



CASE STUDY

McDonald's



McDonald's Restaurants use Climate Wizard to save energy

THE FACILITIES MANAGER FOR MCDONALD'S RESTAURANTS IN QUEENSLAND SAW THE CLIMATE WIZARD AT THE 2010 AIR CONDITIONING, REFRIGERATION AND BUILDING EXHIBITION IN SYDNEY, AUSTRALIA AND IMMEDIATELY REALISED HE COULD APPLY THE TECHNOLOGY TO SAVE ENERGY IN THEIR RESTAURANTS.

He contacted Seeley International and together they designed a scheme where the air extracted by the kitchen exhaust hoods was balanced with outside air, conditioned by Climate Wizard. The first two installations were on a new Restaurant on Bribie Island and an existing restaurant that was retro-fitted at Jindalee, both suburbs of Brisbane.

Prior to these installations the standard installation for restaurants in this climate consisted of two 80 kW (22.5 Ton) rooftop packaged systems, one for the kitchen and one for the restaurant. Both had a quantity of outside air as per the required building regulations.

The new restaurant at Bribie Island retained the 80kW for the restaurant portion but the kitchen was fitted with a 50kW (15 Ton) packaged unit and a CW-H15, with ducting delivering the cooled outside air just above the exhaust hoods. The capital cost of the Climate Wizard and the smaller packaged air conditioner in total was only a little more than the original 80kW PAC.

The retrofit CW-H15 installed at Jindalee was also installed with cooled outside air delivered above the exhaust hoods.

No change was made to the packaged air conditioners.

Both restaurants recorded savings of around 11% of their power costs, compared to installations that did not have the Climate Wizard. Payback was a little over one year for the new installation and a little longer for the retrofit.



Above left: An alternative arrangement is to supply Climate Wizard air directly above the cooking appliances to provide a "curtain" of cool air that is extracted by the range hoods.

Above right: The installation at Burpengary, Queensland. The Climate Wizard supplies air to a mixing chamber where the return air is mixed with Climate Wizard air or free outside air, if the conditions are right.

Since then there have been many more Australian McDonald's installations, as far North as Darwin, out West to Emerald and South to Melbourne.

The really interesting aspect of this very successful application in the fast food industry is that the Climate Wizards were used as outside air pre-cooling in states such as Queensland, which is semi-tropical and hence traditionally evaporative systems have rarely been used in commercial sites. Because of Climate Wizard's unique ability and innovative heat exchanger design, well engineered applications can show huge energy savings for the end user, even in high humidity climates.

Since the original pilot installations, there have been many more where Climate Wizard has been used to the same effect on both the kitchens and the dining areas.

Alternative methods have also been used to introduce the pre-cooled air, such as ducting to a return air mixing plenum, where Climate Wizard air or un-treated outside air can be introduced, depending on the outside air temperature and the BMS control protocol.



Project information

Installation	Original	New
System	80kW PAC	CW-H15 + 50kW PAC
Cooling Capacity	80kW Max	12 + 50 = 62kW
Input Power at 62kW	22.2kW	19.6kW
COP (EER)*	2.8 (9.6)	3.2 (10.9)
Power Saving*	-	11.5%

*At design conditions

Benefits

- ✓ DRAMATIC REDUCTION IN ENERGY CONSUMPTION
- ✓ FAST PAYBACK ON INSTALLATION
- ✓ NEW OR RETRO-FIT INSTALLATION POSSIBLE
- ✓ ENGINEERED FOR HUMID CLIMATES
- ✓ ENHANCED COMMITMENT TO THE ENVIRONMENT
- ✓ LOW MAINTENANCE COST AND LONG LIFE EQUIPMENT



Seeley International Europe (Italy)

Via Rigutino est, 194
52100 Rigutino (AR)
Italy

Phone +39 (0) 575 97189
Fax +39 (0) 575 1949971

Email marketing@seeleyinternational.com
Web seeleyinternational.com

