

How SUN1 is saving millions ...

The chain of budget hotels is slashing its electricity bills by a fifth after implementing a progressive energy efficiency programme that is already paying for itself.

SUN1 hotels are physically not unlike a great many independently-operated budget hotels all over the country – and many of the lessons learnt at the chain can be applied by the owners of such properties to cut their energy bills and save thousands.

Recently rebranded, SUN1 hotels – formerly Formula 1 - are typically older buildings with between 50 and 70 rooms each. Most rooms had window air-conditioners that are now being replaced with central air-conditioning systems, which is preferred by most guests, not least because it is much quieter than the older “window rattling” window units.

SUN1 procurement manager Anthony Booth says energy-efficiency upgrades are being implemented on an ongoing basis with lessons learnt at one hotel being replicated, as far as possible, at the next hotel. Booth says that, given the low-cost nature of the SUN1 operation, very costly improvements were out of the question – and investments had to pay for themselves in a relatively short period of time. As an example of the savings that have been achieved, Booth points to the Benoni hotel where electricity consumption has reduced from 17 kWh per room night sold to 11 kWh per room night sold. At the Edenvale SUN1, which is still equipped with window air-conditioners, consumption per room night sold averages around 21 kWh.

Between them, the 23 SUN1 hotels have a monthly electricity consumption of about 400 000kWh (kilowatt-hours) – approximately as much as the energy consumed by a single large five-star hotel. But, as consultant Anton Potgieter of Energy Resource Optimizers says: “In a hotel, energy is your second biggest cost after salaries and wages and so it has to be a priority when you’re trying to cut operating costs.”

Engineering consultant Mark Conn of CKR Engineering Consultants says the new central AC systems being implemented at SUN1 are based on Variable Refrigerant Volume (VRV) technology – it uses refrigerant instead of chilled or hot water and heats or cools five or six rooms grouped together into one unit.

According to Conn, savings are particularly noticeable in autumn and winter when, during the day, there are often significant differences in the temperatures between the one side of a hotel building and the

other. The VRV systems being installed at SUN1 hotels harvest natural heat and transfer it to where it is needed and, in so doing, reduce demand for energy.

The no-frills SUN1 profile allows it to be acceptable for the HVAC (heating, ventilation and air-conditioning) to be switched off when not in use. Usually, after breakfast, SUN1 guests vacate their rooms, which make it possible to turn the AC off at around 08:00. "In a five-star hotel guests expect the AC to be on 24/7; even at budget hotels the practice used to be that, if you stayed for a week, the AC would stay on for a week," says Conn. "Obviously that was extremely wasteful and very expensive."

Air-conditioning is switched off remotely by the management of a particular property at noon after housekeeping staff have finished cleaning guest rooms and again at 19:00 in the evening when guests mostly go out for dinner at restaurants off the premises. Should a guest be in his or her room during the scheduled HVAC shutdown they can switch the air-conditioning or heating on by themselves.

As well as HVAC, SUN1 properties undergoing energy efficiency retrofits are all having their traditional boilers replaced with heat pumps. In most properties hot water boilers account for about 20% of a hotel's energy bill and, says Conn, replacing boilers with heat pumps translates into immediate savings. "A heat pump will cost a third of resistive heating and give a payback of less than two years," says Conn. Bearing out this savings figure, Potgieter says installing heat pumps typically cut a hotel's hot water energy consumption from around 20% of the power bill to between 5% and 7%.

He cautions, however, that heat pumps need to be carefully chosen. In recent years "all sorts of people began selling heat pumps," says Potgieter. "One result, in the hospitality sector, was that many guests went through winter without hot water. Before you invest in a heat pump you need to find out about the manufacturer and the person selling it; get testimonials about how reliable a particular heat pump is."

By careful planning its energy efficiency rollout, SUN1 has avoided many of the pitfalls that can accompany such well-intentioned programmes. Booth says the energy efficiency measures taken at SUN1 have been proving their worth since 2009, saving about 20% on business-as-usual baselines. "As energy costs climb, the money spent on saving energy will be repaid many times over. Investing in energy efficiency has definitely been money, and effort, well spent."

