



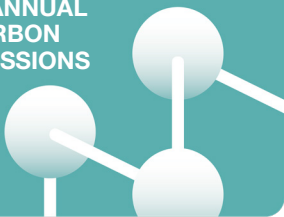
Ashbourne Leisure Centre, Derbyshire Public Sector Decarbonisation Scheme

Grant value
£734,006



121 tonnes

REDUCTION
IN ANNUAL
CARBON
EMISSIONS



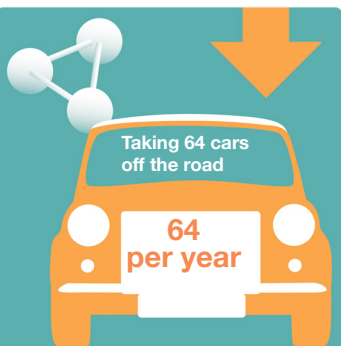
95%

REDUCTION IN
ANNUAL GAS
CONSUMPTION



£2,146

REDUCTION IN ANNUAL
ENERGY COSTS



Derbyshire Dales District Council received funding of £734,006 from the PSDS grant for the implementation of a decarbonisation project at the Ashbourne Leisure Centre. These works will assist with the Council's commitment to be carbon neutral by 2030, reducing annual gas consumption and carbon emissions. Leisure Energy was asked to carry out an in-depth energy survey, assist with the compilation of the technical aspects of the application and project manage the installation of new energy equipment as Principal Designer and Contractor.

Technical Overview

Leisure Energy undertook an appraisal of the energy usage and condition of equipment at the leisure centre. The dryside facility was constructed in 1974, with a wetside extension built in 2004. Wet-side boilers and AHU replacement took place in 2016 and Leisure Energy installed a lighting upgrade to LED within the gym, pool and sports halls in 2018. Energy consumption in 2019 was approximately 1,125,240 kWh with a carbon emission level of approximately 220 tonnes.

The following issues were identified which would give rise to savings in carbon emissions and cost if addressed by the allocation of the grant money:

- No true renewable technology currently at the leisure facility including solar panels.
- Given the age and condition of the dryside boilers, replacement with a new system was required
- Although new air handling units had been installed, they were in need of new equipment to run effectively with renewable technology
- A partial Trend Building Energy Management System had been fitted but would require updating to operate with renewable energy equipment

THE PUBLIC SECTOR DECARBONISATION SCHEME (PSDS)

- The Department for Business, Energy and Industrial Strategy (BEIS) launched the PSDS, which was delivered by Salix in September 2020.
- The scheme offered £1bn of grant funding for capital energy efficiency and heat decarbonisation projects within the public sector in England.
- Information about the PSDS and further schemes can be found on the Salix website www.salixfinance.co.uk



Energy Saving Measures

- Air source heat pumps
- Solar photovoltaic panels
- Air handling unit upgrade

- BEMS upgrade
- Battery storage

Air source heat pumps (ASHP)

Two out of the three existing dryside boilers were removed and replaced with the installation of two high efficiency/low noise Air Source Heat Pumps. These ASHPs operate at reduced optimised flow temperatures of 49°C and 40°C return in comparison to the previous gas based system temperatures of 80°C flow and 60°C return.

We have installed a new hot water storage tank. The pool plate heat exchange and air handling coils were also replaced.

Solar photovoltaic panels

We installed an array of 180 340 watt DC photovoltaic solar panels on the centre's roof to convert energy from the sun to provide electricity and reduce the amount of electricity required from the grid.

Air handling unit upgrade (AHU)

The existing Air Handling Unit in the Pool Hall was reaching the end of its economic life and struggled to hold pool hall temperatures in the winter. The extract system is totally separate, and no heat recovery is possible due to the separation from the supply side.

Therefore, we replaced the AHU for a Heatstar Taurus EC model.

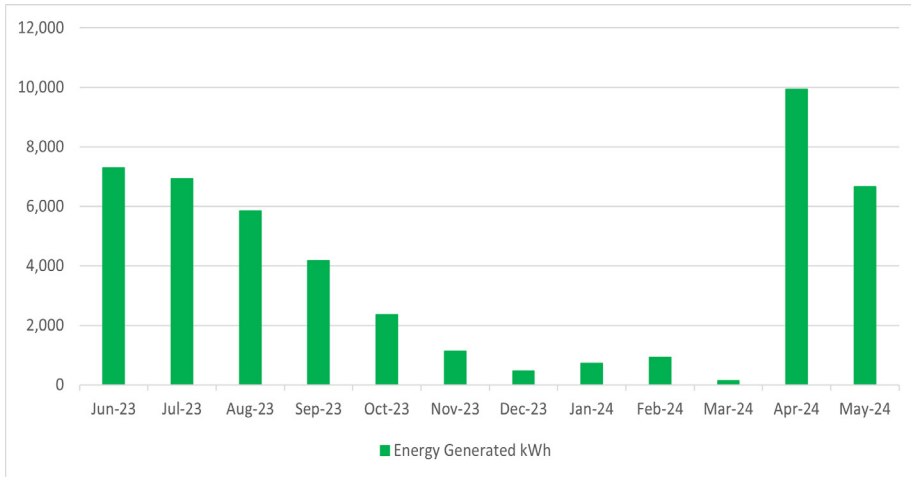
Built-in software and connectivity provides constant real-time monitoring of energy use, speed, torque and temperature which allows automatic diagnosis of HVAC system issues.

Building energy management system (BEMS) upgrade

The existing controls for the building was via a partial Trend system. The system was extended to incorporate smart controls for the ASHP, battery system, PV inverters, fan motors controls and pool pump motor controls.

Battery Storage

A 30 kW, 105 kWh battery storage system was installed. This has allowed for any excess electricity generated during the day to be stored and used during hours of more expensive tariffs instead of being sent to the grid.



“Leisure Energy have proved to be an invaluable delivery partner on this innovative scheme, helping the Council and Freedom Leisure to realise our shared emissions reductions aims for our Leisure Centres. The partnership has worked almost seamlessly with Leisure Energy providing expert project management experience and clear, timely communication “ Tim Braund, Director of Regulatory Services

Who we are

Leisure Energy is an award-winning renewable energy consultancy and principal contractor, who specialise in identifying and delivering energy & sustainability solutions through to full decarbonisation primarily to the public sector.

Contact us

For more information on how we can help your organisation investigate energy usage and reduce carbon emissions, contact Mike Worsnop, Strategic Director:
Email: mike.worsnop@leisure-energy.com
Mob: 07512 303785

Our client

Derbyshire Dales District Council is a local government borough in the county of Derbyshire, providing services to numerous small towns and villages. Ashbourne Leisure Centre is managed on their behalf by Freedom Leisure.

