

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

Level 0 Pre-App Phase II Case Studies: 2025- 2026

Case Study Thirteen: Heating upgrades, 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: c.1730

Building type: Terraced office building (mid-terrace)

Grade listing: Grade I (group listed)

Wall construction type: Bath stone ashlar

Existing retrofit measures: Slim-profile double glazing installed to existing windows in front elevation

Previous Applications for Listed Building Consent (LBC): None

Proposals & Matters Discussed:

- Options for replacement of existing gas boiler and installation of an ASHP.
- Updates to heating infrastructure, e.g. radiators.
- Associated improvements to building fabric.

Heritage Assessment:

- Existing windows are slim-profile double glazed and are clearly modern additions. There is opportunity for upgrade with more efficient glazing technologies, or where windows may be failing.
- The rear extension is a post-1985 addition and is not historic. Insulation upgrades would not impact historic fabric.
- Proposed locations for an ASHP would be concealed by the rear extension and would not be visible in rear views of the building.

Possible Retrofit Options:

- Upgrades to loft insulation (no consent required).
- Draughtproofing of fireplaces and chimney flues between floors using reversible measures such as chimney balloons (no consent required).
- Internal wall insulation and loft/roof insulation to the modern rear extension.
- Replacement of existing slim-profile double glazed windows with vacuum glazing.
- An ASHP may be acceptable in a discreet and well-concealed location – to combine with replacement radiators of an improved size and fin depth.

Listed Building Consent:

- 'Quick wins' measures such as draughtproofing and loft insulation would not require consent.
- Works to install new radiators, and upgrade windows to vacuum glazing would require consent.
- Insulation works to the rear extension would require consent where this constitutes part of the listed building.
- The installation of an air source heat pump would require listed building consent and planning permission.

Measures Discounted:

None.

What Next?

Several options were considered for the location of an ASHP, which would be screened by the rear extension. It was advised to undertake an independent heat pump survey for further technical advice to ensure a heat pump would be able to work efficiently.

Existing radiators are undersized; heating efficiency may be improved by installing replacements. Certain rooms were identified that could benefit from increased numbers of radiators, pending any identified material/visual impact.