



Heat Decarbonisation

Overview

A significant part of the decarbonisation of the College is the new energy strategy.

The original College used oil fired boilers which were subsequently changed to gas-fired boilers and finally to gas-fired central heating plant.

The key elements of the energy strategy are as follows:

- The separation of space heating (central) and domestic hot water (local).
- A new Energy Centre (ASHPs) adjacent to the existing boiler house to provide a centralised energy source for the space heating using the existing heating loop.
- New local ASHPs to provide domestic hot water to the residential courtyards.
- New local ASHPs to the buildings not served by the central system to provide a mixture of both heating and hot water.



Energy Centre: Components

The Energy Centre (Air Source Heat Pumps) will be the primary source for space heating within the central area of the site (the original communal buildings and residential courtyards).

The principle strategy is as follows:

- A flat bed of fans are located externally working on a down-draft principle for air movement.
- These components will be screened for both visual and acoustic reasons.
- There will need to be a gap to the base of the screen to allow for air movement and for the fans to function efficiently.
- The compressors will be located within the existing boiler room (the existing heating installation will be removed) - the compressors produce the most noise and do not to be located externally.

Acoustics

Key to the specification and location of the Energy Centre is the mitigation of any noise pollution. This will be achieved through its location, acoustic screening and specification of components.



Air Source Heat Pumps

(ASHPs to Wider Site)

It is proposed to de-gasify the whole campus through the replacement of existing energy sources with Air Source Heat Pumps.

For the residential courtyards the existing, redundant water tank, located at roof level will be re-purposed as a ASHP enclosure. This occurs at the top of one staircase in each courtyard. The enclosure will be raised by around 300mm of brickwork to fully conceal the equipment (see West Court view - right).

For the remaining buildings small enclosures for heat pumps at ground level are proposed. These will be screened visually and acoustically as necessary.

