

CASE STUDY – BATHS COURT OPTIMISATION



Summary	
Network name	Baths Court
Network owner / operator	Notting Hill Genesis (NHG)
Location	Hammersmith and Fulham
Number of residential / commercial customers	32
Heat source	Gas
Total funding awarded	£17,352
Optimisation Study delivered by	FairHeat
Top three recommendations for improvement	<ul style="list-style-type: none"> • Install Heat Interface Units (HIUs) (as none on the network) • Re-commission radiators and space heating. • Replace boilers within the plant room.

Overview of heat network

Baths Court is a care and retirement housing scheme built in 1984, within the borough of Hammersmith and Fulham. It comprises of 32 supported homes, and has a reception, a communal lounge and kitchen. Heat is currently generated by two condensing gas boilers operating at 70-80°C connected to a 4-pipe heating system. This feeds the individual flats directly via the radiators. There are currently no HIUs on the network, and no heat meters installed.

Details of why the project was needed

The heat network is old, with no space heating control and bypassing radiators. Thermostatic Radiator Valves (TRVs) are missing and a lack of control of heat flow, with no thermostats or programmers installed to allow residents to modify their heating based on their needs. There is also no individual metering, due to a metering evaluation in 2021 concluding that these would not be cost effective. Using an optimisation study to drive forward improvements on the network, an opportunity has been identified to install heat meters and remote monitoring equipment at the same time.

Several issues with the operation of the communal heating have occurred and driven customer complaints. Interruptions to resident supply have been frequent, and timescales for repair have been prolonged. This is due to the network's age and the difficulty in sourcing replacements for parts of the system. The network is nearing its end of life and has been causing considerable discomfort to elderly residents who already have complex health needs.

Recommendations proposed by the Optimisation Study

FairHeat, the appointed heat consultants, set out two packages of work.

- Work Package 1: The recommissioning of the radiators to reduce return temperatures and heat losses, the recommissioning of the network pumps, and the re-insulation of domestic hot water pipes. The package of improvements includes the fitting of heat meters across the network and connecting these to remote monitoring devices.
- Work Package 2 (Recommended by FairHeat): NHG to remove cylinders and existing domestic hot water pipework and subsequently install HIUs, retaining the existing tertiary pipework. New bedroom radiators, PT40s, and thermostats/programmers will also be installed, alongside replacing the boilers in the plant room.

Projected benefits realised from actioning proposed measures

Carrying out Work Package 2 will significantly reduce the number of heat network failures and improve NHG's ability to maintain the system. This will reduce service disruption and downtime for elderly and vulnerable residents. FairHeat have calculated that actioning the proposed measures would reduce heat return temperatures on the network from 65°C to 38°C. Gas and electricity running costs for the network are predicted to fall significantly, and this will reduce carbon emissions.

Benefits to network customers

Residents will have individual control over the heat levels within their flats through their new HIUs and programmers. Overheating within homes and communal areas will be resolved, operations costs will fall, and this will redress customer detriment.

Next steps

NHG would use Baths Court as a model for all unmetered 4 pipe system replacements.

Fitting meters would ensure residents only pay for their own consumption, encouraging them to monitor their energy use and consume only what is required. This would subsequently result in significant gas and carbon savings. Ensuring NHG balance and insulate the tertiary and primary network will further increase residents' comfort levels and keep heat tariffs to a minimum.

Notting Hill Genesis has applied for HNES Capital funding to financially support the delivery of Work Package 2. We have commissioned our heat consultants, FairHeat, to redesign the heat network, and this work is almost complete.

Quote from heat network owner

“Baths Court represents the common type of unmetered heating within the care and support/sheltered setting. These heating systems usually have large boilers that provide uncontrolled heating and hot water to each dwelling and the communal areas. Residents are typically billed heat as part of their service charge. This arrangement encourages wasteful behavior such as opening windows when the building is too hot due to the lack of control.

“Replacing stored hot water for HIUs will ensure energy losses are kept to a minimum, legionella risk is reduced, scalding risks are reduced, and residents pay for their actual consumption. This strategy and project will form part of NHG plan to meter all our unmetered sites and keep the most vulnerable residents safe and warm.”

Dan Perager, Head of Heat, Energy and Water, Notting Hill Genesis