

Case Study 296

The Munich Park Hilton Hotel, Germany

**Energy costs controlled as part of an
Environmental Management programme**



*At the Munich Park Hilton,
management ensure energy
is used efficiently - while
maintaining the highest
international standards of
quality and service.*



Energy Efficiency
DEPARTMENT OF THE ENVIRONMENT



Introduction

The Munich Park Hilton opened in 1972 on the occasion of the Olympic Games. It has 477 guest rooms, as well as shops and a health club. There are several restaurants, including the Hilton Grill with its Michelin star award.

Although the Munich Park Hilton offers the highest standards of quality and luxury, both the hotel and the Hilton International group are committed to using energy efficiently. Hilton International was one of twelve leading hotel chains to form the International Hotels

Environment Initiative (IHEI*) in 1993. The IHEI subsequently published *"Environmental Management for Hotels: the industry guide to best practice"* (Butterworth-Heinemann, 1993) which includes a chapter on techniques for energy and water conservation. This guide is used at the Munich Park Hilton.

In addition, the hotel has its own 70-page action plan covering energy efficiency, environmental practices, waste management, water conservation, purchasing policy and training. An Environment Committee has been formed to increase the commitment and contribution of staff to environmental management.

The Hilton International group's initiatives

Many of the 160 hotels in the Hilton International chain have introduced housekeeping practices that save energy, and have invested in energy efficient technologies.

The group's Technical Services division, based in Watford, UK, documents these activities and reviews the resulting benefits. It co-ordinates and promotes new ideas, ensuring that all the hotels in the group are fully informed of best practice standards in the industry.

Energy and environmental management activities which have been publicised by the Technical Services division across the group include:

- guidance on energy, water and waste management
- staff campaigns to develop an environmental culture
- the means of communicating environmental programmes to guests and to the local community.

Summary case studies of successful implementation of these practices and techniques at particular hotels are also documented and circulated to hotels in the group.

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The Hilton Grill

Banquets and conference facilities

The Munich Park Hilton is a premier venue for conferences, banquets and receptions. Up to 2700 guests can be accommodated. The main ballroom can be subdivided into three sections.

A conference service - Hilton Meeting 2000 - has been launched to promote the conference business. A manager and conference-trained staff offer a comprehensive range of services and facilities to conference organisers. Over 2000 events per year take place.

Energy management actions for conferences

- The Building Energy Management System can control lighting, heating and air-conditioning in all function rooms
- Heating, ventilation, air-conditioning and lighting of each section of the ballroom can be controlled individually
- When a function room is temporarily not in use, the lights, heating and air-conditioning are switched off
- For cleaning, arranging furniture, and showing the room to visitors, a special switch brings on one lighting circuit
- The contract cleaning team supervisor is responsible for switching off the lights after cleaning
- The Hilton Meeting 2000 team is responsible for managing the lighting during conferences.

Guest bedrooms

All guest rooms offer luxury facilities. There are 24 individually styled suites, including the Presidential Suite and Royal Bavarian Suite. An entire floor is reserved for non-smokers.

Guest rooms are heated or cooled by fan coil units. Guests can vary the speed of the fan and the temperature using controls in each room. The fan coil units prevent simultaneous heating and cooling. However, guests can run heating or air-conditioning with the windows open; automatic window sensors to control the room heating and cooling were considered, but were not viable in this case.

Instead, labels ask guests not to use heating or cooling when the windows are open.

Energy management in guest rooms

Co-ordination between room bookings and the control of the building services ensures that heating, cooling and lighting are provided only when and where they are needed:

- at times of low occupancy, whole floors are taken out of service. The bedrooms are unheated, and electricity supplies are cut off to everything except the refrigerated mini-bars in each room. A period of one day is allowed to bring rooms back up to comfort temperature
- lights and televisions are switched off when rooms are unoccupied
- wall and table lights use compact fluorescent lamps
- showers have water flow restrictors
- chambermaids use a single bucket of water for room cleaning - to prevent taps being left running
- the flushing capacity of WC cisterns has been reduced.



Guest bedroom

Public areas, shops and leisure facilities

The hotel accommodates a wide range of shops. The Hilton Beach Club offers a swimming pool, sauna, Turkish steambath, massage and beauty salon.

The shops and leisure facilities are run by independent operators, who are charged for the electricity they use. This places the responsibility for energy use with those who manage these facilities, and provides them with a financial incentive to ensure energy is not wasted.

Energy management in public areas

- Compact fluorescent lamps in all guest corridors
- Between midnight and 0600, only half the lights in the corridors serving guest bedrooms are illuminated
- The duty manager patrols three times per night and checks that lighting is off unless it is needed
- Sensors in the shopping arcade measure available daylight and adjust artificial lighting accordingly
- Electricity supplies to shops and leisure facilities are sub-metered and the costs charged to each operator.

