

Energy Eye Smart system keeps an eye on energy use- Cable Beach Club Resort Broome a Case study



In the heat and humidity of Broome, guest comfort is paramount but so is the cost of the energy to keep them cool.

And with power bills expected to double over the next six years, Cable Beach Club Resort right on the beach in Broome was looking for a power saving solution that was effective, economical, quick and practical to install.

With heating and cooling costs representing up to 60 per cent of hotel energy costs, guests leaving their rooms with the air conditioning running is an area where big savings can be made.

For resort project manager Paul Bullock the solution came from 4000km away in Melbourne from Smart Hotel Solutions' managing director Doron Danon who specialises in providing energy solutions for hotels.

Smart Hotel Solutions distributes the Energy Eye system made up of a wireless door sensor and wireless motion sensor that detects when a room is occupied and controls the air conditioner.

"In a nutshell, the system takes control of the in room HVAC when guests are out the rooms," Mr. Danon said.

"We detect occupancy with a wireless door micro switch as well as a wireless motion detector disguised in the form of a smoke detector.

"As these units are wireless, it is very easy and quick to install and it literally takes us 25 minutes per room, so hotels do not need to put rooms out of order and hence not lose additional revenue.

"Depending how aggressive the property wants to be in energy savings, we can either switch the HVAC off or maintain set back temperatures as well.

"When guests are in the rooms, our system goes into occupied mode and we do not override the HVAC system and the guests are free to do as they please even if they go to sleep – it does not override anything.

"That is because of our door micro switch, once guests are in the room the system will remain occupied until such time as the main door gets opened again and the motion detector does not pick up motion after the door is closed."

Mr. Danon said the Energy Eye system can be used with any HVAC system (central chillers, PTAC, splits etc) and there are wireless sensors for balcony/lanai doors to switch off the HVAC if these doors are left open

He said the typical cost of the system fully installed is about \$450-\$500 per room and can save 25-40 per cent of the room HVAC usage and costs which equates to about two year return on the investment. It can be installed in a room within 45 minutes.

"In extreme climate conditions such as Broome WA, ROI works out at about one year," he said.

"We have also found that in other extreme climates conditions such as Northern Queensland, the payback periods can be better and also depending on the price of electricity."

The Energy Eye is manufactured in the USA and has been round for a decade but only recently came into its own as energy prices began to skyrocket.

For Mr. Bullock the energy savings have been dramatic with 13 % reduction in total KWH achieved.

“The savings are huge. I am still staggered we did not do it years ago,” he said.

“All our air conditioners are split systems and we had no control over them except for staff going into the room and switching them off.

“Now we have nothing to worry about.”

The Energy Eye retrofit was part of a soft refurbishment of 176 studio rooms done in December 2010 at the 22-year-old resort during the last wet season when occupancy is at its lowest.

Actual data and analysis

Cable Beach resort analysis of KWH data for studio rooms

Energy Eye Project Completed and handed over on 15th December 2012

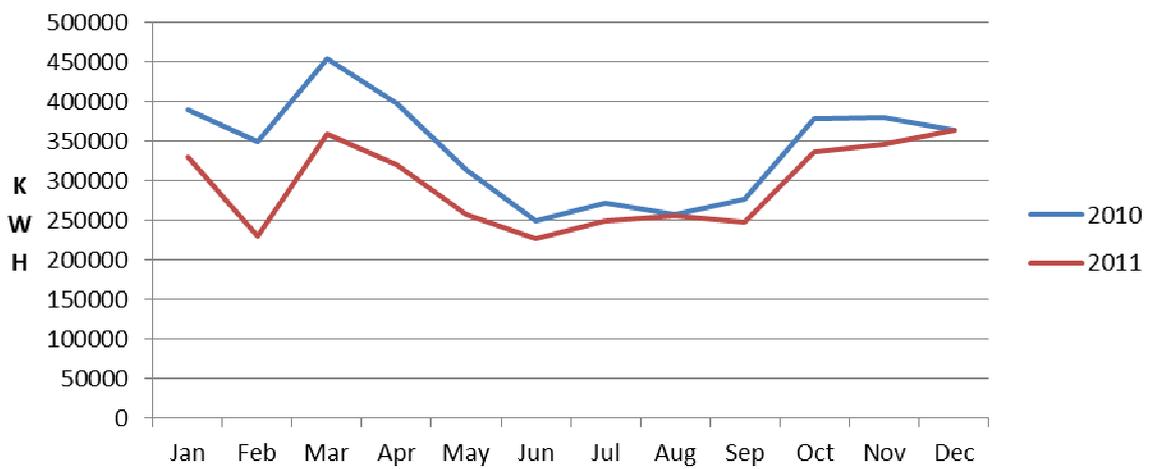
Energy Eye configured to maintain 25 degree set-back temperatures when rooms are unoccupied

Energy Eye configured to Switch off Air-Con Units when Balcony doors are opened

Resort using Split Daikin Invertor air-con units

	KWH 2010 before EE	KWH 2011 after EE	Actual KWH Reductions	% reduction
Jan	390245	329699	60546	16%
Feb	348858	229585	119273	34%
Mar	453770	359396	94374	21%
Apr	397520	319925	77595	20%
May	313347	257034	56313	18%
Jun	248926	226602	22324	9%
Jul	271903	250096	21807	8%
Aug	257332	255960	1372	1%
Sep	276907	247508	29399	11%
Oct	377793	336094	41699	11%
Nov	380341	345967	34374	9%
Dec	363690	364761	-1071	0%
Totals	4080632	3522627	558005	13%

1 year Data comparison actual data



Return on Investment analysis	
KWH Saved	
For 1 year	558005
Cost/KWH	\$0.21
Total savings	\$117,181.05
Investment value	\$101,500.00
ROI Years	1