

MANCHESTER CIVIC QUARTER

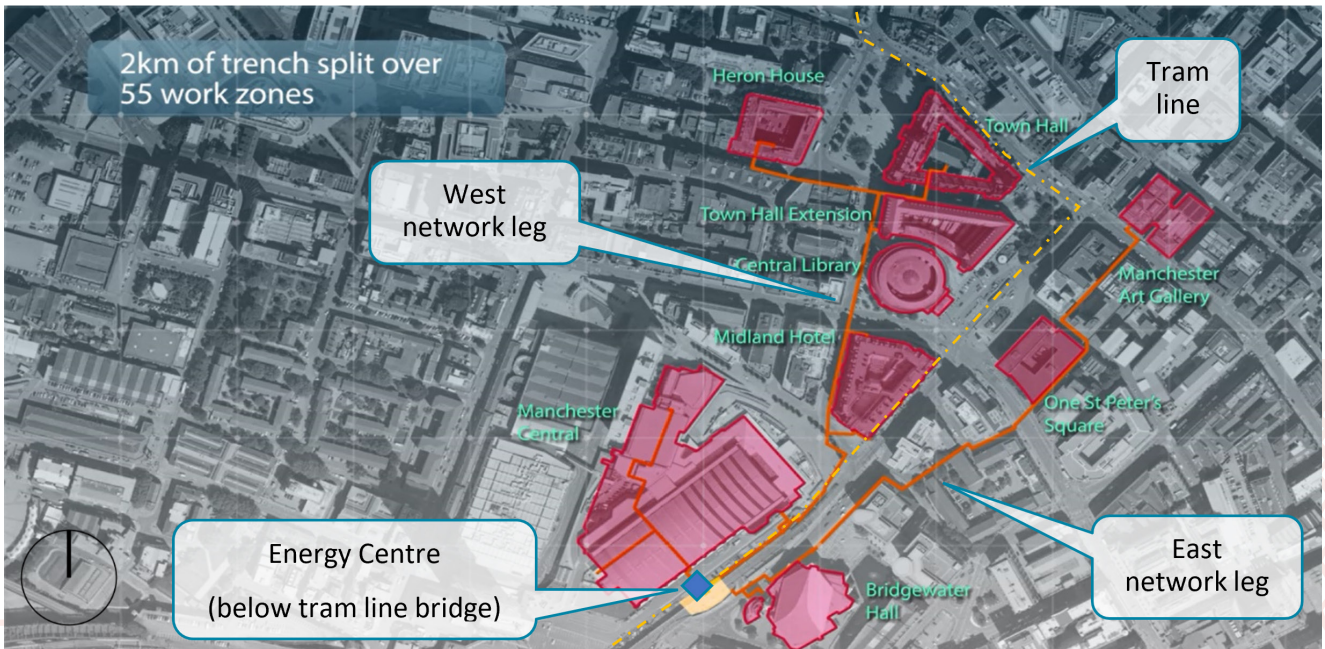
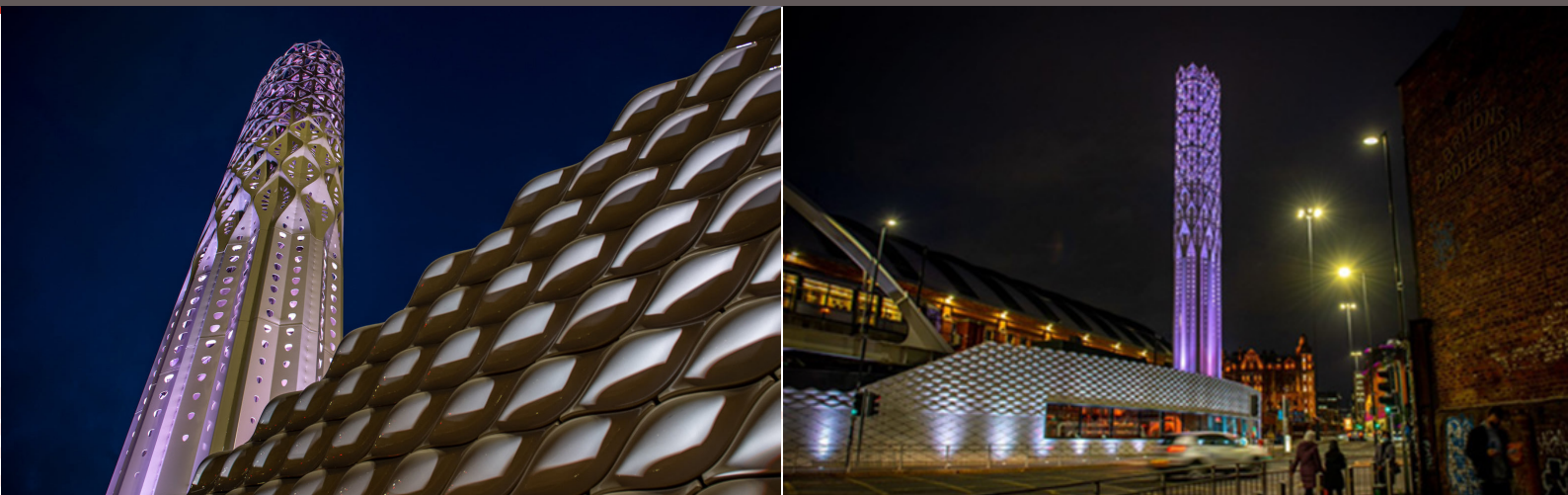


