



PROJECT SUMMARY:



OVERVIEW

North West Bicester is the UK's first eco-town and the first phase received planning permission in 2012, with construction beginning in 2014. Its ambition is to become the first true zero carbon community in the UK.

We won the contract to design and deliver the entire energy solution including CHP energy centre, metering solutions and hydraulic interface units. The heat

and hot water would be distributed through the district heating scheme which was carefully designed, not just to reduce heat losses, but also to be future proofed and allow easy expansion of the system to accommodate the future phases 3 & 4. The team would also be working on an extremely busy site, liaising with other contractors who depended on us meeting our deadlines.

THE SOLUTION

This project presented a demanding schedule and Phase 1 required over 2,400m of district heating flow and return pipework to be fully installed in 1200m of trenches over a 6 month period. Vital Energi worked closely with the two developers on the busy, multi-contractor site to ensure a joined-up approach to planning and delivery. Due to the high-levels of in-house expertise, we were able to meet this challenging timescale, performing the fusion welding and the muffing to the strict deadline.

In addition to installing the main district heating "spine", we were responsible for delivering the

branches and house entries and designed the entire network to be "future proofed" so that it could be easily expanded to connect further phases as they came on line. The main spine is series 2 steel pre-insulated district heating pipework, designed specifically to reduce heat loss, with the branches and house entries made up of a combination of, Aluflex and Steelflex pipework.

Building Relationships With Contractors

Phase 2 of the project saw us deliver the extension of the mains network and house entries to connect 72 dwellings as well as the

CLIENT

A2 Dominion

PROJECT

District Heating

TIMESCALE:

2014-Ongoing

CONTRACT VALUE:

THE BENEFITS:

- > Reduced energy centre layout
- > Reduced Opex costs due to optimum pumping system
- > Faster, lower cost installation due to prefabrication
- > Improved H&S due to reduced on-site hot works

▶ After the completion of the initial phases Vital Energi have been contracted to deliver the connections to future buildings, continuing to be involved in the project as the network expands.



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internal riser and lateral pipework. Our engineers would also install and commission the hydraulic interface units and heat meters.

This phase was delivered by house builder Hill Partnerships and it was essential we built an effective relationship with them as they were contracted to perform the offloading of district heating pipework and all civil works connected with the district heating network, making communications and effective planning essential.

Delivering A 21st Century Energy Solution

The network is fed by an energy centre installed by Vital Energi during the phase 1 construction works. It utilises an 889kWe Combined Heat and Power engine, which not only generates electricity, but allows the heat generated to be used to create hot water. This is supplemented by two 776kw boilers and a 1750kw boiler, with the space for a further two to be added when demand increases. The design also includes three 27m² thermal stores which have a maximum operating temperature of 90 degrees and a capacity of 70,000 litres.

One of the key factors of the

A2Dominion development as a whole was the site's ability to generate electricity from both the energy centre and individual property PV cells. The network operator had set strict limits on total export from both sources. Vital Energi in collaboration with Silver Energy management Solutions Ltd worked through a methodical process of commissioning and verification to ensure that the energy centre would operate strictly in accordance with the design specification.