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a sustainable future

An action guide for social landlords

Optimising heat pumps



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Introduction

Managing a fifth of UK homes gives social housing providers a unique opportunity to drive housing decarbonisation and get heat pump deployment right at scale. While landlords face intense pressure balancing constrained budgets with competing demands, improving installation quality should not be viewed as an added burden.

Instead, getting installations right serves as a practical lever to align net zero goals directly with core priorities: delivering warm homes, reducing fuel poverty and protecting vulnerable residents.

About the research behind this guide

This action guide is grounded in real-world findings from a joint project between Nesta and Bristol City Council (BCC) investigating heat pump installation quality and tenant experiences in social housing. The data spans 92 technical heat pump audits (across new builds and retrofits), 30 follow-up repair visits, and 37 detailed tenant interviews conducted between 2024 and 2026

Key research takeaways

- **Installation faults are common:** All 92 heat pump audits uncovered design, physical, or commissioning faults, with average system efficiencies of 2.79, below the threshold needed for running cost parity with gas boilers.
- **Single touch point handovers leave tenants confused:** Interviews of 37 households revealed that brief, inconsistent and overly technical handovers leave tenants overwhelmed and without the practical confidence and knowledge needed to run their systems efficiently.
- **Remediation can be low-cost and pragmatic:** Follow-up repair visits to 30 homes showed that quality issues can be addressed through simple and relatively cheap fixes, such as replacing pipe lagging or enabling weather compensation.

Full research findings, methodology, and analysis are detailed in our main research report.

Recommendations

This action guide translates our research findings into practical recommendations for social housing providers. Our research identified recurring installation issues. However, these issues are ultimately symptoms of deeper operational and skills gaps linked to the procurement, installation and maintenance of heat pumps in social housing. Ensuring the benefits of low-carbon heating are fully realised and tenants are protected requires looking upstream to address the root causes of poor-quality installations.

The recommendations below are aimed at social housing staff involved in the procurement, deployment and quality assurance of heat pumps in social housing. They are divided into two sections:

- reactive, operational priorities and actions to optimise existing heat pump installations, grounded in the insights of our research
- proactive, strategic enablers and improvements aimed at preventing these issues before installation, drawing on wider insights from social housing providers, industry experts and Nesta's work across the sector.

Building directly on the insights gathered during this work, Bristol City Council is currently implementing a range of these measures. This includes establishing performance-based specifications, new handover and QA procedures, officer and installer training, and remote monitoring trials. While evaluating the long-term outcomes and impacts of these local operational changes fell outside the scope of this research, their early adoption highlights how social landlords can proactively bridge the gap between design and real-world performance.

Operational priorities

Quality assurance and auditing

Social landlords should change from the current 'fit and forget' approach in favour of more active oversight of their installations.

Social housing providers should do the following.

- **Systematically audit and evaluate existing heat pumps to identify performance issues and required repairs early.** This could be done as an independent process, but ideally it would be incorporated as part of annual servicing and maintenance visits.
- **Require installers to complete a thorough technical self-audit before leaving the site.** Pushing quality checks to the point of installation ensures agreed-upon standards are verified while the contractor is still accountable, creating a vital paper trail before final sign-off.
- **Ensure visibility of system performance data.** Our audits have shown that it is difficult to look after these systems without clear data to provide visibility into how they are performing. Ensuring system performance is actively monitored provides vital operational insights. Social landlords should require heat pumps that capture in-situ performance data as a standard minimum baseline. Where greater accuracy is needed, independent MID-approved heat meters should be considered. When deploying remote monitoring setups, teams must factor in upfront hardware and ongoing subscription costs, as well as tenant Wi-Fi connectivity
- **Consider the installation of smart optimisers and controls.** Poor commissioning, particularly disabled weather compensation and fixed flow temperatures, emerged as one of the most widespread issues across our audits. Smart optimisers and controls can ensure heat pumps remain commissioned for optimal performance and low running costs. Crucially, these automated controls also help overcome tenant misuse issues, removing the burden on tenants to manually navigate complex settings.

Targeted remediation

To explore whether underperforming systems could be improved cost-effectively, our project delivered targeted remediation visits to 30 properties. While project timelines meant we could not quantitatively measure long-term seasonal efficiency changes post-repair, early evidence indicates that low-cost, pragmatic fixes have the potential to improve performance and resident comfort.

Social housing providers should do the following.

