West Hampstead Square, Ballymore

The West Hampstead Square project, a Ballymore development completed in 2017, encompassing 197 dwellings across seven blocks, sought to optimise its existing heat network setup. Struggling with challenges such as excessive electricity consumption, significant heat loss, and inefficient equipment, Ballymore recognised the need for transformative changes.

Challenges and Background

The existing heat network setup at West Hampstead Square presented a host of challenges. Unnecessary hydraulic separation, fixed-speed pump controls, and suboptimal insulation standards contributed to significant heat losses of 512 W/dwelling. Furthermore, high-temperature fan coils and uncontrolled flow to Plate Heat Exchangers (PHEs) in substations amplified the inefficiencies.

FairHeat's Optimisation Study and HNES Demonstrator

Ballymore engaged FairHeat for support with a HNES Demonstrator funding application. The project gained approval and, as a result, FairHeat proposed three work packages (WP) to address the issues:

- WP1 focused on plant room control enhancements and network bypass closures, effectively reducing pump energy consumption and return temperatures.
- WP2, identified as the most realistic solution, proposed a comprehensive approach involving temperature adjustments for Fan Coil Units (FCUs), recommissioning of Heat Interface Units (HIUs), pipework reinsulation, and the removal of unnecessary PHEs and associated equipment.
- WP3 mirrored WP2 but incorporated a HIU retrofit for enhanced return temperatures.

Outcomes

WP2 was identified as the most realistic solution, and the project's results are promising. With a planned HNES application, the anticipated reduction in heat losses stands at an impressive 61%. Additionally, energy costs are projected to decrease by approximately 45%, all achieved without any change in usage patterns. These improvements are not only advantageous in terms of efficiency but also in terms of the simplicity of site team operation and maintenance.

**HEAT NETWORK
EFFICIENCY SCHEME**