

# Shopping centre cashes in on energy-saving fans

Fair to say, Birkdale Fair shopping centre is satisfied with their cost-saving fan solution

## ECupgrades

the engineer's choice



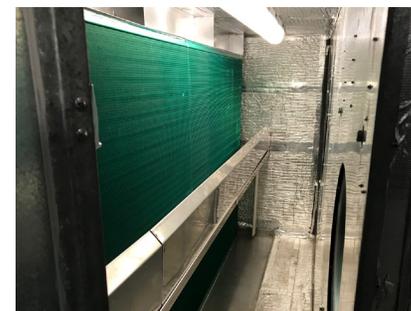
### Measurements after upgrade

Fan	Airflow	Current Draw [A]		Power Consumption [kW]	
		AC	EC	AC	EC
AC1	Maintained	17.3	↓ 8.8 (-49%)	11	↓ 5.6 (-49%)
AC2	↑ 13%	23.4	↓ 7.2 (-69%)	14.9	↓ 5.9 (-69%)
AC3	↑ 10%	22.0	↓ 9.3 (-58%)	13.9	↓ 5.9 (-58%)

### Project

### Application

### Product Performance and Benefits



Birkdale Fair shopping centre, a local one-stop-shop for retail needs, had an existing DWDI forward curved belt-driven fan assembly. The set up was at end of life and running on fixed speed, however, limited access made it impossible to replace the existing air handling units.

Advanced Air Conditioning, an HVAC solutions company in Queensland, made the decision to refurbish the existing fan system with 7 EC RadiPac II (K3G500PA2371).

Upgrades to the controls with a new BMS provides additional savings to the upgrades, as it allows the fans to be slowed down as low as 20% in air flow, depending on heating and cooling demand. This reduced the fan's input power to a fraction of the original set up and also the load to the rest of the HVAC plant.

Advanced implemented a program change to vary the speed of the fans based on cooling demand. There are four stages of cooling on each fan coil unit, 2 coils and 2 compressors per coil. If the demand is only for 1 compressor, the fans will be slowed down by about 20% to save energy at these low demand levels. Once the second and subsequent compressors are called up, the fans are brought back to their designed speed so as not to cause low refrigerant temperatures that affect the compressors.

The RadiPac II EC fans have speed control and high level interface available as standard and are therefore BMS ready.

AHU-1 power consumption reduction by 49% which equals, 5.4kW, and maintained airflow.

AHU-2 power consumption reduction by 69%, which equals 10.3kW, and 13% increased airflow.

AHU-3 power consumption reduction by 58%, which equals 8.0 kW, and 10% increased airflow.