



## HYATT REGENCY PERTH

### Introduction

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A hotels energy use benchmarking project, a partnership between the Commonwealth’s Energy Efficiency Best Practice (EEBP) program and the Australian Hotels Association, has shown how hotels can maximise profits, minimise energy costs and demonstrate leadership by reducing energy use and greenhouse gas emissions—without negatively impacting on the comfort or satisfaction of their guests and customers.

During the project, energy use data was collected from around 50 hotels across Australia and then six of the better performing hotels were examined in depth. The results of the benchmarking exercise have been well documented in a report and series of case studies. This case study is on the Hyatt Regency Perth in Western Australia.

### Hyatt Regency Perth

The Hyatt Regency Perth is a five-star, 367–unit hotel with a floor space of 52 061m<sup>2</sup>. Perth’s appealing Mediterranean-style climate has a dry summer with moderate annual rainfall. The climate requires both substantial heating in winter and cooling during the hot summer months. The hotel has a centre core off which runs four accommodation wings. Rooms in each wing have views to either the east, west, north or south.

Management at the Hyatt Regency Perth have been committed to achieving best practice in energy and water conservation for over 10 years. Doug Stemp, Director of Engineering, says: ‘Our preventative maintenance program and our progressive implementation of energy saving initiatives has paid off. Over the past five years, we have reduced energy use by 10 per cent.’

‘We’ve also achieved big savings from educating hotel division managers about good practices’, says Doug. ‘We have worked with the Head Chef to implement an energy awareness program in each of the Hyatt’s eight kitchens. This has resulted in a 10 per cent reduction of natural gas usage. The kitchen staff have also commented that the kitchens are cooler to work in and equipment requires less maintenance. It is a real win-win.’

Energy and water efficiency was a prime consideration when 239 of the hotel’s rooms were refurbished in 1999. ‘Hotel-wide energy and water efficiency initiatives are best undertaken at times of large capital expenditure like a refurbishment’, says Doug.





### Key energy efficiency investments and savings

Item	Capital cost	kWh energy savings p.a.	Energy cost savings p.a.
BMS control of corridor lights, between November and April	\$5 000	233 279	\$23 328
Compact fluorescent lights in guest rooms	\$11 472	51 294	\$5 129
Efficient halogen lights in guest rooms	\$1 500	8 987	\$899
Efficient fluorescent lights in back of house	\$875	109 500	\$10 950
Efficient heat exchanger for pool heating	\$7 200	230 400	\$19 077
Water efficient shower roses and temperature setback	\$3 600	175 035	\$14 493
BMS control of chiller plant and AHUs	\$30 000	225 000	\$22 500
Total	\$59 647	1 033 495	\$96 376

### Management system initiatives

- ▶ Staff involvement through an Environmental Committee.
- ▶ Shared responsibility across divisional managers.
- ▶ Operational and maintenance budgets used to implement energy saving initiatives.
- ▶ Cost benefit analysis reporting undertaken on proposed energy saving initiatives.
- ▶ Monthly resource reporting.
- ▶ Major investments made at time of refurbishment or upgrade of infrastructure.
- ▶ Participation in EEBP's hotels energy use benchmarking project, and also the Australian Greenhouse Office's Greenhouse Challenge Program.

### Key outcomes of energy efficiency investment

Capital investment: \$59 647

Energy savings: 1 033 495 kWh p.a.

Energy operational savings: \$96 376 p.a.

Greenhouse Gas savings: 698 tonnes CO<sub>2</sub> p.a.

Return on capital invested in efficiency using energy savings: 162%

Net Present Value: \$532 542 (discount rate 10%, life 15 years)

Energy benchmarks: 791 MJ per square metre

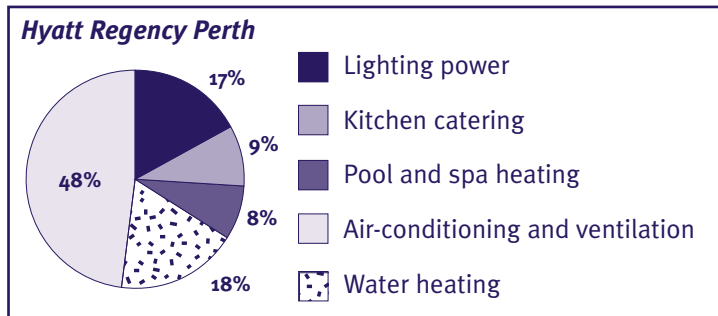
Energy use—industry average for business hotel: 1 000 to 1 100 MJ per square metre

### Energy planning goals for 2001

1. Upgrade Building Management System (BMS) to monitor the pool.
2. Replace pneumatic control valves with electronic versions for pool heating and air-conditioning controls.
3. Evaluate cost effectiveness of replacing incandescent lamps in guest rooms with compact fluorescent lamps.
4. Install a single triphosphor fluorescent lamp in a dual lamp fitting (replacing two standard fluorescent lamps) in all back of house areas.
5. Install meters to monitor air-conditioning chiller conditions.
6. Refine programming of air-conditioning controls in conference, banquet and common areas.

