

City Park West, Central Chelmsford

Optimisation Study



Summary	
Network name	City Park West
Network owner / operator	Notting Hill Genesis
Location	Chelmsford
Number of residential / commercial customers	642
Heat source	Gas
Total funding awarded	£23,976
Optimisation Study delivered by	FairHeat
Top three recommendations for improvement	• Recommission or replace heat manifolds. • Remove cylinders and retrofit Heat Interface Units (HIUs) in properties. • Major hydraulic changes with the plant room.

Overview of heat network

City Park West is a large Notting Hill Genesis development located in Chelmsford in Essex, CM1. It has 642 dwellings, which are of mixed housing tenure, the largest being social market rent. The development also contains 65 extra care and support homes. The site is served by a main energy center in the Middleditch block and connected to two sub-stations,

one at Norman Court and the other at Clacher Court.

Details of why the project was needed

The site was constructed in two phases. Phase 1 has externally accessible HIUs with domestic hot water cylinders and Phase 2 has internal HIUs, with domestic hot water cylinders located in dwellings. The presence of these cylinders means it is impossible to achieve low return temperatures and efficient performance on this site. There have been multiple historic issues with equipment control, overheating and reliability, meaning that infrastructure condition is worse than expected for a site of this age. There are currently no remote monitoring systems in place.

Recommendations proposed

Two work packages have been proposed to address the identified issues:

- Work Package 1: recommends removing the cylinders, retrofitting twin plate HIUs & recommissioning the under-floor heating manifolds. It also recommends the closure and removal top-of-riser bypasses on the network, and re-insulating missing and damaged insulation across whole network. Within the plant room several hydraulic equipment modifications and renewals are set out including replacing the pressurisation unit and the vacuum degasser.
- Work Package 2: recommends the replacement of the underfloor heating manifolds in addition to the following plant works:
 - Installing boiler module back-end valves for control
 - Split low loss header and replumbing two thermal stores
 - Combining pump sets

Projected benefits realised from proposed measures, including how this supports HNES objectives

FairHeat have predicted that both work packages would reduce the heat network return temperatures from 65 °C to 45 °C. Both heat loss volume and pump electricity consumption levels have been assessed by engineers to currently be 'very high' and completing the recommended heat improvement works would bring both key performance indicators down to 'low'.

Benefits to network customers

Customers have previously complained of intermittent hot water supply issues and of total heating outages relating to plant room failures, as well as leaking HIUs. A better performing network, that can be remotely monitored, will improve NHG's maintenance regime and will increase customer confidence in the reliability of their heating and hot water supply. It would also help to bring down energy costs, and therefore future heat tariff costs through efficiency measures.

Next steps

Notting Hill Genesis will be applying for HNES Capital funding to financially support the delivery of Work Package two over a two-year period. We expect this submission to be made in Round 8 and will proceed with the appointment of a principal designer and principal contractor to start the process of delivering the heat improvement in 25/26.

Quote from heat network owner and/or customer

“Despite its potential, City Park West’s heat network has had several key issues affecting its performance. In response to these challenges, we are dedicated to implementing improvement works. These efforts will involve removing the cylinders and retrofitting twin-plate HIUs in Phase 1 at City Park West. Additionally, we propose closing and removing all top-of-riser bypasses and replacing any missing network insulation.

Within the plant room and substations, we will conduct recommissioning and hydraulic works to stabilise flow temperatures, minimize pump speeds, and reduce equipment wear. It's important to note that Phase 1 includes vulnerable customers living in one of the blocks, and we are prioritising improvement works in this area to benefit these residents. We aim to enhance the efficiency and performance of City Park West's heating system, ensuring a more comfortable and sustainable living environment for all.”

Laura Coleman, Heat Network Operations Manager, Notting Hill Genesis