



CBRE British Airways

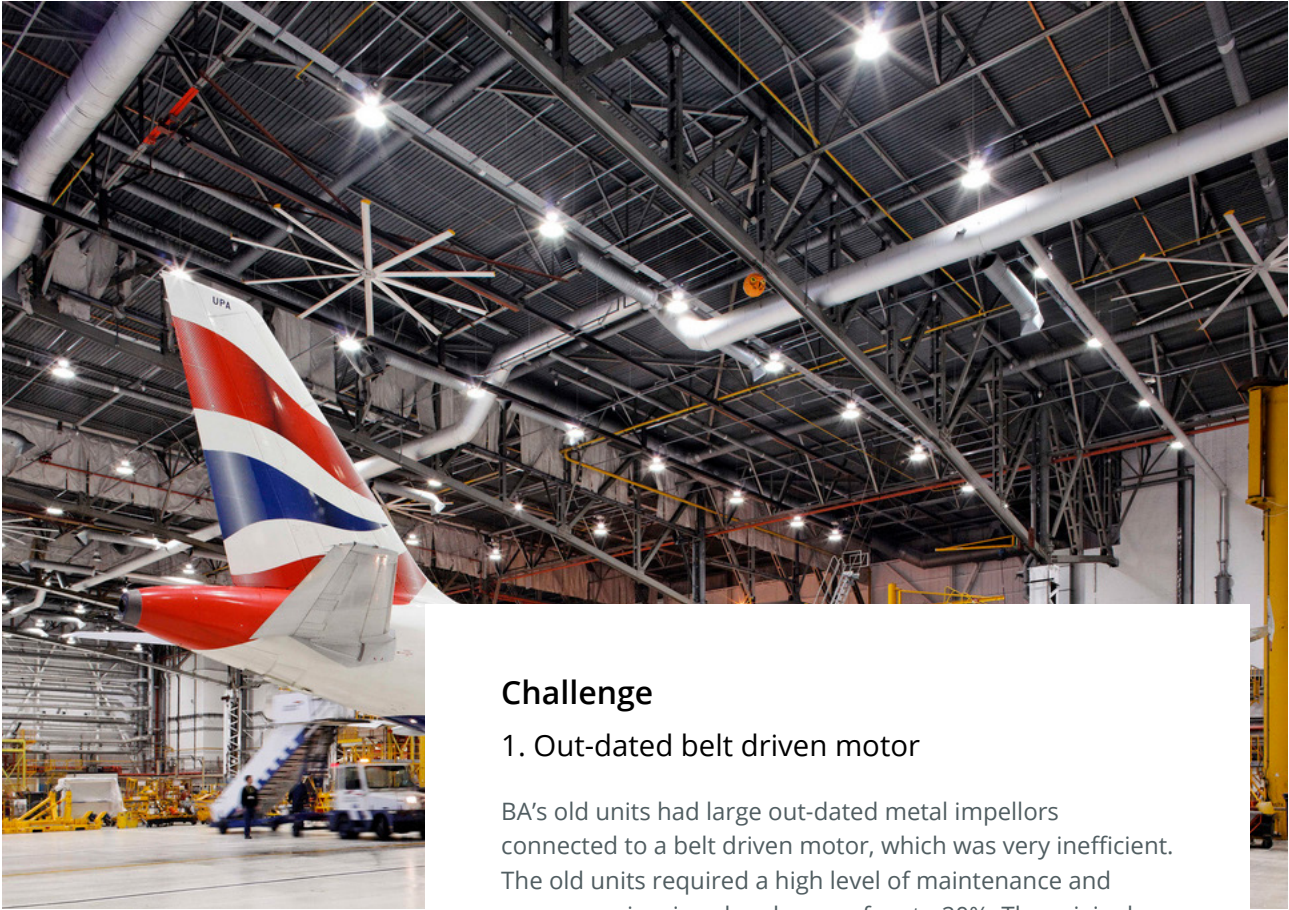
Case Study

Working with CBRE to achieve huge savings for British Airways

VES helped achieve energy savings at London Heathrow by completing two projects which required very different approaches.

- AHU fan upgrade
- Chiller re-utilisation

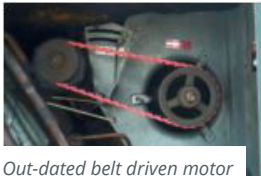
Client	CBRE British Airways
Sector	Airports
Challenge	Out-dated belt driven motor and chiller load demand
Success	Total project savings = 35%



Challenge

1. Out-dated belt driven motor

BA's old units had large out-dated metal impellers connected to a belt driven motor, which was very inefficient. The old units required a high level of maintenance and were experiencing clear losses of up to 20%. The original specification was to save energy by replacing old AHU motors with new IE4 motors. VES investigated the site to ensure the most appropriate solution was recommended.



Out-dated belt driven motor

2. Chiller load demand

BA flight training centre houses 17 flight simulators, covering all models on the BA fleet. They were relocated from Cranebank to their new home in Technical Block A, a listed building and home of the mighty A380 Airbus.



Re-installation of chiller

The chiller load demand had now completely changed due to the relocation of the flight equipment.

Solution

1. AHU fan upgrade

The surveys revealed that space requirements had changed over the years. VES, therefore, suggested an alternative solution, using 98% efficient direct drive electronically commutated (EC) motor technology.

- Fans and AHUs replaced
- Worked within the existing footprint
- In-built protection system (1 fan)
- 90,000 hours lifecycle
- Modified existing controls to add energy-saving features
- Offered a business case outlining the payback period
- The survey also mapped ductwork systems for future use



New direct drive EC motor

2. Chiller re-utilisation

- Technical design to utilise the suitable new carrier chillers
- The chillers were moved to new site location
- Controls were upgraded to utilise the more efficient carrier chillers
- Reduce operational hours of the ammonia chiller, thus reducing associated maintenance
- Extensive pipework and electrical modifications
- Reduced capital expenditure by reusing existing equipment
- Modified existing controls to add energy-saving features
- Offered a business case outlining the payback period
- The survey also mapped ductwork systems for future use



Refurbished chiller unit



Several VES air handling units, manufactured between 1988-1990, are still being used on this site to feed state-of-the-art flight simulators.

Results

Project savings

- Total = 35%

Annual project savings

- Cost = £54,754
- Energy = 608,328 kW
- Payback = 2.8 years

Project benefits

- Re-use of expensive assets and extended asset life on other equipment
- Maintenance and noise reduction
- Future proof building integration
- Commissioned to 'now' specification
- Immediate savings from first AHU upgrade
- CBRE demonstrate that they are 'thinking client'