



BATH PRESERVATION TRUST

Heritage Retrofit Case Study 2

St. Alphege's Presbytery Secondary Glazing and draught proofing



Secondary glazing to the windows and doors of the Presbytery, as well as silicone draught proof seals to opening windows and doors

Introduction to secondary glazing for traditional and listed buildings

The installation of secondary glazing inside your existing windows is an effective way of reducing heat losses in the winter. Unlike shutters and curtains, which are usually open during the daytime, this method is effective 24 hours a day. In the traditional buildings of Bath, the installation of secondary glazing is sometimes preferable to complete window replacement because of the historic importance of the existing windows.

Secondary glazing can reduce heat losses through the window by over 50% and will all but eliminate the draughts through your windows. Noise from outside will also be dramatically reduced.

Historic England's advice for secondary glazing should be considered for listed buildings

Secondary glazing when carefully designed and installed allows the original windows to be retained unaltered, and where necessary repaired, whilst reducing air leakage and conducted heat losses. As a result, there is no loss of historic fabric and in most cases the installation is easily reversible.

If secondary glazing is the preferred solution, the outer windows are best left without draught proofing, to provide a degree of ventilation to the air space between the outer windows and the secondary glazing, to prevent the build-up of condensation.



Retrofit in older homes

In response to the current Climate Emergency Bath Preservation Trust (BPT) is supportive of sensitive sustainable retrofits within the historic environment and encourages upgrading the thermal performance of historic buildings to reduce fossil fuel derived energy use and heat loss.

The suitability of energy-efficiency retrofits in relation to **heritage significance**, effectiveness, and the risk of unintended consequences is assessed on a case-by-case basis.

BPT's position in relation to the appropriateness of a range of measures is set out in our publication [Warmer Bath: A Guide to Improving the Energy Efficiency of Traditional Homes in the City of Bath.](#)

BPT encourages a 'whole house' approach that follows the 'energy hierarchy' and includes behaviour change in relation to carbon consumption as well as repair and maintenance, insulation, ventilation and energy saving improvements ahead of or in parallel with retrofitting alterations.

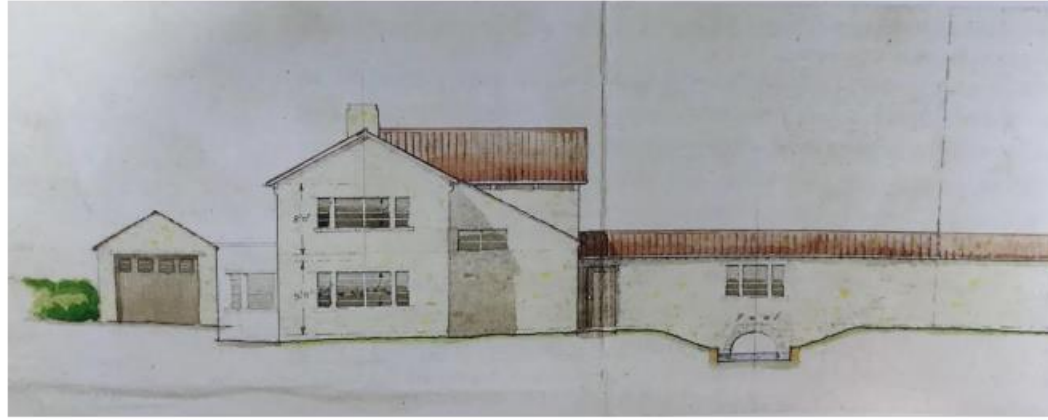
Energy saving changes can result in significant carbon and running cost reductions and warmer living conditions. If you live in an old home there are plenty of steps you can take with no or very low risk, which do not require expertise or huge amounts of money. Lots of helpful tips are set out in [BPT's Quick Guide to Low Carbon Living.](#)



@CasperFarrell

Retrofit Overview

- Residential use
- Grade II* listed
- 1930 – 1960
- Existing original steel Crittall windows
- Secondary glazing and draught-proofing to opening windows supported by BPT
- Listed building consent granted 19/02382/LBA within 3 months
- *CosyGlazing* secondary glazing and silicone draught proof seals installed in Jan 2020
- Average individual unit price £572*
- Work duration 2 days



Project Team

Parish Priest Fr. Malcolm Smeaton

Treasurer Mr. Tim Tayler

Architect Jonah Jay RIBA

Project Background

This project seeks to improve the comfort and energy performance of the Presbytery, a building that continues in use as the home for the parish priest.

