

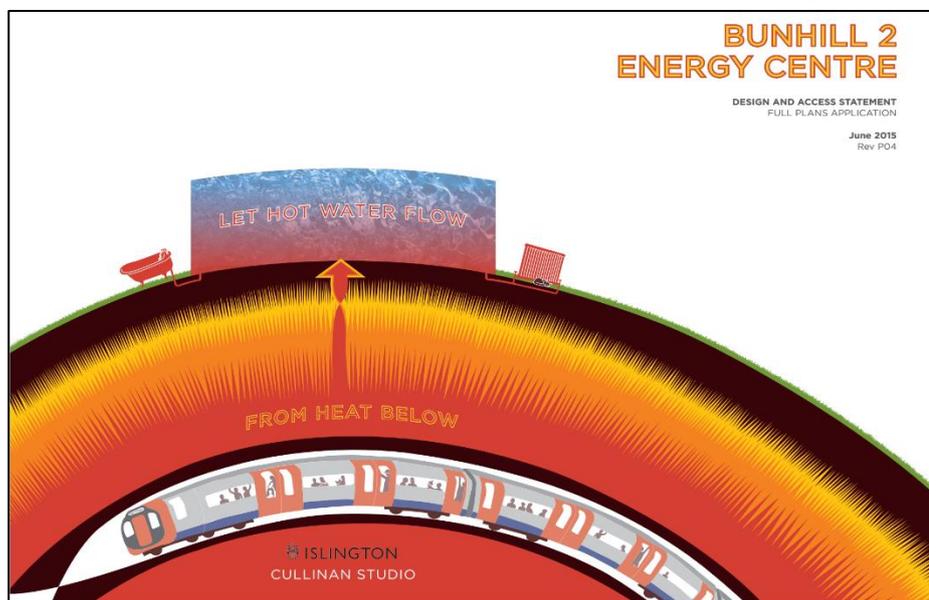
# CITY ROAD HEATS THE NEIGHBOURS

by Antony Badsey-Ellis

City Road station was opened by the City & South London Railway (now part of the Northern Line) in 1901, as part of its extension to Angel. It was located between Angel and Old Street and was never a popular station. The neighbourhood was run down, and when the C&SLR was reconstructed in the 1920s the station closed forever. As was typical for closed tube stations, the platforms were demolished, and during the Second World War the space was used for an air raid shelter. The station has also been used for ventilation, and when much of the street-level building was demolished in the late 1960s, a brick ventilation tower was added onto the fragment which remained.

Apart from tours in 2001 as part of the Open House programme, very little of note has occurred at the station since then – until last year. The station is now being rejuvenated through an initiative by Islington Council as part of a district heating system.

In 2012, Bunhill Energy Centre opened on Central Street. This is a gas-fuelled Combined Heat and Power (CHP) system, generating electricity for supply to the National Grid, but also pumping hot water (taking waste heat away from the power station, through its cooling circuits) through insulated pipes laid under the streets to nearby residential buildings and leisure facilities. Over 700 homes have been heated in this way, with the residents seeing their heating bills drop by around 10%.



The success of Bunhill has led Islington Council to develop Bunhill 2. This will be located on the site of City Road station, and will only provide heating.

Instead of this deriving from electricity generation, it will extract heat from the warm air being pumped up the ventilation shaft (formerly the station lift shaft).

**Left:** the cover of the Design & Access Statement prepared for the Bunhill 2 Energy Centre, and is a modern take on the classic 1920s “It is warmer below” Underground poster.

It will receive further heat from an adjacent substation. All of the heat is currently lost to the atmosphere, and so for a small amount of electricity to run the new plant, a far greater amount of energy can be recovered. The European Union is helping to fund Bunhill 2, providing a grant of €1.2 million via its CELSIUS programme. It is the first of its kind in the UK, and one of the first in Europe, and the EU is hoping to reuse the technology in other cities such as Gothenburg, Rotterdam, Cologne, and Genoa.

The derelict-looking remains of the station building, which just housed the ventilation shaft and access to the stairway down to track level, have been demolished, and a new building is being constructed on its site. This will contain the plant necessary to extract the heat. It will be similar to the heat pumps used in homes to provide heating, either from tubes on the roof or coils of pipe buried in the ground. Ammonia will be pumped through heat exchanger coils located in the ventilation shaft, and be warmed to 20-30°C by the air from the running tunnels. The heat pump will then concentrate the heat, providing an output of hot water at 80°C to pump through the under-street pipes to nearby residential blocks. Islington hope to heat a further 454 houses on the King’s Square estate from Bunhill 2. These buildings will retain their existing communal heating boilers, but will need less fuel once the new hot water circuits are joined to the existing building heating system.

The new building will be highly distinctive, with black glazed bricks and enamelled steel panels used for the ground-floor, above which a further two or three storeys (depending on elevation) will be clad in copper panels and copper mesh. The mesh will allow for ventilation of the equipment within. Raised flower beds and new planting will be provided around the building after completion. The building design has been carried out by the local Cullinan Studio architectural practice, in conjunction with Islington Council.