



## PLYMOUTH DISTRICT ENERGY CULTURAL QUARTER PLYMOUTH, UK

The University of Plymouth takes a proactive approach to reducing their carbon emissions and retaining their leading positions in the LiFE accreditations and the People and Planet Green League. Plymouth City Council (PCC) are also prioritising reducing their carbon emissions and fuel poverty, while improving energy security and supporting inward investment in the area.

BuroHappold Engineering was commissioned by PCC to provide consulting services for the development of heat network projects in the local area. The work was partly funded by the Department of Energy and Climate Change's (DECC) Heat Networks Delivery Unit (HNDU).

This project will establish a catalyst for heat networks in Plymouth. The scheme centres on a university network connecting to loads off campus, increasing the connected load and supplying low carbon heat from the existing CHP with a new biomass boiler and thermal storage. The long term vision is to extend to other seed networks within the city, forming a connecting energy network. This will enable low carbon development, retain energy 'spend' within the region and reduce future energy costs for consumers and organisations.

BuroHappold undertook technical design and modelling of the energy system to optimise energy centre size, heat source

and additional thermal storage based on annual load profiles and operating parameters. The study included network and energy centre design, costing, sensitivity modelling of variables and scenarios as well as the project delivery plan. The commercial model developed provides recommendation on the performance of the scheme and the operational structure that could be adopted to retail heat to off-campus users.

The city centre and University site presented spatial and access challenges for the proposed District Heating Scheme, coupled with local Planning limitations. In addition, addressing the needs of the diverse stakeholders involved required identifying a mutually beneficial option that would still meet the key aims of the project.

To address the technical and commercial challenges of the project, strategies were developed that tackled issues such as the interface with existing data, alongside development and testing of scenarios and options were used to meet technical challenges: energy and financial modelling tools were the key to understanding the potential of the scheme.

BuroHappold stakeholder engagement workshops contributed to understanding stakeholders' aims and to developing a mutually accepted plan.

CLIENT  
Plymouth City Council

DURATION  
2014 - ongoing

SERVICES PROVIDED BY  
BUROHAPPOLD  
Energy consulting, sustainability