

UNIVERSITY OF LIVERPOOL DISTRICT HEATING

Contract Value: **£2.8million**

Client: **University of Liverpool, EMCOR
Engineering Services Ltd and Bardsley
Construction**

- > CO2 emission reduction
- > Reliable and secure energy supply
- > Reducing carbon footprint
- > District heating enables the efficient transportation and use of heat
- > Efficient energy supply
- > Lower energy costs
- > Stable and competitive energy rates

> Introduction

The University of Liverpool is one of the UK's most environmentally aware and progressive institutions and has undergone a complete transformation in its energy infrastructure. Sustainable energy specialist, Vital Energi, has worked with the University, and with contractors EMCOR and Bardsley Construction, on a number of district heating pipework projects, to assist with this transformation. All of the projects required meticulous planning in order to minimise disruption to the University which remained open throughout some of the work. Vital Energi's expertise and experience of working with challenging logistics meant that all of the projects were completed on time and to budget. Liverpool University has adopted a Carbon Management Plan which commits it to a target of cutting 30 per cent of its CO2 emissions by 2016/17. This major infrastructure project provides the university with a state of the art sustainable energy solution that can meet the energy, emission and environmental challenges of the 21st century and provide robust power and heating solutions for the university campus for the next 25 years.

> The Vision

The University of Liverpool aims to be a leading sustainable university and recognises its responsibility to ensure sound, environmentally-responsible operational practice in all its activities. As a member of the Russell Group, the association of the UK's top 20 research-led universities, the University is investing a total of £600 million in its facilities. This includes £350 million in its academic buildings and £250 million in its student accommodation. It is making this investment as part of its commitment to providing a world-class student experience and research environment.

> The Solution

Vital Energi's first project was directly for the University and was carried out during June to December 2007. The company was awarded the contract to install the main district heating system through major highways in the City Centre of Liverpool and the campus itself, working under difficult conditions at night time and around large electrical services.



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More than 1000m of district heating pipe was laid during this part of the scheme which connected University buildings to the CHP energy centre. The University also awarded Vital Energi a 15 year maintenance contract for the district heating pipe network that it installed. During this phase of the works, Vital Energi, the market leader in district heating, further assisted the University by providing pipe size design services and advice on future-proofing the system. The work included connecting to new and existing buildings, some of which were more than 100 years old. Vital Energi also installed its own exclusive Band Muff™ fusion welded joint system which increases the pipes life span to more than 50 years and therefore lowers maintenance costs.

The University recommended Vital Energi for additional district heating projects with its building contractors EMCOR and Bardsley Construction. Working with EMCOR, Vital Energi extended the previously installed district heating mains, connecting into several large buildings including the Harold Cowan Library, CTL Building and Architecture Building. During this phase of the works, which was carried out between November 2008 and October 2010, Vital Energi laid more than 900 metres of district heating pipe. From June to September 2011, Vital Energi also carried out a scheme for Bardsley Construction which involved extending the district heating mains to the two new Bioscience buildings. These new buildings incorporate many energy saving measures and are being built to achieve an Excellent BREEAM (Building Research Establishment Environmental Assessment Method) rating. BREEAM is the world's foremost environmental assessment method and rating system for buildings.

Conclusion

Vital Energi has developed a close working relationship with the University, and its contractors, over the five years it has assisted with the creation of the campus community heating system. During this time, Vital Energi's experience and expertise in its specialist market has enabled it to effectively manage complex logistical challenges and provide guidance on pipe sizing and expansion solutions to ensure the successful completion of the project. The University of Liverpool now has a green infrastructure that meets its energy needs, lowers its costs and reduces its environmental impact while also incorporating innovative solutions for its future energy challenges.