



Resource Efficiency in the Hospitality Sector

Case Studies





Foreword

Over the four years the EPA has financially supported the development and expansion of the Green Hospitality Award programme, it has turned into Europe's most successful responsible tourism marque, and members of the scheme have made operational savings of over €15M through better management of energy, water, food and waste. Being resource efficient makes economic as well as environmental sense.

Working with the stakeholders, including sectoral groups, hotels, contract caterers and other tourism businesses, the Green Hospitality Programme has turned into an exemplar programme showing what can be achieved with a focused and enthusiastic approach, backed by expert guidance. It is our experience that the best ideas and results in relation to sustainable behaviours (for production and service provision) flow from well-motivated and supported individuals at operational level.

The Tourism and Hospitality Sector stands as a driver, and demonstrator, of the Green Economy in action, and it is actively contributing towards a more resilient economy and environment. In challenging economic conditions it may be tempting to view the protection and management of our environment as a luxury; but as demonstrated herein, protecting the environment can go hand in hand with reducing costs. Membership of the Green Hospitality Programme brings with it marketing advantages too. Customers are becoming more selective as regards the environmental sustainability of the goods and services they purchase. The EPA for its part has amended its corporate procurement policy to, where practicable, only select those hotels that operate environmental sustainability programmes such as the Green Hospitality Programme and encourages others to do the same.

I would like to express my appreciation to the Hotels who contributed to this booklet, as well as Clean Technology Centre at CIT and Hospitality Solutions Consulting Ltd. who operate the Green Hospitality Programme.

Best Regards,

Dara Lynott
DEPUTY DIRECTOR GENERAL - EPA



Foreword

In the current economic climate, it is true to say that the easiest Euro made is the Euro saved, and this is most definitely the case for the tourism industry. All tourism businesses currently pay waste, water and energy charges, all necessary for the day to day running of the business. However, for many these costs are now a significant overhead, and with prices only likely to rise, this is a real area of concern. Therefore, any supports which can help businesses to cut costs rather than jobs, is key in the current economic climate.

The Green Hospitality Programme provides the opportunity for tourism businesses to become leaner and cleaner in their day to day operations, allowing the industry to not only survive in these difficult economic times but to grow in to the future.

The case studies in this booklet showcase some of Ireland's greenest businesses, identifying the benefits of being a Green Hospitality Programme member, not only to the bottom line but to the reputation of the business, particularly in the eyes of the customer. Programmes such as this allow our visitors to feel safe in the knowledge that they can make greener choices without compromising on the quality of their holiday. Visitors can now choose from a range of certified green tourism providers throughout Ireland, including accommodation, attractions, pubs and restaurants.

Fáilte Ireland is proud to support the Green Hospitality Programme and the member businesses located all over Ireland and will continue to work with and promote these businesses through the green section of our consumer website www.discoverireland.ie/green.

Best Regards,

Paddy Mathews
MANAGER - DESTINATION DEVELOPMENT - FÁILTE IRELAND



What is the green hospitality programme?

The Green Hospitality Programme (GHP) offers environmental certification for hospitality & tourism businesses across Ireland. Our focus is to allow the Irish Hospitality Sector to position itself as one of the leading “Green” destinations in the world. The GHP is now recognised as one of the most successful certification Programmes in Europe. It is a voluntary programme that demonstrates leadership in environmental management within the hospitality sector.

Ireland is recognised internationally as a country where nature and the environment are relatively unspoiled, yet offers 1st world facilities and service. GHP’s objective is to show that the tourism infrastructure complements this by encouraging individual businesses to achieve a recognised environmental certification label – The Green Hospitality Eco-label, or the Green Hospitality Award.

The GHP offers an incremental certification (up to 5 stages) allowing members to commence the certification process at a pace that suits their needs and ability. Certified members are recognised both nationally and internationally as committed to actively managing their environmental footprint and are taking specific actions to minimise energy consumption, water consumption and reduce waste sent to landfill.

The GHP assists members with environmental legislative compliance, pollution prevention, waste reduction, and encourages biodiversity.

Going Green Saves Businesses Money

The Green Hospitality Programme improves the efficiency of its members resulting in significant cost savings. Our members have saved €30,000 per annum on average through improved waste management, reduced energy consumption, reduced water consumption and through more efficient purchasing

Many of these savings can be achieved with no cost or low cost to the business! Often quite simple steps will deliver excellent results - by raising staff awareness and implementing low cost technology with a quick payback, e.g, LED lamps. Our experience is that hospitality businesses can reduce landfill waste by 50%, water consumed by 30% and energy consumed by 20% through the implementation of the standards and criteria embedded within the GHP.

