

TEEP Case Study – Hastings District Council

- **Splash Planet**
- **Hastings Top Ten Holiday Park**
- **Hastings City Art Gallery**
- **Hawke’s Bay Opera House**

An energy audit of four sites managed by the Hastings District Council was carried out in 2009. The sites were Splash Planet, Hastings Top Ten Holiday Park, Hastings City Art Gallery and the Hawke’s Bay Opera House.

Energy costs for the four sites for the year ending October 2009 totalled \$283,444. The energy audit found savings of \$22,241 a year could be achieved, equal to 7.8% of the annual energy bill. Almost 50% of those savings could be made at the holiday park (\$10,897), 29% at the Opera House (\$6458), 15% at the Art Gallery (\$3378) and 7% at Splash Planet (\$1508).

The savings identified are primarily associated with upgrading some electricity supplies to Time of Use metering, reducing idle energy waste and improving the efficiency of lighting. Additional savings could also be achieved by reducing the supply capacity of the Opera House and reducing the excessive flow rate of communal showers at the holiday park.

The overall energy efficiency of these sites at present is good, and many of the areas for potential improvement are not economically viable. For example, Splash Planet’s major energy users, pumps, have scope for improvement in energy efficiency but due to the low annual use and cheap summer energy, virtually none of these initiatives have economic payback. A similar situation exists at the Opera House, where the major cost inefficiency is through the large loads drawn for brief periods during performances, incurring large network fees but not offering payback on improvement initiatives due to the low operating hours. The recommendations in the audit focused on energy saving initiatives that were financially viable.

The energy audit was carried out as part of TEEP 2009. Hastings District Council is a TIA member.

Splash Planet

Splash Planet is a theme and water park located in central Hastings. The park operates between November and April to coincide with summer and high visitor numbers in the region. Over this period it operates between 10am and 5.30pm, seven days per week.

The water park consists of a large outdoor theme area and indoor heated pools. The outdoor area has four water slides and a “lazy river” and several other smaller attractions. The indoor pool uses a natural gas water heater to heat the pool



Total energy consumption and cost both increased in the 2009 year (November 2008 – October 2009), with a total consumption of 604,135kWh at a cost of \$80,581.91.

Cost Savings and Payback Time

Immediate payback

- Disconnect the fluorescent tubes in the reception drinks fridge.

Total cost: \$0 Total annual savings: \$128

Less than two months payback

- Install flow rate restrictors in the 18 communal block showers

Total cost: \$360 Total annual savings: \$3072

- Upgrade the permanent resident electricity supply to Time of Use metering

Total cost: \$500 Total annual savings: \$3949

- Repair the communal kitchen water boiler leak

Total cost: \$50 Total annual savings: \$332

Less than 1.5 years payback

- Replace existing lighting with more efficient lighting types

Total cost: \$2265 Total annual savings: \$3357

- Insulate the section of hot water pipe work above the kitchen and laundry to reduce heat loss.

Total cost: \$80 Total annual savings: \$59

Hastings City Art Gallery

Hastings City Art Gallery is a public facility that operates seven days per week between 10am and 4.30pm, except for some public holidays. The gallery consists of one building which has multiple art display wings, reception area, storage and workshop area, offices, a café, toilets and staff lunch room. The gallery maintains a temperature of between 18 to 22 degrees Celsius and a relative humidity of between 45% and 60% to avoid mould and cracking occurring in the art works.



The gallery is powered by electricity. Total energy consumption for the year ending October 2009 cost \$18,822.57 (117,929kWh). Almost 60% of that cost is for air conditioning, and 25% for lighting.

Less than three months payback

Improve the control of lighting on the site.

- Total cost: \$5 Total annual savings: \$234

Change the fountain pump plug to a standard 3-pin plug, enabling a timer to switch the fountain off at night.

- Total cost: \$50 Total annual savings: \$1177

Upgrade the site's electricity supply to Time of Use metering

- Total cost: \$500 Total annual savings: \$1752

Less than 2 years payback

Replace the 50W halogen downlights in the foyer with compact fluorescent lamp (CFL) downlights. These halogen downlights are only being used for area illumination and are not directed at any artwork, therefore colour quality is not an issue and these can safely be replaced with CFL downlights. Fluorescent lamps generate the same amount of light while using around 3-4 times less input energy.

- Total cost: \$396 Total annual saving: \$215

Hawke's Bay Opera House

The Hawke's Bay Opera House is a large theatre and function venue that operates during business hours on weekdays and also on weekends when the facility is being used.

The theatre itself is a large room with multiple seating levels for customers and a central stage. Stage lights are large consumers of energy. Facilities include dressing rooms, shower and toilets. Front of theatre includes a foyer area and bar which has underfloor natural gas heating. The facility also has several large function/performance rooms which are hired by the public for events. Air conditioning is provided by a centralised plant containing a natural gas boiler for heating and an air-cooled chiller for cooling. Total energy consumption for the year ending October 2009 cost \$89,868.96 (663,992kWh).



Payback immediate or less than 1 month

Switch off the entire foyer area water heating system when it is not required.

- Total cost: \$0 Total annual saving: \$2469

Improve the control of lighting on the site.

- Total cost: \$0 Total annual saving: \$385

Remove or disconnect the identified fluorescent tubes in the office hallway.

- Total cost: \$0 Total annual saving: \$49

Downgrade the main electricity supply's capacity to 300kVA

- Total cost: \$300 Total annual saving: \$3555

Comment from Hastings District Council

"The TEEP energy audit saved us money as well as letting us 'walk the talk' of energy efficiency and caring for the environment," says Hastings District Council Business, Arts and Tourism Operations Manager Peran Hutchings.

"We wanted audits of these four council-owned sites to help identify where we could save money and be more efficient.

"We got some great information, including a couple of big surprises to come out of the Holiday Park and Art Gallery reports. The audit identified immediate changes and savings we could make, and highlighted an area at the gallery where we shouldn't be paying for energy in the first place.

“While the audit found we were already doing a good job of being energy efficient at Splash Planet, we now have a lot of new information that we can incorporate into our day-to-day work. The audit also provided useful pump and water flow information for Splash Planet that we haven’t had before.”

Mr Hutchings says the Council has already instigated almost all the energy efficiency actions identified in the audit report and he definitely recommends the process to other tourism businesses.

www.splashplanet.co.nz

www.hastingstop10.co.nz

www.hastingscityartgallery.co.nz

www.hawkesbayoperahouse.co.nz