

CASE STUDY – RESERVOIR AND WATERSREACH OPTIMISATION



Summary	
Network name	Reservoir & Watersreach
Network owner / operator	Notting Hill Genesis
Location	Hackney, N4
Number of residential / commercial customers	117
Heat source	Gas
Total funding awarded	£19,632
Optimisation Study delivered by	FairHeat
Top three recommendations for improvement	<p>Recommissioning HIUs (Heat Interface Unit) and radiators and carrying out insulation improvements.</p> <p>Replacing HIUs and improving radiator control.</p> <p>Lowering the network flow temperature to 60°C. There will also be some additional plant room works including pump replacement.</p>

Overview of the project

Reservoir and Watersreach (R&W) is a Notting Hill Genesis (NHG) block located at the large and high-profile regeneration site of Woodberry Down Estate in Hackney, London, N4. It consists of 117 dwellings, all of which are social rented homes. There are a total of 635 properties at this development. Each block has its own plant room as a temporary arrangement, pending plans to connect all homes at Woodberry Down to one new large scale energy centre as per the Low Carbon Transition Masterplan. This has placed a strong emphasis on reducing operating temperatures on all four Woodberry Down NHG sites individually to enable a future connection to a more efficient district heating scheme.

Details of why the project was needed

Equipment on this site is generally in poor condition and the plant room is operating through manual settings, rather than being controlled by the Building Management System (BMS) in auto mode. There have been several recent outages and heat losses are high with reports of overheating in communal areas.

The optimisation study has helped NHG understand the root cause of these issues, how to improve efficiency and therefore customer satisfaction, and how to prepare the scheme for connection to the district heat network. Learnings from the funded Optimisation Study at R&W will be used by NHG in relation to their three other blocks and will help to prepare for and inform NHG's heat strategy. The learnings from preparing for connection into a wider district heat network will also produce broader benefits to NHG, and the wider industry, as sites are increasingly connected to centralised low carbon systems when upcoming regulations come into effect.

Recommendations proposed by the Optimisation Study

The following measures have been recommended for NHG's Reservoir & Watersreach heat network:

- Replacing the current HIUs with high performance HIUs. This would reduce primary return temperatures and increase performance and reliability.
- Installation of new valves on all radiators within dwellings and recommissioning radiators. This would improve heating performance and allow better control for residents.
- Installation of heat metering and remote data collection throughout the network. This would ensure accurate performance monitoring and allow targeted performance improvement works to take place.
- Replacing current pumps with more appropriately sized pumps. This would reduce electricity consumption.
- Adapting plant room pipework. This will lower boiler return temperatures and allow the boilers to operate more efficiently.
- Removing substation pumps to decrease electricity consumption.
- Reducing the boiler set point to 60°C. This would lower the network flow temperature and gas consumption within the boilers. This would also result in smaller heat losses and increased efficiency.

- Installing a degasser unit in the plant room. This will reliably remove air from the entire network, minimising the risk of pipework corrosion and reducing maintenance costs and failure risks.

Benefits to network customers

As part of the enhanced programme of proposed works, NHG customers will receive a new Heat Interface Unit which will resolve bypassing, reduce return temperatures, and bring down heat loss. Improved control of heat supply across the network and minimising heat losses will positively impact the cost of heat delivery to residents. They will also experience better space heating performance in their homes, improving their comfort levels. Overall, the heat network will be more stable and more efficient, and this will have the benefit of bringing down electricity and gas consumption by the heat plant. These benefits will be reflected in the future heat tariffs that are charged to residents.

Next steps

NHG plans to explore its options for undertaking improvements outlined in the optimisation study. Its plan is to put the package of works out for tender, inviting suppliers who have successfully delivered heat improvements at other NHG sites to bid.

“HNES revenue funding has allowed NHG to continue to identify the underlying causes of underperformance, and inefficiencies in our heat network sites, and to understand where our financial investment is required to optimise them, for the benefit of our customers.”

– Jennifer Mclean, Major Works Project Manager, Notting Hill Genesis.