In 2011 it is estimated that GHP members reduced costs by at least €6.2m, with over €15m savings to date.

Going Green Generates New Business

Environmental certification delivers competitive advantage. Certification by GHP opens a hotel up to new markets. There is a growing requirement by customers for green suppliers. Corporate and Government green procurement policies require that environmentally certified businesses are chosen or specified when purchasing. Conference venues are often determined by their green credentials.

Adopting environmental certification improves the image of your business and supports your Corporate Social Responsibility programme. The GHP encourages your business to support local suppliers, support Irish producers, promote local activities and attractions and to engage with local communities, schools, businesses, festivals and events. All of these can result in new, increased business.

Certification allows Green Hospitality members access to third party websites such as GreenTravel.ie, Expedia.com and DiscoverIreland.ie, which promote green businesses.

Support - Green Hospitality members receive extensive FREE support

Green Hospitality Programme members are kept up to date on a range of environmental issues which affect their business. Members receive free information on: Environmental benchmarks, environmental legislative updates, advances in technology for resource efficiency, best practice advice, case studies and support tools and templates.

The GHP hosts regional workshops and specialised training seminars a number of times each year to service its members.

The Green Hospitality Programme has been operating in some form or other with EPA funding since 2005 when it was funded as a pilot project under the Cleaner Greener Production Programme.

Who is the Programme for?

The GHP works with each sector to tailor sectoral awards to suit each type of business

Our members include:

- Hotels and Guesthouses
- Restaurants and Pubs
- Bed and Breakfast providers and other Accommodation providers
- Contract & Institutional Caterers
- Leisure Centres and Spas
- Activity Providers & Tourism Attractions
- Conference & Event centre
- Eco-tourism providers

For more information on the Green Hospitality Programme and how to join log on to www.greenhospitality.ie



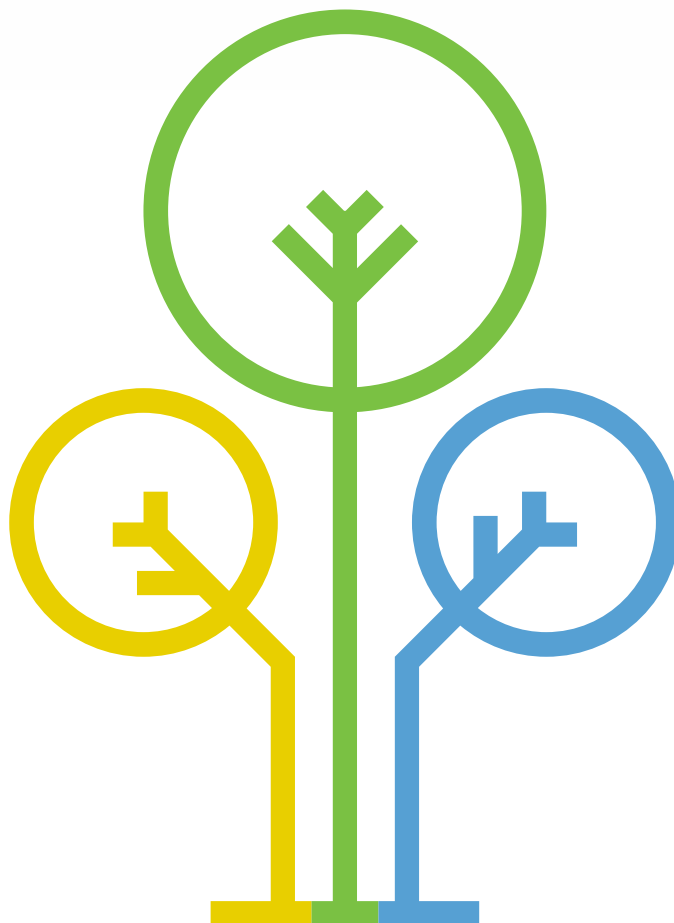
National Waste Prevention Programme (NWPP)

The EPA's National Waste Prevention Programme (NWPP) was launched in April 2004. It is now entering its 9th year, making it the oldest National Waste Prevention Programme in Europe. During this time, the Programme has launched a number of initiatives, all aimed at reducing wastage and saving money (Resource Efficiency).

