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## Part 2

# Quality assurance issues: strengthening data, skills, and supply chains for effective retrofit delivery

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# Executive summary

Ensuring the success of large-scale social housing retrofit programmes requires robust data systems, skilled workforces, and reliable supply chains. However, several quality assurance challenges continue to limit effective delivery across the UK. These include:

- a. Poor data quality on housing stock
- b. Limited monitoring and reporting mechanisms,
- c. Significant supply chain constraints and shortages of skilled workers capable of delivering whole-house retrofits.

Inconsistent and incomplete data, particularly regarding Energy Performance Certificates (EPCs) and housing conditions, undermine effective planning and evaluation of retrofit programmes. At the same time, skills shortages and supply chain fragmentation increase costs, delay project delivery, and reduce confidence among investors and policymakers.

Despite these challenges, emerging good practice demonstrates practical solutions. Liverpool City Region's Dynamic Purchasing System (DPS) shows how flexible procurement can expand supply chain participation. WM

Housing's workforce development programmes highlight the importance of targeted training and apprenticeships, while Lancaster City Council's Regional Retrofit Action Plan demonstrates how collaboration between local authorities, training providers, and industry can strengthen regional skills capacity.

To strengthen quality assurance and enable the scaling of retrofit programmes, policymakers should:

- Improve procurement flexibility to expand supply chain participation
- Strengthen workforce development through targeted training and apprenticeships
- Enhance collaboration between local authorities, training providers, and industry
- Adopt place-based approaches to supply chain and skills development

Addressing quality assurance challenges is essential not only for improving retrofit outcomes but also for building the industry confidence required to scale delivery and achieve the UK's Net Zero ambitions.

# Introduction

Retrofitting social housing is a critical component of the UK's transition to Net Zero, offering opportunities to reduce carbon emissions, alleviate fuel poverty, and improve housing quality. However, delivering retrofit programmes at scale requires more than financial investment. It also depends on robust data systems, skilled labour, and effective supply chains capable of delivering high-quality upgrades.

Current retrofit deliveries face significant challenges due to data limitations, monitoring gaps, and supply chain weaknesses. Many local authorities (LAs) and housing authorities (HAs) lack reliable data on housing conditions and energy performance, making it difficult to prioritise retrofit interventions and evaluate their outcomes. At the same time, workforce shortages and fragmented supply chains constrain the sector's ability to deliver high-quality retrofits at scale.

Addressing these quality assurance challenges is therefore essential for improving retrofit planning, implementation, and long-term performance. Strengthening data systems,

workforce capacity, and supply chain coordination will be critical to ensuring that retrofit programmes deliver consistent, high-quality outcomes across the UK housing sector.

Further background, methodology, and the overall summary of findings are presented in the main research brief, ***“Unlocking procurement for net-zero - overcoming barriers in social housing retrofits.”***

This brief focuses specifically on quality assurance issues, while additional companion briefs examine other procurement challenges:

**Part 1: Financial constraints - overcoming financial barriers to scaling retrofit,** focuses on financial constraints and innovative financing mechanisms.

**Part 3: Coordination conundrum - overcoming fragmentation to deliver retrofit at scale** explores coordination challenges and governance structures for retrofit delivery.

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## **2. The barriers and challenges**

### **i. Poor data quality and housing stock variation**

Variations in the housing stock pose a significant challenge for retrofitting, as different property types require tailored solutions (Edmen, 2021). Many LAs and HAs lack the expertise and comprehensive data to manage retrofitting projects effectively. Inadequate information on energy performance and housing conditions complicates decision-making, leading to inefficiencies in retrofit planning and implementation. Reliable, standardised data collection mechanisms are necessary to bridge this gap and support data-driven policymaking (CPC, 2021).

### **ii. Limited monitoring and reporting mechanisms:**

The absence of robust monitoring and reporting mechanisms impedes progress tracking and accountability in retrofit programs. Many existing data sources, such as Energy Performance Certificates (EPCs), are incomplete or outdated, making it difficult to assess the real impact of retrofitting measures (Happold, 2021; CPC, 2021). Establishing comprehensive, long-term data-collection strategies is essential for evaluating retrofit performance and providing industry stakeholders with the confidence to invest in large-scale projects.

