

# Environmental Good Practice in Hotels

**Case Studies** from  
the International Hotel &  
Restaurant Association  
Environmental Award

GREEN HOTELIER





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## About this publication

The case studies presented in this publication have been selected from applications to the IHA Environmental Award 1992-1995, which were judged in 1995 by the United Nations Environment Programme-Industry and Environment.

The growing response to the award over this period indicates that an increasing number of hoteliers are recognizing the importance of environmental action, starting to implement their own initiatives and seeing the benefits of such programmes.

The case studies selected are drawn from around the world, from small independent hotels and large international chains. They reveal a diversity of approaches to environmental management, based on criteria such as:

- 1 The environmental priorities of each region
- 1 The cost of water, energy, waste disposal and other resources
- 1 The location and size of the property
- 1 The availability of technology
- 1 The level of green consumerism

This publication is not intended to compare the environmental programmes presented, nor to evaluate on a uniform scale the economic and environmental benefits of each programme. In making this publication available, UNEP IE and the IH&RA aim to:

- 1 Commend the efforts undertaken by pioneering hoteliers
- 1 Provide practical examples of what is, and can, be achieved
- 1 Further promote good environmental practice in hotels worldwide
- 1 Encourage national hotel associations and public authorities to disseminate information on environmental management processes and technologies to promote industry-wide environmental action.

While many active steps have been taken, there is room for progress and greater industry awareness of the need for:

- 1 The use of resource inventories, environmental impact assessments and the incorporation of environmental design elements before building plans are finalized
- 1 A systematic approach to environmental management, starting with environmental audits to identify where and how to begin
- 1 Comprehensive programmes prompting action in all areas
- 1 Improved integration of environmental programmes into day-to-day operations
- 1 Continuous improvement, with monitoring systems in place from the outset
- 1 Life-cycle assessments to ensure that the best environmental and cost options have been chosen
- 1 Better communication of environmental performance to guests and other audiences

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Illustrations by Chantal Aubin-Wehr  .

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# Kingfisher Bay Resort & Village

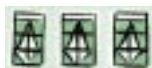
## Fraser Island, Australia



### ABOUT THE HOTEL

Kingfisher Bay Resort & Village is located on the west coast of UNESCO's World Heritage-listed Fraser Island, 250km north of Brisbane. The site encompasses 65ha and includes a 152-roomed hotel, 75 self-contained villas, a 114-bed Wilderness Lodge, a day-visitor pavilion, the staff village, 3 restaurants and conference rooms for up to 300 people.

Kingfisher Bay was built to strict environmental guidelines with the aim of offering a modern resort to blend harmoniously with the island's sensitive ecosystem. Before construction began, extensive environmental impact assessments were performed. Additional research was undertaken to examine certain areas in more detail: topography vegetation and fauna surveys, an hydrology survey and studies of previous aboriginal use and habitation of the site. Findings of these studies gave rise to several management challenges and further advice was obtained to ensure that construction and operation of the resort would be carried out with minimum disturbance to the ecosystem. Kingfisher Bay estimates that over 57 person years of research, planning and design went into the project.



### DESIGN

#### High level of environmental integration

From the outset, every effort was made to minimize environmental impact and achieve a high level of environmental integration:

- 1 Roads and buildings are planned around the major trees to the greatest extent possible.
- 1 All buildings are designed to harmonize with the environment using Queensland-style architecture made of wood with open verandas and curving tin roofs to reflect the sand dunes. Colours reflect the surrounding bush vegetation.
- 1 Buildings are limited to 2 levels, and are below the tree line.
- 1 All timber used is from indigenous species
- 1 The hotel centre complex (conference rooms, reception, lounge rooms, restaurants, administration offices and toilets) is designed without air-conditioning. Natural convection currents are created by windows and vents at the upper and lower levels of the building. In summer, cool air is drawn into the building throughout the day while hot air escapes through the large ceiling vents. In winter, vents are closed to trap warm air resulting in a "glass house" effect.
- 1 All rooms and public areas have enough natural light during daylight hours to eliminate the need for artificial lighting on fine days. Insulation has been maximized in all rooms.
- 1 All public areas, conference rooms, bedrooms and offices are non-smoking. Smoker bedrooms are available on request.
- 1 Impacts on the dunes and swamps are minimized through the use of either hardwood boardwalks or wood chip walking tracks.
- 1 The resort has an on-site sewage treatment plant.

*Economic & environmental benefits:*

*The design of the resort is estimated to save over 500,000kwh of energy each year, which is equivalent to the energy consumption of 100 households.*

## CONSTRUCTION

### Minimizing Environmental Impact

The introduction of mainland soil diseases was prevented by using landfill obtained from the Kingfisher Bay site itself or from approved mainland sources. Natural materials removed from the site were mulched and used for landscaping.

### Landscaping

Native plants from the site and surrounding area were used for landscaping. Thousands of plants were removed prior to construction and held in an on-site nursery for replanting later. A further 150,000 native plants were raised from seeds and cuttings. The on-site nursery continues to provide for all the resort's landscaping needs.

Run-off from roads and roofs is diverted into large lakes within the resort area to reduce scouring, creating natural-looking peat lakes which attract a diverse range of wildlife.



## WATER

Waste water treated through the biotechnological plant is not used for irrigation as the nutrient requirement levels of the soil and vegetation on Fraser Island are very low. Treated water is released into the fast-moving channel in the Great Sandy Strait.



## ENERGY

A key card is required to power each room. This ensures that all energy is turned off when the room is vacant. Air-conditioning units have to be switched on manually.



## WASTE

All waste generated by the resort is separated, compacted, stored on site and sent to the mainland for recycling. Glass waste is crushed before being sent for recycling.



## WIDER BENEFIT AND NETWORKING

Kingfisher Bay has set-up a community consultative committee to ensure the resort maintains good communication links with various interest groups in the community. Conservation, Aboriginal, and resident groups are represented on this committee.

Kingfisher Bay actively encourages research programmes relevant to the Fraser Island ecosystem and to ecotourism. These include:

- 1 Mammal research on the behaviour of small native marsupials,
- 1 Kingfisher Bay's parent company, Queensland Tourism Industries Ltd, offers 5 grants each year to postgraduate students doing Ecotourism research.

Within the framework of the resort's environmental interpretation programme, several educational initiatives are in operation to increase the environmental awareness and sensitivity of visitors. They include:

- 1 Fraser Wild Nature Programme, courses hosted by specialists to give guests an opportunity to further their knowledge.
- 1 Environmental Education Programme for Schools, conducted with practical interaction with the resort's rangers.



## SUPPORT MEASURES

### Staff

Staff induction programmes include an environmental good conduct video.

### Visitor communication

A 4 stage programme is in place - promotion, orientation, involvement and reinforcement. Within this framework several interpretation programmes, self-guide tours, displays, publications and videos are available to guests. The interpretation programmes include guided walks, four-wheel drive tours, marine tours and "meet the ranger" activities. Kingfisher Bay employs 13 full-time rangers on these programmes.

### CONTACT

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*"Kingfisher Bay has sought to integrate planning, design, landscapes, interpretative programmes, and tourism to truly represent the World Heritage values of Fraser Island. This integration is our major attraction. Fraser Island is the focus of our guest's holiday and Kingfisher Bay is the facilitator."*

**Tony Charters**  
**Director, Environmental Management**

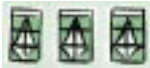


# Neptune Hotel, Copenhagen, Denmark



## ABOUT THE HOTEL

The Neptune Hotel has 133 rooms including 16 executive units and 5 conference rooms for up to 70 persons. It is located in the Frederiksstad quarter of Copenhagen, close to the Amalienborg Palace, the harbour promenade and the main shopping area. It belongs to the Neptune Group which also operates the Hotel Esplanaden, and the Gendarmen Cafe/Restaurant. The Hotel is a recipient of the "Green Key" - a Danish environmental certificate awarded to hotels that pay special attention to environment and health.



## DESIGN AND REFURBISHMENT

### "Nordic Light Style"

At the end of 1995, 11 suites were refurbished in the "Nordic Light Style" a new concept in decor and furnishing conceived by the Neptune's proprietor and administrative director. Based on late 18th century Scandinavian interior design concepts, it incorporates environmental considerations in all elements of decor and furnishing. The selection of textiles, furnishings, bedding, paints and lacquers is made according to evidence that environmental impact has been mitigated throughout the production process. All guest amenities are made from natural products, or products made from recycled material.

Rooms are non-smoking and specially designed for visitors suffering from allergies and other environmental illnesses. (They have been approved under the guidelines of the Danish Asthma Association).



## WATER

All taps and toilets are equipped with water saving devices.



## ENERGY

### The "energy saver" key card

The hotel has had an "energy saver" key card system since 1994, when it was used by the electrical conglomerate Thorn EMI to pilot their new system. The key card operates on a relay system. On entering the room the guest inserts the key card into a card holder which turns on all electrical outlets and lights in the room. Once the card is removed, all electrical outlets, except the minibar are turned off in 30 seconds.

### Individually controlled air conditioning

All individual air conditioning units in guest rooms are computer controlled and are set at a standard temperature. Guests can turn the unit on and off, but they must contact reception to regulate the temperature.



## WASTE

Guest rooms are supplied with two waste baskets, one for burnable items and one for non burnable items such as plastic containers and empty aerosol cans. Old batteries can be handed in at the reception for recycling. Laser toner

cartridges in printers are returned to the suppliers for refilling.

### **Purchasing**

Suppliers are asked to provide specifications to guarantee the environmental sensitivity and quality of their products. All paper products have to be recycled.



## **SUPPORT MEASURES**

### **Staff**

Training is given to all staff to incorporate environmental housekeeping practices in their daily routines.

### **Visitor communication**

The environmental action plan is displayed at reception. An information folder on the energy saving key card is given to guests when checking-in. Through the guest questionnaire "Who Cares", Neptune receives comments on its environmental programme.

#### *Economic & environmental benefits:*

*Neptune Hotel is convinced that its environmental work has played an important role in enhancing its corporate image and increasing occupancy over the last few years. The response of travel agencies and tour operators has also been encouraging.*

### **CONTACT**

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*"We combine cost saving with environmental protection. When people think of environmental measures, they often associate them with austerity or ultra simplicity. It is our intention to prove the contrary and to demonstrate that we can live in comfort while taking care of the environment."*

**Mrs Bente Noyons**  
**Owner and Administrative Director**

# Hotel Nikko Hongkong

IHA Corporate Green Hotelier of the Year 1995



## ABOUT THE HOTEL

The 17-floor Hotel Nikko Hongkong, is situated on the waterfront of the Victoria Harbour next to the shopping area of Kowloon. Included in its 462 rooms are 19 suites. The ballroom can hold receptions for up to 460, and four additional function rooms with seating capacity for 55 to 230 people. The hotel has four restaurants and two bars. It also operates a business centre, swimming pool, health club and a shopping arcade.



## WATER

### Reducing water consumption

After experimenting with devices such as plastic flow restricters, Hotel Nikko installed a calibrated water control system, the "Platypus System", in June 1995. The core element of this system is a compact valve which is inserted into the hydraulic system to control the flow and temperature balance of each tap or shower. The correct type and size of valve is chosen for each tap or shower, depending on factors such as required water temperature, pressure and flow rate. The advantages of this system are:

- 1 Water flow is constant, flow fluctuations from each tap or shower are eliminated
- 1 Changes in water temperature are eliminated
- 1 Water hammer, velocity noise and splashing when taps are turned on, are substantially reduced
- 1 Filters improve the quality of the water delivered to guests.

