RISE | Retrofit information, support & expertise

Retrofit Success Stories: Cutting fuel costs with low-carbon heating in rural North Yorkshire

Case study

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Retrofit Success Stories

This series aims to explore the individual stories and experiences of successful retrofit projects from the perspective of key suppliers. This covers a range of themes from technology use through renewable energy and low carbon heating to the career progression and skill development that projects are enabling.

Introduction

This Retrofit Success Stories case study showcases **Broadacres, a housing association based in Northallerton** managing around 7,000 homes across rural North Yorkshire, is helping residents cut fuel costs and lower carbon emissions through **low-carbon heating upgrades**. Supported by £2.43 million in Wave 2.1 funding from the Tees Valley Combined Authority, **Broadacres partnered with PH Jones to deliver insulation, solar PV, and heat pumps** to homes previously reliant on inefficient solid-fuel systems.

One beneficiary is Mr. Carr, who **replaced his old coal heating with a new heat pump, solar panels, and improved insulation**. He described his home as much warmer and quieter, with heating costs now just £4–£5 per week. He is also earning money by exporting surplus electricity back to the grid. *"People of our generation are naturally wary of change, so we were a little reluctant at first. We weren't sure how disruptive the work would be or whether the house would still feel warm. But we decided to go ahead, and it's been the best thing we've done. The system is easy to use, the house is always warm, and it now only costs us around £4-£5 a week to heat the whole home."*

This case study highlights how these upgrades are improving comfort, cutting bills, and supporting the transition to low-carbon heating in rural communities.

Readers that would like this document in a more accessible format should contact rise@turntown.co.uk.

Background

Broadacres

Broadacres Housing Association (BHA) is a rural housing provider based in Northallerton, North Yorkshire, managing more than 6,800 homes across villages and market-town communities. As a key anchor organisation in the region,

Broadacres focuses on providing safe, affordable, and secure homes for residents who often face limited housing options and higher risks of fuel poverty.

Many of its older, traditionally built rural properties are harder to heat and more carbon-intensive, prompting Broadacres to prioritise sustainability within its long-term strategy. By investing in modern, low-carbon heating technologies and whole-house energy-efficiency upgrades, BHA is working to cut emissions, lower energy bills, and improve comfort for residents.

PH Jones

PH Jones is a long-established UK heating, electrical, and renewables services provider with a strong reputation for supporting the social housing sector. Over decades, the company has built deep partnerships with local authorities and housing associations, delivering essential services such as heating installation, gas maintenance, electrical work, and increasingly, low-carbon technologies. Its focus on reliability, safety, and customer care has made it a trusted name for large-scale housing portfolios.

Now operating as part of British Gas, PH Jones plays a key role in helping communities transition toward more energy-efficient homes, supporting national goals around sustainability and net-zero housing.

AirEx Technologies

AirEx Technoligies is a climate-tech innovator dedicated to addressing fuel poverty and climate change through cost-effective smart home solutions. Its intelligent ventilation technology responds dynamically to environmental conditions, reducing energy demand by minimising unnecessary heat loss while still ensuring healthy, well-managed airflow.

Its flagship product, the AirEx Floorvent, regulates ventilation within underfloor voids in homes with suspended timber floors. Using built-in sensors and real-time weather data, the system automatically opens and closes to balance heat retention, moisture control and indoor comfort. This approach reduces draughts, lowers heating requirements, and supports improved energy efficiency.

Building on the success of Floorvent, the company is now extending its smart ventilation technology into living spaces. This next phase aims to provide whole-home airflow optimisation, helping households achieve stronger energy performance without compromising on ventilation quality.

The Challenge

Many Broadacres homes featured suspended timber floors—an older construction type prone to significant heat loss and cold draughts. While improving thermal performance was essential, traditional underfloor insulation wasn't always appropriate due to limited access, structural constraints, and the need to maintain healthy underfloor ventilation. Broadacres also wanted solutions that would minimise disruption for residents, many of whom were living in the homes during the works.

