



BATH PRESERVATION TRUST

Heritage Retrofit Case Study 1

3 Lansdown Place East Dormer window double glazing

Replacement of single-glazed sashes in four front and rear dormer windows with 'Ventrolla' double-glazed slim-profile windows



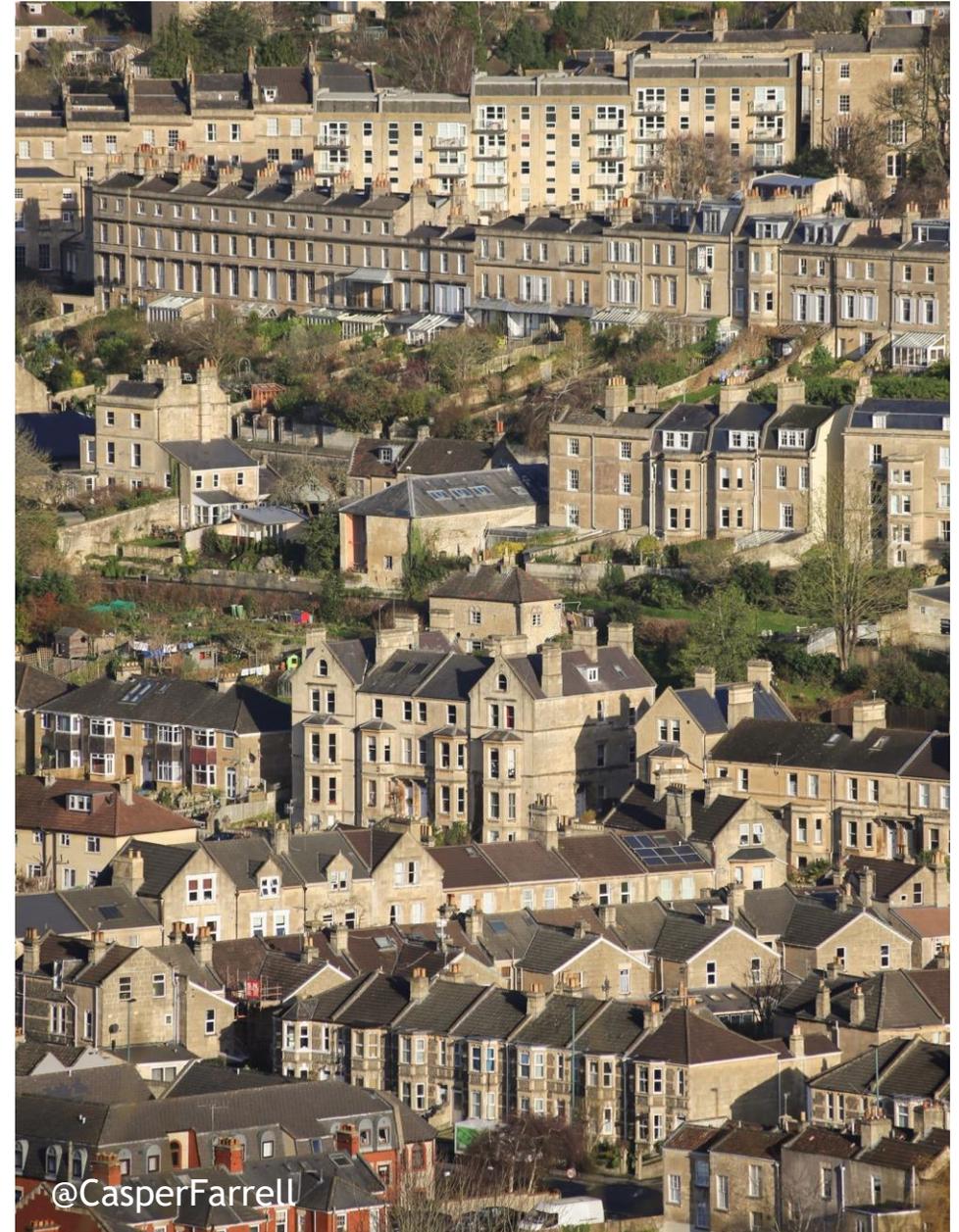
In light of the current Climate Emergency Bath Preservation Trust (BPT) is supportive of sensitive sustainability retrofits within the historic environment and encourages upgrading the thermal performance of historic buildings and reducing fossil fuel derived energy use and loss.

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 a 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.](#)



BPT's position on double-glazed windows

BPT supports **slim-profile double glazing (replacement windows)** where existing windows are of a non-historic origin in a listed building. BPT is favourable of their replacement with appropriately designed slim-profile double glazed equivalents. BPT also supports the replacement of individual glass panes, within significant historic timber sash windows with slim-profile double glazing, but not normally where crown glazing is in place.

We maintain the importance of ensuring a high-quality appearance harmonious with the traditional window profile of Bath's Georgian terraces. This can be achieved through the use of appropriate glazing bar profiles or styles, and glazing bar thickness to ensure the timber frame isn't overly heavy in appearance.

