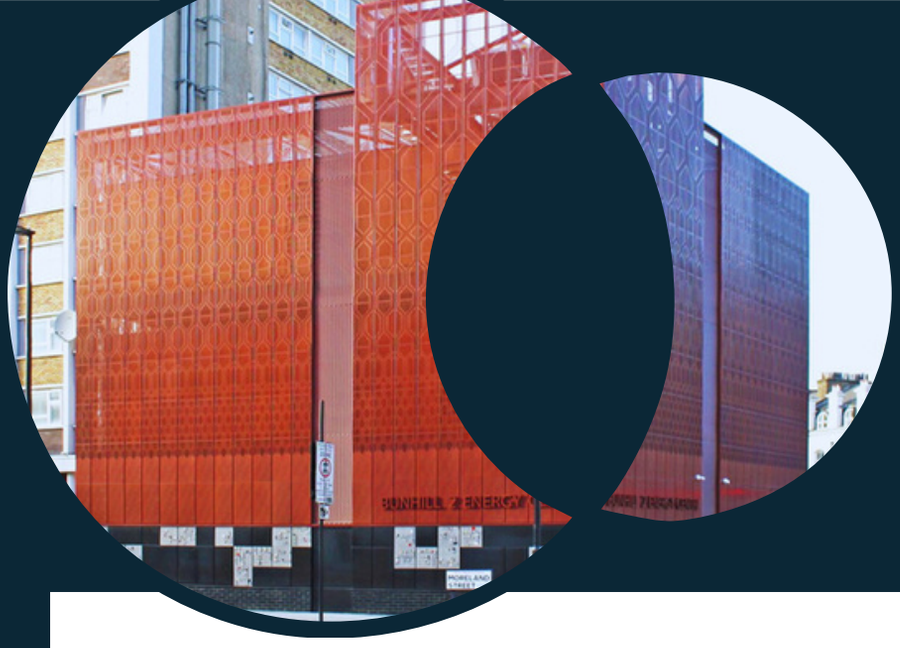
Case Study

Bunhill District Heating Network



Client:
Islington Council

Principal Contractor:
Colloide

Value:
£12M

Location:
Islington,
London, UK

Project:
District Heating

Colloide were employed as the principal contractor to deliver the design and build of the Bunhill Energy Centre and the district-wide heat network phase 2.

This is an innovative project which recovers heat from the London Underground. The project is also the first of its kind in Europe.

Phase 2 of the Bunhill Heat and Power network consists not only of an extended DH network but also a highly inventive new energy centre.

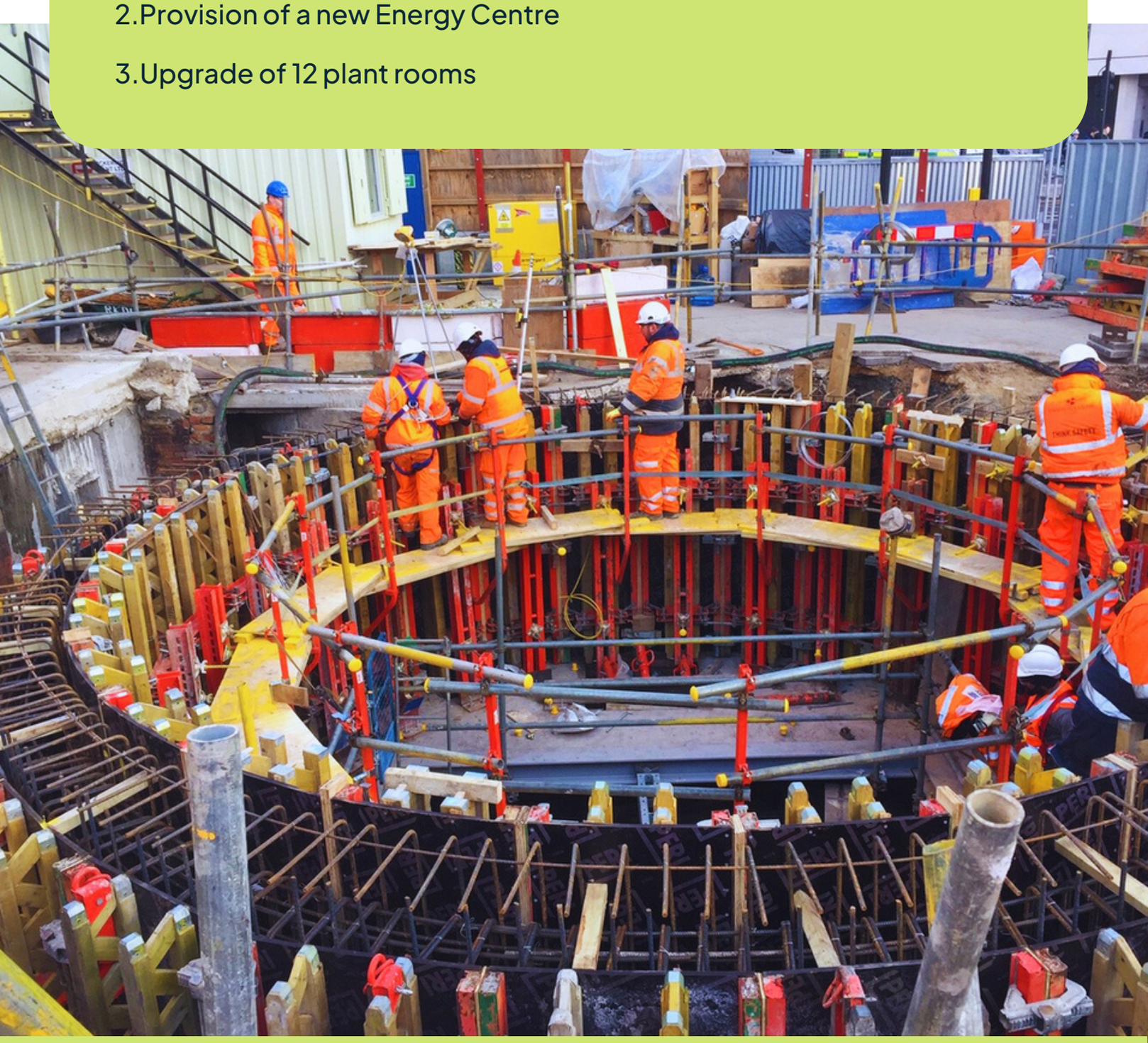
Islington Council, Bunhill Ward and the EU CELSIUS research project (managed by the GLA in London) agreed to fund an extension of the heat network and provide additional heat production capacity for connected buildings. The extension allows Islington Council to connect a further 454 homes in the area, with the potential to supply a further 1,000 homes