In 2012 the NWPP initiatives were branded under a new BeGreen (Preventing Waste & Saving Money) umbrella. The various initiatives not only substantially raised awareness of Resource Efficiency in Ireland, but also resulted in a combined saving of €13 million in Irish industry and commerce.

The programmes operating under the BeGreen umbrella are:

- Green Business Initiative
- Green Hospitality Programme
- Green Healthcare Programme
- Green Homes
- Smile Resource Exchange
- Stop Food Waste
- Green Communities Programme
- Prevent and Save
- Cleaner Greener Production Programme
- Local Authority Prevention Programme



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Energy

Energy is usually by far the biggest utility cost. It therefore, offers the biggest opportunity for savings. Energy costs have risen substantially in recent years and are forecast to continue increasing above inflation for the foreseeable future, therefore giving even a greater incentive to focus on energy management.

Energy saving measures range from no cost measures, such as awareness-raising and training, through low cost items like replacement of light-bulbs, where payback is less than 24 months, to larger projects requiring capital investment – boiler replacement, air conditioning improvements, installing Combined Heat and Power (CHP) plants, etc.

The GHP offers advice and support to members to assist them in reducing their energy consumption. In addition, by facilitating hotels to gather and benchmark their energy use, managers can see the extent of potential improvements.

Reductions in energy used by the hospitality sector not only improves competitiveness of the business but also reduces emissions of greenhouse gases, which are responsible for climate change. Reductions in the burning of oil and gas and in use of electricity generated from fossil fuels all reduce the impact on the environment.

A number of GHP member hotels are now using sustainable, carbon neutral energy sources, such as biomass, which often are less expensive than fossil fuels.

Awareness is a key to any reduction programme and all employees need to be made aware of how their actions can reduce CO₂ emissions and also help the company by reducing costs. Allied to this awareness must be the ability of the company to monitor performance and compare consumption.

Members of the Green Hospitality Programme have reduced their energy consumption by 20% in the last 7 years, which has reduced their carbon footprint and increased their competitiveness greatly.

Within this booklet are case studies showing how many hotels have made significant reductions in their energy consumption, and costs.

Energy is the biggest utility cost-
Green Hospitality Programme has assisted members in
reducing their energy consumption by 20% in recent years

Energy





Cost Savings.....€70,000 / Annum
Investment.....€210,000
Payback.....Less than 3 Years

Environmental Benefits:
CO₂ reduced: 507 Tonnes p.a.

Combined Heat and Power System and Fuel Switching Saves €70,000 Per Annum

TULLAMORE COURT HOTEL



Description of Property

The Tullamore Court Hotel, located on the outskirts of Tullamore, is a 4 star hotel that has 104 guest rooms, bar, restaurant, leisure centre, and conference facilities. The hotel has received Environmental Certification from the Green Hospitality Programme and has been a member of the programme since 2005.



Project Description

In 2006 the hotel underwent an expansion, adding 32 new rooms, a new kitchen, and 9 new meeting rooms. As part of this expansion it was decided switch from LPG to Natural Gas and to install a Combined Heat and Power (CHP) unit to reduce energy costs. While Natural Gas had become available in the town it had not been connected to the hotel. Natural Gas costs at the time were half those of LPG.

The CHP plant was installed to generate electricity in-house using natural gas, at a lower price than offered by grid suppliers. The added bonus was free hot water produced by the CHP plant, which was used to heat the pool and guest accommodation.



The Results

The CHP unit provided 122kW in electrical output and 196kW in heating output. The savings achieved by the CHP unit were in excess of €70,000 per annum. The payback for this project was less than 3 years. Consequently the hotel also reduced its CO₂ emissions by 507 tonnes per year.

Following the expansion of the hotel by 32 new rooms, a new kitchen and 9 new meeting rooms; the energy bills only rose by 7% due to the installation of the CHP unit. The CHP plant has been of huge benefit to the hotel.

Philip O'Brien - GENERAL MANAGER



TOP TIP - To understand energy costs calculate fuel costs in cent per kWh. (Tullamore court hotel was paying 6 cent/kWh for LPG, but when they switched to natural gas they paid 3 cent/kWh.)

Cost Savings €34,900 / Annum

Investment €39,000

Payback 13 Months

Environmental Benefits:

CO₂ reduced: 135.7 Tonnes p.a.

Efficient Lighting Saves €34,900 Per Annum

CASTLEMARTYR HOTEL



Description of Property

The Castlemartyr Resort is a 5 star resort located 20 minutes outside Cork City. It has 103 bedrooms, 3 restaurants, spa, gym and a golf course. The resort has received Environmental Certification from the Green Hospitality Programme and has been member of the programme since 2009.



