

CASE STUDY:

Air source heat pump system

SERVICE: DESIGN & INSTALLATION

PROJECT: Public Sector Decarbonising Scheme

CLIENT: Hammersmith & Fulham Council

DURATION: 12 months

VALUE: £660,000

“ Great working with the Accent Team, very much looking forward to a meeting to celebrate the success of the PSDS project. ”

Henry Oriabure
Project Manager
Corporate Properties and Facilities Management
Hammersmith & Fulham Council

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Assets at-a-glance

MACBETH LEARNING CENTRE

- 3 x Samsung ASHP & hydro boxes
- Biddle fan convactor network
- 1 x shunt set with header
- 2 x primary pumps
- Thermal inertia to 2 tonnes
- Web based control system

BROOK GREEN NURSERY

- 2 x Samsung ASHP & hydro boxes
- Biddle fan convactor network
- 1 x ASHP onto 2 x hydro boxes for the hot water service

Based on the findings of Hammersmith and Fulham Borough Councils' January 2021 Carbon Audit, a pressing need was established to tackle an unacceptable carbon footprint spread across a range of areas. When it came to the matter of de-carbonising the heating systems in two authority run buildings, the council approached

Accent Services to find and implement the zero-carbon solution their scheme demanded.

With the greater part of a century between their construction dates, the two sites in question each presented a different set of variables, when it came to the design of the system.



The Macbeth Centre

The Macbeth Centre is an adult education hub, offering a huge range of adult learning and skill classes. Built in 1875 of a traditional red brick design, the heating was originally coal fired. This was replaced with a gas boiler in the 1950's which used the the existing cast iron radiator network. Accent Services designed a new, state of the art system using three air source heat pumps feeding into a series of large hot water storage tanks which were conveniently sited in the original coal store. Thankfully, all the asbestos cladding of the old system had been expertly removed prior to arrival on site, presenting Accent with a clean space to work in.

Access however was a challenge, and to ensure that all plant would fit neatly in the space and also be able to be manoeuvred into position in the confined area, Project Manager Jack Cooley called on his team to 3D model the plant to ensure there were no nasty surprises once implementation could begin. Accent's planning allowed the project to run smoothly with the tanks craned in to position through the original coal chute. One other requirement of the 3D modelling exercise was to ensure that potential replacements, driven by future preventative maintenance were possible and could be achieved with minimal disruption.

In all, Accent installed three Samsung air source heat pumps and hydro boxes serving Biddle fan convectors across multiple classrooms. The installation comprised one shunt set with header and two primary pumps. The design incorporated Thermal inertia to two tonnes and a web based control system.

Brook Green Nursery

Built in the 1980's, the Brook Green site spanned the ground floor of the building plus all the attached exterior garden area. With a more recent construction date, this building benefitted from significantly better insulation giving racially lower U values throughout. Accent's task again here was to reduce carbon emissions due to the production of heating and hot water, down to zero, and so another bespoke air source heat pump system was designed. With an altogether more efficient building, this system only required two heat pumps to generate sufficient hot water to heat the classrooms. However, Accent installed a third; a high temperature unit, generating 80 degrees to supply hot water for sinks and bathroom etc.

The plant was craned into place in a new purpose built plant room adjacent to the building, with the heat pumps nearby in a discreet louvered enclosure.

In all the system comprised two Samsung air source heat pumps and hydro boxes serving Biddle fan convectors across multiple classrooms, plus one more on to two hydro boxes for the hot water service.

Air source heat pumps

We think of heat pumps as a modern technology and indeed, the levels of efficiency that we now enjoy is a relatively recent development. But the invention of the heat pump actually outdates the Victorian Macbeth Building by some 10 years. At Accent however, we concentrate entirely on the heating and air conditioning of the future.

