



Aberdeen Business School

Case Study

Extending asset life and reducing energy consumption

Leading ventilation manufacturer VES were approached by CBRE to reduce energy consumption and extend the lifespan of Aberdeen Business School's existing air handling units as part of the University energy funded project.

Client	CBRE
Sector	Education
Challenge	Delivering system improvements and identifying and implementing exceptional energy savings
Success	57% annual saving on running costs



Challenge

Award winning University Robert Gordon has a duty of care to both students and staff for their comfort and indoor air quality as well as reducing energy and carbon consumption.

The main challenge for the university was their out dated and inefficient fans. To overcome this, the specification requested that the old inefficient belt driven fan and motor assemblies were upgraded to new energy efficient direct drive plug fans to prevent any ongoing energy losses.

Plug fans offer maximum efficiency and minimum energy consumption. With the latest impeller and motor technology, VES offer energy efficient fan and AHU component replacements, delivering reliability, increased efficiency and extending the life expectancy of existing HVAC equipment.



Plant room



Solution

Working in partnership with CBRE, VES carried out a full technical survey and were able to implement exceptional energy saving initiatives.

Due to the limited access and time available, refurbishment was the most suitable and cost-effective solution for the client. Using the latest EC plug fan technology, VES successfully increased the life expectancy of the units and reduced energy consumption.

By upgrading the existing belt driven centrifugal fans to EC plug fan arrangements with integral speed control, VES were able to reduce consumption significantly.

In addition, a controls strategy was integrated into the HVAC solution, to meet the demand ventilation requirements for different zones within the building.

To further improve energy savings, VES removed the redundant DX cooling coils which reduced the system pressure, reducing the energy consumption even further from the new EC plug fans.



New EC fan



Wall of fans



A 57% reduction in fan motor load at 100% power is impressive and in excess of my expectation. I will definitely be recommending AHU refurbishment rather than replacement wherever possible.

Energy Consultant [CBRE](#)



I'm very happy with how the project went, both the management and the work on site were to a high standard and the power saving reported is very impressive.

Mechanical Associate [CCDP](#)

Results

By taking pre/post readings of the operating conditions of the fans, VES were able to collect the estimated savings achieved by the system improvements and replacements and present annual payback calculations.

This has resulted in an estimated 57% annual saving on running costs.

VES are now looking into implementing the solution into other key areas of the building/campus.