## Key energy use areas

Total annual energy use for the year 2000 was 41 158 952 MJ. A breakdown of usage into key service areas indicates that air-conditioning and water heating are the hotel's primary energy drivers. This is fairly typical of most hotels.



Energy use in service areas by percentage

## Key efficiency initiatives

### Initiatives incorporated during building construction

1. Key tag switches installed in all guest rooms to control air-conditioning and lighting.
2. Fluorescent lamps installed in guest bathroom vanities.
3. Gas installed for water heating, pool heating and space heating.
4. Fluorescent fittings installed in reception, shop, offices, conference room, kitchen, workshops, stores and laundry.

### Lighting initiatives since construction

1. BMS controls installed in hallways to turn off lights when not in use.
2. 250 efficient triphosphor fluorescent lamps installed in passageways, hotel common and back of house areas (to replace 500 dual lamped standard fluorescent fittings).
3. 35 Watt IR halogen lamps installed in guest rooms (to replace 50 Watt lamps).
4. Compact fluorescent lamps installed in each guest room (to replace incandescent lamps).

### Building Management System controls

The hotel did not have a BMS in place during construction. In 1988, a basic BMS was installed to control the main central air-conditioning chillers. This was substantially upgraded during the major refurbishment of 1999, to allow for control of refrigeration compressors and air handling units in function rooms.

The ability to monitor and control the air-conditioning and lighting is seen by hotel management as critical to maintaining gains made in energy efficiency.

### Water heating

Domestic water heating at the hotel is supplied by natural gas boilers. Two key initiatives were implemented to reduce gas usage, which equate to savings of more than 175 000 kWh of energy a year:

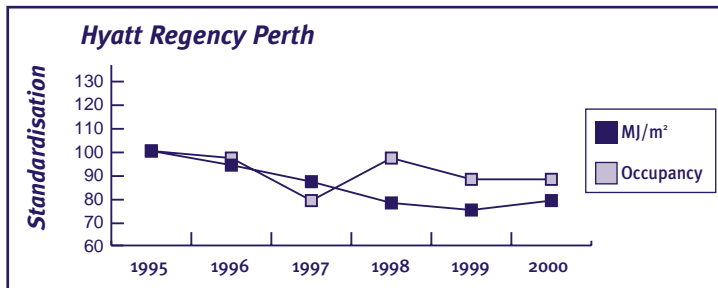
1. Reduced water temperature from 75°C to 60°C; and
2. Replaced standard shower roses in guest rooms (during a 1995 refurbishment), at a capital cost \$3 600, with more efficient models. The standard shower roses had a flow rate of 30 litres per minutes. The new ones had a flow rate of nine litres, which reduced water consumption by 30 per cent or 5.7 ML.

### Pool heating

The hotel's 470 000 litre, 25-metre pool is heated year round. The original heating system consisted of two shell and tube heat exchangers, which were inefficient. The exchangers were replaced with more efficient models at a capital cost of \$7 200. This resulted in energy cost savings of more than \$19 000 a year.

## Overall hotel performance

The performance of the Hyatt Regency Perth over the past five years is charted below. The chart shows a downward trend of the total energy used per square metre.



## More information

The hotels energy use benchmarking project concluded that best practice hotels always have systems in place to regularly monitor, record, analyse and report on hot water, gas and electricity use. They often have full time engineers on site and continually seek ways to optimise energy performance. Best practice hotels also understand the importance of incorporating efficiencies into day-to-day operations and into the planning of renovations and retrofits.

EEBP supports industry sectors to identify and implement cost-effective solutions for a more sustainable and competitive future. The program has a combined focus on innovation, training and benchmarking and offers practical tools, information and assistance. EEBP is working with a growing list of industry sectors, which includes aluminium production, beverage and containers manufacturing, bread baking and milling, dairy processing, wine making, and fleet management.

The hotel benchmarking case studies are available without charge from:

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