A listed building consent application was submitted for permission to install removable magnetic secondary glazing to the original steel Crittall windows and doors and draught proof to improve their performance and energy efficiency.

The application was supported by BPT

Heritage Significance

Our Lady and St. Alphege's Presbytery is a GII* listed mid-20th century building designed by Sir Giles Gilbert Scott. The Church was largely completed in 1929, with the post-war addition of the campanile in 1954. Closely based on an early Christian basilica (Santa Maria in Cosmedin, Rome), it was built in response to an increasing Catholic congregation the 1920s, still present today. The presbytery later opened next door in 1958 as a house for the church clergymen. It shares the Church's Grade II* listing.

Scott was renowned for his church work in the interwar period, designing buildings in an eclectic style of simplified historical modes attributed to the 20th century Traditionalist School. His designs put a contemporary 'twist' on the traditional Gothic form and carefully incorporated factors such as natural light and use of materials.

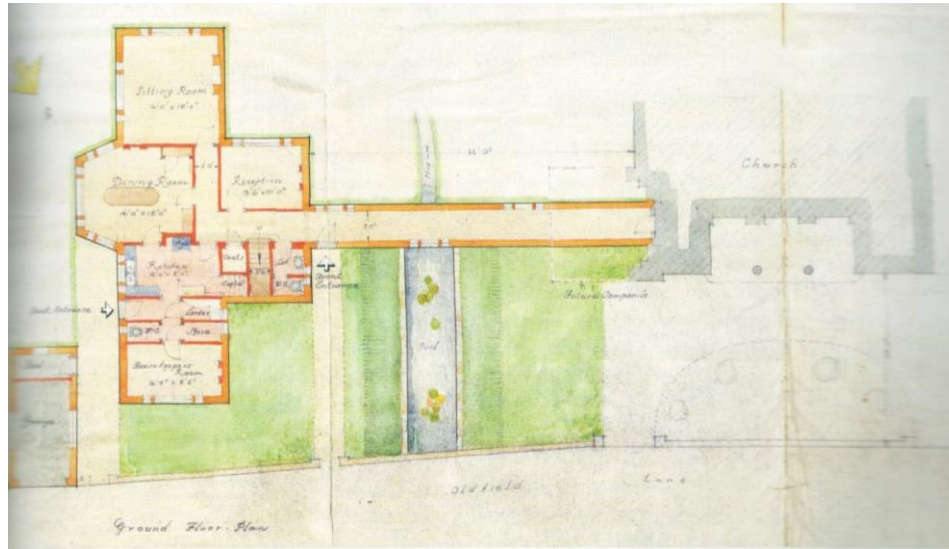


Image above: Scott's original 1955 plans of the Presbytery. A long corridor linked the house with the Church, creating a visual separation between the two buildings. Below: a K6 telephone box



He is notable for other nationally-recognised buildings including the Bankside Power Station (now the Tate Modern), and the K6 telephone box which has become an iconic aspect of the 20th century streetscape. Interestingly, the fenestration style of the K6 shares a striking resemblance with the windows of the Presbytery.

This intact complex of buildings remains a striking example of contemporary early to mid-20th century architecture which is frequently overlooked in the wider World Heritage Site. Within the Oldfield Park character area, there are "relatively few landmarks as there is such a consistency in the built form." As such, St Alphege's forms one of a number of "splendid" local landmarks to which greater significance is attributed as a result of its streetscape presence. It remains indicative of Bath's 19th and 20th century expansion and the associated socio-cultural need for new places of worship to accommodate an ever-growing population.

Justification for magnetic secondary glazing

- Existing original windows are in good condition
- Their slim profile and marginal panes align with the window design – which resemble the architect’s best-known project – the K6 telephone box
- Reversible and removable frames
- No adverse visual impact
- Maintains intrinsic part of the building’s mid-century design
- No impact on character and appearance of conservation area
- Improved insulation and any associated carbon saving is in accordance with Climate Emergency objectives
- Public benefit of carbon saving and residential occupation outweighs minor adverse heritage impact