### **iii. Significant supply chain constraints and shortages of skilled workers capable of delivering whole-house retrofits**

The retrofit supply chain faces significant constraints, including a lack of skilled labour, high costs of new technologies, and supply

shortages. Short-term funding cycles create unpredictable demand spikes, leading to bottlenecks and inflated costs. The UK's retrofit market is not yet mature, with limited suppliers capable of delivering high-quality whole-house retrofits (Nanda et al., 2022; Dyson, 2023). To address these challenges, greater investment in training and skills development is needed to build a workforce capable of supporting widespread retrofit efforts (GFI, 2022).

Overcoming these data and supply chain challenges is vital to scaling up retrofitting in the UK. A coordinated approach focusing on improved data collection, workforce training, and supply chain development will be essential to unlocking the full potential of retrofitting for energy efficiency and net-zero targets.

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### 3. Good practice examples

#### i. Liverpool City Region Combined Authority - NW Housing Retrofit Dynamic Purchasing System (2022)

**Challenge:** Since 2022, the Liverpool City Region Combined Authority (LCRCA) has been actively addressing the housing decarbonisation and fuel poverty challenges within its jurisdiction. As part of the UK's net-zero transition, Liverpool has pursued large-scale retrofit programmes to improve the energy efficiency of low-income housing, reduce carbon emissions, and support green job creation. However, traditional procurement processes for retrofit projects have often been slow, rigid, and exclusionary, preventing smaller contractors and SMEs from participating effectively. The complexities of tendering, long evaluation periods, and the requirement to meet strict national procurement regulations have made it difficult for local suppliers to compete with larger, established firms. Additionally, competitive national funding schemes have created uncertainty in securing long-term investments in retrofit projects.

**Solution:** To address these challenges, LCRCA adopted a Dynamic Purchasing System (DPS) to modernise procurement, improve efficiency, and increase SME participation in its housing retrofit initiatives (LCRCA, 2022).

As part of its housing retrofit strategy, Liverpool implemented DPS for procurement, enabling retrofit contractors and suppliers to be onboarded more flexibly while complying with procurement regulations. The DPS approach, used within the North West Housing Retrofit

Programme, streamlined procurement in three key ways:

- Continuous Supplier Onboarding - Unlike traditional framework agreements that only allow supplier selection at fixed intervals, DPS remains open-ended, enabling new suppliers to join at any time. This approach widens market participation, allowing regional SMEs and specialist retrofit contractors to compete.
- Faster Procurement and Contract Awarding - DPS reduces bureaucratic delays by allowing pre-qualified suppliers to be selected quickly for specific retrofit projects. This model ensures faster contractor engagement, particularly crucial for meeting tight government retrofit deadlines.
- Improved Access for Local and SME Contractors - Smaller contractors, which previously struggled with complex tendering procedures, could now compete effectively. The DPS facilitated smaller, localised contracts, ensuring that regional businesses benefited from retrofit funding.

Implementation and Key Achievements – The LCRCA has successfully integrated DPS into multiple retrofit funding streams, including:

- Sustainable Warmth Fund (£28.5m) – Targeting low-income, poorly insulated homes across the Liverpool City Region.
- Social Housing Decarbonisation Fund (SHDF, £11.1m) – Upgrading 1,242 social housing units with energy-efficient improvements.

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- North West Energy Hub (£10.5m additional funding) – Expanding retrofit coverage in Liverpool and Lancashire.

As part of its procurement enhancement efforts, the LCRCA has approved a DPS call-off process for retrofit assessments, allowing rapid development of a contractor pipeline. They have delegated procurement authority to the Executive Director of Investment and Delivery, enabling quicker contract awards.

Furthermore, they established a Retrofit Programme Board to ensure procurement aligned with regional housing and climate priorities.

Outcomes and benefits - The adoption of DPS in Liverpool's housing retrofit strategy has led to several positive impacts:

- **Faster project mobilisation:** The ability to onboard contractors continuously has accelerated retrofit implementation.
- **Increased SME participation:** Local suppliers and SMEs have been better able to compete, supporting local economic growth.
- **Cost savings and efficiency:** By reducing procurement bottlenecks, projects have achieved greater cost-effectiveness.
- **Scalability and flexibility:** The model allows future retrofit expansions without the need for re-tendering framework agreements.