Laundry

The laundry was modernised in 1989. A new continuous batch (conveyor-loaded) washer, computer-controlled for different types of laundry, was installed. A computerised pressing machine ('flatwork finisher') irons and folds bed linen. All the hotel's bath towels, bed linen and table cloths, as well as employees' uniforms and guests' laundry are washed or dry cleaned here. On average four tonnes per day are handled.

The laundry is served with steam at 110°C to 120°C generated by two gas-fired boilers. The steam boilers are run only when the laundry is operational, although they are kept running during the half-hour lunch break to avoid closing down and re-starting them.

Laundry - management actions

- Staying guests may use their towels for more than one night. A simple sign in the bathroom states:

"Dear Guest - for a better environment we would like to ask you to use your hand and bath towels several times. If you desire fresh towels please leave your towels on the floor."

- Linen for staying guests is changed only every second day

These measures have saved gas, electricity and water, and reduced environmental impact from detergents. Guest feedback - sought using a questionnaire - has been positive.

Kitchen

There are three adjoining kitchens in the hotel - the main kitchen, the new banquet kitchen and the grill restaurant kitchen. In 1994 a total of 527 600 covers were served. Most of the cooking equipment uses gas. Two steam ovens are supplied from the steam boilers in the top-floor plant room.

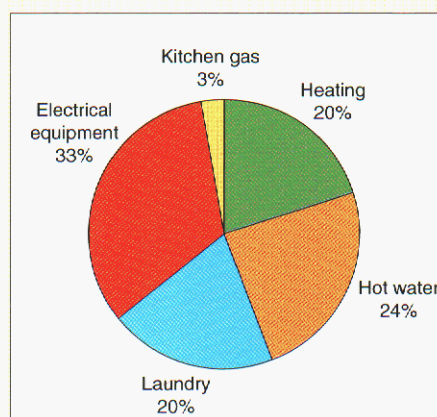


Kitchen

Heating, ventilating and air-conditioning

A district heating system supplies two heat exchange units in the basement. These serve both hot water circuits for space heating and two calorifiers which heat domestic hot water. The cooling towers of the air-conditioning system use groundwater pumped from the hotel's own underground source, reducing both water and sewerage costs. Fan coil units for space heating and cooling maintain comfort temperatures when the external temperature is above minus 5°C, but below this additional heating is provided via radiators.

The Building Energy Management System controls the heating, cooling and lighting in almost all the function rooms, as well as lighting and electricity for the kitchens and laundry.



Percentage (kWh) 1994 of energy usage

Catering energy management

- Gas, electricity and water used for catering are all sub-metered, and the Chief Engineer compares consumption per cover with historic figures
- Kitchen equipment is switched on only when it is needed
- Refrigerated stores are opened only when necessary
- Refrigerated stores have prominent light switches to ensure lights inside are not left on unnecessarily
- Door seals to refrigerated stores are maintained in good condition
- The new banquet kitchen features automatic push-button devices on taps which stop water flow after 20 seconds

Waste management

- Used containers and other items are sorted into plastics, glass, metal and cardboard, for re-use or recycling
- Organic waste is collected by a local farmer

Energy management and the Chief Engineer

The Chief Engineer carries out many energy management tasks, including the following:

- he ensures that gas and electricity meters are read daily
- he is responsible for tabulating fuel use and reporting to the General Manager and to the group's Technical Services division
- he personally checks the operation of the cooling towers daily
- he operates the Building Energy Management System
- he reviews the functions of the BEMS - and additional circuits, such as lighting or heating in particular parts of the hotel, are connected to it whenever possible
- he controls the heating system when the external temperature drops below minus 5°C
- he reviews energy management practices and the cost and acceptability of new ways to save energy
- he operates within the international guidelines laid down in the hotel group's Energy Control Management Programme and prepares the hotel's energy consumption profile
- he reviews the energy efficiency of proposed new equipment, such as refrigerators, freezers and catering equipment
- efforts are made to ensure economical use of older equipment - for example, staff are trained to use lifts only when travelling three floors or more.

The Environment Committee

The Environment Committee was formed in 1992 to address issues relating to energy efficiency, waste management and water conservation. It is typically made up of five members with all key departments represented. Guest members are invited to participate when an item of particular relevance to them is discussed. The committee meets once a month.

The committee's position is advisory and strategic. It operates between management and departmental levels. The presence of the Resident Manager on the committee shows the commitment of senior staff to environmental management. The committee reports to members of staff through notice board announcements, articles in the staff newsletter and meetings with the various departments.

