Better air for the built environment

Vodafone data centre

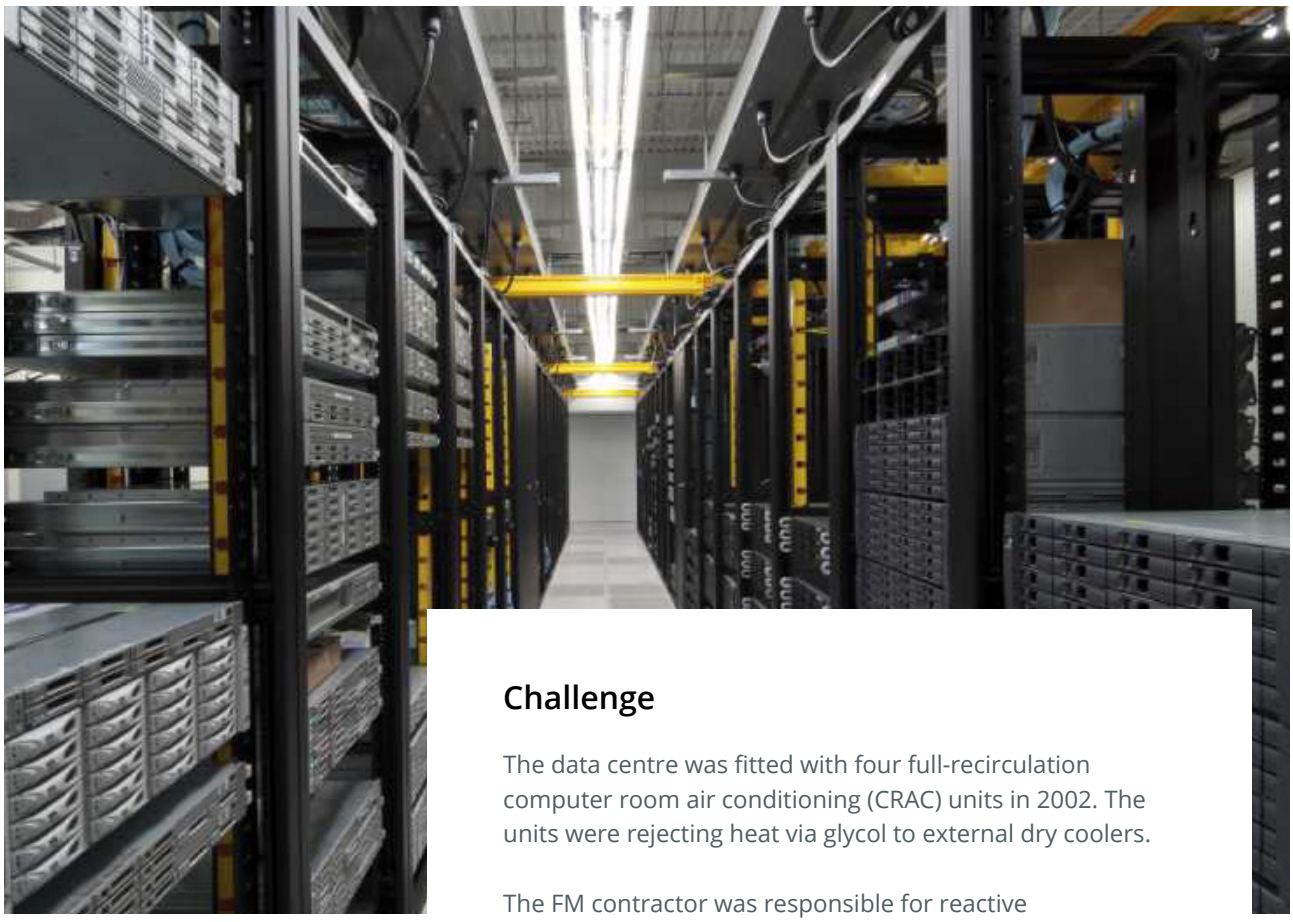
Case Study

Vodafone

VES has helped a major multinational telecommunications company save energy, reduce costs and improve unit reliability at one of their data centres.

- **Quick payback period**
- **Extended asset life**

Client	Vodafone
Sector	Data centres
Challenge	Ageing equipment with no back-up
Success	Energy savings, cost reductions and improved reliability



Challenge

The data centre was fitted with four full-recirculation computer room air conditioning (CRAC) units in 2002. The units were rejecting heat via glycol to external dry coolers.

The FM contractor was responsible for reactive maintenance at the site with the existing equipment that was ageing, had no back-up and was energy hungry, with limited electrical supply.

Vodafone Bracknell

Outdated cooler

Rack hotspot issues

Solution

scheme was designed between the data centre's FM contractor and VES to retrofit a fresh air free-cooling system. The system would take control of the existing CRAC units, and tier these in as the outside temperature rose and amount of free-cooling reduced.

These units both filter and mix the fresh air, ensuring it's clean and cold. VES fitted a new control panel that controls both the free cooling and CRAC units, and measures both the outside and data hall temperatures. It runs the centre on fresh air as much as possible, tiering in CRAC units as required. Equipment run times are recorded.

The client was experiencing hotspots by some racks, where ducting was impossible. VES powered the existing floor grilles with in-built fans, distributing the cooled air exactly where it is required. The old fans were AC belt driven and in need of regular maintenance, so VES replaced them with the latest low energy direct drive fan technology. This helped to:

- **Reduce the chance of unit failure through broken drive belts**
- **Lower energy consumption**
- **Reduce maintenance**

A simple, yet effective solution.

New units installed

Fresh air Inlet lourves

Max unit and controls

Project payback of under 2 years.

Results

Results revealed that the VES free-cooling units are being utilised 95% of the time. This delivers the following benefits:

- **Reduced energy spending and a project payback of under 2 years**
- **Additional resilience and back-up to these critical systems**
- **Increased longevity on both the CRAC units and chillers, as downtime is now possible**
- **Longer response time to fix the chiller and CRAC units if they fail, mitigating any negative consequences**
- **Whilst the site runs on a 3-phase supply, the new units are single phase. This ensures system resilience in the event of loss of an electrical phase**
- **Reduced electricity consumption, allowing further expansion without having the expense of new distribution systems**