Where it is deemed acceptable to fit slim-profile double glazing within the principal elevation of a listed building, and where there is no loss of significant historic fabric, BPT may recommend that slimline is fitted within all window openings to ensure a consistent appearance and finish. The case for slim-profile double glazing can also be made (and potentially supported) when historic windows are found to be extensively beyond repair.

BPT supported the principle of slim profile timber double glazed windows to replace all single glazed sashes at neighbouring 6 Lansdown Place East (pictured). An increase in glazing bar thickness to 25mm has been permitted to explore the success of this type of glazing design. It is intended that the works will be inspected to understand the potential benefits and level of impact once the windows are installed.



Retrofit Overview

- Residential use
- Grade II listed
- c1792
- Existing windows historic replicas dating from the 1980's
- New replica timber double glazed dormer windows supported by BPT
- Listed building consent granted 20/00024/LBA within 3 months
- Ventrolla timber doubled glazed windows installed in June 2021
- Cost £8,000
- Work duration 2 days



The house faces South West above the city and is exposed to prevailing weather.

The roof was replaced in the 1990s. During this work as much insulation as possible was worked into the ceilings and sloping sides of the mansard roof.

All existing single glazed sash windows have been draught proofed, however the rooms at the top of the house in particular were still very draughty and cold prior to double glazing being installed.

Planning consent has been obtained and work undertaken to replace single-glazed sashes in four front and rear dormer windows with 'Ventrolla' double-glazed slim-profile windows.

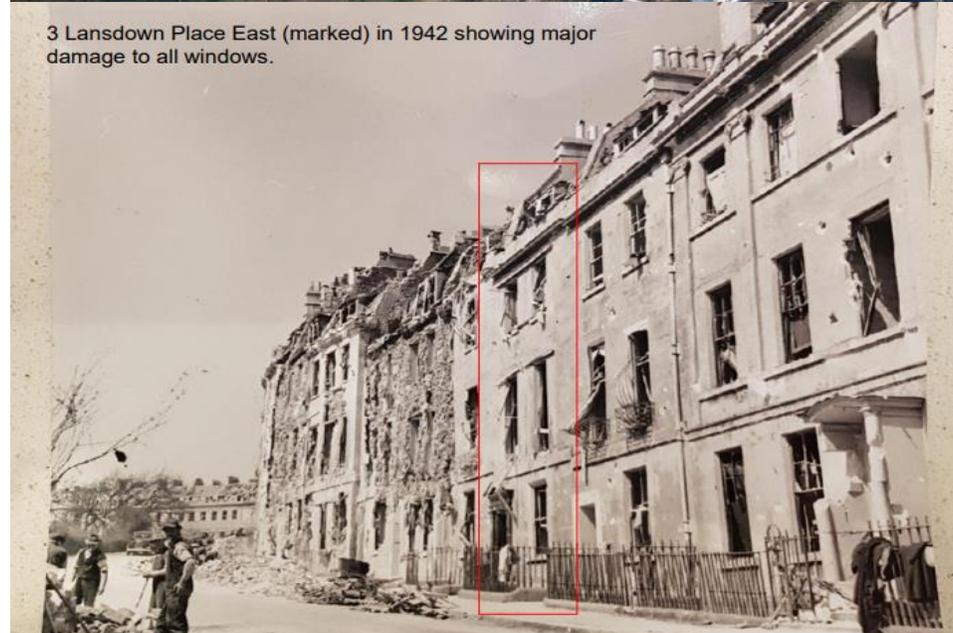
Heritage Significance

3 Lansdown Place East is a residential house forming part of the Grade II Georgian terrace 1-16 Lansdown Place East and is situated within the Bath conservation area and World Heritage site. The terrace forms part of the complementary planned setting on the south-western approach to the Grade I Lansdown Crescent which is flanked by Lansdown Place East and West to form the serpentine terrace as designed by John Palmer between 1792 - 1795.

These terraces are hugely significant in its presentation of Georgian monumental architecture and town planning, and the designed visual homogeneity and harmony throughout both Lansdown Place East and Lansdown Crescent which contributes to the Outstanding Universal Value of the World Heritage Site.



3 Lansdown Place East (marked) in 1942 showing major damage to all windows.



4-9 Lansdown Place East sustained significant damage from the Blitz bombing of April 1942 and were rebuilt in facsimile by Cyril Beazer, an established local builder, by the 1950s. Bomb damaged resulted in the loss of original historic joinery and glazing at number 3.

The current sash windows date from 1986 following replacement of the deteriorating 1950s reconstructions. Despite this, the building retains a fine articulation of traditional six-over-six single glazed sash windows, with six-over-nine sash windows for the principal first floor, with one-over-one sash dormer windows of a later style prior to replacement in 2021.

Lansdown Place East therefore retains significant architectural and historic interest through its maintained material and architectural vernacular, and continued aesthetic and architectural uniformity as part of the wider set piece.

Justification for double glazing

- Slimline nature of glazing bars and double glazed panes.
- At dormer level the appearance and detail is virtually undetectable from street level.
- No loss of historic material.
- Little to no impact on character and appearance of conservation area.
- Problems with existing windows.
- Improved insulation and any associated carbon saving is in accordance with Climate Emergency objectives.
- Public benefit of carbon saving outweighs heritage harm.