### *Economic and environmental benefits:*

*The water control system was installed in June 1995. Between July 1995 and June 1996, despite an average occupancy increase of 4% over the previous year, water consumption per guest decreased by an average of 13%, equating to HK\$ 13,000 (US\$ 1,688) saved per month. (Note: This figure could be as high as 30% as it does not include water consumption for laundry)*

*Since the installation of the water control system, consumption of hot water has fallen and correspondingly, the use of fuel for the hot water boilers has decreased by an average of 4% or 2,000 litres per month. This amounts to savings of approximately HK\$5,600 (US\$724) in fuel costs.*

*Taking into account the energy saved, the payback period is estimated to be 30 months. However, if the savings on the Trade Effluent Discharge (imposed in April 1995) and the Sewerage Discharge fees were included, the payback period would be considerably shorter.*

### Reducing the use of fresh water

The chiller plant operates on a sea water cooling system, which eliminates the use of scarce fresh water. Towel re-use tent cards are placed in all guest bathrooms. The feasibility of recycling laundry rinse waters is being studied.



## ENERGY

### Key card master switch

Hotel Nikko Hongkong estimated that approximately a third of its guests forgot to turn off the master switch controlling electrical units when leaving the room. The hotel installed a key card-controlled master switch to replace the button, which automatically ensures all electrical units are off when rooms are vacant.

#### *Economic and environmental benefits:*

*Hotel Nikko Hongkong estimates that the key card system brings a saving of HK\$2,36 (US\$0.30) per day per room. Switches cost HK\$165 (US\$ 21) per unit. The payback period is 70 days.*

### Maintaining indoor temperatures

Daily thermometre readings ensure that indoor temperatures are maintained at 20°C degrees in summer and at 21-22°C in winter.

### Reducing boiler operating hours and water temperatures

The hot water boilers are switched-off between 01h00 and 05h00. Water temperature has been reduced from 60°C to 55°C - hot enough for personal use and to prevent legionella growth.

#### *Economic and environmental benefits:*

*In 1995, these measures combined brought Hotel Nikko Hongkong a 6% reduction in electricity costs, and over a 9% reduction in fuel oil costs which translated into savings of about \$512,000 (US\$66,000).*

### Readjustment of gas equipment

The hotel has installed control technologies that maintain the correct ratio of gas and air in the kitchen stoves. The hotel works with the Hong Kong & China Gas Company to ensure that all gas equipment is adjusted in accordance with the Company's specifications.

#### *Economic and environmental benefits:*

*Gas consumption is reduced by 11% and associated costs are reduced by 6% each year.*

## RISK PREVENTION PLAN

A 30 item checklist has been drawn up to ensure that the property is not only a "green" hotel, but also a "safe hotel". In addition:

- 1 A booklet entitled "For your safety" is put in all guest rooms.
- 1 A "Safety and Emergency" paragraph is included in the employee handbook.
- 1 Regular staff safety drills, fire emergency exercises, hygiene and first aid training are conducted.
- 1 A safety video is regularly screened for staff. The Urban Council's leaflets on sanitation and hygiene are distributed to all staff.
- 1 Swimming pool water is regularly analyzed by an independent laboratory.
- 1 Additional loud speakers have been installed in guest rooms for emergency announcements.

## MONITORING

An extensive programme to monitor energy and water use, as well as indoor air quality is in place. Metres have been placed on all outlets. The information is



being used to build a database history to enable the hotel to prioritize future activities. Monitoring is performed by students of the Hong Kong Polytechnic University with assistance from the hotel maintenance and engineering staff.



## **WIDER BENEFIT AND NETWORKING**

### **Collaboration with the Hong Kong Polytechnic University**

The environment programme of the hotel is used as a practical study programme for final year students of the Department of Building Services at Hong Kong Polytechnic University. The partnership began in 1992, when the students performed an audit on Hotel Nikko Hongkong's water and energy consumption efficiency and on indoor air quality.

In 1995/6, three student research projects were completed:

- 1 Performance evaluation of the direct sea water-cooled chiller plant
- 1 Water use audit following the water conservation retrofit
- 1 An investigation of the possibility of energy recovery from exhaust air at roof level and condensed heat from the chiller plant

### **The Nikko Hongkong Environmental Prize**

In 1996, Hotel Nikko Hongkong created an annual Environmental Prize to be awarded to a student from the Department of Building Services at the Hong Kong Polytechnic University who had demonstrated outstanding performance in the final year environmental project. It comprises a certificate, trophy and a scholarship of HK\$5,000 (US\$ 650).

### **A "Guide to Energy and Water Conservation in Hotels"**

Hotel Nikko Hongkong and the Hong Kong Polytechnic University have published "A Guide to Energy and Water Conservation in Hotels", a practical guide for managers and engineering staff based on the experience gained from auditing hotels in Hong Kong.

### **Networking and sponsorship**

The hotel's general manager frequently makes presentations on environmental management in hotels at national and international workshops and conferences. Hotel Nikko Hongkong is a sponsor of the Hong Kong Annual Business and Industry Environment Conference. The hotel also participates in tree-planting efforts and fund-raising activities for environmental charities.



## **SUPPORT MEASURES**

### **Visitor communication**

The environmental awards won by Hotel Nikko Hongkong are displayed in the reception area and are listed on hotel stationery, brochures and other promotional materials.

### **Staff**

All staff are trained to apply good housekeeping measures during their daily tasks: turning off equipment when not in use, closing curtains in unoccupied bedrooms to reduce heat transfer, using equipment (especially washing machines) according to manufacturers specifications, and reporting leaks and other defects.

Special training is given to engineering and maintenance staff who are actively involved in improving the operating efficiency of all equipment.

Copies of "Guidelines for Energy Efficiency" produced by the Energy Efficiency Advisory Committee of the Government of Hong Kong are distributed to all staff.

**CONTACT**

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*"First it is important to ensure that you get the support of your staff, most specifically your engineering staff and that they are aware of the usefulness of environmental action plans. The second step is to ensure that the technical specifications of equipment installed in a building are followed... In my experience most companies can cut energy consumption by 10% just by taking a few simple measures."*

**Jean Marie Leclercq**  
**General Manager**

# Budapest Hilton, Hungary

## Budapest Hotels Collective Waste Management Programme



### ABOUT THE HOTEL

The Budapest Hilton has 322 guest rooms, 3 restaurants, 2 bars, a wine cellar, a ballroom, 7 meeting rooms and a business/meeting centre. It accommodates over 100,000 guests annually. Located in the historic Castle district of Budapest, it incorporates the remains of a Dominican church and cloister from the 13th century, classified by UNESCO's World Heritage programme.



### WATER

Washing machines and dishwashers operate on low water cycles. Low flush toilets have been used in the newly restored bathrooms. Guests can choose to re-use towels or have them changed daily, which reduces water and laundry detergent use, and effluent.



### ENERGY

The use of energy-saving light bulbs has reduced the energy bill by 13%, or US\$ 40,000 per year



### WASTE

#### Waste separation and recycling programme

Waste paper including stationery, office paper used on both sides and newspapers, metal cans and white and coloured glass are collected, separated and sold for recycling. A waste compactor which reduces waste volumes by 50% was purchased at a cost of US\$ 10,000.

#### *Economic and environmental benefits:*

*In 1994 and 1995, through recycling initiatives and compacting non-recyclable waste, the Budapest Hilton's overall waste volumes were reduced by more than 30%. Waste collection fees were reduced by US\$ 10,000 in 1995. The return on investment of the waste compactor was one year.*

### PURCHASING

Detergents and cleaning liquids are biodegradable and are bought in bulk to reduce packaging waste. Ink ribbons and cartridges are reusable and recyclable.



### WIDER BENEFITS AND NETWORKING

The Budapest Hilton's general manager has organised several environmental training workshops for members of the Hotel Association of Hungary. He has also published a booklet entitled "The Green Road to Tourism".



## SUPPORT MEASURES

### Visitor communication

Tent cards on the wise use of energy and on reducing water use are placed in all guest rooms. "Thoughts About Our Future", the Budapest Hilton's environment brochure, describes the Hilton's environment programme and gives ideas on how guests can participate.

### Staff

When the Budapest Hilton was awarded the Environmental Prize of the Hotel Association of Hungary, the prize money was distributed amongst line employees who demonstrated a strong environmental commitment.

## THE BUDAPEST HOTELS COLLECTIVE WASTE MANAGEMENT PROGRAMME

- 1 Building upon the above environment programme, particularly its waste separation and recycling activities, the Budapest Hilton together with the Budapest Marriott, initiated a collective waste management effort for the members of the Hungarian Hotel Association.
- 1 When it started in 1994, recycling in Hungary was still small scale and expensive. Twelve hotels in Budapest started by recycling office paper, then newspapers and cardboard. Later, glass bottles were separated by colour and collected for recycling. The glass recycling programme was a big challenge as initially the collection companies often failed to collect on schedule or not at all. Furthermore, there was no guarantee that the glass would be recycled after collection and many collectors were not equipped with trucks to handle large quantities. A reliable firm was finally found which would collect and recycle glass waste free of charge.
- 1 Each hotel participating in the collective waste management effort has invested US\$10,000 in a waste compactor which reduces waste volumes by 50%.
- 1 Plans are underway to extend this programme to other types of wastes and to members of the National Hotel Association throughout the country.

### *Economic & environmental benefits:*

*Apart from the proper disposal of waste, this effort helps to overcome problems pertaining to limited storage space in hotels. Savings are made on waste collection fees as the trucks collect waste from several hotels in one round. The programme is reported to save the participating hotels collectively around US\$70,000 per annum.*

### **CONTACT**

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*"We could introduce many things at once, but soon we'd find that the excitement would go and people would lose interest. We don't want that. We are in this for good, in the long run."*

**Mr Attila Zobor, Resident Manager**



# Hotel Guestline Days, Tirupati, India



## ABOUT THE HOTEL

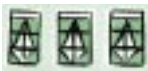
Hotel Guestline Days, Tirupati, is owned and managed by Mahindra & Mahindra Ltd., in affiliation with Days Inn Inc., USA. It has 141 rooms, two restaurants, a health club, a conference room and a business centre.

Tirupati lies at the foot of the Tirumala hills in Chittar District, Andhra Pradesh. It is the home of the Sri Venkateswhara Temple and Vaishnovite Shrine, which receive an average of 30,000 visitors a day, bringing the hotel clients all year round.



## POLICY

Corporate environmental commitment is part of the mission statement of Guestline Days: "To construct and manage our properties in a manner that preserves and enhances the environment and serves the public interest".



## DESIGN

- 1 The hotel is designed in a Y shape to optimize the use of natural light.
- 1 The ceiling on the top floor is lined with a 75mm thick layer of expanded polystyrene which acts as a heat insulator, keeps the indoor temperature at a lower level and brings down air-conditioning costs.
- 1 Showers are installed instead of baths.
- 1 Instead of traditional hardwoods such as teak and mahogany (protected species), treated rubber wood has been used for guest room furniture.
- 1 Reed curtains are used in areas where complete privacy is not needed.



## WATER

### Collection and use of rain water especially during the monsoons

Rain water is collected and used for many purposes. In an untreated form it is used for toilet flushing. Water which has been filtered, chlorinated and passed through an ultra-violet filter is used for cooking and drinking.

### Reducing water use

A hydro-pneumatic ring system has been introduced to regulate flushing water which operates through control valves in each WC.

### *Economic & environmental benefits:*

*The quantity of water per flush has been reduced from 12 to 8 litres. 365,000 litres of water is saved each year which equates to Rs. 1,369 (US\$ 39).*

### Waste water treatment and recycling

All waste water, from flushing and bathing and from the kitchen and laundry is collected in grit chambers where grease is separated. The heavy particles which sink to the bottom of the chamber are removed at regular intervals. The water then flows to an aeration tank where bleaching powder, ferric chloride and copper sulphate are added. It then passes through a multi-layer filter before it is stored and used in the hotel garden and fountains. Excess grey water is used on local agricultural land.