- **Explore targeted remediation programmes focussing on simple, high-impact fixes that address common physical and commissioning flaws.** Key interventions include installing or replacing pipework lagging, enabling weather compensation and adjusting domestic hot water settings.
- **Establish a clear repairs categorisation framework to prioritise fixes that deliver the most critical and positive impact for tenants**. Providers should decide how to define and group fault severity to guide site visits, balancing immediate tenant comfort and energy savings against interventions that extend system lifespan to delay costly full replacements.

Repeated tenant engagement

Our research demonstrates that a 'one-and-done' handover at the moment of installation is insufficient. Tenants often feel overwhelmed by technical information during their initial briefing, typically when they move into their home, leading them to quickly forget instructions or misplace physical leaflets. This issue is particularly acute for tenants who move into a property after a heat pump has already been installed, as they frequently receive no handover at all. This lack of familiarity often results in tenants operating their efficient heat pumps like traditional gas boilers, turning them on for short, sharp bursts or turning the power off entirely, which drives up electricity bills and reduces comfort.

To ensure that heat pumps deliver affordable comfort, social housing providers should do the following.

- **Move away from a single handover touchpoint.** Handovers should be conducted repeatedly at different times, such as during the initial installation, ahead of the first winter heating season, and whenever a new tenant moves in. Information should also come from multiple sources, combining technical walkthroughs by engineers with follow-up support from housing officers.
- **Use accessible language and illustrative examples and avoid dense engineering jargon.** Handover materials must use plain English and practical, everyday examples to explain how the system operates. This clear communication is essential to manage tenant expectations, specifically by explaining that running the system continuously is highly efficient and that radiators feeling warm (rather than scalding hot) is completely normal.

- **Provide durable, multi-format resources.** Traditional paper leaflets are easily misplaced and forgotten. Instead, information should be delivered in various formats, such as laminating essential quick-start guides and securely affixing them directly onto the hot water cylinder, the control unit, or in communal spaces where they cannot be lost.

Strategic enablers

While our research evaluated physical installations and tenant experiences rather than internal administrative workflows, insights from practitioners and industry experts indicate that on-site faults are frequently symptoms of upstream procurement challenges and internal skills gaps.

To prevent these issues at scale, landlords should consider the following strategic practices.

Shift to outcome-based procurement

Accreditation, such as MCS or TrustMark, is necessary, but doesn't guarantee high-quality work or predictable real-world performance. Therefore, social housing providers should shift away from simply purchasing equipment and begin procuring with clear, performance-based outcomes outlined from the start.

As part of this, social housing providers could do the following.

- **Link performance to procurement** by integrating system performance metrics and quality benchmarks (resident comfort standards, minimum seasonal performance factors, maximum design flow temperature) directly into contractor procurement key performance indicators.
- **Require essential design documentation before sign-off.** Landlords should mandate full heat loss calculations and system designs for all new-build developments and ensure these documents are submitted, reviewed, and verified prior to installation for all properties (MCS standards already mandate them for retrofit).
- **Require installers to follow clear commissioning guidelines** before sign-off, including enabling weather compensation by default, avoiding fixed flow

temperatures, and sizing and scheduling domestic hot water systems to match real household demand.

- **Reduce subcontractor chains to improve accountability** for the quality of installations. Longer chains of subcontractors result in less visibility on those actually conducting work, whilst end-of-the-chain installers receive less than the initial proportion of the tender. This could be achieved by better supporting smaller, local contractors to apply for tenders.

A comprehensive, practical guide on how to build these requirements into procurement specifications can be found in Carbon Trust's 2026 guide.

Upskill internal staff

Internal social housing teams, including both office-based staff and heating and maintenance teams, often lack technical familiarity with heat pumps. This makes it difficult for them to critically engage with procurement and installation processes to ensure proper quality control. It also means that when a heat pump is underperforming, issues are often missed and repairs and maintenance are inconsistent. Bringing technical, troubleshooting, and commissioning skills in-house allows organisations to be proactive, resolve tenant complaints rapidly, and protect residents.

To build this internal capacity effectively, social housing providers could provide the following.

- **Heat pump procurement training for non-technical teams.** Run dedicated training for internal contract and asset management teams on how to procure for high-quality installations. This should cover what performance-based outcomes to specify in contracts, how to look for installation quality benchmarks, what technical red flags to watch out for, and how to support residents through system operation and maintenance requirements.
- **Advanced low-temperature system design training for in-house heating teams**. Bring technical troubleshooting and commissioning skills directly in-house to help maintenance teams be more proactive.
- **On-site shadowing**. Use installation, auditing, and repair phases as practical learning opportunities. Internal staff should spend time on site shadowing expert installers to gain hands-on understanding of low-carbon heating.

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