

HEAT NETWORK EFFICIENCY SCHEME

Woodbrooke House, Bangor House, and Newnham House



Woodbrooke House, Bangor House and Newnham House comprise three communal heat networks serving eight high-rise residential buildings managed by Solihull Community Housing, with approximately 570 flats in total. Located in Solihull, the networks are served from three energy centres and have been in operation for approximately 11 years.

Summary	
Network name	Woodbrooke House, Bangor House, Newnham House
Network owner / operator	Solihull Community Housing
Location	Solihull
Number of residential / commercial customers	570
Total funding awarded	£1.6 million
Total project capex (total value of works)	£3.4 million



Heat source	Biomass-led heat networks supported by gas boilers
Performance/efficiency improvement measures deployed	Recommissioning Heat Interface Units (HIUs) Installing new pre-settable TRVs Pipework and insulation upgrades Dynamic flushing, water treatment and recommissioning New BMS and plant optimisation controls Differential pressure pump control and bypass improvements
Annual reduction in network fuel use (kWh/year)	579,124kWh gas reduction (52%)
Annual reduction in network carbon emissions (kg.CO2)	Approx. 97,000kg/year net Scope 1 operational carbon reduction

Overview of heat networks

The three Solihull based heat networks, serving eight residential tower blocks, received a total of £1.6 million worth of capital grant funding in Round 7 for efficiency improvements, with the aim of reducing running costs, improving water quality, and minimising network outages and leaks.

The networks serve approximately 570 flats, providing communal heating and hot water. They operate as biomass-led heat networks, with wood-pellet biomass boilers providing the principal renewable heat source and gas boilers providing supplementary and back-up heat.

Details of why the project was needed

Solihull Community Housing carried out a series of investigations to identify the causes of the recurring performance issues affecting the networks.

The housing association concluded that continued reactive maintenance was no longer sustainable and that coordinated, long-term improvements were required across the networks.

The networks had experienced recurring heat outages and leaks, poor water quality, hydraulic performance issues and high operating costs. Investigations identified issues within the energy centres, distribution systems and individual flats. Optimisation studies, structured condition surveys, water-quality assessments and network-performance assessments were therefore undertaken to establish the causes and define the improvement works.



These issues increased maintenance requirements, affected resident comfort and confidence in the heat networks, and reduced the reliability and efficiency of heat delivery. The findings supported the need for a coordinated programme of plantroom, distribution and dwelling-level improvements.

Efficiency measures implemented

Alongside Dodd Group and Chirpy Heat, Solihull Community Housing implemented a coordinated programme of improvement works supported by HNES capital funding. The works were intended to improve energy performance, increase renewable heat utilisation, improve hydraulic stability and water quality, reduce operating costs and outages, and extend the operational life of the three networks.

Within the flats, Heat Interface Units (HIUs) were recommissioned and new pre-settable Thermostatic Radiator Valves (TRVs) installed. Hydraulic balancing was improved across the connected dwellings to provide better control of flow and heat delivery.

Across the distribution systems, pipework was replaced, insulation was upgraded, temperature-controlled bypass arrangements were introduced, and cleaning and water-treatment works were completed, including dynamic flushing and recommissioning.

Within the three energy centres, new Building Management Systems (BMS) were installed together with differential-pressure pump control and revised plant-optimisation strategies. Plantroom circuits were flushed and recommissioned, supporting improved hydraulic stability and more effective use of the available biomass and gas plant.

Outcome of changes

Dodd Group completed the capital works in an eight-month programme, with the works completing in October 2025. The first annual performance review following the works demonstrates measurable improvements in energy use, renewable heat utilisation, operating cost and overall network performance.

During delivery of the works, heating and hot-water provision was maintained for approximately 570 flats, with resident engagement used to minimise disruption throughout the programme.

Across the three energy centres, the post-works review shows a substantial shift away from gas and towards renewable biomass heat. Combined gas consumption reduced by approx. 52%, while biomass heat generation increased by approv. 80%.



Renewable heat generation now accounts for around 73% of the total heat generated across the networks'.

Electricity consumption across the three plantrooms reduced by approximately 40.6% (Bangor House 27%, Woodbrooke House 40%, and Newnham House 67%).

Gas consumption also fell significantly at Bangor and Woodbrooke, by approximately 60% and 59% respectively.

Importantly, the reduction in fossil-fuel and electrical consumption was achieved while resident heat delivery increased by approximately 9.3%. The annual review therefore indicates improved overall plantroom and network performance and efficiency levels.

Across the three HNES-optimised energy centres, combined plantroom energy operating costs reduced from £234,261 in 2024/25 to £186,076 in 2025/26. This represents an annual saving of £48,185. Gas costs reduced by 48.6% and electricity costs by 53.1%.

Bangor House achieved the largest individual operating-cost reduction at 32.1%, from £136,896 to £92,990. Woodbrooke House reduced by 8.8%, from £81,998 to £74,808. Newnham House recorded an 18.9% increase, from £15,367 to £18,278, reflecting the operational and biomass-reliability constraints identified during the reporting period.

Next steps

Solihull Community Housing will continue to monitor the upgraded networks, including energy consumption, renewable heat utilisation, plant reliability, operating cost, water quality and network performance, so that the benefits of the optimisation works can be tracked over subsequent reporting periods.

The lessons from this programme will also inform similar improvement works across Solihull Community Housing's wider heat-network portfolio. Most recently, the housing association received HNES capital grant funding in Round 10, with the aim of improving the efficiency of five further heat networks serving 484 residents.

Quote from Solihull Community Housing

> *"Working with our long term delivery Partner Dodd Group, from the original Optimisation Studies and Capital Bid production for HNES funding, through to the delivery of the identified improvement measures, we are very pleased with how smoothly the Project has run.*



Our goal was to improve the reliability and efficiency of our heat networks, for the benefit of our Residents.

We have achieved excellent results, with Zero unplanned interruptions to heat service for our Residents and significant efficiency gains in both carbon emission and running cost reduction.

The Project has been an excellent example of true Partnering, ensuring our heat networks continue to perform reliably and efficiently for many years to come."

- **Andy Duke**, Head of Asset Management and Development, Solihull Community Housing