Problems with existing windows

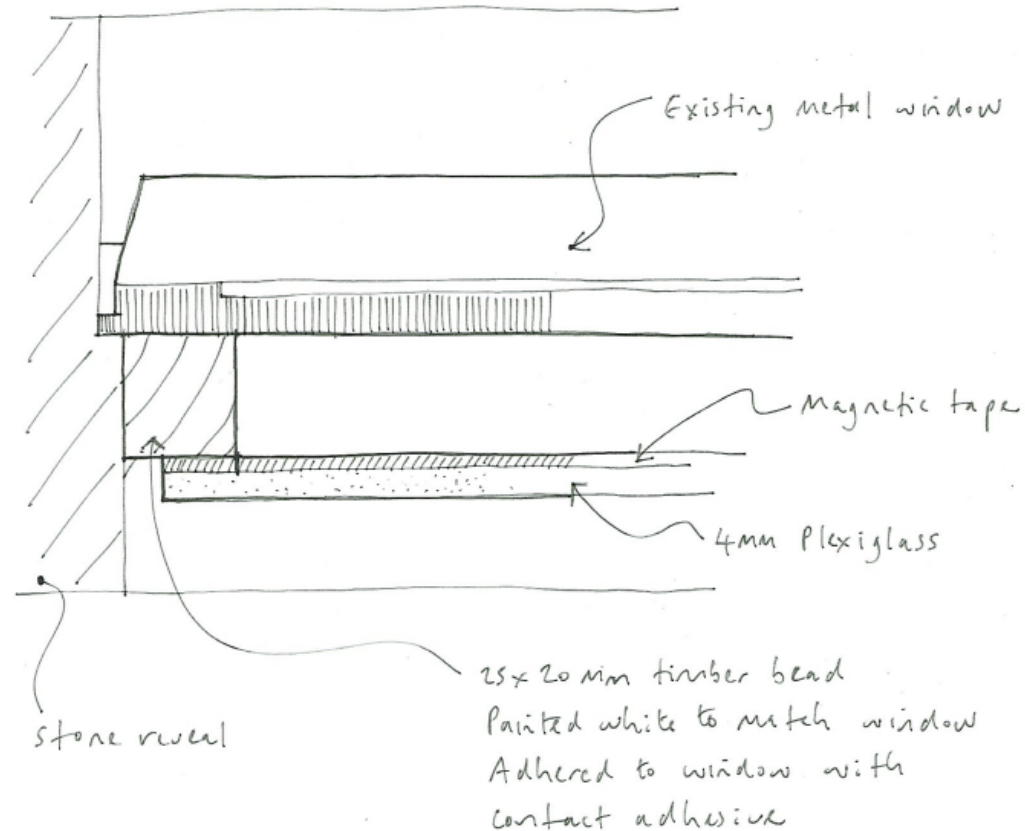
- Cold
- Condensation
- Draughty
- Noisy

Approach

The solution is a removable secondary glazing, manufactured and installed by Mitchell and Dickinson, whereby timber beading is adhered to the metal ('crittall') window frames internally using contact adhesive. This was painted to match the window frames and of a similar section size to the existing metal frame so that it is visually unobtrusive.

4mm Plexiglas is held to the frames with magnetic tape. This means that it can be easily removed for cleaning, or to access opening casements. The only items to be fixed to the steel windows are the timber sub frames and silicone sealing strips.

PLAN DETAILS



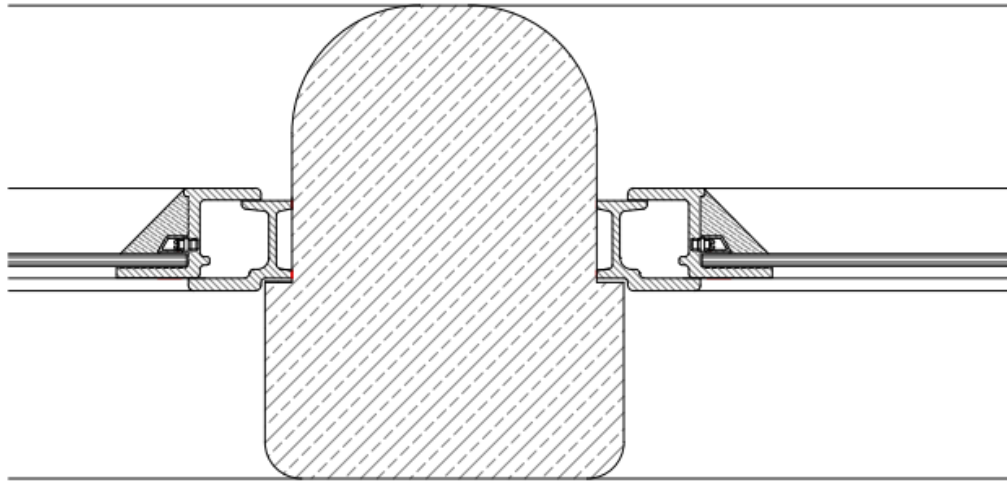
Justification

This light-touch approach retains the integrity of the original windows and can be easily removed in the future if need be. The window efficiency was estimated to improve by 70% making the Presbytery house more financially and environmentally sustainable, with minimal visual and negligible physical change to the listed fabric.