Project Deliverables

The main objectives

This project included three main parts:

1. Extension of DH network
2. Provision of a new Energy Centre
3. Upgrade of 12 plant rooms



Extension of DH Network

The main components of the system

The DH network aspect of this project included the installation of over 1600m of underground DH pipework – all steel insulated pipe from Logstor ranging in size from 250 diameters downwards. This aspect of the works was complex, requiring pipework to be installed across heavily congested roads (in terms of underground services and traffic) in London requiring significant planning and management.

The District Heat Network had to connect and run through four separate live sites consisting of:

- A new school- Morelands School constructed by Morgan Sindal
- A new multi-story Housing Development constructed via Higins
- A new multi-use development constructed by Lexion Developments

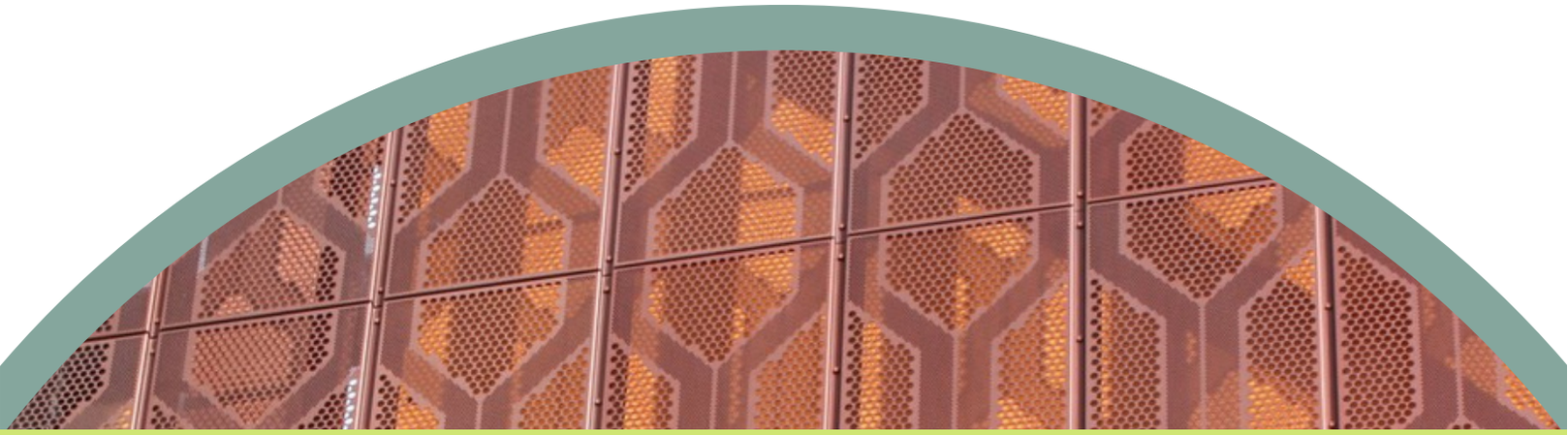
These projects were also in development at the same time as our works which required close coordination which was managed through regular meetings and coordination including traffic management.

Plant Room Upgrades

To allow the existing plant rooms to accept heat from the DH network, the plant rooms were upgraded to include thermal substations and associated equipment and control. The plant rooms were modified and upgraded in two phases. The first phase consisted of modifying 7 of the plant rooms which were already connected to the network as part of the Bunhill phase 1 project. The second phase then consisted of modifying a further 5 plant rooms which were being connected to phase 2 of the heat network extension. As the plant rooms are always active, the work in these rooms were carefully planned to ensure there was no downtime and minimal shut downs.

Energy Centre Design & Build

The Energy Centre included 2no. 240kw and 1no. heat pump with the Heat pump system taking air from the London Underground and transferring this into hot water to be used in the DH network. Two CHPs were also used to provide electric for the site with the heat also being transferred to the DH network. This reduced the electrical impact of the site & maximising return of investment. The overall system is controlled by a central SCADA system linking to the plant rooms and Energy Centre 1 which use local BMS controls. All existing BMS controls were upgraded or replaced as part of this project



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