*Economic and environmental benefits:  
150,000 litres of water are recycled per day, which equates to Rs. 152 per day  
and Rs.55,480 (US\$ 1,585) per year in water costs.*

## ENERGY



### **Guest room master switch**

All guest rooms have a master switch which guests are requested to turn off when leaving.

### **Hot water recovery**

Condensation from the air conditioning unit and the laundry and health club is fed back into the main boiler. As this water is already heated, the boiler operates at lower capacity and consumes less fuel.

### **Sun control films**

Sun control films have been added to all windows in public areas with direct sunlight, reducing air conditioning load and related costs. Energy saving light bulbs are complemented with dimmers in all public areas.

*Economic & environmental benefits:  
The hotel estimates that these measures collectively save about 2,815 kw per year which equates to Rs. 84,315 (US\$ 2,409).*

## WASTE



### **Biodegradable disposable items**

Plastic plates and cups have been replaced by disposable containers made with biodegradable leaf and plant sheaths.

### **Composting**

All wet garbage (mainly food waste from the kitchen) is composted and used as fertilizer. Excess compost is sold to local farmers, some of whom supply the hotel with fruits and vegetables. Revenue from this practice is estimated at Rs.1,369 (US\$ 39) per month.

### **Recycling and reuse**

- 1 Air-conditioning units use reusable filters.
- 1 Stationery and promotional materials use recycled paper. Old envelopes are reused for internal correspondence.
- 1 Leftover juices and wines are used to make vinegar which is used as a cleaning agent.
- 1 Wooden crates, used for packaging when the hotel was built in 1991, were reused to build barriers around saplings planted along the road leading to the hotel.
- 1 Newspapers, bottles, crates and cans that are not taken away by suppliers are sold to scrap dealers for recycling, which generates Rs. 1,500 (US\$ 43) per month.
- 1 Old linen is converted into cleaning cloths.

### **Purchasing**

Guestline Days makes a conscious effort to use suppliers who buy back their packing for reuse and recycling. Preference is given to local products. Efforts are made to reduce items that require long-distance transportation which causes pollution. All wine and spirits served are made in India.



### **EMISSIONS**

#### **Reduction of boiler emissions**

The boiler is serviced and maintained to ensure that carbon dioxide emissions are below 3.5% and oxygen is above 13%.

#### **Air-conditioning**

The air-conditioning unit uses lithium bromide as a refrigerant, a more environmentally friendly alternative to chlorofluro carbon (CFC) which causes ozone depletion.

#### **Fire extinguishes**

Traditional halon fire extinguishers have been replaced with halon 1211, a more environmentally friendly alternative.



### **SUPPORT MEASURES**

#### **Staff**

On-going environmental initiatives among staff include an awareness programme on vehicle emissions which has encouraged the staff to car-pool and use bicycles. Guests can also hire bicycles from the hotel.

#### **Visitor communication**

"Water shame" notices in all guest rooms remind guests: "The way some people waste water! They wouldn't if they knew a few water facts. Brushing teeth with an open tap uses 33 litres, a closed tap uses 1 litre. A shower bath uses 100 litres of water, a bucket bath uses 18 litres."

A letter inviting guests to "Save the Planet" is included in the general information pack in all rooms. It outlines the Guestline Days environment policy and asks guests to cooperate through actions such as using less water and turning-off the power supply master switch when leaving the room. Visitors have commended the hotel for its environmental efforts through the guest questionnaire.

#### **CONTACT**

Mr A. Ranganathan  
Hotel Guestline Days,  
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Tirupati - 517 507  
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*"Everyday we consciously or unconsciously do something that damages the Earth's environment. It is our endeavour to be conscious of safeguarding our environment in all that we do and at all levels, for we believe that safeguarding our environment is safeguarding ourselves and future generations."*

**Mr A. S. Ranganathan**  
**General Manager**

# Welcomgroup Maurya Sheraton Hotel and Towers, New Delhi, India



## ABOUT THE HOTEL

The Welcomgroup Maurya Sheraton Hotel and Towers in New Delhi operates 440 guest rooms, 7 restaurants and 8 conference rooms. "Welcomenviron" is the name of the environmental awareness programme implemented in Welcomgroup (non-hospitality) subsidiaries and serves as the basis of the hotel's environmental programme.



## POLICY

The "Welcomenviron" Policy and Procedure Manual serves as a working document for developing the hotel's environmental action programme. In order to facilitate implementation and monitoring, the manual includes an environmental management "road map", life cycle analysis flow charts and monitoring checklists for all action areas, ie:

### Operations and

#### facilities management :

Emissions, noise, dust, effluent, solid waste, hazardous materials, machinery specifications, energy, transport, ozone layer depleting chemicals, legionella prevention, discontinuing use of asbestos.

#### Product services:

Packaging materials, product specifications, supplier performance using recycled materials.

**Environmental awareness:** Awareness and training, environmental committee, publicity, library

#### Communications:

Corporate image and public relations, internal communications

#### Information systems:

Environmental management records and environmental legislation register.



## WATER

### Waste Water treatment

Laundry and waste water are recycled through an effluent treatment plant installed on the hotel premises. Laundry waste water is first dosed with chemicals to bring down the alkaline level and then passed through an aerator to reduce the biological oxygen demand (BOD) loads. Suspended solids are then removed through lamallear separators, and residual suspended matter, detergents and sludge are removed through dual media filters (DMF). At this stage all organic matter has been removed from the water, BOD levels are lowered and colour and odours have been eliminated. A low chlorine dose is added to kill any residual bacteria.

Kitchen waste water is treated by a similar process, having first passed through a crusher and filter to reduce larger particles of food waste. All treated water is

used in the hotel fountains and for landscaping. It also feeds into an aquarium which indicates the level to which the water has been purified. The backwaters used for washing the filters and softeners in the water treatment plant are also collected and used for landscaping.

*Economic and environmental benefits:*

*The hotel estimates that 200,000 litres of water are recycled per day. The backwaters that are collected and used for landscaping amount to 30,000 litres per day.*

**The hygiene kiosk to reduce water consumption**

A special apparatus for the cleaning of hands in the kitchen uses ultrasonic technology. Water molecules vibrating at 40,000 cycles per second penetrates and removes the dirt particles embedded in the pores of the hand. The use of soap and water is greatly reduced.

**Auto flush**

Minimum water is used in public area urinals through an auto-flush system activated by infra-red sensors.

*Economic and environmental benefits:*

*Water use has been reduced by 1,060 litres per year.*



**WASTE**

**Recycling of cooking oil**

Used cooking oil from the kitchen is passed through an oil recycler, then re-used for cooking. After the second use, the oil is collected in a common slump and sent to a Welcomegroup unit microbiological laboratory for the manufacture of soap.

**Good housekeeping measures**

- 1 Paper laundry bags have been replaced by reusable cloth bags.
- 1 Table mats are made of biodegradable fibres.



**ENERGY**

**Motion detectors and photocells**

Motion detectors have been fitted in guest rooms so that when empty, all electrical circuits are automatically switched off. Photocells have been used to turn on and off outdoor lighting. Timing devices have been fitted to corridor lights.

**Lowering wattage**

60 watt incandescent lamps have been replaced by 9 florescent watt lamps.

**Energy maintenance**

A comprehensive maintenance and energy management programme ensures the optimum loading of transformers, and an optimum defrosting system for cold storage and deep freezers. Kitchen exhaust fans are fitted with timers.



## EMISSIONS

### Ozonizer in guest bedrooms

Ozonizers are installed in guest rooms to improve indoor air quality. These devices break down the oxygen to produce nascent oxygen which removes odours and purifies the air.

The flue gas from the boiler is passed through wet scrubbers which contain a sodium hydroxide solution. The solution absorbs the carbon monoxide in the flue gas and minimizes pollution. The central air conditioning unit operates on CFC-free chillers.



## SUPPORT MEASURES

### Visitor communication

A permanent environmental exhibition is maintained in the lobby which displays information on sustainable resource use and the "Welcomenviron" programme. An environmental information channel is included on the in-house television service.

The "Welcomenviron - We Can Do It" booklet is made available to encourage guests to "do their bit" and lists a range of eco-tips for local guests:

- 1 Use bio-gas when living in satellite cities and rural surroundings
- 1 Re-sell paper to recycling agencies
- 1 Use leaf plates for picnics instead of plastic containers
- 1 Collect rain water for various uses
- 1 Use water from washing food and defrosting the fridge for watering plants

The booklet discusses current environmental problems such as the "green house" effect, the increase of land-fill sites, forest conservation and industrial pollution- related health issues.

In an effort to increase environmental awareness among guests, an attractive telephone index of unbleached recycled paper is offered to guests. It includes information on Indian natural history, literary quotations, nature paintings and facts and figures such as: 17 trees are used to make 1 ton of paper; every newspaper uses 1 tree per month for its paper requirements; every year a 100,000 trees are felled for making wooden crates.

### Staff

"Welcomenviron" is coordinated by an environmental team with representatives from all departments, headed by the General Manager. A quarterly environmental award scheme has been organized to reward departments showing a strong commitment. All job appraisals contain a section on participation in "Welcomenviron".

## CONTACT

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*"We are firmly committed to achieving best international practice and standards in all environmental issues. Our future plans include waste heat recovery from the central air conditioning unit and using bio gas as a fuel for cooking. We are also in the process of making inventories and system flow charts to perform a life cycle analysis of all products that we use."*

**Nakul Anand, Former General Manager**

# Hotel Inter-Continental Nairobi, Kenya



## ABOUT THE HOTEL

The Inter-Continental has 440 guest rooms, 4 restaurants, a casino, and a ballroom which seats over 500 persons. It is located opposite Uhuru Park, a ten minute walk from Nairobi city centre.



## ENERGY

### Reusing the condenser from the discarded liquid chillers to install a flash steam heat exchange unit

Because flash steam was escaping from the boiler due to excess steam in the laundry condenser, the cost of installing a flash steam heat exchange unit to use this otherwise wasted energy for water heating was investigated. However, as the hotel's 20 year old liquid water chillers were being replaced, it was decided to remove the condenser from the discarded chillers and reuse it for the heat exchange unit in order to make substantial costs savings.

Water now enters the heat exchanger at 25°C where it is heated to 38°C. It is then pumped into the central water heater where it needs to be heated only another 12°C to reach 50°C. (Previously, water was heated directly in the heater from 25°C to 50°C). The boiler now operates at 50% capacity, and uses less energy.

#### *Environmental & economic benefits:*

*By saving on the cost of a new heat exchanger (US\$ 40,000) and using the heat exchanger recovered from the water chillers, the only cost incurred was US\$2,000 for installation and modifications. Fuel consumption has been reduced by 24,000 gallons (90,909 litres), which amounts to US\$ 34,000 per annum. Carbon dioxide and sulphur dioxide emissions have also been reduced.*

### Twin speed motors in the air conditioning cooling towers

The cooling towers of the water-chilled air-conditioning system have been replaced by ones which operate on two-speed motors and fans. The temperature of the water entering the cooling towers is gauged automatically so when cooling demand falls and the water temperature is low, the motor operates at a lower speed. An automatic water treatment device to remove limestone and legionella bacteria has also been fitted.

#### *Environmental & economic benefits:*

*As the motors frequently operate at a lower speed, approximately 8000 kwh of energy are saved per month. This equates to a reduction of US\$ 8,400 in energy costs per annum. The noise level of the towers have been reduced by 60%.*

### Power factor correction

The hotel was registering significant losses in voltage due to the high reactive power content when receiving power from the national grid. A capacitor bank was installed which improved the incoming power factor from 0.8 to 0.99, which brought major savings on electricity costs, through reduced surcharges.