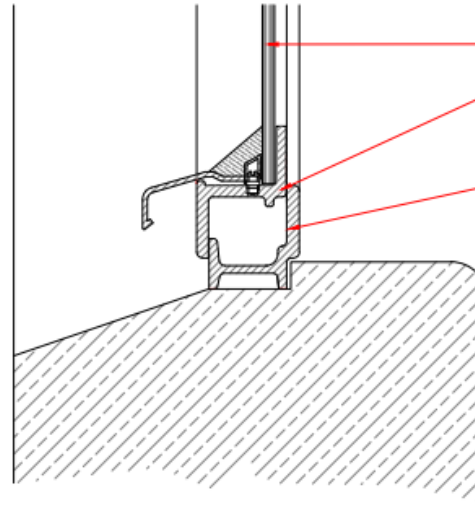
This is a reversible intervention and relatively **unobtrusive** approach to improving the energy efficiency of this building.

Jonha Jay Architects drawings are detailed on the following page.

Sketch detail provided by Mitchell and Dickinson

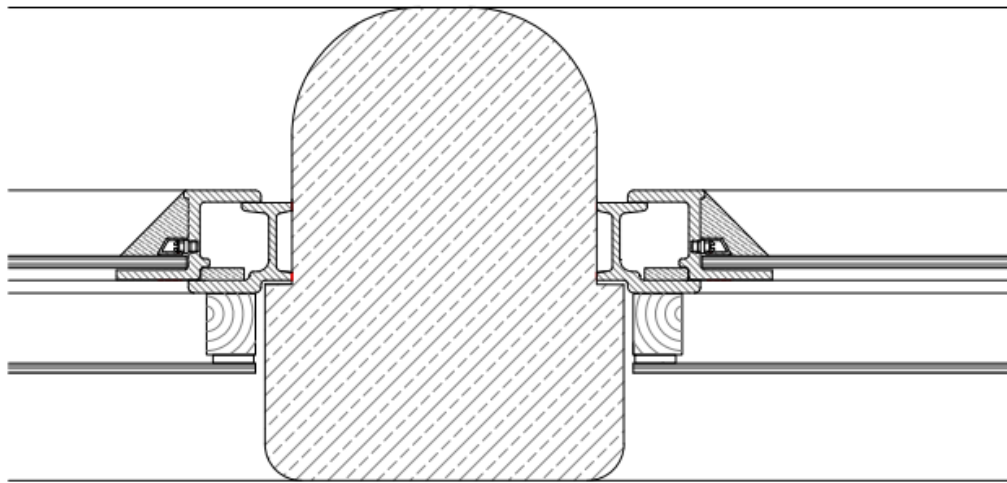


1
311 **MULLION DETAIL - AS EXISTING**
1:2

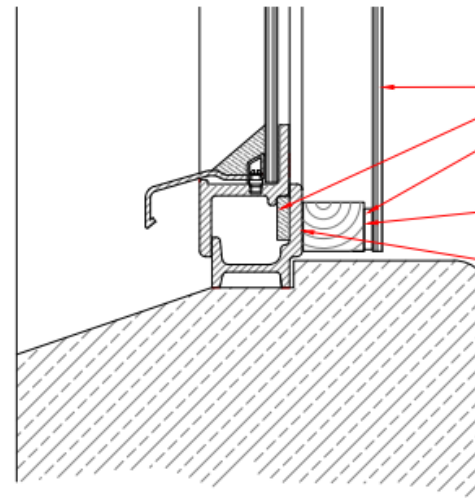


5mm single-glazed window
poor seal between steel frames resulting in draughts
condensation problems caused by non-thermally broken steel window frames

2
311 **SILL DETAIL - AS EXISTING**
1:2



3
311 **MULLION DETAIL - AS PROPOSED**
1:2



4mm Plexiglas silicone sealing strip
magnetic strip
25x19mm hardwood frame painted to match window
timber frame adhered to window frame using contact adhesive

