



PROJECT SUMMARY:



CLIENT
Currie & Brown

PROJECT
University of Sussex

TIMESCALE:
November 2016 - February 2017

CONTRACT VALUE:
£600,000

PROJECT OVERVIEW

The University of Sussex is situated amongst the South Downs National Park. They are currently updating and expanding their energy infrastructure to reduce CO2 emissions by 44% by 2020. They have been constructing new buildings to BREEAM standards, replacing old energy inefficient buildings and improving the energy use and insulation of existing buildings to reduce their carbon footprint.

Currie & Brown selected us to extend the existing district heating network along the east slope of the campus by installing 1.4km of pipework along a

700m trench loop, connecting to the existing system. This included 700m of pipe carrying hot water away from the energy centre, and 700m of pipe returning water to the energy centre.

The completed network will supply a variety of campus buildings, including the future science hub and student residences, which will eventually be home to around 600 students.

VITAL SOLUTION

Normal excavations for district heating pipework range from 1-2m in depth and width, however due to the undulating land and steep gradients that make up the South Downs, we

needed to excavate to 5m in places. Therefore, our initial scope of work doubled with an average trench depth of 3.5m and 8m wide.

THE BENEFITS:

- > Project completed one month ahead of schedule
- > Adaptable approach to accommodate scope of work
- > 1.4km of district heating pipework installed to achieve carbon reduction targets
- > Ability to feed future connections
- > Measures taken to conserve local wildlife

▶ The installation utilised the use of 1.4km of pre-insulated steel pipework to extend the district heating network



‘ The project had extremely tight timescales and through good communication, management and teamwork, Vital Energi reduced the delivery by over a month. The welding teams work was quite special and of excellent quality and the band-muffers work was also of high quality, especially in the conditions they were working in. The process was well thought through and Vital Energi’s Project Manager co-ordinated the teams of welders and band-muffers providing a seamless delivery. ’

RICHARD BATTEY, DIVISIONAL DIRECTOR, CURRIE & BROWN

To accommodate the changes, we amended our methodology to ensure we would complete the work on time, and so brought in two civils teams to work in sequence while excavating the trench. The first team dug to 4m and the next team used a trenching excavator to accurately dig the final 1m for the pipe to be laid. Additionally, to safely support the 5m trench, we battered the excavation sides back to 45° leaving the trench 11m wide in some places.

Delivered high quality work despite challenging weather conditions and work areas

We installed 8-inch series 2 Logstor pipes with an outer casing of 355mm along the 700m trench. When the pipe was laid, our teams of welders and band-muffers worked together to seamlessly join the network and were commended by our client for the high-class quality of their

installation during the difficult winter months.

We came across some service clashes on Boiler House Hill and innovatively avoided them by bending some of the pipework in position using pneumatic air bags. To do this, we used a system with up to 80 tonnes of pressure with the added advantage of not damaging the pipework as the airbags are soft. Our operatives were not at any risk as they did not need to be in contact with the pipe while the bags were inflating and this technique meant that we did not need to re-route the network to avoid clashes.

Centring countryside environment and pedestrian accessibility

Finally, we were sensitive towards pedestrians on campus and the considerate measures that the university have taken to preserve

the countryside environment. We devised a dynamic pedestrian access plan with several routes, which could be opened and closed to maximise flexibility, and maintained access at all times. Additionally, we communicated with other contractors and rerouted part of the network to avoid disturbing the local wildlife conservation areas, which are home to newts and badgers.