Alongside these practical challenges, Broadacres needed retrofit measures that would deliver clear, measurable improvements. Key priorities included:

- Achieving a minimum SAP rating of 69 to lift homes toward EPC Band C
- Reducing draughts and unnecessary heat loss to lower heating demand
- Improving comfort and affordability for residents experiencing rising fuel costs

Ensuring full PAS:2035 compliance as required under SHDF Wave 2.1 funding.

This created a need for smart, fabric-first solutions capable of raising energy performance quickly and cost-effectively, while maintaining ventilation levels appropriate for older buildings.

The Retrofit Solution

To address heat loss through suspended timber floors, PH Jones selected the AirEx Floorvent smart air brick as a core fabric-first measure within Broadacres' retrofit programme. The technology uses built-in sensors and real-time weather data to intelligently regulate airflow in the underfloor void losing during colder periods to reduce heat loss and draughts, and opening when humidity rises to prevent damp and mould. This approach delivers consistent EPC improvements of 2–4 points, and in some cases up to 6, helping homes move closer to EPC Band C.

PH Jones and Broadacres chose AirEx for its ease of installation, minimal disruption to residents, cost-effectiveness, and its recognition as a PAS:2030 Annex B.2 draughtproofing measure, making it a smooth fit within the PAS:2035 process required by SHDF funding. The smart air bricks also form part of a wider low-carbon upgrade programme that includes large-scale installation of air source heat pumps, solar PV systems, enhanced loft insulation, and modernised central heating systems—together creating warmer, healthier, and more energy-efficient homes across Broadacres' rural housing stock.

Resident Impact & Outcomes

Residents experienced immediate and noticeable improvements following the installation of AirEx Floorvent smart air bricks and associated low-carbon upgrades.

Homes felt significantly warmer with fewer draughts, and the quick, low-noise installation meant that no residents needed to vacate their homes during the works—a major benefit for families and older occupants. Feedback across the programme has been consistently positive, with many residents highlighting the increase in comfort and the simplicity of the process.

One example is Mr Carr from Seamer, who reported that his 1930s family home is now warm throughout while costing just £4–£5 per week to heat, following the installation of an air source heat pump, solar PV panels, additional loft insulation, and AirEx smart air bricks. These individual experiences reflect the wider measured benefits achieved across Broadacres' housing stock, including 3283 kg of CO_2 savings, £3,250 in annual fuel bill reductions, and rapid improvements in EPC ratings delivering greater affordability and resilience for residents in the face of rising energy costs.

Looking Ahead

Looking ahead, Broadacres is preparing to significantly scale its retrofit delivery across North Yorkshire, with plans to upgrade an additional 300 homes in 2026—doubling its annual output. Supported by £1.857 million from Wave 3 of the Warm Homes: Social Housing Fund, the organisation will continue to prioritise smart, fabric-first technologies such as the AirEx Floorvent alongside wider low-carbon measures. *"We are really pleased with the progress we've made so far in improving the energy efficiency of our older homes, and we're looking forward to building on this in 2026. The feedback we receive from our customers shows just how positive these improvements can be, particularly when it comes to reducing energy bills. In the current economic climate, this support is more important than ever."*

The success of the partnership between PH Jones, AirEx and Broadacres has demonstrated what high-quality, PAS-compliant retrofit delivery can achieve in rural communities: accelerated EPC improvements, measurable reductions in carbon emissions and household energy costs, and consistently positive resident outcomes.

This collaborative, resident-focused approach provides a practical and scalable model for other social housing providers, while reinforcing Broadacres' long-term commitment to achieving net-zero carbon by 2050 and ensuring homes remain warm, efficient, and affordable for years to come.

Link to resources referenced:
AirEx smart air bricks

AirEx Smart Brick Case Study

www.broadacres.org.uk.url

Links to relevant RISE resources:
Planning resident engagement

Insulation