



Carbon Reduction in Commercial Heating & DHW Systems



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Can you reduce the carbon footprint in your building?

Case Studies – Northamptonshire Leisure Centres NHS Building Oxford

Deep Dive Project Insight - Cheshire South College, Crewe Importance of Public & Private sector collaboration, client considerations, funding, design, installation and outcomes

The Additional Benefits of Decarbonisation











Northamptonshire Leisure Centres

Major retrofit of heating and DHW supply to x4 leisure centres across the county – Towcester, Daventry, Brackley & Moulton

4.5MW of Air Source Heat Pumps, providing heating and DHW to changing rooms.

X44 ASHP's in total along with thermal stores and calorifiers.











NHS – Jordan Hill, Oxford

ASHP's providing DHW to a newly refurbished building.

The project involved a deep retrofit of the complete space, with upgrades to the entire facility.

x2 25Kw R290 ASHP x2 500l Calorifiers















Cheshire College South & West



The Project -

Removal of existing 1.5MW gas fired system & installation of 1.5MW's of air source heat pumps & thermal stores

Client – Cheshire College South, Crewe

Main Contractor & Design – AA Projects (Drees and Sommer)

Funding – PSDS via Salix

Detailed Design – KGA Consultants

aaprojects







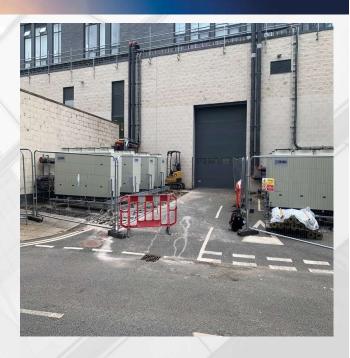
Installation – Senate Mechanical













First things first

- Client requirements
- Required outcomes decarbonisation and heating
- Funding options source and application
- Product selection identify system from published data
- Available power onsite possible upgrade requirement?
- Positioning identify useable space













Next steps

- Thermal stores and supply correct capacity
- Pipe runs detailed design
- Noise considerations workspace and residential areas
- Test & commission Identify snags & any parameter adjustments onsite and online before going "Live"
- Handover and ongoing servicing, maintenance and monitoring



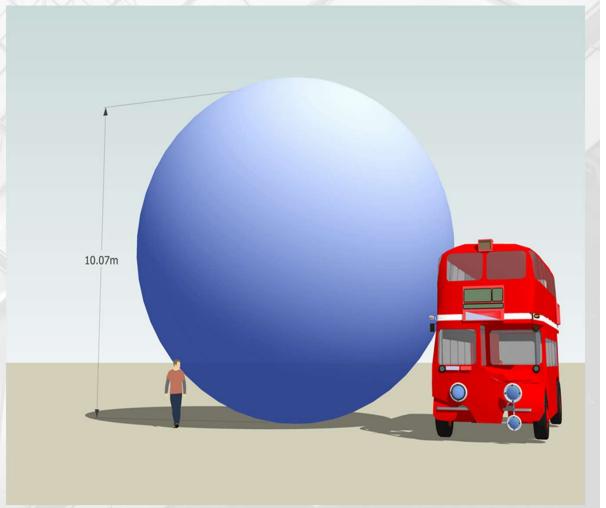
Outcomes

- Hot water supplied at 65c
- Providing heat for entire campus

*Carbon Reduction

- 721 tonnes per annum
- 11,000 tonnes over 15 years

*Estimated
Based on 80% boiler efficiency
SAP 10.2 calculations
182 Heating days





The Additional Benefits of Decarbonisation





pump and an accompanying 1000 litre Strebel TS1000 Thermal Store. The S-ASX-LQ model makes use of a liquid injection refrigerant circuit enabling up 68°C flow even down to air temperatures of minus 20°C making it a perfect technology for such retrofit projects.

Consideration had to be taken with the design and installation carried out by Martin Environmental Services regarding the positioning of the heat pump and its proximity to the coast. A saline resistant epoxy coating was applied to the external surface fins of the heat pump evaporator coils improving their corrosion resistance. In consideration for local residents and businesses Martin Environmental also designed and installed a bespoke enclosure for aesthetic purposes, and also to lower noise emissions from the installation

Masters House now contributes to the local authority's commitment to Net Zero; not just today but for many years to come.



1 x TSE1000 Thermal Store

We selected the Strebel heat pump due to its high quality and capability which was suitability for the location. Strebel provided us with an excellent communication and after sales service.

Peter Adams, Martin Environmental Services

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