#### *Environmental and Economic benefits:*

*The capacitor bank was purchased for US\$28,500. Through the increased*

power factor, energy savings total US \$1 700 per month, or US \$ 20,400 per annum. The return on investment is 18 months. The capacitor bank does not use - polychlorinated-biphenyl, a toxic liquid that cannot be properly disposed of at the end of its service life.



## EMISSIONS

### Replacement of CFC 12 liquid chillers

Like most traditional refrigeration and freezers, the Inter-Continental Nairobi's liquid chillers were operating on R12 which contains chlorofluro carbons (CFCs) - an ozone depleting substance. These chillers have now been replaced with more ozone friendly R-134a (HFC-134a) chillers. The cost of this replacement was US\$ 200,000.



## WIDER BENEFITS AND NETWORKING

### Environmental information booklets

The Regional Chief Engineer has compiled two environmental information booklets, designed for non-engineers on "Energy Conservation and Awareness and Environmental Auditing" and "Environmental Management for Small and Medium Sized Hotels in Developing Countries." He observed that while most hoteliers recognize the importance of environmental management, many fail to take action not only due the lack of capital, but also due to their lack of technical knowledge. The booklets were developed to improve hoteliers' understanding of environmental issues and provide practical suggestions on simple, low-cost measures to improve environmental performance. They were disseminated to over 50 small and medium sized hotels and to other Inter-Continental Hotels in Kenya and Africa in place of a traditional Christmas card.

#### *Economic & environmental benefits:*

*The response has been very positive. Several hotels, including 8 Inter-Continental hotels in Africa have now implemented environmental management programmes.*



## SUPPORTING MEASURES

### Visitor communication

"The Green Plant" newsletter carries information on general environmental issues as well as on the hotels environment programme.

### Staff

A task force of representatives from all departments oversees the implementation of the environmental programme. An environmental award is organized, and the winners are announced and rewarded at the annual staff party which is attended by the Minister of Tourism.

## CONTACT

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Hotel Inter-Continental  
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or 214617

*"Governments in Africa are faced with mounting socio-economic problems which are further compounded by the lack of capital to make improvements. Instead of waiting for government assistance, we, as private sector international industry leaders, have a leading role to play in raising environmental awareness and encouraging environmental action in local industry."*

**Mr Varuna Fernando**  
**Regional Chief Engineer, Inter Continental Hotels, (East Africa)**

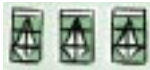


# Narayani Safari Hotel and Lodge, Nepal



## ABOUT THE HOTEL

The 37-room Narayani Safari Hotel was built in 1987 and the Narayani Safari Lodge (12 rooms) followed in 1988. Both are located on the periphery of the Royal Chitwan National Park, 150km from Kathmandu. The park covers 932km<sup>2</sup> of the subtropical lowlands of the south central Himalayas and was listed by UNESCO as a World Heritage Site in 1992.



## DESIGN AND CONSTRUCTION

### The decision to build the Narayani facilities outside the National Park

At the planning stage, permission to build tourist facilities inside the park could have been obtained. (Seven tourist lodges were already located inside the park). However, the company believed that National Parks should be set aside primarily for conservation and decided to site the facilities outside the Park and apply for permission to use the Park only for wildlife viewing trips. It was the first time in Nepal that a tourist enterprise had made such a request. This decision was taken despite the marketing disadvantage, as most tourists clearly preferred to be housed within the park.

### Choice of building materials

The facilities were built on land of low agricultural value. Wooden beams, door and window frames from derelict houses on the land were reused for building the single-storey cottages of the hotel and lodge. No trees were felled for construction.

Elephant grass was used initially to thatch the cottage roofs. However, because these tended to leak during the monsoon, the grass was replaced by locally-made clay tiles. Every January, the park authorities invite the tourist lodges and villages to cut the elephant grass they require before burning the remains so that new grass can grow.



## ENERGY

Solar panels are used for water heating. As there are no facilities for storing solar energy, hot water is not supplied at night. Despite the low cost of wood and charcoal, LPG gas is used for cooking.

Even though Narayani Safari is located outside the National Park, it adheres to the park regulations and does not use electricity on the property. Lighting is provided through kerosene lamps.



## WIDER BENEFIT AND NETWORKING

Narayani Safari has attempted to demonstrate to the surrounding villages that well planned tourism can bring tangible benefits. Initially these communities were "anti-national park and anti-tourism" but by employing villagers as staff at the hotel and lodge and allocating a part of profits to rural projects, Narayani

Safari helped the villages establish a health centre, a vegetable nursery and a secondary school scholarship programme.

With the ultimate aim of reducing the local community's dependence on the National Park and thereby stopping the illegal exploitation of its resources, Narayani Safari began working with non-governmental organizations to help villagers establish fruit and fodder tree plantations.



## SUPPORT MEASURES

### Visitor communication

A code of conduct on environmentally-sensitive behaviour in the National Park is available to guests in English, Spanish, Japanese and Chinese. Visitors are asked to limit the use of water, and are given safety instructions on using the kerosene lamps.

### CONTACT

Mr Gyawali  
Narayani Safari Hotel  
and Lodge  
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*"It is our intention to serve as an example of the positive impact that tourism can bring to rural communities. By operating in an environmentally sensitive manner we hope to contribute to the better management of the National Park and its buffer zones".*

**Mr Lochan Gyawali**  
Director

# Sånga Säby Conference & Study Centre, Sweden



## ABOUT THE HOTEL

Sånga Säby was established as a centre for agricultural research over 50 years ago by the National Swedish Farmers Union. Today the Sånga Säby Conference & Study Centre is a separate company affiliated to the Union. Conference participants make up a large share of its market.

It is located on Lake Mälaren, on Färingo Island, 35 km from Stockholm. The main building is a manor house dating back to the early 18th century. Sånga Säby offers conference facilities for 350 persons, a restaurant seating 150 and 113 guest rooms.

Environmental activities at Sånga Säby began with an internal environmental audit undertaken by students of the local high school, who continue to monitor and report bi-annually on the centre's environmental progress.



## WATER

### Waste water treatment

A waste water treatment plant is located on site. In 1992, the plant was entirely renovated and now includes a 3-stage water purification process. First the water passes through mill strainers and is purified by oxygenation using air compressors. At the final precipitation stage, PAX 21 is added to sink sludge. (PAX 21 is free from chloride aluminium and is one of the most environmentally friendly substances for separating sludge.) Residues are destroyed by bacteria before water is transported to the municipal sewage treatment plant. Treated waste water is directed to an outlet in Lake Mälaren.

#### *Economic & Environmental benefits:*

*The total amount of waste water treated through this plant in 1995, which is also used by local apartments and a farm, was 15,398m<sup>3</sup>. (Exact volumes of waste water generated by the conference centre cannot yet be quantified).*

### Water saving devices

All water outlets have been fitted with water-saving nozzles and public restrooms furnished with urine-separating toilets.

#### *Economic & Environmental benefits:*

*Through these devices Sånga Säby estimates that the volume of water consumption has dropped by 40%, which equates to SEK 10,000-12,000 (US\$ 1,506-1,807).*



## ENERGY

### Use of renewable energy

67% of the entire facility is heated and cooled using marine and geothermal energy. Supplementary energy is generated through boilers fuelled by rape methyl esters (RME), or rape seed oil. All electricity used by the centre is produced from renewable sources.

In early 1995, Sånga Säby in association with the Swedish Ethanol Development Foundation, acquired Sweden's first RME-powered car. Today all vehicles and tractors at Sånga Säby operate on RME. Lawn mowers are operated on solar energy and rape seed oil.

Solar panels have been installed on the roof of the sauna /relaxing area which provide a majority of the energy for heating and hot water in the sauna and swimming pool.

### **Good housekeeping measures**

- 1 Low energy light bulbs and fluorescent lights are used whenever possible.
- 1 Motion detectors turn out the lights when conference rooms are empty.
- 1 All guest rooms are fitted with individual thermostats.
- 1 Time relay control systems reduce indoor temperature at night in all guest rooms and public areas.
- 1 Weather strips on windows and doors are checked annually and replaced as needed.

### *Economic & environmental benefits:*

*Whereas in 1994, Sånga Säby served 22 people on 1mwh in a 24 hour period, in 1995, 26 people were served - an increase in energy efficiency of 15%. (Note: this calculation has been adjusted to take into account increased occupancy and energy use during the hard winter of 1995.).*



## **WASTE**

### **Waste separation**

A waste separation programme ensures the separation of paper, aluminium, organic waste from kitchen and garden, glass, batteries and other hazardous waste substances. Waster water from the kitchen goes through a separate cycle where fats enter a separating tank before reaching the sewage plant for further treatment.

### **Biodegradable disposable items and bulk buying**

Disposable items are only used for picnics and excursions. Plastic items have been replaced with starch-based biodegradable materials and cardboard. Portion packs have been replaced by larger bulk packs. The delivery system ensures that all packing is taken back for recycling. All delivery trucks are fuelled with rape seed oil.

### *Environmental & economic benefits:*

*Waste volumes are estimated to have fallen by 60% in 1995.*



## **MONITORING**

### **Progress monitoring model**

To ensure precise monitoring of environmental progress and the calculation of environmental and economic benefits, in August 1996 Sånga Säby in association with the Stockholm House of Sustainable Economy, developed a tailor-made environmental monitoring system. The accurate measurement of real environmental benefits will be possible from 1997.



## WIDER BENEFIT AND NETWORKING

The Sånga Säby Conference and Study Centre's water purification and treatment facilities are also used by a nearby farm and over 20 neighbouring villas and apartments.



## SUPPORT MEASURES

### Staff

All staff were involved in the drawing up Sånga Säby's environmental policy and action programme to ensure their full co-operation and participation. Training is an important priority. The wage system includes environmental performance-related bonuses for all staff.

### Visitor communication

Sånga Säby is often invited to make presentations on its environmental work at the conferences and meetings it hosts. In 1995, 62% of the guests were introduced to the Centre's environmental programme through such presentations.

Notices in rooms request the guest to:

- 1 Leave paper and other recyclable materials on the table or on the floor for proper disposal
- 1 Switch-off TV sets using the main button and not with the remote control
- 1 Adjust room temperature using the radiator switch, not the windows

### *Environmental & Economic benefits*

*Sånga Säby reports that occupancy has risen by almost 10% per annum since 1993, and this is largely attributed to its environmental activities.*

### CONTACT

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Sånga Säby Conference  
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*"Our ambition is to lead the way in the future, and serve as a prototype for environmental action in the industry, both in Sweden and world-wide."*

**Mats Fack, Managing Director**  
**Jimmy Sjöblom, Manager's Assistant, Market and Environment**

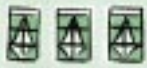
# Scandic Hotels, Sweden



## ABOUT THE HOTEL GROUP

Scandic is presently Scandinavia's largest hotel chain with over 100 hotels in Sweden, Denmark, Norway and Iceland. The chain also operates hotels in Germany, Austria, Belgium and Great Britain.

Scandic's environmental policy underlines the need "to move from resource wasting - to resource caring". An environmental action programme, focusing on the customer environment, food and beverage, water, energy, packing and waste handling, laundry, dish washing and cleaning, logistics and transport is being implemented across the chain. The approach and the pace of implementation of the programme differs from country to country.



## DESIGN & REFURBISHING

### **The Scandic Environmental Room: 97% recyclable or biodegradable**

The "recyclable room" was first tried out in 1994 and is now being introduced to all Scandic hotels. 2,500 such rooms have been installed throughout Scandinavia. From 1996 an additional 1,500 rooms will be introduced each year, demonstrating environmental sensitivity through design and choice of materials.

The material content of all materials, parts and design elements in the environmental rooms are labelled, so that the durability of each part can be assessed and they can be effectively re-used.

