



FROM DAIKIN AUSTRALIA

Daikin Australia wins the ARBS 2010 HVAC Excellence Award

This year, Daikin Australia took out the inaugural ARBS HVAC Project Excellence Award with its impressive entry of Daikin Australia's Head Office Development completed at Chipping Norton.

The Daikin development involved the acquisition and amalgamation of several properties, redevelopment of existing factory buildings and the construction of a new Head Office administration facility.

The new office building adopts innovative environmental design that achieves a 5 Star NABERS rating and includes passive design initiatives and an innovative Building Management System (BMS).

The facility involved construction of a building with a floor area of 1996sqm, 475 car spaces, staff facilities and landscaping. The development also involved substantial road works and provision of a local substation.

The building's contemporary architecture incorporates elements of environmental control such as shading devices. Environmental sustainable design objectives were an important part of the development, with the design and construction of passive and active building features achieving a 5 Star Whole Building NABERS performance rating.

The mechanical services designed and installed in Daikin's new office comprised of a Daikin VRV Heat Recovery system with a net capacity of 385kW. Connected to a series of high performance outdoor units are a range of indoor ducted systems strategically zoned through BSV boxes to capture heat recovery processes during key operating periods throughout the year, in particular Autumn and

Spring. Two large economy cycles drive high density areas in the show room and foyer, while Daikin's latest innovative heat pump heating solution 'ALThERMA' provides under floor heating to a small section of the showroom and provides hot water service to the building through a specifically designed boosted hot water tank. Key attributes and considerations for the mechanical system included a number of energy reduction strategies such as:

- Full contrast zoned heat recovery VRV system designed to produce an average COP of 5.
- BMCS system to monitor each FCU on an hourly basis (refrigeration capacity required and energy consumed).
- Peak demand / power management strategies designed to minimise daily power usage.
- Offset condenser saturated suction pressures and temperatures to maximize compressor volumetric efficiency while maintaining good indoor amenity and energy reduction.
- Staff training and education on how to use the facility. Monthly updates and wall charts with tips of the month to guide staff members.
- Dual layer façade management system (internal blinds) and operable windows are installed on both levels, with the option to double glaze portions of the north façade.

During the design phase, energy model predictions derived a whole building energy consumption of 311,000kWhrs p.a. or 155.8kWhrs/m²/p.a to meet the 5 star requirements. After the NABERS assessment in September 2009, a Whole Building rating was awarded. Daikin's target for next year is to improve this result by 5-10%. This will be achievable given the continual fine tuning processes and lessons learnt during the first 18 months.
