

Web link to solution information:

<https://www.kensacontracting.com/services/fifth-generation-district-heating-cooling/shared-ground-loop-arrays/>

Description:

Shared Ground Loop Arrays use a cluster of boreholes (each 200m deep) to extract low temperature heat (2C - 10C) from the ground. This is then distributed to each property at low temperature. This means there is no heat loss in the distributing pipe work and as a consequence the operator of the system is not paying for wasted heat and communal areas do not overheat. In each home is a Kensa Shoebox Heat Pump which upgrades the heat to higher temperatures delivering heat to radiators at 45-50C and hot water at 65C with no requirement for a backup fossil fuel system. As the internal individual Shoebox heat pumps are connected to the electricity consumer board in each property, each occupier pays for heating and hot water through their standard electricity bill. This means that the tenant is free to shop around on the open market for electricity and the operator is not required to meter heat, contract with or bill each resident. Each heat pump has a service life of 20-25 years and the boreholes last in excess of 100 years.

The benefits of shared ground loop arrays include:

- the lowest carbon emissions of any renewable heating technology (thereby making significant progress towards net zero communities),
- considerable improvements to EPC ratings achieving gold sustainability standard for new build without additional technologies,
- the lowest end user fuel costs of any renewable heating technology, alleviating fuel poverty in UK communities (up to 45% savings when compared with electric storage heaters).
- low maintenance and servicing requirements making systems hassle free to operate,
- lowest lifetime costs - GS heat pump unit replacement expected after 20 years or more.
- an income available via the Non-Domestic RHI for 20 years
- no requirement for energy centres or districting heating pipework
- no requirement for heat interface units, heat metering or billing to occupants
- ability to provide both heating and cooling
- suitable for any housing type - tower blocks, apartment blocks, terraced, semi-detached, detached etc.