- 1 All timber used is from Nordic trees carrying a sustainable felling stamp.
- 1 Lacquers and paints used are water based, UV lacquer or powder lacquered materials.
- 1 Floors are either wooden or laid with wall-to-wall wool carpets.
- 1 Curtains and bedspreads are 100% cotton and flame-proof.
- 1 Table tops have a laminated surface for extra durability.
- 1 Wastepaper baskets are made with sheet steel to ensure fire safety.
- 1 Corn starch based bin liners are currently being tested.
- 1 Cupboards and panels are made of wooden boards with a veneer of Nordic alder.
- 1 Armchairs and sofas have wooden frames with steel springs, are upholstered with cotton or wool and reinforced with leather for durability
- 1 Lighting is provided through low energy light bulbs. Metal parts in fittings have been replaced with wood. Shades are made of reinforced material, lacquered aluminium or recyclable plastic.
- 1 Rooms have thermostatically-controlled individual heating.
- 1 All environmental rooms are non-smoking.
- 1 Accessories made of wood include baggage racks, frames and hooks for bed and paintings, and coat hangers.

### *Economic & Environmental benefits:*

*The cost of fitting an environmental room is 10% higher than a conventional Scandic hotel room. Scandic does not consider this to be an additional cost as each part of the room can be reused. For every 1000 rooms built or refitted, the consumption of non-renewable resources is reduced by 10 tons of metal and 60 tons of plastic. Scandic reports that the market response to the environmental rooms is very positive - they are always the first sold out.*



## WASTE

### Recyclable soap and shampoo programme

A standard cake of hotel soap weighs 15 grams, wrapped in plastic. An overnight guest uses approximately 3 grams and the rest is thrown away. Scandic have launched an entirely recyclable shampoo and soap system, replacing individual bars and bottles with dispensers made out of recycled plastic (polyethylene terephthalate). Soaps and shampoos use natural products and sugar cane and are biodegradable.

#### *Environmental and Economic benefits:*

*Across the chain, chemical effluent has been reduced annually by 30 tons.*

*Plastic and aluminium packing waste has been reduced by 8 tons per year.*



## MONITORING

### Scandic Environmental Index

All Scandic Hotels are required to report on their environmental performance every quarter. A 14 point index has been developed to assist progress monitoring and benchmarking within each property and across the chain. This lays special emphasis on energy consumption, which is adjusted accorded to business volume, outside temperature and wind cycle.

### Environmental Performance Benchmarking

Environmental performance is one of 20 criteria of the Scandic Corporate Financial Benchmarking scheme. From Autumn 1996, all Scandic hotels will include environmental costs and benefits in financial reports. As environmental performance becomes an essential success indicator, Scandic can ensure that environmental action will be fully integrated into the daily management and operation of all its hotels.



## WIDER BENEFITS AND NETWORKING

### The ABC of the Environment

Scandic works closely with the Swedish organization "The Natural Step" to produce publications, including "The ABC of the Environment".

### "The Challenge" programme

Scandic is a partner in "The Challenge", a programme to facilitate dialogue and co-operation on continuous environmental management and improvement. (Other participants include Electrolux, McDonalds Sweden, the Swedish Railway System and the Swedish Farmers Co-operative).

#### *Economic and Environmental Benefits:*

*Market surveys in 1995 indicate that the environmental programme has strongly enhanced the corporate image of Scandic Hotels.*



## SUPPORT MEASURES

### Visitor Communication

Scandic explains to guests why the new environmental measures and products have been introduced and what benefits are being achieved through them. Posters, leaflets are exhibited and environmental magazines are displayed in all rooms and in the lobby of each hotel. A suggestion box for green ideas is also available.

## Staff

All employees across the chain receive between 1 and 5 days of environmental training.

### CONTACT

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*"We are have received considerable support for our environmental programme from both existing and new customers and have positioned Scandic to target a new 'green' and health-conscious client segment. We have also been approached by companies and organizations outside our normal business environment, and sharing our environmental knowledge and experience with them has led to new business."*

**Mr Ola Evarsson**  
**Director Environmental Affairs**  
**and Corporate Purchasing**



# Phuket Yacht Club, Thailand

IHA Independent Green Hotelier of the Year 1996



## ABOUT THE HOTEL

The Phuket Yacht Club is a Mandarin Oriental Resort located on Nai Harn Beach, Phuket, with a radically different approach to environmental management. The hotel's environmental committee is convinced that environmental sustainability can only be achieved through programmes that:

- 1 Increase environmental awareness
- 1 Stress the urgent need to act due to the present state of the environment
- 1 Develop the notion of 'environmental stewardship' - a positive and caring attitude towards the environment

The main focus is on changing peoples attitudes, starting with the Yacht Club staff and widening the range of influence to reach the village communities of Phuket and Thailand.



## WATER

### Water treatment and recycling

Waste water from the hotel goes through a treatment process using BIO-BAC which treats the water biologically. It is then used for watering the gardens.

#### *Economic & environmental Benefits:*

*The Yacht Club estimates that per day it saves 70m<sup>3</sup> of water and 1,750 Baht (US\$ 70) in high season and 40m<sup>3</sup> of water and 1000 Baht (US\$ 40) in low season from recycling water.*

### Water conservation tent cards

Cards in bathrooms inform guests "Water is a precious commodity on our island and your co-operation in conserving this valuable resource during your stay with us will be greatly appreciated." They are also invited to reuse towels.

#### *Economic & environmental benefits:*

*Laundry loads (especially towels) have been reduced by 25%.*



## ENERGY

Measures to optimise energy use include:

- 1 A heat recovery system installed in the laundry.
- 1 Hot water maintained at 50°C at tap to ensure minimum use of energy for water heating
- 1 Refrigeration defrost cycles start during off-peak demand periods to keep costs down
- 1 Curtains and blinds closed to reduce external solar heat transfer.
- 1 A reflective roof installed above the walk-in fridge to reduce energy consumption

#### *Economic & environmental benefits:*

*The hotel estimates that these measures save 6% in electricity costs per month, which equates to 26,400 Baht (US\$ 1,056).*



## WASTE

### **Rubbish Recycling Project**

Paper, cardboard boxes, plastic, metal, aluminium cans, organic waste, cooking oil and glass waste is collected, separated, stored (when required) and sold for recycling or reuse.

#### *Economic & environmental benefits:*

*Over 1,000kg of newspapers are recycled each month and every day five 26 gallon containers of organic waste are sent to a local pig farm. Annual revenue earned from the recycling of waste is insignificant 800 - 1,200 Baht. (US\$ 32-48) but its primary objective is to raise staff awareness on the importance of recycling.*



## EMISSIONS

All refrigerants are low in CFCs' and halon fire extinguishers have been replaced by equipment operating on carbon dioxide and dry powder.



## WIDER BENEFIT AND NETWORKING

### 1 **'Minimum Standards for Environmental Protection'**

The Phuket Yacht Club has issued an environmental action checklist for all hotels in Phuket with 65 actions listed under front office, housekeeping, laundry, restaurants, room service and bars, kitchen, stewarding, waste management, maintenance and engineering, and general actions. The Phuket / Thai Hotels Association has adopted these standards, and all its members are required to maintain them.

### 1 **Training workshops for Thai Hotel Association members**

At the request of the Thai Hotel Association (THA), the Phuket Yacht Club Environment Committee is preparing environmental management training workshops in 1996 for all members of THA in Phuket.

### 1 **Environmental seminars for Phuket's Police**

In early 1996 the Phuket Yacht Club organized environmental seminars for 88 policemen from the region to discuss the environmental issues of Phuket and to consult on possible ways and means to resolve them.

### 1 **Environmental curriculum for primary schools**

In association with the Thai Ministry of Education, work has begun to develop a environmental curriculum for primary schools in the area. Workshops to introduce this curriculum to primary school teachers, first in Phuket and then all over Thailand, are planned for November 1996. The hotel's Total Quality Manager also holds weekly environmental education classes for local children.

### 1 **Beach cleaning activities**

The Phuket Yacht Club started beach cleaning in response to guest complaints, to offer an example to other hotels, and to drive home the message to environmental stewardship to both staff and local communities. The programme first focused on the Nai Harn Beach and has expanded to several other areas in Phuket. To maintain cleanliness, waste bins/collection points have been set up on the hinterland. The programme has growing support from the hotel staff, local schools, communities and government.

- 1 The Yacht Club is negotiating the upgrading of the municipal waste collection service, for which the local communities may be required to pay a small fee.

*Environmental benefits:*

*The district won the 1995 local government annual award for the prettiest district in Phuket, and the area around the Nai Harn Beach and reservoir has been designated a public park - the Rawai Public Park.*



- 1 **Tree planting campaigns**

The survival of Phuket's Mangrove Forests is threatened by construction projects such as shrimp farms. The Phuket Yacht Club, with support from the State Provincial Forestry Department and local communities, has initiated several Mangrove tree planting and maintenance campaigns. Its environmental committee, with support from the national forestry authorities, is working on a project to plant a natural medicine forest on lands attached to the National Nai Yang Forest in Phuket.



## SUPPORT MEASURES

### Staff

- 1 General environmental workshops are held every Saturday. Special training is given on maintenance to ensure that all equipment is regularly cleaned and serviced to avoid spills, odours and leaks and ensure maximum operating efficiency.
- 1 All job descriptions include an environmental section. Staff members are required to "protect the environment and be economical as possible with resources and materials used in the job, including electricity, paper and water".
- 1 When new staff members join the hotel their orientation training includes a 45-minute session on the environment, the work of the resort environment committee and how they can participate in environmental activities.
- 1 Much emphasis is given to encouraging staff members to adopt good housekeeping actions such as switching off air conditioners and other equipment when not in use, and separating waste into recycling containers as a part of their daily routine.

### Visitor communication

A video on the Club's environmental activities will soon be ready for viewing on the in-house TV channel. The new guest services directory also provides information. A tent card in guest rooms invites visitors to "Think E.A.R.T.H: Energy, Air, Resources, Trees and Humanity".

### CONTACT

Peter McAlpine  
Phuket Yacht Club  
Nai Harn Beach  
Phuket - Thailand  
Fax +66 (076) 381 164

*"What makes our environmental programme special is that the benefit of society and the education of people are placed first. It is not only a collection of energy saving and recycling measures. Each action is used as educational tool to develop in people a sense of responsibility toward the environment."*

**Mr Peter McAlpine**  
**Total Quality Manager**

# Dusit Hotels and Resorts, Thailand



## ABOUT THE HOTEL

Dusit Hotels and Resorts is the leading hotel group in Thailand. It has 10 hotels located throughout the country, some owned and managed by Dusit Hotels and Resorts, some operated under management contract.

The group's environmental programme began in 1991 with a nation-wide effort to plant a tree for each of Dusit's 3,000 hotel rooms in the locality of each hotel. Since then, a corporate programme based on the group's Uniform Environmental Standards, has been developed and is being implemented in all hotels. Each hotel has identified its environmental priorities and developed corresponding action plans.



## POLICY

### Uniform Environmental Standards

Dusit's Uniform Environmental Standards cover:

- 1 Water conservation, treatment and recycling
  - 1 Reducing energy use
  - 1 Waste separation
  - 1 Use of recycled products and those with reduced packaging
  - 1 Restructuring manpower
  - 1 Staff training and orientation
  - 1 Internship programme
  - 1 "Eco-team" awards
  - 1 Conservation of the natural beauty in the areas where hotels are located
  - 1 Participation in community environmental protection
- The Standards include resource use and monitoring levels (presented below).



## WATER

### Water consumption is monitored based on:

- 1 m<sup>3</sup> per number of inhouse guests
- 1 m<sup>3</sup> per number of food and beverage covers
- 1 m<sup>3</sup> per 100 Baht of total revenue



## ENERGY

Dusit is a member of the Energy Conservation Centre of Thailand, which serves (among its many other functions) as an information centre for new energy technology. The group's Technical Service Division provides recommendations and information to all hotels in the chain.

