



PROJECT SUMMARY:



CLIENT

Mullaley/Energetik

PROJECT

Arnos Grove Heat Network

TIMESCALE:

2015 - 2018

CONTRACT VALUE:

£3.9 million

PROJECT OVERVIEW

Ladderswood Estate is a joint venture between Sherrygreen Homes and One Housing Group in collaboration with the London Borough of Enfield, with Mulalley as contractor. It will see major regeneration of the area to provide new residential properties, commercial units, a hotel and a community centre.

Energetik

During the development's early construction phase, Enfield Council's heat network company Energetik was established. Energetik is set up to own and operate a series of heat networks in the borough, with a vision to deliver efficient, reliable and expandable heat networks and provide a high quality of customer service. Energetik intends to deliver such heat networks by ensuring the developer follows the requirements of its technical specification. Normally the heat network is designed and built to Energetik's technical specification following a strict approvals process,

and upon completion of each phase Energetik adopt the plant within the energy centre and the network. The Arnos Grove heat network supplying the Ladderswood Estate was the first of Energetik's heat networks to go into operation, therefore setting an important precedent for the level of quality and positive customer experience that Energetik wants to deliver across its schemes.

With Energetik coming on board, the Council agreed to revise the development agreement to incorporate as much of the requirements of Energetik's technical specification as was economically viable. This included Sherrygreen homes and One Housing Group providing an energy centre and network that could be expanded and act as a district heating hub in the Arnos Grove area, allowing it to connect other developments when economically viable.

THE BENEFITS:

- > Bespoke phased solution to meet the site's development schedule
- > Flexible design allows for incorporation of sufficient plant to meet predicted energy demands and can be expanded at a later date for further offsite connections
- > Allowing for the connection to the larger Meridian Water Heat Network

▶ The first phase of the project saw the installation of a 240kWe CHP engine, three 1.7MW boilers and a 93m³ thermal store.



“ Working with Vital and Mulalley on our first site has been a useful learning experience for everyone involved. It’s been a real team effort to achieve the enhanced specification as far as was possible given our late involvement in the project. We’re proud to be seeing the benefits of our attention to detail play out. In our first year of operation we had no planned or unplanned interruptions and our customers are very happy in their new homes.”

IAN GUEST, TECHNICAL DIRECTOR, ENERGETIK

▶ VITAL SOLUTION

We initially joined the scheme in 2015 to install the energy centre plant and network for Mulalley to their designer’s requirements.

Following the introduction of Energetik to the scheme, Vital’s role in the project changed to take responsibility for the detailed design, amending it to reflect Energetik’s technical specification, working closely with both the contractor, Mullaley, and Energetik to deliver the new requirements.

Following Energetik’s approvals process we completed the first phase of the energy plant and network in October 2017, with the next phases well under way to complete the development of 517 homes, a hotel and a number of commercial units.

Phased construction tailored to the unique site requirements

The development’s phased construction plans would see the properties built over a period of five years. We also phased the design and installation of the energy plant and network to grow alongside the development and enable the

developer to manage its project cashflows.

The first phase saw the installation of a 240kWe CHP engine and three 1.7MW boilers, along with 93m³ of thermal stores, a cold water system and booster sets. Whilst the thermal stores and the CHP engine were not required until later phases, they were installed alongside the other plant in the first phase to eliminate the risk of interruptions being caused to the heat supply if installed at a later date. The CHP engine will become operational in a later phase when there are sufficient homes connected to allow it to be economically viable to run.

The district heating network installation is also being phased and will eventually serve the whole of the Ladderswood redevelopment site, growing in line with the overall project construction schedule.

Future-proofing the scheme to cater for client’s long-term aspirations

The energy centre has been designed to incorporate a further 240kWe CHP engine, and so that each

1.7MW boiler can be replaced with a 3MW boiler. This would cater for a potential larger energy demand if surrounding developments were to connect to the network in the future.

Energetik made the decision to install additional thermal store capacity, which is approximately double that which is required for Ladderswood Estate, in advance of requirement to enable for easy expansion of the scheme. This is due to the complexity of installing such large plant at a later date within a live energy centre. In the short term, this will provide both greater reliability of supply to the customers and enable the CHP to supply a greater percentage of the heat which will further reduce carbon emissions.

We are installing the network to the boundary of the development site at three locations which will be capped for future extension. This will allow for easy expansion to other offsite developments and gives the potential to connect to the planned low carbon Meridian Water Heat Network in the future.