



PROJECT SUMMARY:



CLIENT

Mace

PROJECT

District Heating

TIMESCALE:

90 Weeks

CONTRACT VALUE:

£3.26m

THE BENEFITS:

- > Turnkey energy solution
- > Improved delivery solutions, substituting twin pipe for single
- > Trouble free installation on congested site
- > Installation of 1KM of district heating and 200m of district cooling pipework

OVERVIEW

In 2015 we won the contract to deliver the £25m biomass energy centre and district heating network for the University of St Andrews. The project called for the complete regeneration of the derelict, former Curtis Fine paper mill and the installation of a 10km district heating network which serves multiple buildings at the North Haugh Campus.

The Award-Winning project saw an innovative blend of Scandinavian technology and British expertise and created a system capable of delivering 6.5MW of renewable biomass heat

and saving up to 6,000 tonnes of CO2 per year. We also created much of the essential surrounding infrastructure for the biomass operation including the fuel storage area, wood chipping facility and delivering the new bridge to facilitate large biomass deliveries.

In addition to evolving the design and delivering the energy solution, we also entered into a comprehensive 5 year operation and maintenance contract and an associated warrantee on the district heating pipework.

VITAL'S SOLUTION

The district heating and cooling is supplied by an energy centre located in the lower basement level (B2) of one of the tower blocks named C2. It houses a 185kWe CHP two 1,700kW condensing boilers, three 8,000 litre thermal stores and four low temperature hot water skids. The energy centre also feeds the district cooling network.

Both the energy centre and district heating network were originally

delivered by consultants Aecom and our approach was to work with the lead client's professional team to develop improvements where possible. In this instance we were able to help enhance the design to reduce the overall footprint of the excavations. Our designers were able to create a solution which utilised twin pipe, where it was practical... Something which was necessary due to the congested

▶ The overall project was made up of five primary heating networks and two cooling networks which combined a range of different pipework to create an optimised solution.



‘The Vital team had good industry and energy centre knowledge to bring to the project, they knew what they were talking about and had a very good level of communications, good reporting and good point of contact in the relevant teams.’

JACQUES DE LANGE, SENIOR M&E MANAGER, MACE

site and other services being installed at the same time.

The full installation comprised of 5 primary district heating networks and 2 cooling networks which were made of Logstor series 2 steel pipework. Due to the complexity of the project we also used a broader range of Logstor products, utilising ALU-PEX Twin, Steelflex, Pex, Twin and Steel Pipework, integrating the different elements into an optimised network.

One of the main challenges our team were presented with came from the site's proximity to live rail lines. Due to this, representatives from Network Rail were on-site on a watching brief and constantly measuring any movement within the railway arches, which will later be converted into retail spaces. Network rail also imposed certain restrictions on the installations, which included maximum trench depths and dictated a maximum 12m of open trench before the need to backfill.

Ideally, we would opt for a 72m trench which would allow for one full day's continuous welding and deliver maximum progress. Normally, this

type of trench size restriction would have an impact on the delivery schedule, but because of our large pool of in house operatives we were able to allocate a full-time welding and jointing team who could install as the trenches were made available to us.

On many developments, the district heating is one of the first things installed, but on the Camden Lock Village Development buildings were already under construction and out of the ground before any of the underground services installation began.

This contributed to the congested nature of the site and saw the need for us to store all district heating pipework off site, where it could be delivered within the hour, as needed. Additionally, the swing radius of the crane was limited to 2.5m from the railway which saw the need to drop the DH in this area and then transport it into the final position. Normally, we install district heating in 12m lengths, but on this project we used 6m long lengths which could be more easily transported more easily around the site.

One of the issues which can arise on

sites of this type are clashes with other services. To overcome these we held onsite co-ordination and daily district heating meetings. This aimed to avoid clashes where possible and create solutions where not. Some of the clashes involved oil lines and oil cooled power cables which had a 1m restriction zone around, so the on-site team would create small variations to the route to ensure the installation was installed safely, while performing optimally.

Despite facing numerous challenges, we were able to work closely with the Client and their professional team to deliver the 1,000m of district heating and 200m of district cooling to connect three residential blocks and 31 retail arches, making this another successful decentralised energy project in the London Borough of Camden.