Liverpool City Region Combined Authority won Best Local Authority-Led Retrofit Programme at the 2024 Retrofit Academy Awards for successfully upgrading over 4,000 social homes with sustainable retrofits. Over

the past three years, the Combined Authority has leveraged government funding to drive large-scale retrofitting across its six boroughs, setting a benchmark for sustainable housing initiatives in the UK, specifically in their resident engagement, cost efficiency, and commitment to quality in decarbonising homes (LABM, 2024).

## ii. WM Housing Group (since 2018)

**Challenge:** WM Housing, one of the leading housing providers in the West Midlands, operates across Coventry, Birmingham, Solihull, Herefordshire, and Worcestershire, managing over 30,000 properties. WM Housing has rebranded itself as Citizen Housing (Champ, 2019). In line with UK net-zero targets and social housing decarbonisation efforts, the organisation has focused on retrofitting homes and developing a skilled workforce to support sustainable housing initiatives.

A major issue is the shortage of skilled workers, particularly in areas such as energy efficiency improvements, heat pump installations, and low-carbon technologies. This shortage is exacerbated by limited training opportunities and entry pathways, making it difficult for young people and those from disadvantaged backgrounds to join the sector.

**Solution:** To address these challenges, WM Housing launched multiple workforce development and training programmes, integrating apprenticeships, work placements, and partnerships with education providers and industry stakeholders.

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- WM Housing Group adopted several initiatives and strategies, including (WMHousing, 2018):
  - Apprenticeships and vocational training - WM Housing employed seven apprentices across various roles in 2018, providing on-the-job training and nationally recognised qualifications. These apprenticeships focused on construction, maintenance, property management, and the installation of green technology. In collaboration with local contractors working on retrofit projects, the organisation ensured apprenticeship opportunities were embedded in procurement contracts, creating employment pathways for young people.
  - Partnership with JobCentre Plus – Work Experience Programme - A six-week voluntary work experience programme was developed in partnership with JobCentre Plus to provide hands-on learning for unemployed individuals. The programme successfully helped two of the four initial participants secure permanent positions with WM Housing. The initiative has since been expanded to focus on training retrofit installers, heat pump technicians, and energy assessors.
  - Collaboration with Hereward College – Inclusive Workforce Development - WM Housing partnered with Hereward College, a specialist further education institution, to provide internships for students with disabilities. Nine students participated in the year-long academic internship programme, with four securing permanent roles within the organisation. This initiative helped foster an inclusive workforce, ensuring diverse employment opportunities in the retrofit sector.
  - Knowledge Academy – WM Housing established a Knowledge Academy to develop standardised training for housing and property services staff. Plans are underway to expand this framework to include retrofit-specific competencies, ensuring the workforce is well equipped to implement low-carbon technologies and energy-efficiency measures.
  - Growth Mindset and Mindfulness Training were introduced to help staff adapt to new technologies and regulatory requirements, fostering resilience and innovation.
  - Procurement and social value in workforce development - A social value approach was integrated into procurement, ensuring that contractors engaged in retrofitting projects contributed to workforce development.
  - Contractors working with WM Housing were required to provide apprenticeships or training placements as part of their contracts, targeted recruitment of local workers, particularly from disadvantaged backgrounds, on-site training opportunities for young people, and reskilling of existing workers.

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**Outcomes and impact:** The skills and workforce development initiatives implemented by WM Housing have resulted in:

- Expanded employment opportunities, with apprentices and trainees transitioning into permanent roles.
- Greater inclusion through targeted programmes for unemployed individuals and people with disabilities.
- Increased SME and contractor engagement, fostering a regional supply chain for retrofit projects.
- Enhanced workforce resilience with training in energy efficiency, sustainability, and modern construction methods.
- Higher tenant satisfaction, as well-trained staff improve service quality, efficiency, and property maintenance standards.

### **iii. Lancaster City Council - Local Government Association's Regional Retrofit Action Plan Training (2022)**

**Challenge:** Lancaster City Council (LCC) has set an ambitious target to achieve net zero by 2030. However, the diverse nature of its built environment poses significant challenges for retrofitting. The district comprises a historic city with many old buildings, a coastal town in Morecambe with unique environmental considerations, and rural areas requiring specialised retrofit solutions. One of the key challenges identified was the workforce development gap, ensuring that local contractors and businesses are aware of and

equipped with the necessary skills and accreditations, such as PAS 2030/35, to bid for and deliver retrofit contracts effectively. The LCC struggled to effectively communicate the need for businesses to adopt new standards and accreditation requirements. Additionally, there was uncertainty regarding who should take the lead in developing relevant training opportunities and aligning them with industry needs (LGA, 2022a).