### Energy levels are maintained as follows:

- 1 Overall thermal transfer values: less than 45 watts per m<sup>2</sup>

### Maximum levels of lighting:

- 1 Guestrooms and corridors: 15 watts per m<sup>2</sup>
- 1 Public areas: 17 watts per m<sup>2</sup>
- 1 Banqueting areas: 20 watts per m<sup>2</sup>

### **Electricity consumption is monitored as follows:**

- 1 KWH per number of in-house guests
- 1 KWH per 100 Baht of total revenue
- 1 KWH per m<sup>2</sup> of service area in function room
- 1 KWH per m<sup>2</sup> of total outdoor area
- 1 KWH per m<sup>2</sup> of total indoor back-of-house area

### **Gas consumption**

- 1 Litres per number of covers served
- 1 Litres per 100 Baht of food and beverage revenue

### **Fuel consumption**

- 1 Litres per pound of laundry
- 1 Litres per 100 Baht of total revenue

### **Solid waste**

Waste volumes are calculated based on:

- 1 Each waste category as a fraction of total waste
- 1 Total tonnage per guest
- 1 Total tonnage per staff member.

### **The “Ecoteam” award**

An award is presented to the hotel which can best demonstrate good environmental practice. Drawing and environmental slogan contests are organized to encourage the families of staff members to participate.

### **Sample actions**

- 1 Silver reflectors installed to reduce the number of light bulbs used. This cuts energy consumption in half.
- 1 Building reservoirs, tanks and lagoons to collect rain water
- 1 Installing heat reclaim chillers in all hotels
- 1 Using unbleached, undyed cotton for linen, towels and laundry bags.
- 1 Installing flow reducers in all water outlets and toilets
- 1 A pre-water heating system using solar energy at the Dusit Resort in Pattaya

#### **CONTACT**

Ms. Jumpoon Chavasiri  
Dusit Hotels & Resorts  
c/o Dusit Thani Hotel  
Raina IV  
10500 Bangkok  
Thailand

*“Dusit Hotels realises the importance of protecting and conserving the environment and natural resources. Not only the Dusit Group but the hotel industry in Thailand has made a leading group effort on environmental issues.”*

**Jumpoon Chavasiri,  
Director, Human Resources,  
Dusit Hotels & Resorts**

# Derwentwater Hotel, Keswick, UK

IHA Independent Green Hotelier of the Year 1995



## ABOUT THE HOTEL

The Derwentwater is a country hotel near Keswick, in the English Lake District. It is set on the north western shore of Lake Derwentwater on 16 acres of conservation grounds. The hotel incorporates the main building - a three-storey 19th century stone structure; the Derwentwater Tower - a former country house of the same age and construction and a large conservatory, overlooking the lake.

The hotel has been undergoing refurbishment since 1993. It currently has 52 bedrooms (including 5 suites) and 18 self-catering apartments. Rooms will be reduced to 42, and apartments will be increased to 22 in February 1997. The hotel's only conference room will be lost during refurbishment.



## WATER

### Water saving measures

During refurbishment, all baths are replaced by showers and flow-reducers are used in all outlets. Low flush toilets have been installed in the refurbished bathrooms. In the older toilets, used plastic mineral water bottles are filled and placed in cisterns to reduce flush flow.

### *Economic & environmental benefits:*

*In refurbished rooms, water consumption has reduced by 11 litres per day per room. In 1995 this represented a saving of 154,497 litres of water, which equates to £197 (US\$ 303). The bottles in the cisterns alone save 30,000 litres of water per year, or £37 (US\$ 57).*



## ENERGY

### Individual combination boilers

Individual combination boilers have been introduced in the self-catering apartments. They provide heating and hot water on demand, and avoid hot water storage so consume less energy.

### Heating zones

The hotel has 3 gas-fired boilers each serving its own zone, so zones can be closed down at times of low occupancy. They also provide more flexibility for maintenance and reduce the impact of boiler plant repair.

### Maximising boiler capacity

The main hotel is heated through low-pressure hot water radiators served by gas-fired boilers. An appraisal of the heating system showed that certain boilers were being used under capacity. Therefore radiators replaced electric heaters in the conservatory.

### Energy saving housekeeping measures

- 1 Insulation of the loft with 200mm of fibreglass and of hot water pipes
- 1 Low energy lighting
- 1 Double glazing in the self-catering apartments

- 1 Ionisers on all gas equipment
- 1 Overrider thermostats on the central boilers to delay ignition of the boilers
- 1 Better use of existing time clocks on gas boilers and electric heaters

*Economic & environmental benefits:*

*Despite regular and routine readings of gas and electricity metres, precise calculations of economic and environmental benefits are not possible due to the ongoing refurbishment. However, the hotel estimates that since 1994, combined energy saving efforts bring over 20% savings in energy costs which equates to £5,400 (US\$ 8,308) per year.*



## WASTE

### Ionisers on beer lines

Ionisers have been placed on the beer lines in the hotel cellar. The beer lines now need to be cleaned only once every 4 weeks instead of once a week.

*Economic & environmental benefits:*

*This has reduced effluent by over 54 litres a week, which include 50 litres of waste beer. The reduction in waste beer and cleaning materials bring weekly savings of £134 (US\$ 206), while the reduction in labour costs is £1,170 (US\$ 1,800) per annum.*

### Aerosols and refillable dispensers

Only plastic pump action aerosols are used. Individual toiletries in the guest rooms have been replaced by recyclable and refillable dispensers.

*Economic & environmental benefits:*

*Reducing bedroom toiletries resulted in savings of £7,800 (US\$ 12,000) a year.*

### Waste-free breakfast

The use of individual packs of cereal, butter, jam and yoghurt has been stopped at the breakfast buffet. Items are purchased in bulk and displayed on the buffet in bowls to eliminate waste.



## SUPPORTING MEASURES

### Staff

Staff are informed about the environmental programme from the interview stage. Environmental information is included in the induction programme and the staff handbook.

### Visitor communication

The Derwentwater Hotel's environment statement is displayed prominently in the reception area. Comments on the environmental programme are received regularly through the guest satisfaction questionnaire.

"Going Greener" leaflet is put in all guest rooms listing the hotel's environmental actions and "Did you know" environmental information such as:

- 1 The energy from recycling one aluminium can operates your TV for 3 hours
- 1 If your fridge is 10% colder than necessary, your energy bill will be 25% higher.
- 1 By recycling one glass bottle, you can save enough energy to light a 60w bulb for 4 hours.

In the hotel grounds, several programmes are underway to encourage wildlife. The hotel is working with English Nature to develop a comprehensive conservation and management plan for the grounds.

**CONTACT**

Ian Aston  
Derwentwater Hotel  
Portinscale, Keswick  
Cumbria CA12 5RE  
United Kingdom  
Fax: +44 (17687) 71002

*"My advice on starting an environmental programme is to give it a go. It may be something small - but it is doing your bit. I am astonished that we have not had one letter of customer complaint about our measures - it just shows what fixed ideas we have."*

**Mr Ian Aston,  
Managing Director**



# Habitat Suites Hotel, Austin, Texas



## ABOUT THE HOTEL

The Habitat Suites Hotel has gained a reputation as a “safe haven from toxic chemicals and environmental ills that travellers must endure in ordinary hotels”. Located three miles from the municipal airport and 6 miles from the city centre, the hotel operates 96 suites - 72 with one bedroom and 24 with two. Each suite is equipped with a living room, breakfast bar and a full service kitchen. Meeting facilities are available for 50 persons. Restaurant services are available only for breakfast and conference meals.

Habitat Suites has a strong corporate, federal and state government clientele. Extended stay (30 days or longer) visitors contribute 10% of the total occupancy. Its environmental programme stresses environmentally sound housekeeping.

## REFURBISHMENT

When refurbishing:

- 1 Chlorofluorocarbons (CFC) were recovered from all discarded equipment. New purchases use established CFC alternatives.
- 1 Aluminium window frames were removed and a reflective roof cover added to avoid heat transfer.
- 1 Only water-based paints were used.
- 1 Carpets were laid with no adhesives.



## WATER

To reduce water consumption:

- 1 Aerators have been fitted to sinks and shower heads, reducing water flow from 5 to 2.1 gallons (19 to 8 litres) per minute.
- 1 Water saving toilets have been installed in all suites and staff toilets which use 1.5 gallons (6 litres) per flush, as opposed to the normal 3.5 gallons (13 litres).
- 1 Bed linen and towels are changed on request only.
- 1 Washing machines are programmed for low water usage.
- 1 Water-saving sprinklers in irrigation outlets are estimated to save 500 gallons (1,894 litres) a day.
- 1 Native plant species that require less water are used for landscaping.

*Economic and environmental benefits:*

*The combined water-saving measures bring the hotel an estimated saving of US\$ 9,000 in water consumption costs per year.*

## **A non-toxic ionization system to replace chlorine in the swimming pool**

Instead of chlorine, a non toxic copper and silver ionization system is used to sterilize the swimming pool and spa. This involves passing a low alternating direct current (6-12 volts) between copper and silver electrodes, fitted in the returning line of the pool and spa. The current causes the release of virus-killing copper and silver ions which are carried into the pool and spa with the returning water. They give good residual protection, are unaffected by UV or heat and cannot be absorbed through the skin. (The level required to sanitize water is a fraction of that classified as safe to consume by the US Environmental Protection Agency)

*Economic & environmental benefits:*

*Use of chlorine has been eliminated and the use of other maintenance chemicals has been reduced by 50%. Ionization is non-corrosive to the equipment and the pool and spa surface and there is a vast improvement in water quality. "Red eye" complaints have ceased.*



## ENERGY

- 1 Refrigerators are maintained at 38°F (3°C) and the freezer at 5°F (-15°C) to minimize the use of electricity.
- 1 Motion sensors turn the lights on and off in guest laundry rooms and public restrooms.
- 1 The pool water circulation pump operates during peak hours only (10am-10 pm).
- 1 Hot water is maintained at 125°F (52°C) in guest rooms and 140°F (60°C) in the laundry - sufficient for guest use and laundry. (Excess heating of water is energy and cost intensive).
- 1 15 energy-efficient air-conditioning units have been installed and Habitat Suites plans to gradually change over all units.

*Economic & environmental benefits:*

*The use of fluorescent lighting and air-condition units alone save the hotel over 122,000 kw of energy per year, which equates to US \$ 10,954.*



## WASTE

- 1 Grease traps have been fitted in all waste pipes.
- 1 Paper towels are unbleached, unscented and recycled after use
- 1 Organic fertilizers with no herbicides are used for the garden.
- 1 Fire extinguishers are refillable and halon-free.



## SUPPORTING MEASURES

### Visitor communication

All advertising stresses Habitat Suite's commitment to be a "green" hotel. It has an increasing number of visitors who suffer from environmental allergies and illnesses. It is a popular venue for meetings on environmental awareness and action. In addition to the traditional breakfast menu, which is 100% organic and additive- and preservative-free, a microbotic breakfast option is also available.

### Staff

At recruitment stage, staff are informed of the hotel's environmental commitment. Ongoing awareness programmes are organized and cash rewards offered for "green" ideas.

### CONTACT

Mr Longoria or Ms Cummings  
Habitat Suites Hotel  
500 Highland Mall  
Boulevard, Austin,  
Texas 78752 - USA  
Fax: +1 (521) 467 6000

*"We receive at least one telephone call every day inquiring about our environmental efforts. We are inspired by our increasing number of environmentally-ill clients. They are a reminder that if we do not change our ways, we will all be poisoned."*

**Mr Eduardo Longoria, Managing Partner**

# Hotel Inter-Continental Miami, USA

Winner of the 1993 IHA Environmental Award



## ABOUT THE HOTEL

The Hotel Inter-Continental Miami is a 34-storey property located in the heart of Miami's financial and commercial district. With its 664 rooms, 240 of which are designated as non-smoking rooms, 33 suites, 5 restaurants and over 61,000 ft<sup>2</sup> of meeting and banqueting space, the hotel caters to business executives, conventions and leisure travellers.