Responsibility for energy and environmental issues within each department lies with the departmental head or an assigned staff member.

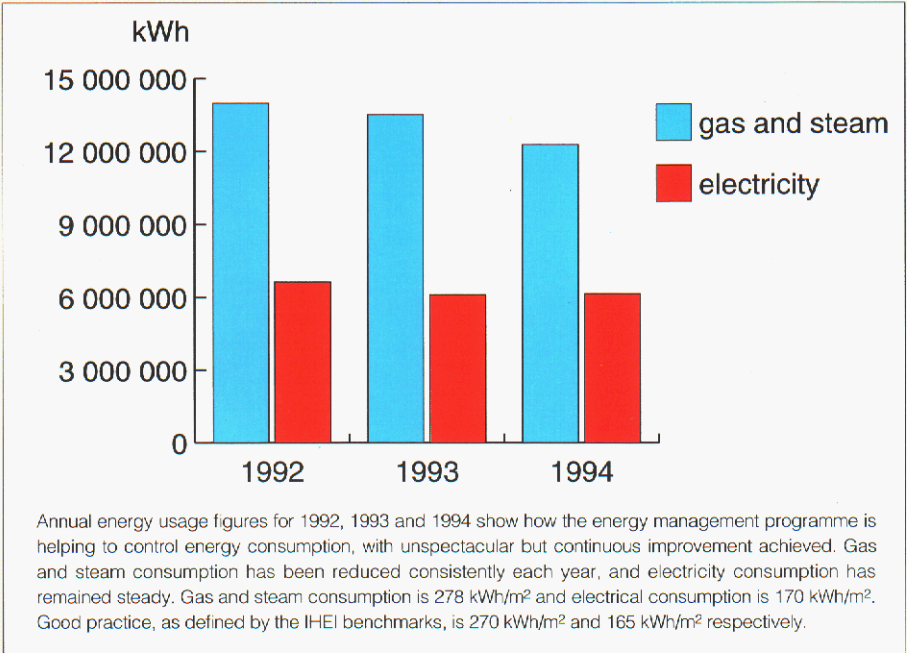
Staff motivation

A suggestion box in the staff area was introduced in 1991. About 25-40 ideas for improved practices – not limited to energy – are submitted each month. The best suggestion every month is rewarded by a weekend in one of the other Hilton hotels in Germany.

Staff awareness of the hotel's energy consumption is being raised through a newly introduced programme using examples familiar to everyone. For example:

- the hotel's annual drinking water consumption would fill the swimming pool fifty times.

Similar attempts are being made to relate the hotel's consumption to typical domestic figures, for example, to compare the cost of running the services in the ballroom for an hour with the number of months for which an average house could be operated.



Hotel energy consumption

ELECTRICITY	kWh	GAS	kWh
Ballroom	329 020	Kitchens	525 029
Main kitchen	406 480	Laundry	3 643 671
Banquet kitchen	33 880	Total Gas	4 168 700
Hilton Grill restaurant	345 760		
Isar restaurant	50 760	STEAM	kWh
Laundry	91 280	Space heating	3 683 000
Other	4 897 300	Domestic hot water	4 426 000
Total electricity	6 154 480	Total Steam	8 109 000

Energy consumption (kWh) 1994 for named fuel types and use

Waste management

In Germany the 'Duales System' of waste separation between sorted and unsorted waste is well established. When, at the beginning of 1993, the cost of having unsorted waste collected doubled, the hotel's Chief Steward embarked on a comprehensive waste recycling programme. The main sorting categories are paper, metal, glass, plastic and organic kitchen waste. Because sorted waste is collected for free, the hotel has been able to reduce its waste disposal costs by 40%. Waste management – reducing, re-using and recycling – has a high priority at the hotel.

Most sorting of waste commences at source. For example, chambermaids' trolleys have separate containers for sorting waste from guest bedrooms, and the kitchens, back-of-house offices and service stations all have separate bins for sorted waste. The hotel's loading bay area contains various hoppers of sorted waste ready for collection.

Waste management activities

Between 1992 and 1993 waste from the hotel was reduced from 72 unsorted tonnes to 47 tonnes of sorted waste and only 12 of unsorted – a reduction of 18%. Actions include:

- cardboard pressed into bales and collected weekly
- plastics collected by a private recycling agency
- glass bottles separated into crates in a sorting area - about 90% of bottles are re-used, the remainder are sorted by colour for recycling
- goods purchased in bulk where possible to reduce packaging
- containers for cleaning materials collected by the supply company
- conference organisers encouraged to use the minimum packaging and charged for any rubbish left behind.

The hotel's policy on waste management is under continuous review.

