



PROJECT SUMMARY:



CLIENT
Camden Council

PROJECT
District heating

TIMESCALE:
October 2014 - Present
ongoing phases

CONTRACT VALUE:
£3.4 million

OVERVIEW

Camden Council have ambitious targets to reduce their carbon emissions by 40% by 2020 and one of the key stages to their plan is the first

phase of a District Heating Network which would initially connect 4 housing estates, providing heat and hot water from a central energy centre.

CHALLENGE

The location of the installation made the project extremely challenging. Located close to St. Pancras International station, the area would involve removal and reinstatement of cobbles, working on busy highways and walkways and dealing with the congested existing utilities in central London. It would also see Vital retrofit a brand new energy centre into the basement of a 1960's under used car park. The project presented our designers with a challenge as they would be designing the initial stages of what will

become one of London's major heat networks. Contingency was built into the design to accommodate future increased demand and also to ensure ease of expansion for future planned connections. The second phase of the District Heating Network will see the installation of a CHP engine in the energy centre, which will provide low carbon electricity via private wire to The Francis Crick Institute, one of Europe's largest biomedical research facilities.

THE BENEFITS:

- > Will deliver over 1,000 tonnes of CO2 reduction in Phase 2
- > Providing modern and efficient heating and hot water the community
- > Extensive modelling has provided ease of expansion
- > Problem free installation in the heart of London
- > Winner of the 2016 H&V District Heating Project of the Year

▶ In total, the Phase 1 district heating network is 581m long and links the energy centre with 4 housing estates which make up 339 homes.



“We are really excited by this project. It represents the first step in a network of low carbon energy projects, which will provide cleaner, greener, affordable and more secure energy supplies for communities across Camden.”

COUNCILLOR MERIC APAK, CABINET MEMBER FOR SUSTAINABILITY AND ENVIRONMENT

▶ THE SOLUTION

For phase 1 of the energy centre there are three 1.3MWth boilers. The Energy Centre has been designed so it can incorporate another 1.3MW boiler and a CHP engine working in conjunction with a thermal store. The waste heat from the CHP will be used to generate additional heat capacity for the residential connections while the low-carbon electricity will be sold to the Francis Crick Institute.

The Energy Centre is in a former underground car park which has been retrofitted. This has seen the Vital team employ creative design to work with the original building. This can be seen in the flue solution, which was designed to run up the side of the building and has been clad to match the buildings other lift shaft.

After extensive heat loss calculations and comparisons, Vital Energi has specified Logstor Series 3 single pipework which has an expected design life in excess of 50 years.

The 581m of district heating pipe which makes up the core of Phase 1 will include a range of pipe sizes. After careful analysis of potential future heat loads, all have been sized to allow for planned future expansion and range from 65mm to 250mm pipework.

The pipework has a moisture detection alarm system installed, accurate to one meter, allowing any issues to be addressed as early as possible and before a leak occurs.

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Camden Council had given a great deal of thought to the possible long-term evolution of their heat network and have procured a comprehensive 15 year Asset Management contract with Vital which will guarantee a minimum efficiency performance level in excess of 80% for the system.

THE CONCLUSION:

Phase one of the project will deliver significant CO2 savings for the first year, simply by upgrading the old, boiler system. Phase 2, which includes the installation of the CHP engine, will take place in late 2016 and is forecast to deliver further carbon savings.

The network has been designed so that after the CHP's lifecycle expires Camden will be able to use whatever the most low carbon and cost effective technology of the future may be. Phase 3 of the project is set to see connections to a further 136 dwellings, community facilities and a redeveloped school.