Project Description

In 2010, management investigated the possibility of using energy efficient lighting as a cost effective solution to reducing electricity costs. A lighting consultancy was employed to survey the light fittings and revealed that the resort hotel had 3,004 light fittings, most of which were halogen and incandescent lamps.

It was recommended that these inefficient light be replaced with LEDs (Light Emitting Diodes). The cost of installation of these LEDs was estimated at €39,000. Management made the decision to carry out the replacement programme. This was done on the basis that LEDs would reduce electricity requirements for lighting by 90%.



The Results

The savings generated by this change in technology generated savings of €35,000/ annum in energy costs and €3,800 annual maintenance costs, delivering total savings of €38,800 in the 1st year. This gives a payback period of 1.1 years..

	Running costs	Energy kWh	Tonnes CO ₂	Replacements/annum
Existing	€38,700	277,000	150	€3,800
New	€3,800	27,500	15	€0
Savings	€34,900	250,000	136	€3,800

The installed LEDs have a minimum life span of 5 years. It is predicted that the hotel will have saved nearly €175,000 in energy costs over the life span of these LED's.



Cost Savings.... € 7,128 / Annum

Investment..... €6,000

Payback..... 9 Months

Environmental Benefits:

CO₂ reduced: 32 Tonnes p.a.

LED Lighting Saves €7,128 Per Annum

MARITIME HOTEL - BANTRY



Description of Property

The Maritime Hotel is a 4 star hotel located in Bantry, with 100 bedrooms, treatment rooms, leisure centre, restaurant, bar, function room and meeting rooms. The Maritime Hotel has achieved the Green Hospitality Programme's Gold Award.



Project Description

In 2009, management at the Maritime hotel sought to reduce their electricity bill for lighting by installing more efficient lighting. A total of 240 halogen spots on the hotel corridors, each with an energy rating of 30watt, were replaced with 3 watt LEDs.



The Results

The new 3 watt LEDs reduced the energy consumption of corridor lighting by 90%, resulting in a cost saving of €7,128 / annum on electricity. As LEDs generally have a 5 year life-span, the labour cost associated with changing "blown" lights has been practically eliminated, reducing the workload on the facilities department.

Based on an LED cost of €25 each, in 2009, the payback period was 9 months for this investment. After the 9 months the hotel was saving €7,128/per annum, and this excludes the cost of reduced labour and the replacement of halogen spots.

The price of LEDs has decreased significantly in recent years so for a hotel undergoing this cost saving measure the payback period should be less than 9 months.



Source Details:

Green Hospitality Programme www.greenhospitality.ie

Cost Savings€70,000 / Annum

Investment.....€0

Payback.....Immediate

Environmental Benefits:

CO₂ reduced: 64 Tonnes p.a.

Good Energy Management Saves €70,000 Per Annum

RADISSON BLU HOTEL AND SPA - CORK



Description of Property

Radisson Blu Hotel & Spa, located in Little Island, Co Cork, is a four star property with 129 luxury rooms and suites. Facilities include spa and fitness centre, restaurant, bar and nine meeting rooms and a ballroom. The Radisson Blu Hotel & Spa has been awarded the Green Hospitality Programme's Gold Award.



Project Description

In 2009 the Green Team set out to reduce energy consumers by identifying energy usage around the hotel. The team identified controls and procedures, which were employed to optimise energy using equipment. Also identified were the controls for all of the major energy using equipment and managing these in a more efficient manner helped to reduce the energy consumption considerably.

The Building Management System (BMS) was optimised to reduce times and temperature settings in many parts of the hotel, without affecting guest comfort.

Staff were also made aware that energy consumption was being monitored very closely and that unnecessary equipment being left on would be recorded and brought to the attention of management. This helped to maintain a focus on energy management.



The Results

The results of this project were very impressive with electricity consumption reduced by 19% and gas consumption reduced by 6% over a two year period. This has led to energy cost reductions of €70,000/ annum.



TOP TIP - Create an energy awareness checklist for each department, to remind staff of how they can reduce energy consumption

The combination of training and monitoring has worked well for us and we now have a good culture of energy awareness throughout the hotel.

Andrew Mullen - CHEF ENGINEER/ENERGY MANAGER



Cost Savings €15,000 / Annum

Investment €210,000

Payback 10.5 Years

Environmental Benefits:

CO₂ reduced: 46 Tonnes p.a.