**Solution:** In collaboration with Sustainability West Midlands (SWM), the Local Government Association (LGA) Climate Change Programme has launched the Regional Retrofit Action Plan Training to support local government officers in addressing workforce and skills challenges in the retrofit sector. The programme aims to equip council officers with the tools and knowledge necessary to build local capacity and foster collaboration among key stakeholders, including training providers, communities, and the private sector.

Through a combination of technical briefings, group work, and one-on-one support, the training enables councils to develop effective action plans to build a skilled workforce capable of delivering large-scale retrofit projects. This initiative is particularly crucial in ensuring that councils can meet their net-zero commitments by creating sustainable employment pipelines and enhancing local contractor participation in retrofit procurement (LGA, 2022b).

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Their participation in the Regional Retrofit Action Plan Training provided LCC with a broader perspective on workforce development challenges. Through the Action Learning Sets, they engaged with other councils facing similar issues, realising that the challenge was not unique to Lancaster. This collaborative approach helped break down the problem into manageable steps, emphasising the importance of shared responsibility among stakeholders.

Key actions included:

- Stakeholder collaboration: Engaging local training providers, colleges, universities, the Local Enterprise Partnership, Lancaster Skills Hub, and employers to collectively address skills shortages.
- Industry engagement: partnering with the Construction Industry Training Board (CITB) to ensure that relevant training pathways were available for local contractors.
- Promoting accreditation awareness: Hosting events and workshops to educate businesses on PAS 2030/35 standards and their implications for securing retrofit contracts.
- Aligning training with demand: Recognising that training providers will offer relevant courses if there is demonstrated demand from local businesses and contractors.

**Impact and outcomes** - The Community Wealth Building agenda in Lancaster now emphasises the importance of local contractors participating in retrofit procurement, helping to create sustainable

job opportunities and economic benefits within the region. By integrating workforce development efforts with broader retrofit planning, the LCC is taking a long-term, place-based approach to upskilling the workforce and strengthening the local supply chain.

**Sustaining the approach** - LCC has embedded a collective approach to workforce development by continuing to strengthen partnerships between the public sector, training providers, and private industry. The council facilitates knowledge sharing through ongoing workshops and networking events, ensuring stakeholders remain informed and engaged. Regular monitoring of training uptake and industry engagement allows strategies to be adapted as needed. Additionally, supporting policy alignment ensures that retrofit initiatives align with both regional and national skills development strategies, fostering long-term sustainability in workforce development and in the retrofit sector's growth (LGA, 2022a).

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## 4. Lessons learned

The good practice examples highlight several important lessons for addressing the data, skills, and supply chain barriers that currently limit the scale and effectiveness of retrofit programmes in the UK.

### **i. Flexible procurement mechanisms can aid in expanding supply chain participation.**

Traditional procurement frameworks can limit participation by smaller contractors and specialist retrofit providers. Flexible procurement mechanisms, such as DPS, can streamline procurement processes, reduce administrative burdens, and enable continuous supplier onboarding. This approach improves market access for SMEs, increases competition, and strengthens regional retrofit supply chains.

### **ii. Workforce development can be strengthened through targeted training and apprenticeships.**

The shortage of skilled workers remains a major constraint in scaling retrofit delivery. Workforce development programmes that combine apprenticeships, vocational training, and partnerships with education providers can help build a skilled labour force capable of delivering energy efficiency upgrades and low-carbon technologies. Embedding skills development requirements within procurement contracts can further ensure that retrofit investments contribute to long-term workforce capacity.

### **iii. Enhancing collaboration between local authorities, training providers, and industry can help align training provision with labour market demand.**

Skills shortages in the retrofit sector often stem from limited coordination between policymakers, training institutions, and industry

stakeholders. Collaborative approaches that bring together councils, colleges, training providers, and employers can help align training provision with labour market demand and ensure that workers acquire the skills needed for retrofit delivery.

### **iv. Adopt place-based approaches to supply chain and skills development.**

Retrofit programmes are most effective when workforce development, procurement strategies, and supply chain initiatives are aligned with local economic conditions. Place-based approaches enable local authorities to strengthen regional contractor networks, develop local training pipelines, and ensure that retrofit investment contributes to local economic growth.

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