

## Boschendal, The Olive Press Boschendal Wine Estate, Cape Town, South Africa



### Hyper-efficient cooling with Climate Wizard indirect evaporative air conditioning

**BOSCHENDAL WINE ESTATE BUILT A BEAUTIFUL MULTI-FUNCTION VENUE CALLED THE OLIVE PRESS ON THEIR ESTATE TO HOST WINE LOVERS FROM ALL OVER THE WORLD.**

With Africa's hot summer conditions, the owners were looking for a cost effective air conditioning system that was able to cool their venue as efficiently as possible.

**Climate Wizard** indirect evaporative air conditioner was selected for the following reasons:

- Capable of cooling large open spaces,
- Delivers the legislated fresh air requirement for the venue in a cost-effective way and,
- Supplies 100% outside air.

**Climate Wizard** inherently handles the outside air:

- cooling load and also blows any latent load out of the room instead of recirculating it.
- heat load and only has to cover the 60kW internal sensible load, compared to the 137kW load required with a vapour-compression air conditioner.

**The challenges the consultants faced were:**

- Ambient design conditions in excess of 40 °C,
- Venue designed to hold functions for more than 400 people, with high outside air requirement,
- One side of the building completely open, offering scenic mountain views as a highlight of the guest experience.



# The result

## Boschendal Wine Estate were impressed with the results:

- Over a 10 day period\* (10-20 March 2015), an average **Climate Wizard** supply temperature of 21 °C was achieved, whilst using only 10.8 kW of power, with one side of the building completely open, delivering 100% fresh air;
- Climate Wizard** was 30% cheaper to install as part of a new building site;
- The infrastructure savings with **Climate Wizard** were almost 0.5 million Rand, as the venue did not need to upgrade the electricity supply to meet the proposed air-conditioning power requirements;
- A 2.6 year return on investment could be received by offsetting the capital cost and the annual saving of power (kWh and demand tariffs on kVA).

## HVAC project specifications provided to the specifying engineers:

- ASHRAE design conditions of 33 °C dry bulb & 20.2 °C wet bulb
- Operating hours:** 8:00-22:00, 7 days/week
  - People in venue:** 400 people @ 75W/person, 30 kW total load
  - Staff:** 10 people @ 50W/person m<sup>2</sup>, 0.5 kW total load
  - Indoor temperature:** 25 °C
  - Ventilation:** 2.5 ach/h
  - Doors to veranda:** open
  - Total cooling requirement:** 137 kW (for inverter air-conditioning & fresh air)
  - Outside air:** 10 L/s/person

## Savings

CLIMATE WIZARD POWER	SAVINGS	INVERTER AIR-CONDITIONING POWER
Running Amps 15A	<b>55A</b>	Running Amps 70A
Maintenance - R 300/m	<b>R1700 pm</b>	Maintenance - R 2000/m
10.8 kW (COP 5.7)	<b>20.2 kW</b>	31 kW (COP 2.9)

Following such a success, two **Climate Wizard** air conditioners have now been installed at a restaurant, owned by Boschendal Wine Estate.

## Project information

On the 3rd of March 2015\* the ambient temperature reached a maximum of 42 °C. During this time, the **Climate Wizard** air conditioners were supplying air at 16.2 °C and maintaining the room at a comfortable 23 °C.

6 x CW-H15 <b>Climate Wizard</b>	Only 10.8 kW input power for cooling	Cooling capacity 60 kW
One multi-functional venue		COP of 5.7

## Climate Wizard benefits

CLIMATE WIZARD	INVERTER AIR-CONDITIONING SYSTEM
100% fresh outside air	Outside air generates a high load
No re-circulating air required	Re-circulating air required
All doors can remain open	All doors must be closed
Will cool veranda area also	Additional veranda cooling required
Low maintenance	Constant maintenance required
No refrigerants or synthetic chemicals used	Replenish refrigerant gas
Ultra green product and very energy efficient	Consumes large amount of power

\*Based on data logger and weather files



To discuss technical engineering project requirements contact [Seeley International southafrica@seeleyinternational.com](mailto:southafrica@seeleyinternational.com)

You will quickly realise how much energy efficiency you'll gain. We provide full technical support to help you optimise the benefits.