Solar Thermal Provides 30-40% of Annual Heating Demand

BEWLEYS HOTEL - DUBLIN AIRPORT



Description of Property

Bewleys Hotel, Dublin Airport is a 466 bedroom hotel with conference facilities, a bar and restaurant. The hotel was built in 2006 and is now a certified member of the Green Hospitality programme.



Project Description

During the design of the hotel it became apparent that energy consumption for hot water, for baths, showers, kitchen etc., would constitute approximately 50% of the hotel's total energy use. A number of energy saving technologies were considered at the planning stage of the hotel and the technology considered most feasible was the installation of solar collectors.

The hotel decided that the installation of 56 solar panels or 308m² of collector area on the roof and 2 x 5,000 litre hot water storage tanks would be adequate. The estimated cost of the solar system was €210,000, approximately 25% of this was obtained from SEAI for the purchase and installation of the solar panels. It was estimated that, operating at optimal conditions, the solar thermal system could provide approximately 40% of the hotel's hot water requirements, with the remainder of the heating demand provided by natural gas boilers.



The Results

It is estimated that the system provides 198,000kWh of thermal energy on an annual basis, representing 42% of the hotels annual heating demand. When compared to a reference heating system of only natural gas, this system reduces CO₂ emissions by 46 tonnes per year and reduces fuel costs by €15,000 per year. At a total cost of €157,500 to Bewleys, the payback period is 10.5 years. The life time of the panels is 25-30 years, meaning that the hotel will be getting free energy for 15-20 years.



Our solar system is supplying 30-40% of our hot water needs. This system is supplying green heat to our hotel and is completely automated.

Clio O'Gara - BRAND MANAGER OF BEWLEYS HOTELS



TOP TIP - Solar thermal, when properly integrated into a hotel's heating system, can prove to be effective at reducing energy costs.

Source Details:

SEAI - Email: info@seai.ie www.seai.ie

seai SUSTAINABLE
ENERGY AUTHORITY
OF IRELAND

 **BeGreen**
PREVENTING WASTE & SAVING MONEY



Cost Savings €50,000 / Annum

Investment €300,000

Payback 6 Years

Environmental Benefits:

CO₂ reduced: 424 Tonnes p.a.

Solar Thermal & Biomass Boiler Installation Saves €50,000 Per Annum

INCHYDONEY LODGE & SPA - CORK



Description of Property

The Inchydoney Island lodge & Spa is a 4 star hotel located in West Cork. It has 67 bedrooms and apartments, large spa and a heated sea water swimming pool. In 2007 it was the Winner of the Renewable Energy Award at The Annual SEAI Energy Awards.



Project Description

Up to 2005 the hotel had been using LPG as its heating fuel. The hotel had a high heating demand with the spa and the seawater swimming pool, which was maintained at a temperature of 32°C. Rising gas prices led management to consider options, to reduce heating costs. Several options were investigated.

The solution was to install a combination of 3 x 150kW woodchip boilers, 80m² of flat plate solar thermal collectors and a new heat recovery system. The woodchip boilers were selected based on the cost of heat, from wood chip being at least 50% less than heat produced by LPG. The solar panels were selected as they would help reduce the heating demand for the heated seawater pool, and the recovery system was selected to improve the overall efficiency of the heating system.



The Results

The results of the new heating system have been very impressive. It has reduced the overall heating bill by 50% leading to a saving of €50,000 per annum. At a cost of €300,000 the new heating technologies installed were expected to have a payback of 6 years. As both woodchip and solar technologies are carbon neutral they have reduced the carbon footprint of the hotel by 424 tonnes of CO₂ per annum.

FACTS	
Boiler size	450kW (3 x 150kW)
Wood pellet consumption	360 tonnes per year
Solar system	80m ² of flat plate collectors
Fuel cost savings	€50,000
Investment	€300,000
Payback period	6 years
CO ₂ reduced	424 tonnes per year



TOP TIP - Using a combination of renewable technologies to replace old fossil fuel heating will save your business money and slow climatic change.



Cost Savings..... €12,400 / Annum

Investment..... €8,500

Payback..... 8 Months

Environmental Benefits:

CO₂ reduced: 55 Tonnes p.a.

Timers On Leisure Centre Water Features Saves €12,400

RADISSON BLU HOTEL AND SPA - CORK



Description of Property

The Radisson Blu Hotel & Spa, located in Little Island, Co Cork, is a four star property with 129 luxury rooms and suites. Facilities include leisure centre, restaurant, bar, nine meeting rooms and a ballroom. It has been a member of the Green Hospitality Programme since 2008 and has achieved a Gold Green Hospitality Award. The hotel was awarded an SEAI Award for Energy management in 2010.