Figure 1. Location of Manchester Civic Quarter Heat & Power Network and Energy Centre - note Midland Hotel will no longer connect to the network. (adapted from Vital Energi drawing)

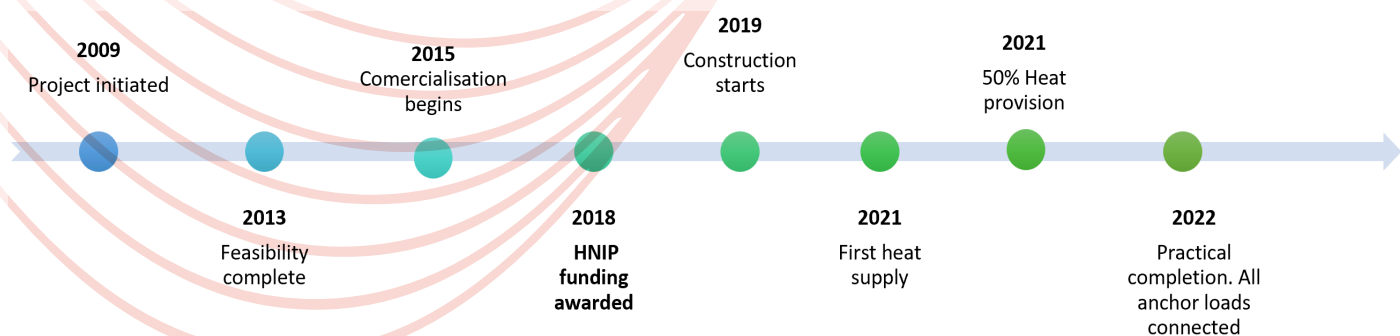
Funding beneficiary	Manchester City Council
Location (Town/City)	Manchester
Total project capex	£20,000,000
Funding awarded	£2,870,000 construction grant
Planned heat export at completion	18.7 GWh per annum
Planned cooling provision at completion	N/A
Heat source & technology	CHP and backup boilers 3.3MW CHP generator and two 12MW gas boilers
Thermal storage capacity	3 x 40m ³
Key anchor loads	Manchester Town Hall
Length of primary network	2km
Anticipated number of buildings and/or connections	Town Hall, Town Hall Extension, Central Library, Manchester Central Convention Centre, Manchester Art Gallery, The Bridgewater Hall and Heron House
Annual carbon savings (average over first 15 years)	473 tCO ₂ e

The Manchester Civic Quarter Heat Network (CQHN) was initiated by Manchester Council - delivered by Vital Energi - to help the Council deliver on its local decarbonisation, and now net zero strategy. The HNIP grant enabled the first construction of the network.



The energy centre is located beneath the railway arches of Manchester Central Station and is earmarked by the 40m 'Tower of Light', acting as an awe-inspiring architectural cowl for the five CHP generator flues. The project has been designed with the potential for future expansion, not only in scale but in its heat and power generating means. As new technology becomes available, like hydrogen blending, biomethane, and more renewable generating technologies, upgrades to production and storage methods can be made.

Project Milestones



The Story So Far*

The provision of HNIP funding to CQHN enabled Manchester to reap the benefits of district heating networks in its bid to decarbonise. The potential for further future decarbonisation of CQHN and the wider energy and heating network will be enabled through the procurement of Green Gas and hydrogen blending (in 2025), an increased mix of renewable grid energy, and other decarbonising solutions measures implemented in the UK. This means that Manchester can compound its carbon reducing measures and move towards its net zero goal with confidence.

The funding also provided substantial social value to the local and wider area. As a result of the project, 22 new members of staff, including four apprentices and one Manchester graduate, were hired by the delivery partner Vital Energi. Furthermore, £15,000 has been donated to The Christie NHS Foundation, a leading Mancunian cancer treatment clinic – this was raised through various fundraising efforts carried out over the project's duration.

Continuing to develop plans and engage with further off-takers to the network will help it reach full capacity.

Project Insights

Architectural complexities arising from heritage challenges at the energy centre required innovative solutions. Overcoming the challenges of laying pipes in the congested underground of central Manchester required expertise and problem-solving capabilities.

Adaptability within the supply chain played a crucial role, considering Manchester's bustling economic hub. The project successfully adjusted to changes in buildings, such as event spaces, national events, and judicial spaces.

The heat network maintained a proactive and collaborative approach throughout implementation, fostering strong relationships with clients and funders.

Efficient planning and project structuring laid a solid foundation for the heat network's success. Early structuring with a preferred bidder and the use of pre-services construction agreements allowed for ample time during contract negotiations, facilitating planning applications, early orders, and design development.

Collaborative work with the operator and off-takers proved effective in achieving the decarbonisation goals of the energy centre.

Councillor Tracey Rawlins, Executive Member for the Environment, and Transport Manchester City Council said:

"The Civic Quarter Heat Network will provide a highly efficient source of heat and power for some of Manchester's most iconic buildings, making significant carbon reductions and contributing towards the city's shared goal of becoming carbon-neutral by 2038."



*Up to date as of March 2023