Eskom Energy Advisors are on standby to assist establishments of any size and type in the hospitality sector with advice on how to implement energy efficiency measures as a way to reduce costs - supported by energy efficient technology suppliers and Energy Services Companies (ESCOs), Eskom Energy Advisors excel in:

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- Analysing the energy consumption of establishments or specific processes in establishments;
- Identifying areas of energy wastage in establishments;
- Assessing the current and future energy needs of establishments; and
- Identifying the most cost effective and energy efficient technology solutions for establishments.

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Sidebar 1:

People make all the difference

Before spending a cent on new energy-efficient equipment, hotels should seriously consider how their staff behaves and how changing that behaviour can save electricity.

Leading energy-efficiency consultant Anton Potgieter of Energy Resource Optimizers recalls how he and his colleagues achieved a 17% reduction in the electricity consumed by a single City Lodge property – the Grayston Town Lodge in Sandton, Johannesburg - just by changing staff behaviour. “First of all we identified where people were wasting electricity; where they were leaving the AC on and doors open, or turning on the TV while a room was empty; where lights were left on in communal areas that weren't being used,” says Potgieter. “Once you have information about how people behave you can start planning to change their behaviour – and we did just that, saving 17% of electricity at one property without spending anything on equipment.” The rands-and-cents savings achieved at the Grayston Town Lodge were so obvious to the management of the City Lodge group that they had no hesitation in rolling out similar enhancements at other properties.

Without investing time in the human element, in behaviour change, any energy-efficiency intervention is bound to have limited impact, says Potgieter. Pointing to the Tsogo Sun group's investment in VRV technology, he observes that a single unit of the system serves a number of rooms so it is important that staff consider air-conditioning when checking in guests. Scattering guests across a property when a hotel is only half-full means that all the VRV units are engaged at the same time whereas half of them could be switched off if guests were allocated adjacent rooms.

Potgieter regularly conducts training sessions with hotel staff to reinforce the energy-saving culture. Instead of delivering uninspiring lectures on energy efficiency, he and his colleagues prefer a game-show format incorporating games such as “spot the mistake”, “quickfire” or “mix and match”.

At Tsogo Sun properties detailed monthly reports on electricity consumption are made available to a property's general manager, the members of a property's energy committee as well as the local “energy champion” – an individual who is motivated to take particular responsibility for reducing energy consumption. “The most successful energy-efficiency programmes are those where the whole team, from management down, takes responsibility for cutting electricity consumption,” says Potgieter.

Within the Tsogo Sun group, a high-level energy steering committee consisting of financial and operations directors meets every two months to consider what SUN 1 procurement manager Anthony Booth calls the hotels’ “energy strategic direction” - to consider achievements and plot how

improvements can be applied at different properties. At individual properties staff is expected to check that guests who have left their rooms, or checked out, have switched off their TV sets and air-conditioning. And if not, to do so themselves.

Mark Conn of CKR Engineering Consultants stresses the importance of training facilities staff in the maintenance of energy-efficiency equipment. “When you make improvements it’s essential that staff know how to maintain the equipment – how to do routine maintenance, do fault finding, cleaning filters, how to reset the system and when to get a specialist in,” says Conn. “We’re not talking about on-site staff stripping down and repairing a compressor; generally that sort of work, when it’s not done properly, ends up costing you money and is best left to the specialists.”

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Sidebar 2

Tsogo Sun: a lot more hotel – same power bills

The iconic Southern Sun Maputo has just undergone a major R270 million upgrade that has almost doubled its number of rooms – but electricity consumption will remain unchanged. Previously the beachfront property had 158 “keys”, a number that has grown to 259 since the revamp.

CKR Engineering Consultants’ Mark Conn, who advised owners Tsogo Sun on the energy-efficiency aspects of the upgrade, says the building used to have an installed hot-water boiler capacity of 384 kW. After the upgrade the hotel will be able to deliver hot water to the much larger number of rooms as well as to the back of house but without installing new boilers. Instead, the hotel’s three chiller units have been equipped with heat-recovering modules to deliver 350 kW of water-heating capacity per chiller. Just one in-line resistive heat has been retained as an emergency backup.

According to Conn, the time had come to replace the water-based Chillers, which had become “a bit old and tired”. By moving to air-cooled units, the hotel will save between 10m³ and 20m³ of water per day – an important consideration in the water-stressed Mozambican capital.

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