Project Description

As part of the hotel's environmental management programme, water features in the leisure centre pool area were identified as a significant electricity user. The swimming pool has 16 different water features, all of which were wired to turn on when the leisure centre was open. This resulted in all water features having a running time of 5,000 hours per annum. The water features have a combined electrical rating of 41kW. The estimated annual use of electricity for these features was 205,000kWhr, which at an average cost of 12c per kWhr, was costing the hotel €24,600 per year in electricity costs.

To reduce the operational time of the water features, management installed push-button timers, which guests now press to activate the water features.



The Results

Management estimate that the running time of the water features has been halved. The installation of the push buttons cost €8,500 and has delivered an estimated savings of over €12,300/ annum on reduced electricity costs. The payback period for this project was 8 months.

We have found that the pool is actually a much more relaxing place now that the features are only on demand. In the past the noise levels were quite high and since the installation we have received nothing but positive feedback.

Andrew Mullen - CHIEF ENGINEER AND ENERGY MANAGER



Cost Savings Customer Savings
Investment €0
Payback Immediate
Environmental Benefits:
CO₂ reduced
Water consumption reduced
by 1580m³ p.a.

Housekeeping Opt-Out Option for Guests, Reduces Environmental Impacts

THE WESTIN HOTEL - DUBLIN



Description of Property

The Westin Dublin opened its doors in September 2001, and was the first Starwood hotel in Ireland. In 2010, The Westin Dublin was awarded the Green Hospitality Programme "Gold Award" and the "Best Environmental Awareness Programme" for its commitment to educating associates and incorporating environmental awareness into the everyday culture of the hotel. In 2012 the hotel was awarded the prestigious GHP Platinum Award.



Project Description

In 2012 The Westin Hotel Piloted a 'make a green choice' programme; this is where the hotel offers guests the option to declining housekeeping, if staying for more than one night. Guests who decline housekeeping are rewarded with a €5 voucher for the bar/ restaurant or 500 Starpoints (the hotel's loyalty programme) per night of housekeeping declined.

The Westin Hotel has calculated that each time housekeeping is declined, there are the following environmental benefits:

- 186 litres of water reduced
- 0.19kWhr of electricity reduced
- 7.3kWhr of natural gas reduced
- Reduced cleaning chemicals



The Results

During the pilot programme, 17% of total guests choose to decline housekeeping which is equivalent to 8,500 guest co-operating with the programme each year. This results in significant reductions in water, chemicals and energy used in cleaning and washing of linen and towels.

The 'make a green choice' programme has also raised customer awareness of environmental issues, as the benefits to the environment of the 'make a green choice' programme and the hotels overall environmental management plan are explained to all guests.

Because of the success of this pilot programme in the Westin Hotel, Dublin, the Starwood Group have decided to make the 'make a green choice' programme a global brand standard as of January 2013.






Waste

Ireland has an excellent international reputation for Waste Management and the Hotel sector has played its part as well. However, many hotels still are not applying the simple actions required to minimise their costs by preventing waste and then correctly segregating it.

The GHP has identified that the greatest costs associated with waste are generally not those that are charged at the back door but the actual costs associated with the materials that are being disposed.

While Food Waste costs approximately €120 a tonne to compost, the costs associated with the purchase, cooking and storage of the food for a restaurant are more than €3,000 per tonne.

Waste Management is one of the simplest tasks any hotel can undertake and there are some excellent examples included within these case studies. Solutions are generally of no or low cost with excellent returns. Many solutions focus strongly on employee awareness, the continuity of waste management actions and on-going waste benchmarking.



Costs for waste disposal are rising - but it's not just this cost which needs to be considered. There is also the much greater cost associated with the wasted resources, which are being discarded.

Waste



Cost Savings.....€124,000 / Annum
Investment.....€9,000
Payback.....Less than 1 Month

Environmental Benefits:

Reduced landfill
Reduced papercup consumption
Reduced CO₂

Replacement of Disposable Paper Cups Saves €120,000 Per Annum

SODEXO - IRELAND



Description of Company

Sodexo provides catering facilities for a large IT company based in Cork. This company employs 2,000 employees and operates 24 hours per day. Sodexo is a recognized leader in global sustainability and operates to its own "Better tomorrow Plan". Sodexo Ireland has adopted the Green Hospitality Programme to gain environmental certification for its properties in Ireland.