4
311 **SILL DETAIL - AS PROPOSED**
1:2

<small>NOTES</small> Drawings are based on survey information and are not intended to represent actual conditions. All dimensions are in millimetres unless stated otherwise. Where any dimensions conflict, the metric will be used in every case.	- These drawings are for planning purposes only and contractor must verify all dimensions prior to setting out.	P1 22.06.18 JJ JJ ISSUED FOR COMMENT	CLIENT CLIFTON CATHOLIC DOCKERS TRUSTEES REGISTERED PROJECT R.C. CHURCH OF OUR LADY AND ST ALPHONS, BATH	DRAWING TITLE PRESBYTERY SECONDARY GLAZING DETAILS SIZE & SCALE 1:2 (A3)	JOB NUMBER 103 DRAWING NO. 011 REV. -	
		<small>ISSUE DATE</small> <small>DRAWN</small> <small>CHECKED</small> <small>DESCRIPTION</small>	<small>DRAWING STATUS</small> ISSUED FOR COMMENT	<small>© 2018 JJI (John James & Partners) Limited</small> <small>100, The Old Rectory, Bathwick, Bath, BA2 9NP</small> <small>T: +44 (0)1225 311111 F: +44 (0)1225 311112</small> <small>E: jji@jjipartners.co.uk</small>		

Cost

57 individual mullioned windows were in the project scope across 24 grouped sets. The average individual unit price was £572 or average unit grouping £1,360. This brings the retrofit cost within or slightly cheaper than comparable non-listed installation of mid-range double-glazing.

Timescale

The project did not take long. The application was submitted in May 2019 and approved in July 2019. The project completed in January 2020. 8 months start to finish is comparable to the lead in time for 'good' double glazing.

Energy Efficiency

The Presbytery cost less to heat in January – June 2021 than it did in a shorter period the preceding year. Data is not comprehensive at this stage however the data suggests a yearly saving of £1,089.58.

The manufacturer calculates an average 70% overall heat saving for these products

CosyGLazing u-value: 1.7

“It has resulted in a warmer house and reduced bills” Homeowner



Advice and Guidance

BPT is here to help. We offer free independent planning and conservation advice to homeowners and architects and promote elements of best practice planning and design processes.

The planning application for The Presbytery could be replicated for other properties. The approach to the secondary glazing design is useful and could be used as the basis for a brief for a competent glazier or handy person which would significantly reduce the cost.

There are specialist companies that offer magnetic secondary glazing such as Magneglaze, CosyGlazing and Mitchell and Dickinson.

BPT seeks opportunities to work with homeowners to reach best practice sustainable retrofit solutions and monitor results. Retrofitting schemes can provide an invaluable opportunity to monitor the thermal and acoustic efficiency, before and after, whilst also observing any additional unintended consequences such as changes in humidity levels. Successes and failures can help advocate considered approaches and support more effective planning applications.

If you are thinking about retrofit or undertaking works please reach out to BPT at conservation@bptrust.org.uk



Useful Links

Listed building consent application documents for **St. Alghelge's Presbytery**

https://www.bathnes.gov.uk/webforms/planning/details.html?refval=19%2F02382%2FLBA#documents_Section

BPT comments on the planning application for **St. Alghelge's Presbytery**

<https://www.bath-preservation-trust.org.uk/planning-application/st-althelgess-presbytery-oldfield-lane-oldfield-park-2/>

BPT Quick Wins for Low Carbon Living in Older Homes

<https://www.bath-preservation-trust.org.uk/wp-content/uploads/2021/11/Low-Carbon-Living-in-Older-Homes-BPT-guidance-leaflet.pdf>

BPT Warmer Bath, guidance for improving the energy efficiency of traditional homes

<https://www.bath-preservation-trust.org.uk/wp-content/uploads/2022/04/Warmer-Bath.pdf>

B&NES Energy Efficiency Retrofitting and Sustainable Construction Supplementary Planning Document

https://beta.bathnes.gov.uk/sites/default/files/2022-03/BNES.01%20Retrofitting%20and%20Sustainable%20Construction_2.pdf

Historic England – Whole house approach

<https://historicengland.org.uk/advice/your-home/saving-energy/energy-efficiency/>

Historic England Energy Efficiency and Historic Buildings: Secondary glazing for windows

<https://historicengland.org.uk/images-books/publications/eehb-secondary-glazing-windows/>

Historic England Making Sash Windows Energy Efficient

<https://historicengland.org.uk/advice/your-home/saving-energy/making-changes-to-save-energy/sash-windows/>



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