## WATER

### Water Recovery System

Waste water from the laundry is treated and reused to water the gardens in the hotel's plaza level fifth floor. Drought resistant plant varieties have been used in the gardens. In 1994, the hotel installed a water metering device that monitors the quantities consumed by each department and improves the control of water use.

### Reducing water consumption

In the bathrooms, water outlets and showers are equipped with aerators. Four gallon toilets have 1.5 gallon water saver units.

*Environmental and economic benefits:*

*These measures collectively save the hotel over 400,000 gallons of water per year, which amounts to \$4,000.*



## ENERGY

### Reducing energy consumption

Incandescent lights have been replaced with single florescent lamps, and in renovated guest rooms, the wattage has been reduced from 40 to 34 watts. The air-conditioning system has been retro-fitted to an automatic thermostat system.

### Energy Efficiency Programme

The Miami Inter-Continental has implemented the Florida Power and Light (the local power company's) Energy Efficiency Programme.

Motion sensors have been installed in all meeting rooms, air condition filters are changed once a month instead of every two months, temperatures on corridors and elevators are adjusted, variable frequency drives are fixed on all electric motors, and timers are fitted on all energy equipment.

*Economic and environmental benefits:*

*Collectively these actions save an estimated 400,000 kwh of energy annually, which amounts to \$2,400.*



## WASTE

"Inter-Cycle" is the name of the waste minimization and management programme of the Inter-Continental Miami. It's objectives are to reduce, re-use and recycle waste whenever possible, guarantee appropriate disposal, and

ensure regular monitoring through waste management audits and an annual cost/benefit analysis.

### **Reducing the generation of waste**

All suppliers are asked to take responsibility for their packaging. Suppliers must take back wooden crates and pallets that were previously left on the hotel loading dock or pay for their disposal. The hotel reports "the results are remarkable."

### **Purchasing environmentally friendly products and "closing the recycling loop"**

The Inter-Continental Miami has adopted a policy to purchase environmentally sensitive products, eg. items that are recyclable or biodegradable, and made from recycled materials. Suppliers are asked to provide information on the environmental sensitivity of their products, and to suggest alternatives for toxic and heavy resource consuming items. The above actions aim to "close the recycling loop" and help stimulate the market for recycled products.

#### *Economic and environmental benefits:*

*Over 98% of the hotel's general ledger consists of materials with the highest possible recycled content, minimized toxicity and reduced packing. 100% recycled purchases include stationery and all promotional material, toilet and tissue paper, guest amenity containers and re-fillable pencils for guest rooms.*

### **Recycling and reuse**

Waste collection and recycling programmes have been set up for paper, PET (Poly Ethylene Terephthalate) and HDPE (High Density Polyethylene) plastic, cardboard, glass, batteries, used florescent lamps, motor and kitchen oils, scrap metal, styrofoam and aluminum.

Among other re-use initiatives:

- 1 Edible left-over food is donated to food banks
- 1 Guest amenities eg. soaps and lotions are collected by the Miami Rescue Mission
- 1 Old furniture and decorative ancillaries are donated to local charities
- 1 Old sheeting is reused as laundry bags (to replace plastic bags)
- 1 Old electrical appliances are re-sold to suppliers
- 1 Christmas trees are planted to be reused the following year
- 1 Batteries and florescent lamps are recycled through the state programme
- 1 Reusable containers are used for storing and holding cleaning liquids
- 1 50 gallon containers are reused as recycling bins and garbage cans
- 1 Photocopying on both sides of the paper

Non-recyclable waste is compacted in a 30 m<sup>3</sup> compactor

#### *Environmental and economic benefits:*

*Before « Inter-Cycle » began the hotel generated 1,420 tons of waste annually and disposal costs amounted to \$85,000. Since 1992 with "Inter-Cycle" up and running, over 30 items and 45% of the hotels waste stream are recovered and recycled. Disposal volumes have fallen to 679 tons and disposal costs are down to \$31,000 per annum - with garbage collection just once a week, instead of every other day.*

## **PURCHASING**

### **Annual vendors summit**

The hotel encourages cooperation and dialogue with suppliers through its

annual Vendors Summit. which serves as a forum to inform suppliers of its commitment to resource conservation and pollution prevention, and to encourage them to apply environmentally sound practices in the production and distribution of their products.



## MONITORING

### Checklists

Monitoring checklist are used to verify if each item the hotel uses can be better re-used or recycled. Each department has to maintain a record of its waste output.

### Cost benefit analysis

A regular waste management audit is performed with assistance from an environmental consultancy. This is followed by an annual cost benefit analysis of the entire "Inter-Cycle" initiative. Both economic and environmental costs and benefits are evaluated.

The costs of operating the "Inter Cycle" programme (purchase of containers for collection, internal publicity costs, coordinators time, etc) and actual waste disposal fees are calculated and offset against:

- 1 The extra waste disposal charges that would have been due if recycling/reuse initiatives were not in operation
- 1 Revenues from selling recyclables
- 1 Estimated value of the non-tangible benefits of Inter-Cycle such as marketing gains and improved employee morale.

### Improved noise comfort

The laundry was formerly located next to the hotel ventilation system's air compressors, and the engineer's shop next to the chiller plant. Due to excess noise both work areas have been relocated. Mechanics and ground-keepers are required to wear ear plugs when working with power equipment.



## WIDER BENEFITS AND NETWORKING

The Inter-Continental Miami is a member of the Florida Department of Transportation's "Keep Florida Beautiful" and has adopted 2 miles of highway extending from the front of the hotel to Biscayne Boulevard. The hotel also participates in numerous regional and local environmental campaigns such as the Earth Day Anniversary festivities, the US Conference of Mayor's National Paper Recycling Project and the Buy Recycled Business Alliance.



## SUPPORT MEASURES

### Staff

The "Green Team" coordinates the environmental effort. It includes all department heads and a representative from the environmental consultancy. To coordinate the collection of recyclables, the special post of "Mr Inter-Cycle" was created. Monthly competitions are organized to select the "recycler of the month" and the "recycling department of the month".

Special training sessions are held on environmental awareness and incorporating environmental action into daily operational procedures. Much

emphasis is given to good housekeeping practices . Training sessions are held in English, Spanish and Creole. Likewise "Inter-Cycle" promotional posters and recycling container labels also appear in these languages. An information sheet on the "Inter-Cycle" programme is included in all job descriptions.

### **Visitor communication**

The Hotel Inter-Continental Miami's environmental policy statement is displayed at the front desk, in meeting rooms and in restaurants. Tent cards have been placed in all guest rooms on recycling, water conservation and energy awareness. Guests are asked to leave their newspapers and aluminum cans for collection. A recycling bin for newspapers can also be found in the lobby.

#### **CONTACT**

Mr J. Reibel  
Inter-Continental Miami  
100 Chopin Plaza  
Miami, FL 331 31- USA  
Fax: 1 305 372 4472

*"Since 1991, the hotel has taken actions that promote the efficient use of natural resources, curb environmental degradation, aid the local community and result in financial savings."*

**Jean-Jacques Reibel**  
**General Manager**

## National hotel association environmental programmes

National hotel and restaurant associations are seen as the bridge between hotels and international organisations in introducing environmental programmes. The following is a brief summary of some examples of the environmental activities currently underway at associations around the globe and contact details of chief executives.

The **American Hotel & Motel Association** has a long-standing commitment to the environment. In 1996 it launched a "Good Earthkeeping" Programme, consisting of in-room guest cards that stress the importance of water and energy conservation. Printed in several languages, they give guests the option of reusing towels and bed linen, thus saving energy and billions of gallons of water. Other projects include the publication of a US version of the "IHA/UNEP/IHEI Environmental Action Pack for Hotels" and a video, "Shaping Change and Changing Minds: Environmental Management in the Lodging Industry".

**Contact:** William Fisher, Tel: 1 202 2893100, Fax: 1 202 2893199

The **Hotel Association of Aruba** forms part of the island's environmental task force, which has already set up a glass recycling programme and plans to extend this to paper and aluminium. A project to keep the island's reefs clean is already in operation.

**Contact:** Rory Arends, Tel: 297 8 22607/21367/89, Fax: 297 8 2402

The members of the **Bonaire Hotel Association** are some of the most environmentally active in the Caribbean. One fifth of the island is a national park. Programmes have been set up with schools, radio and TV, and an environmental conference has been organised. Hotels also recycle waste water.

**Contact:** Anthony Cecilia, Tel: 599 7 5134, Fax: 599 7 8534

Members of the **Hotel Association of Canada** are developing an environmentally friendly product in response to a reported increase in the number of visitors looking for wide open spaces and clean air, particularly from Asia. An additional green incentive has come from the federal government, which generates 4% of hotel business, following a decision to put its service business (airlines and hotels) exclusively through environmentally-committed organisations. The association is working with the environment agency to develop environmental criteria for hotels and providing 50% of funding for the programme.

**Contact:** Anthony Pollard, Tel: 1 613 2377149, Fax: 1 613 2383878

The **Caribbean Hotel Association's** green programme has been up and running for 3 years. The CHA has produced its own environmental toolkit specially adapted to the Caribbean's status as a resort destination. It is backed by signage in hotel rooms, environmental awards, and a series of lectures and seminars held around the region. The association has an ongoing commitment to the greening of the industry and acknowledges that international tour operators increasingly select environmentally sound hotels and destinations.

**Contact:** John Bell, Tel: 1809 7259139, Fax : 1809 7259108/9166

The environmental programmes of the **Colombian Hotel Association** (Cotelco) are directed mainly at energy conservation and are sponsored by local industry. Cotelco is currently researching the use of alternative (solar) energy sources

**Contact:** Ismael Arciniegas, Tel: 57 1 3103640, Fax: 57 1 3103509

The **Danish Hotel Association's** (HORESTA) Green Key award scheme has become widely recognised in the Danish hotel industry, thanks to the patronage of the wife of the Danish Prime Minister which ensures regular media coverage. The scheme requires hotels to comply with 55 criteria within different time frames, and applies to all sizes of property.

**Contact:** Jørgen Kønigshøfer, Tel: 45 31 356088, Fax: 45 31 359376

The **Finnish Hotel Association** has been active in environmental matters since 1991, when it published a study on the greening of hotel and restaurant businesses. In April 1996 an environmental management system was created for all hotels in Finland.

**Contact:** Pekka Ropponen, Tel: 358 0 632488, Fax: 358 0 632813

The **Hong Kong Hotel Association's** conservation committee has produced a "Green Bible" for its members and, like the IH&RA, has launched a 'Green Hotelier' award programme with the support of American Express TRS.

**Contact:** James Lu, Tel: 852 23753838, Fax: 852 23757676

**HORECA Nederland** has developed and tested a comprehensive environmental pack (comprising manual, video, promotional materials and newsletters) for integrating an environmental care system into different types of hotel operations. By 1997 it aims to have over 6,000 hotels participating in the programme. The programme won them the IHA Environmental Award in 1994.

**Contact:** Fred Klinkhammer, Tel: 31 348 466866, Fax: 31 348 430211

The **Hotel Association of Hungary** is one of the pioneers of the « IHA/UNEP/IHEI Environmental Action Pack for Hotels ». Its latest green endeavour is the recruitment into membership of affiliates with environmental programmes/products. Hotel members of the association get a 15% discount with a member company that manufactures energy-saving light bulbs.