Project Description

The IT company was using 1.2 million paper cups per year in its canteen. These coffee cups were non-recyclable and were therefore sent to landfill. The cost of purchasing these cups was €120,000 per annum. In addition to this cost, there were additional costs associated with the disposal of large volumes of waste cups.

Sodexo and management at the IT facility decided to prevent this waste stream by ceasing the use of disposable paper cups. All members of staff were provided with their own thermal mugs, free of charge. Staff were made responsible for the washing and care of these mugs, at dedicated mug washing stations. Lost mugs were replaced at a cost of €4.50 to the staff member. Ceramic mugs were also made available in the canteen area.



The Results

The new thermal mugs were well received by staff, which found that coffee stayed hot, longer, when they returned to their work-stations. A new trend ensued where staff began to purchase their own designer thermal flasks and these are now accepted in the culture of the company.

A number of costs savings have resulted from this project which include:

- €120,000/ annum savings on cup purchase
- €4,000 reduced cost of waste management
- Reduced cost of coffee
- Reduced energy associated with coffee making

As the coffee now stays hot for longer, Sodexo catering has seen a reduction in coffee consumed, which results in a reduced hot water requirement meaning reduced energy demand.



TOP TIP - While the reduction in disposal cost was only €4,000, the reduction in raw materials purchase was €120,000. This demonstrates the 'hidden' cost of waste.

Cost Savings €59,000 / Annum

Investment €4,500

Payback 1 Month

Environmental Benefits:

Waste reduced: 295 Tonnes p.a.

Waste Prevention Saves €59,000

RADISSON BLU ROYAL HOTEL - DUBLIN



Description of Property

Radisson BLU Royal Hotel is a city centre hotel located in Dublin with 150 rooms and suites, restaurant and bar. The hotel presents 15 well-equipped meeting facilities, including six contemporary meeting rooms, two dedicated boardrooms, one exclusive video-conferencing suite, three corporate syndicate rooms and an elegant ballroom. The Hotel is a member of the Green Hospitality Programme and has achieved the Gold award.



Project Description

Radisson BLU Royal Hotel implemented a new waste management programme when they joined the Green Hospitality Programme in 2007. A review by the GHP suggested opportunities for improved waste management.

GHP suggested::

- Good waste separation throughout all departments in the hotel
- Monitoring of waste collection company

The Green team started to monitor how much waste was been generating through different operations of the hotel and ways to reduce it:

- Clear waste bags were used to make waste separation and monitoring more visible
- Started to closely monitor waste streams and identified ways to reduce and improve management of each stream separately
- In order to minimise incoming waste-packaging, bettering planning of food purchasing and delivering was implemented
- Wooden pallets were collected for free by agreement with several suppliers
- Product ordering and food preparation processes were revised, which offered a possibility to reduce food waste
- Introduced close monitoring of waste separation in the departments where most of the waste is generated, in order to identify and reduce these wastes
- Waste room is locked at all times so that waste collections can be monitored more easily
- Water bottling system was purchased to minimise glass waste



The Results

The results of this waste reduction programme are quite impressive when considering that the only investment was the purchase of a water bottling system which delivered saving of €35,000 per annum. The rest of the savings are achieved by reducing waste before it is even delivered to the hotel.



TOP TIP - Reducing and preventing waste at source, before it even gets to the hotel is best!



Source Details:

Green Hospitality Programme www.greenhospitality.ie

Cost Savings €15,000 / Annum
Investment €0
Payback Immediate
Environmental Benefits:
Waste Reduced: 5 Tonnes landfill p.a.

Food Waste Prevention Training Saves Hotel €15,000 Per Annum

WOODLANDS HOTEL - ADARE



Description of Property

The family run, Fitzgerald's Woodlands Hotel in Adare Co. Limerick is a 3 star, 94 room hotel, with a leisure centre, spa, and a busy conference and events centre which caters for weddings and conferences. In 2008, the hotel was certified by the Green Hospitality Programme.



