction in your carbon emissions, a significant step towards your mandate of a 50% reduction in carbon emissions by 2030.

A study by Historic Scotland testing thermal performance demonstrates the superior heat loss capability of secondary glazing compared to replacement heritage glazing.

<https://www.buildingconservation.com/articles/secondary-glazing/secondary-glazing.htm>