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Case Stories

Vahterus Technology at The Centre of Yet Another Revolutionary Net Zero Project

Rebecca Casale, Key Account Manager at Vahterus

The project to extract waste heat from an underground train network is the first of its kind in the world, and Vahterus Plate & Shell technology is right at its centre. A purpose-built ammonia heat pump was commissioned by Islington Council to sit at the heart of the revolutionary Bunhill Energy Centre in London, located on the site of an old underground station.

The decommissioned station, once named City Road, is now home to an innovative underground air extraction system, whereby warm air created by machinery and trains on the London Underground's Northern Line is extracted via a ventilation shaft. Energy from this warm air is then used by the heat pump to heat water, which is distributed through

Bunhill Energy Centre utilises warm air created by machinery and trains on the London Underground for district heating.

the 1.5 km network of district heating pipelines. Cheaper, greener heat is then delivered to various buildings within the community, including 550 homes, leisure centers and schools.

In the colder months the heat pump will be running near full capacity (1,000 kW), delivering energy to the various buildings within the area. However, in the warmer months, when demand decreases, the fan from the ventilation shaft is reversed, and instead injects cooling into the underground network, helping to keep passengers more comfortable.

Islington Council commented: 'This ground-breaking scheme has the potential to be replicated not only across Islington and London but in any major city with an underground network. That's because heat networks, such as Bunhill Heat & Power Network are able to harness a wide range of renewable and waste heat sources that are already available within a city.'

Paul Button, Director of Vahterus, UK said: This is another great example of the client selecting Vahterus for ground-breaking and innovative technology. The compact size, low ammonia charge, reduced maintenance cost and fully welded construction (less risk of leakage) means Vahterus Plate & Shell technology is perfect for heat-pump applications. We are delighted to have played a part in such a successful project, which is yet another example of modern heat-pump technology helping provide lower-cost greener energy in an area, where affordable heating is more vital for the community than ever before. The Bunhill Energy Centre has already reduced CO_2 emissions by around 500 tonnes per year and this is set to increase due to the long term expandable and flexible solution.