Problems with existing windows

- Cold
- Condensation
- Draughty
- Mouldy
- Noisy
- Streaming

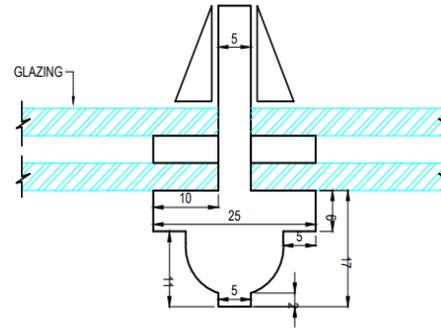
Planning & Design Process

The initial listed building application for replacement dormer windows proposed an 'ovolo-and-fillet' glazing bar moulding profile of 25mm thickness and 17mm depth, with a spacer matching the colour of the painted timber.

The depth of the rebate was not specified, but this needed to be of a sufficient capacity to penetrate the 12mm glazing thickness as well as allowing for the internal face to be puttied. The Council was minded to approve the proposal but asked for clarification on the following details:

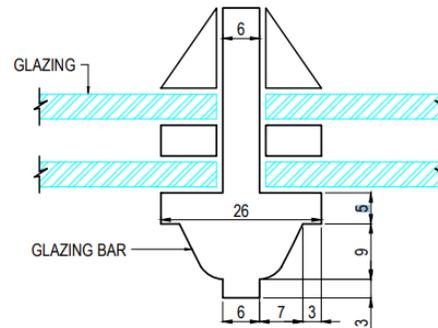
- That the proposed glazing bar profile would match those existing across the building.
- Whether the sash mechanism would require amendment or replacement to take the additional weight of the proposed double glazed unit.
- Clarification as to the proposed thickness of the double glazed bar.

BPT submitted comments in support of the listed building application.



GLAZING BAR PROFILE

SCALE 1:1



GLAZING BAR PROFILE

SCALE 1:1

Glazing bar detail provided by Ventrolla

BPT questioned the appropriateness of the glazing bar moulding profile and thickness proposed. Given the age of the original building an ovolo profile could be considered more appropriate. BPT also encouraged the use of thermal glass.

In response the applicant/homeowner indicated that examples of glazing bars in properties of this age were much finer at 19mm, but a much thicker glazing bar profile (as referenced at around 25mm-26mm) would be required to contain the weight and thickness of the double glazed units.

Design revisions to the proposed windows were submitted. This included the width increase of the glazing bar from 25mm to 26mm total, and a slight increase in the depth of the proposed glazing bar moulding from 11mm to 12mm (remaining at 17mm total).

The revised glazing bar profile was proposed which was concluded by the case officer to be more in keeping with those existing within the property.

The applicant indicated that the existing sashes use traditional sash weights; the cast iron counterweights would be replaced with lead to compensate for the increased weight of the double glazed units.

These would all be mechanical alterations within the sash box and not be publicly visible. The applicant further clarified that Ventrolla had been specially commissioned to produce 12mm double glazed units, more visually in keeping with the special characteristics of the listed building.

A further amendment to the proposed drawings responded to concerns that the glazing bars may be too visually heavy and 'chunky' by bringing the proposed width back down from 26mm to 25mm.



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Installation

Ventrolla removed all 8 sashes to apply the fillets, covering the seals at the edges of the panes; fitted 'stop locks' to all four windows, allowing them to be opened a few inches for ventilation.



“The biggest challenge was getting agreement between the manufacturers (Ventrolla) and the Planners over the width of the glazing bars. In the rest of the house it is 19mm, but this is currently impossibly thin if using individual 12mm thickness double glazed panes, where the edge seal has to be concealed within the ‘putty line’.”

Robin Kerr, Homeowner

“BPT was most helpful, as, in accordance with their excellent publication ‘Warmer Bath’, they wish to see historic houses modernised to the greatest extent practical to ensure that people continue to want to live in them. Otherwise, what would be their future?”

“It is difficult to be accurate about energy and cost savings, however, it is certainly warmer, less draughty and quieter. The reason for converting only the dormers was partly because of price (this is not a cheap operation), but also because we have shutters on all the other windows.”

Robin Kerr, Homeowner 3 Lansdown Place East



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 3 Lansdown Place East could be replicated for other properties. The approach to the glazing bar profiles design are useful and could be used as the basis for a brief for a competent carpenter or glazier which would significantly reduce the cost. BPT provides lists of local carpenters and joiners contractors on request.

We seek 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 3 Lansdown Place East

<https://www.bathnes.gov.uk/webforms/planning/details.html?refval=20%2F00024%2FLBA>

BPT comments on the planning application for 3 Lansdown Place East

<https://www.bath-preservation-trust.org.uk/planning-application/3-lansdown-place-east-lansdown-bath-bath-and-north-east-somerset-ba1-5et/>

Listed building consent application documents for 6 Lansdown Place East

https://www.bathnes.gov.uk/webforms/planning/details.html?refval=21%2F01238%2FLBA#documents_Section

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 Making Sash Windows Energy Efficient

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