**Contact:** Gabor Lombosi, Tel: 36 1 1669462, Fax: 36 1 3223854

The **Romanian Hotel Association** has been granted 36 000 ECU (US\$30 000) by the European Union's PHARE programme for the development of a national campaign to promote environmental action and awareness.

**Contact:** Mihai Rajnita, Tel: 40 1 6141978, Fax: 40 1 3120486

The **Swedish Hotel and Restaurant Association** will hold an environmental conference in March 1997 in response to the growing industry interest in implementing environmentally sound operations. One of SHR's main aims is to highlight the competitive advantage to hotels of going green. An SHR initiative, 'Chefs for the Environment', now boasts 250 members. An annual Environmental Barometer Survey conducted among members to raise awareness shows encouraging results: responses increased from 300 in 1995, to over 500 in 1996.

**Contact:** Allan Nyren, Tel: 46 8 2312 90, Fax: 46 8 215861

The **Thai Hotel Association's** Green Leaf programme has created a uniform set of standards for evaluating hotel environmental performance and a country-wide classification system. The THA environmental committee's "Keeping Thailand Clean and Green" manual serves as a training and information resource for hotels. Further green training for hoteliers was provided in 1996 by a THA Green Hotel Fair and Seminar.

**Contact:** Kua Ansvananda, Tel: 66 2281 9496, Fax: 66 2281 4188



# Sources

## Some Environmental Publications & Programmes

### **Environmental Action Pack for Hotels**

*Published by UNEP, the IHA and the IHEI*

A practical guide to planning and implementing an environmental management programme in a hotel. Complete with action checklists and practical examples, with sections covering energy, solid waste, water, effluent and emissions, contractors and suppliers and progress monitoring.

**Contact:** International Hotels Environment Initiative  
P.O. Box 324, Aylesbury, Bucks HP19 3BR - United Kingdom  
Tel: +44 (0) 1296 89 550  
Fax: +44 (0) 1296 39 2369

**Contact:** UNEP / Industry and Environment  
Tour Mirabeau, 39-43 quai André Citroën  
75739 Paris Cedex 15 - France  
Tel: +33 (1) 44 37 14 50  
Fax: +33 (1) 44 37 14 74

### **Green Innovations - A Worldwide Directory of Environmental Resources for Hotels**

*Published by the International Hotels Environment Initiative, UK*

Covers air pollution, conservation and ecology, construction and development, energy efficiency, environmental auditing, hazardous substances, noise, marketing, product supply, training and education, transport, waste management, and water management.

**Contact:** International Hotels Environment Initiative (see above)

### **Green Hotelier**

*The quarterly magazine of the IHEI*

Each issue includes examples of best practice from the industry, case studies and newsbriefs on the newest green technologies on the market.

**Contact:** IHEI (as above) for an annual subscription

### **The Green Partnership Guide: 12 steps to create an environmentally friendly setting for our guests, ourselves and our future**

*By Warner Troyer. Published by the Canadian Pacific Hotels and Resorts, 1992*

Practical advice on environmental responsibility covering waste minimization, disposal and recycling, water conservation, environmentally responsible purchasing, and communication. Also included are "Success Stories" and a list of "Green Contacts".

**Contact:** Canadian Pacific Hotels and Resorts  
One University Avenue, Suite 1400  
Toronto, Ontario M5J 2P1 - Canada  
Tel: +1 (416) 367 7101  
Fax: +1 (416) 863 6097

### **A Guide to Innovative Technology for Sustainable Tourism**

*Published by the Commonwealth Department of Tourism, Australia*

Presents innovative technologies for waste minimization and for the effective use of resources e.g. water, energy and construction materials.

**Contact:** Commonwealth Department of Tourism

GPO Box 1545

Canberra ACT 2601 - Australia

Tel: +61 (6) 279 7111

Fax: +61 (6) 248 0734

### **Thai Hotels Association Environmentally Friendly Suppliers Directory: "The Green Pages for Hotels"**

Contains a 12 step programme for environmental management and a comprehensive listing of suppliers of environmentally friendly products for the daily operations of hotels.

**Contact:** Thai Hotels Association

203-209/3 Ratchadamnoen Klang Av.

Bowonniwet 10200 Bangkok - Thailand

Tel: +66 2 281 9496/281

Fax: +66 2 281 4188

### **Environmental Self Assessment Programme**

*Based on the International Chamber of Commerce (ICC) Business Charter for Sustainable Development and published by Global Environmental Management Initiative (GEMI), USA*

A tool for improving environmental management systems throughout business organizations. Pinpoints ways to increase the quality of environmental policy, planning, implementation and monitoring. Allows the user to prioritize environmental improvement opportunities.

**Contact:** Global Environmental Management Initiative

200 L Street, N.W. Suite 710

Washington, D.C. 20036 - USA

### **Company Environmental Reporting, A Measure of Progress of Business and Industry Towards Sustainable Development**

*Technical Report no. 23 published by UNEP IE, ISBN 92-807-1413-9, 1994*

The results of a survey of 100 environmental reporting pioneers, which demonstrates how companies can use environmental reporting as a tool for building dialogue and cooperation with various partners.

**Contact:** UNEP / Industry and Environment (see above)

### **Life Cycle Assessment: What it is and how to do it**

*Published by UNEP IE, ISBN 92-807-1546-1, 1996*

The first part of the publication discusses the concept of LCA and how it is practiced. The second part examines the steps involved in making an LCA in a simplified and systematic manner.

**Contact:** UNEP IE (see above)

### **Environment Auditing and Management for Small and Medium Sized Hotels in Developing Countries**

*Compiled by Mr Varuna Fernando, Regional Chief Engineer, Inter Continental Hotels, (East Africa)*

Presents simple no-cost and low cost actions for environmental management.

**Contact:** Mr Varuna Fernando, Regional Chief Engineer,  
Hotel Inter-Continental Nairobi  
Box 30353, City Hall Way, Nairobi - Kenya  
Fax: +254 (2) 210675 or 214617

## Facility Design and Construction

### **Ecotourism: A South Australian Design Guide for Sustainable Tourism**

*Published by the South Australian Tourism Commission, Adelaide (ISBN 338.47919423)*

Contains guidelines for the development and management of ecotourism facilities, as well as other criteria concerning the establishment and operation of eco tourism ventures.

**Contact:** South Australian Tourism Commission  
GPO Box 1972, Adelaide, South Australia 5001  
Tel: +61 (8) 303 2222  
Fax: + 61 (8) 303 2339

### **The Ecolodge Sourcebook for Planners and Developers**

*Published by the Ecotourism Society, 1995, ISBN 0-9636331-1-2*

Information and case studies on the international ecolodge market and on techniques for design and construction of tourism accommodation, the use of renewable energy, financing and resource interpretation.

**Contact:** The Ecotourism Society  
P O Box 755, North Bennington VT 05257 - USA  
Tel: + (802) 447 2121  
Fax: +1 (802) 447 2122

## Water

### **WAVE - Water Alliances for Voluntary Efficiency**

*Wave is a non-regulatory water-efficiency partnership created and supported by the US Environmental Protection Agency (USEPA).*

Its mission is to encourage commercial businesses and institutions to reduce water consumption while increasing efficiency, profitability and competitiveness. The USEPA plans to use the experiences of the hotel industry to develop similar programmes for other industries.

**Contact:** United States Environmental Protection Agency (USEPA)  
401 M St. SW-Mail Stop 4204  
Washington, DC 20460 - USA  
Tel: +1 (202) 260 7288  
Fax: +1 (202) 260 1827

### **Water Consumption in the Lodging Industry**

*By Professor Michael H. Redlin and Assistant Professor Jan A. de Roos*

A report prepared for the Research Foundation of the American Hotel & Motel Association and the School of Hotel Administration, Cornell University. Draws upon information from 148 accommodation facilities on water purchase and disposal costs, water consumption in different types of facilities and different hotel departments and the current status of water conservation in the lodging industry, to create models that permit the estimation of water consumption for facilities of different sizes and market segments.

**Contact:** The American Hotel & Motel Association  
1201 New York Avenue, Nw, Washington DC 20005-3931 - USA  
Tel: +1 (202) 289 3100  
Fax: +1 (202) 289 3106

## Energy

### **The World Directory of Renewable Energy Suppliers and Services**

*Published by James and James Ltd UK, ISBN 1-873936-40-0, 1995*

Lists over 6000 companies and organizations from more than 100 different countries. It also includes a series of general articles, case studies on biomass, rational use of energy, energy storage, geothermal sources, hydro and wave energy sources, instrumentation and metering, photovoltaic, solar thermal sources and wind energy.

**Contact:** James and James Publishers Ltd

Waterside house,  
47 Kentish Town Road,  
London NW1 8NZ - UK

### **A Guide to Energy and Water Conservation in Hotels**

*Developed by the Hong Kong Polytechnic University, Department of Building Services in collaboration with Hotel Nikko Hongkong*

Includes a good housekeeping checklist, and an energy management action plan covering air conditioning systems, boiler plants, lighting systems, other engineering systems and water conservation.

**Contact:** Jean-Marie Leclercq, GM

Hotel Nikko Hongkong  
72 Mody Road, Tsimshatsui East  
Kowloon - Hong Kong  
Fax: +852 2311 3122

### **Energy Conservation and Awareness**

This booklet has been prepared to create a basic awareness of energy conservation in the hotel industry and is especially destined for persons with no engineering background.

**Contact:** Mr Varuna Fernando, Regional Chief Engineer,  
Inter Continental Hotels (see above)

## Waste

### **Waste Wise**

The voluntary and non-regulatory US Environmental Protection Agency (US EPA) initiative works with businesses to reduce solid waste, and at the same time reduce disposal and purchasing costs while enhancing operating efficiency and community standing. The programme is open to all businesses, and those companies which join are committed to make progress in three areas: the prevention of waste, collecting recyclable and buying or manufacturing recycled products.

**Contact:** US Environmental Protection Agency (see above)

### **Recycling and Source Reduction for the Lodging Industry**

*Published by the American Hotel & Motel Association*

Provides information on collection systems, securing markets for recyclable items, and recycling by commodity. The chapter 'Beyond Collection' discusses purchasing recycled items and waste reduction tips. The final section is devoted entirely to case studies.

**Contact:** American Hotels and Motels Association (see above)

**Less Garbage Overnight - A Waste Prevention Guide for the Lodging Industry**

*By John P. Winter and Sharene L. Asimi, published by Inform Inc., USA, 1996 ISBN 0-918780-66-7*

Focuses on waste prevention strategies, and includes a section on reuse option, purchasing less toxic products, and a "Blueprint for Office Sustainability".

**Contact:** Inform Publishers

120 Wall Street, New York, 10005-4001- USA

Tel: +1 (212) 361 2400

Fax: +1 (212) 361 2412



## The United Nations Environment Programme

The United Nations Environment Programme is the United Nations' environmental conscience. It acts as a "catalyst for change" and for sustainable development. UNEP Industry and Environment brings industry, governmental and non-governmental organisations together to promote environmentally sound industrial development. The goals of UNEP IE are to:

- 1 Encourage the incorporation of environmental criteria in industrial and business development
- 1 Facilitate the implementation of procedures and principles for the protection of the environment
- 1 Promote the use of safe and clean technologies
- 1 Stimulate the exchange of information and experience throughout the world



## The International Hotel & Restaurant Association

The IH&RA is a global network of independent and chain operators, national associations, hospitality suppliers and educational centres in the hotel and restaurant industry in 147 countries. As the "voice of the industry" it represents, protects, promotes and informs its members to enable them to achieve their objectives.

The IH&RA Environmental Award is sponsored by American Express TRS and supported by the International Hotels Environment Initiative. It has been presented annually since 1991.

The IH&RA  
Environmental Award  
is sponsored by

