



PROJECT SUMMARY:



CLIENT
Mace

PROJECT
Energy Centre & DH

TIMESCALE:
May 2013 - October 2016

CONTRACT VALUE:
£5.4 million

OVERVIEW

Greenwich Square is located on the vacant site of the former Greenwich District Hospital which was demolished in 2006 and offers the opportunity for a regeneration which will include 645 homes, leisure centre, library and health centre.

The positive benefit to the local community will be extensive, as the developers, Hadley/Mace are delivering a high proportion of the development as affordable housing.

THE CHALLENGE

Vital Energi would have to install 1km of pipework and create a state-of-the-art energy centre on a busy, multi-contractor site, not only scheduling works so that they don't clash with other contractors, but also arranging delivery of large pieces of plant and equipment.

The energy centre would need to conform to a series of national, regional and local planning requirements and legislation and Vital would, as always design an innovative system which was economic, resilient and easy to maintain.

THE SOLUTION

The Greenwich Square project involved connecting 362 homes across multiple blocks via a district heating system powered by a Condensing CHP engine, with several distinct design innovations which ensured the plant was efficient as possible. After extensive modelling, we created a thermal store solution which ensured

that the CHP only ever runs at 100%, its most efficient state, and stores the additional hot water in a thermal store for peak times of demand.

A creative pumping solution was created which operates during low loads, meaning that it uses less electricity for up to 40% of the time.

THE BENEFITS:

- > Energy centre optimised for maximum efficiency
- > Innovative pumping system brings added economy
- > Customer feedback praised Standard of Site Management, Calibre of Engineers and Attitude
- > 1km of district heating delivered on busy, multi-contractor site

- ▶ 40,000 litre thermal stores, 889kw Condensing CHP engine and 2.1MW high efficiency boilers.



This combined with control of the return temperature which enhances the schemes efficiency.

With the experience of our extensive in-house design team we custom designed acoustic louvres which met firewall standards, balancing the legislative requirements with the essential need for ventilation.

The district heating system involved VitalEnergi installing 1km of pre-insulated Series 1 steel carrier pipework, with pex flex Series 1 branches throughout the bustling site. Branches were installed from prefabricated T fittings, with fusion welding, all of which would undergo extensive testing to ensure the highest level of workmanship.

Completing the energy system, Vital also designed, supplied and installed all internal riser and lateral pipework in addition to supplying and commissioning the Hydraulic Interface Units.

Vital make every attempt to contribute positively to the project as a whole, rather than focussing simply on our area of responsibility, and this sees us programme works, communicate with fellow contractors and attend site meetings to ensure we are working in harmony with other contractors and ensuring work progresses for everyone as quickly as possible.

Our delivery team have high levels of engagement with clients, consultants and designers and at Greenwich Square actively participated in the weekly subcontractor meetings, contributing to areas such as improving health and safety.

Large pieces of equipment, such as the three 40,000 litre thermal stores and 889kw Condensing CHP engine require detailed planning for delivery and manoeuvring into position. On a busy site, when we have allocated time and space for large deliveries, it is essential that they arrive on time, and our supply chain is 100% reliable. This was achieved by our project team through high levels of engagement with all stakeholders and at Greenwich Square actively participated in the weekly subcontractor meetings, contributing to areas such as improving health and safety.

Other plant included 2.1MW high efficiency boilers, specified, in part, due to their low nitrogen oxide emissions which contributed to keeping the emissions in line with air quality legislation.

Our installations are future proofed to ensure robust access and maintenance, meaning that clients receive an installation which is not only easy to maintain, but is flexible to allow replacements. With pipework which has a life expectancy of 50 years and a CHP which has a life-cycle of 15 years, the energy generation solution will need to be upgraded during the projects' whole life and by careful planning and forethought; we can ensure this inevitable upgrade is simple and less expensive.

THE CONCLUSION:

Vital Energi's high levels of in house expertise ensure seamless project transition from design and procurement, through to installation, commissioning, and operation and maintenance. This not only avoids developers needing to deal with several different companies, but ensures that we can respond speedily to programme changes, variations and provide the perfect solution to an ever evolving development.

We ensure that we not only build relationships with the clients, but also other contractors and stakeholders, understanding that this will allow us to best deliver to our clients programme, but also to adapt to the inevitable change which a large, multi-contractor development brings.

Through careful, considered design, we were able to add several innovative features which made the energy solution more efficient and also more resilient. The result of this was an on-time, on-budget solution. Our Operations and Maintenance customer service review saw us gain fantastic feedback from the client, who praised important areas such as Standard of Site Management, Calibre of Engineers and awarded us 10/10 for our Attitude.