

Beech Lodge: A Georgian Villa – with vacuum glazing, secondary glazing and internal wall insulation



Overview

Age/Period:	1780 + 1830 + 2010
Type:	Mid-terrace extended Georgian Villa
Years in residence:	1
Fabric:	Bath stone, vacuum, secondary glazing
Area:	Alexandra Park
Status	Grade II listed

Key Features

-  Fineo vacuum glazing
-  Secondary glazing
-  Internal wall insulation
-  Ceiling/loft insulation
-  Energy efficient LED lighting

Introduction

David and Melissa moved into their charming Georgian villa in Alexandra Park in 2023. Having previously lived in historic buildings, they quickly began planning to make their new home warmer, more comfortable, and energy-efficient with lower carbon emissions and running costs. As the property is listed, they first needed to secure Listed Building Consent for their proposed changes. With the help of a local architect, they obtained approval in May 2024 and promptly began the renovations. Originally built in 1780, the villa had been extended in 1830 and again more recently in 2016.

In addition to general interior refurbishments, the work focused on reducing heat loss by installing vacuum and secondary glazing on the windows and insulating the cold back bedroom from the inside.



Features

Vacuum glazing

Vacuum glazing is a cutting-edge technology that significantly outperforms traditional single glazing in terms of insulation. Despite its compact size of 8mm, it offers seven times lower heat loss than single glazing, rivalling the performance of triple glazing. Due to its exceptional benefits, vacuum glazing is gaining popularity and acceptance for listed buildings in Bath.

This technology consists of two thin glass panes separated by a vacuum, operating on a similar principle to a thermos. At 8mm, it's notably slimmer than previous "slimline double glazing" products and boasts half their heat losses. The glazing bars are typically attached to the exterior of the glass, enhancing energy efficiency by preventing heat transfer through the relatively thermally conductive wood framing.

The windows are virtually indistinguishable from single glazing unless viewed from very close proximity. Vacuum glazing is generally the best option for those seeking to refurbish non-original historic sash windows.



The glazing should also eliminate condensation on cold mornings and if installed on a busy road significantly reduce road noise.

Secondary Glazing

For some of the more recent single-glazed windows in the modern kitchen/dining extension, secondary glazing was professionally installed.

Secondary glazing is a way of reducing both draughts and heat losses through windows. It is a particularly good approach for those on a modest budget who can [complete the work themselves](#). It is also sometimes the only solution for thermally upgrading original windows as it maintains their integrity.

Internal wall and loft insulation

During their first winter, David and Melissa noticed the rear bedroom was particularly cold due to its three external walls. As part of the refurbishment, they installed internal wall insulation, which is expected to more than halve the heat loss and make the room easier to heat.

Internal wall insulation is an effective way to reduce heat loss in historic buildings without altering the appearance of the external fabric—in this case, dressed Bath stone. However, it's important to seek professional advice before starting such work to minimize the risk of interstitial condensation forming within the walls, which could potentially damage the building's structure.

Chimney Ballons

In addition to installing wood burners, David has been experimenting with a chimney balloon. Chimney balloons are an affordable way to reduce drafts and heat loss in homes. They allow a small amount of air to pass through the chimney, preventing moisture buildup that can occur if the chimney is completely sealed.

Recommended installers

- [Hawker Joinery](#) (vacuum glazed windows)
- [Mitchell and Dickinson](#) (secondary glazing, insulation)
- [Clare Strong Interior Design](#)
- [DD Builders](#) (Blinds, shutters and renovation)