

Phase I of the Green Heritage Homes is a partnership project, managed by Bath & West Community Energy and funded by the South West Net Zero Hub, which is hosted by the West of England Mayoral Combined Authority through the Local Energy Advice Demonstrator Programme.

# Local Energy Advice Demonstrator (LEAD) Project: Green Heritage Homes

## Level 0 Pre-App Phase I Case Studies: 2024- 2025

### Case Study Five: Secondary glazing, slim-profile double glazing, underfloor insulation, internal wall insulation, roof insulation, air source heat pump (ASHP)

*\*All Level 0 pre-app case studies have been anonymised in accordance with GDPR requirements*

#### History and building type

**Building age:** Extensively altered 1838

**Building type:** Semi-detached local community building

**Grade listing:** Grade II

**Wall construction type:** Rubble stone, freestone dressings

**Existing retrofit measures:** Loose-fill loft insulation

**Previous Applications for Listed Building Consent (LBC):** Consent granted 2019 for roof works and replacement windows in 20<sup>th</sup> century extension. Consent granted 2017 for cavity wall insulation in 20<sup>th</sup> century extension.

## Proposals & Matters Discussed:

- Draughtproofing of doors and chimneys.
- Upgrades to existing windows – double glazing or secondary glazing.
- Internal wall insulation and underfloor insulation throughout.
- Upgrades to existing loft insulation and installation of roof insulation.
- Improvements to heating system and installation of ASHP in rear car park.

## Heritage Assessment:

- Where windows are of interest and contribute to the appearance and historic significance of the building, opportunities to retain and improve the energy efficiency of existing windows was advised.
- Secondary glazing may be appropriate but would require further assessment of different secondary glazing systems to investigate how this could be installed without affecting or removing the projecting metal bracket which forms part of the casements' opening mechanism.
- The existing suspended floor finish appears to be non-historic, and could be lifted and re-laid with minimal impact to the building.
- Internal wall insulation of an appropriate thickness and type may be acceptable where modern plaster appears to be present.
- Installation of roof insulation was considered – this would need to be applied externally to avoid material alteration and impact to the rafters and kingpost truss, but may result in changes to the appearance of the building. The proposed insulation type and thickness shall be specified.
- An ASHP to the rear of the building would be concealed in principal views, but would be of limited visibility - visual impact may be mitigated through design and screening.

## Possible Retrofit Options:

- Draughtproofing to doors, chimneys, and/or windows (no consent required).
- Upgrades to loft insulation to address inappropriate non-vapour permeable materials and poor installation (no consent required).
- Options for secondary glazing system which could be installed without adverse impact to casement opening mechanism.
- Installation of under-floor insulation beneath the suspended floor, ensuring adequate ventilation is maintained.

- Installation of internal wall insulation (pending material thickness and specification).
- Roof insulation to main exposed roof structure with kingpost truss would need to be installed externally, by lifting and relaying existing pantiles, to minimise impact to historic roof structure and internal appearance – further assessment of impact on roof structure.
- Any proposed insulation should be vapour permeable, e.g. wood fibre, sheep’s wool, hemp, cellulose, aerogel, or insulating lime plaster.
- Installation of ASHP in appropriate location, pending further details of mitigation screening measures and appearance.

## Listed Building Consent:

- Draughtproofing is a ‘quick wins’ measure which can be installed without consent. Improvements to loose-fill loft insulation would also not require consent.
- Upgrades to replace existing windows with more energy efficient glazing would require listed building consent. Secondary glazing may require listed building consent, where this may result in material alterations to the casement window mechanism.
- All insulation works to the walls and under the floors would require consent where there would be a material alteration to the listed building. Insulation of the exposed main roof would require consent where there is potential impact to the appearance of the roof, and material changes to the historic roof structure.
- An ASHP would require listed building consent and planning permission – not PD in the curtilage of a listed building.

## Measures Discounted:

- Metal-framed casement windows appear to be of some age (c.1920s or older), and may be associated with the building’s former use as a school. Where existing casement windows appear to be of historic value, their replacement would be unlikely to be supported.

## What Next?

- Measures were discussed with the applicant as part of options for the long-term maintenance and upgrade of the listed building. Retrofit measures can be integrated into an existing maintenance plan for the building, to be delivered in later phases alongside other general repairs. Repair or replacement works identified in the future may

include opportunities to incorporate retrofit to reduce additional construction costs.

- It was recommended that a Retrofit Plan is put together for the building which identifies existing priorities as well as areas where there may be opportunity for retrofit in the future. It is also beneficial to keep a written and photographic record of any ongoing retrofit works, or previously installed measures, to clearly identify building condition, what work has already been undertaken and when, and contractors/suppliers used.