



Smarter energy use - same guest comfort at Crowne Plaza Christchurch

✓ Key features

- Practical commonsense approach to energy and utilities savings
- Buy in and engagement of hotel staff

✓ Key benefits

- \$100,000 saving in power consumption
- 14% saving in water consumption
- Enhanced environmental credibility

Crowne Plaza Christchurch, one of the city’s leading hotels, slashed its energy consumption and shaved \$100,000 off its annual electricity bill, without compromising guests’ comfort. An approach of taking the ‘low-hanging fruit’ first, won over the sceptics and helped to embed energy-awareness into the business. And the good ideas keep coming.

Crowne Plaza Christchurch – top tips for energy management

- Know your utilities systems and consider all of them
- Collect and understand the data
- Get expert advice
- Keep an open mind to all possibilities
- Take the ‘low hanging fruit’ first

When Crowne Plaza Christchurch undertook an energy audit three years ago it uncovered numerous ways to cut consumption but more importantly, it kick-started a change in thinking that is still bringing rewards.

“The audit really focused our attention and got us looking for opportunities,” explains chief engineer Chris Stevens. “It became part of our everyday business.”

He enjoys getting calls from staff with maintenance niggles. It shows that people are actively watching their energy use.

“The other day one of the chefs called me and said, ‘did you know all the plugs in our sinks have gone?’ We replaced the plugs for a few dollars and pow – there you have an instant water saving.”



Crowne Plaza Christchurch; an iconic hotel designed by Warren and Mahoney and opened in 1988.



The argument for energy efficiency

Crowne Plaza Christchurch, located in the central city, caters for a mix of leisure and business clientele. It has 298 guest rooms, three restaurants, a bar and five function or conference rooms – not to mention substantial behind-the-scenes areas for admin and housekeeping.

As such a large enterprise, the hotel's annual utility spend is a significant overhead. Energy use was singled out as a common sense area to try and find savings. But although the primary driver behind the energy review was a desire to cut consumption and reduce utility costs, it was imperative that the hotel achieve this without compromising guests' comfort.

In addition, the cost consideration was happening within the wider context of a shift in environmental awareness in the industry, and specifically the Intercontinental Hotel Group, of which Crowne Plaza is a part. It was felt that improving the hotel's sustainability could have a positive effect on the brand.

Taking the first steps

The audit, carried out by energy engineering consultants Enercon, recommended a raft of changes ranging from the very simple – such as ensuring gas hobs are turned off after use – to the more complex with longer-term payback, such as using one of the chillers as a heat pump to pre-heat domestic hot water.

It predicted annual savings of more than \$70,000 for a one-off outlay of less than \$30,000. But the real benefit, says Chris, came when those used to working more intimately with the hotel picked up the ball and ran with it.

“There were a lot of surprises,” says Chris. “We found a few really significant plant configuration opportunities that hadn't been considered. There were ideas that only people who knew the plant really well could identify.”

Practical measures for impressive results

One of the issues thrown up was that the hot water circuit was connected to the building water circuit – with one running at 80°C and one at 130°C. This meant that a vast amount of electricity was being pushed into the 130°C circuit for no real benefit. The proposed solution would have seen the hotel invest in a new tank and valves on the roof.



Upgraded room controllers provide efficient air conditioning control and give guests greater flexibility in setting their level.

“We tracked down previous Chief Engineers and the original Commissioning Engineer, huddled round a white board for a couple of hours and found a way to do it for nothing by opening and closing some valves. The cost estimate for the tank was \$20,000; we found a solution that cost a cup of tea and a few scones.”

Another such saving came with the realisation that a chiller plant used to cool the hotel during summer was used during winter to cool only one room, the PABX room - with a 100 kW load on the chiller. A 6 kW heat pump was installed to do the same job in the PABX room and the chiller could be decommissioned in winter.

“The payback on that was six weeks,” says Chris. Other changes included installing 35 W infra red coated lamps and CFL lamps where appropriate, new low-flow water fittings in bathrooms, and infra-red occupancy sensors to control ventilation in bars, restaurants and guest rooms.

Crowne Plaza’s annual electricity bill is \$100,000 less now than in 2006 – a 14% saving. The hotel has also achieved a peak annual saving of 14% in potable water and trade waste, and 12% in LPG consumption.

Bringing others on board

In the high-end hospitality sector where the client’s experience is paramount, the challenge wasn’t just to spot improvements, but also to gain the buy-in of management and staff.

“When we started this there was a degree of reticence, but when we walked in with

the sums people were surprised and willing to give it a go. If you do the easy stuff and get the win, it builds confidence – not only for bosses, but also your own confidence.”

The approach he advocates is to ‘take the low-hanging fruit first’. By making the relatively simple changes quickly and showing a clear benefit, it becomes progressively easier to work up to the bigger changes.

Because Crowne Plaza manages the Christchurch hotel but does not own the building, there was the added element of consulting with the building owner, Australian-based Eureka Funds Management, when major capital improvements were called for. Here it proved important to be armed with all the relevant data, and be able to demonstrate a solid return on investment.

Importantly for Crowne Plaza, the savings were achieved without any reduction in guest comfort. In fact, having a story to tell on its environmental performance is an asset in the tourism industry where the demand for ecologically friendly choices is gaining momentum.

The hotel is benchmarked with Green Globe, an international certification programme for sustainable tourism, and it provides a sustainability profile for tour operators. These profiles are compiled by all the hotels in the group, with InterContinental’s management taking a keen interest in how each performs.



The original LPG boiler control provides feedback to the Building Management System.



The new Building Management System computer integrates the new and old.



Adjustments are made to chiller parameters using upgraded technology controlling legacy plant.



Original fit chiller controls are superseded by a retro fitted microprocessor control providing greater reliability and flexibility of operation.

Chris sees no reason why similar businesses – whether in hospitality or not – can't replicate Crowne Plaza Christchurch's success. "The key thing is not to be afraid – it's not rocket science. If you can get those quick wins under your belt, you find you have more support from more people, and it builds momentum."

An ongoing process

The hotel is still proactive in finding energy savings – in May 2009 it undergoes another energy audit.

There are still areas for improvement. Although its LPG use has dropped, the climbing cost of the gas means there has been no corresponding saving. Within the current plant configuration not much can be done to reduce reliance on LPG, so that will be a major focus of the audit. Water use is another area, and an ozone laundry system is being looked at.

"My view is that water is the new gold. It's only going to get more expensive, so if we make improvements now we'll be in a good position when it does get more costly," Chris explains.

Retaining momentum among staff, involves keeping the channels open. Chris spends a lot of time talking to people on the shop floor – in housekeeping, kitchens or administration – because it's here that obvious problems, and/or commonsense solutions, are identified.

"This is an ongoing process. It's important to review your decisions, search for new opportunities, engage those around you – and listen to everybody."



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We work with businesses to identify the opportunities for energy management that are available to them and help them develop energy management action plans to make the most of these opportunities.

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- developing the wood fuel industry.



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