Project Description

As part of the Green Hospitality Programme this hotel decided to reduce food waste generated during wedding events. A number of waste reduction options were chosen which included:

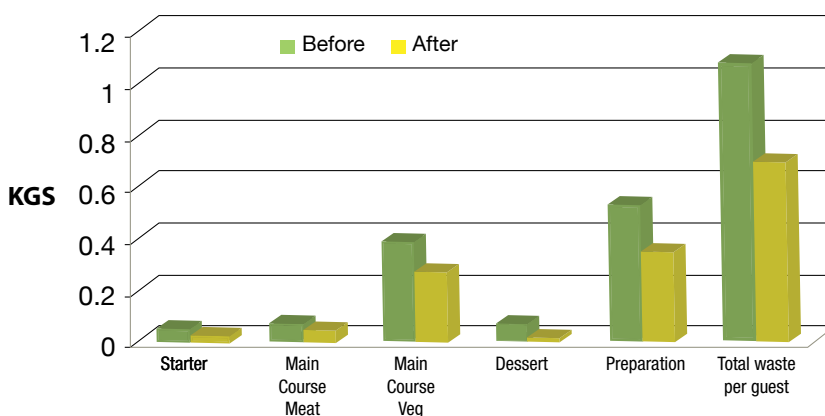
- Better portion control, when serving main courses
- Reducing waste trimmings on vegetables and meat
- Serving vegetables in large central dishes, rather than serving individual portions
- Staff awareness raising and training on food waste prevention



The Results

By applying these options, food waste generated per person served was reduced by almost 37% in just 2 months. This is equivalent to a reduction of 5 tonnes of food waste per annum. It is estimated that every tonne of food waste costs businesses €3,000 (based on purchase, storage, cooking, serving and disposal). Accordingly, the improvements made during this project equate to a cost savings of €15,000 per year with no investment required.

Food waste produced before and after staff training.



Food Waste Prevention awareness is common sense, but staff need to be reminded of it on a regular basis.

David Fitzgerald - General Manager



Monitor and weigh food waste returned from tables. This is the food waste that can be prevented.



Source Details:
 Green Hospitality Programme www.greenhospitality.ie

Cost Savings €40,000 / Annum

Investment €1,800

Payback 2 Weeks

Environmental Benefits:

Waste Reduced: 134 Tonnes landfill p.a.

Waste Segregation and Staff Training Saves €40,000 Per Annum

THE CASTLECOURT HOTEL & WESTPORT PLAZA RESORT - WESPORT



Description of Property

The Castlecourt Hotel & Westport Plaza Resort is located in the centre of Westport Co. Mayo, which has just been voted as the "Best Place to Live in Ireland". The resort has a total of 200 guest rooms, a spa and leisure centre and is a premier wedding and conference facility in the West of Ireland.



Project Description

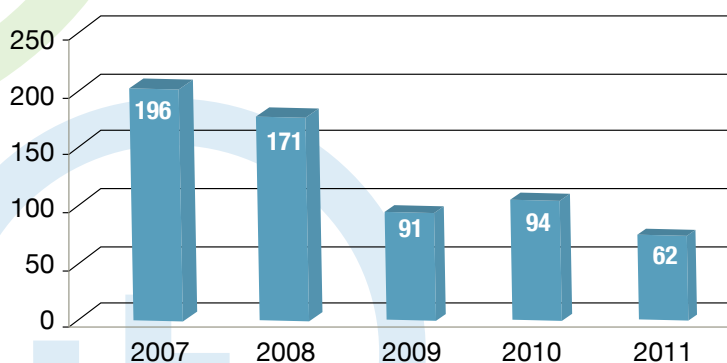
Following the best practice guidelines from the Green Hospitality Programme, the traditional method of waste management using a waste compactor was mothballed and a changeover to departmental wheelie bins was introduced for each department of the hotel. Staff were trained on strict requirements for waste segregation and monthly departmental landfill weight reports were benchmarked against department's activity.



The Results

Since 2007, when the resort first joined the GHP, waste to landfill has been reduced by 70% through better awareness and segregation facilities. This has resulted in a reduction of 134 tonnes of landfill/ annum which has saved the hotel €40,000 / annum or €200,000 since they implemented their new waste management programme.

Tonnes of landfill/annum



Source Details:

Green Hospitality Programme www.greenhospitality.ie



Water

Water costs are another significant expenditure for the hospitality sector. In Ireland we have a plentiful supply of water at a relatively low cost compared to other EU states, where costs can be up to four times higher. However, water costs are likely to rise in future years as greater investment is required within the network to ensure continuity of supply.

Water is mainly used in the hospitality sector for: flushing toilets, guest showers /taps and in kitchens. Up to 50% of high quality drinking water consumed by hotels is used to flush toilets. In this booklet, we have included case studies which demonstrate actions taken by businesses to manage, control and eliminate the use of drinking water for flushing toilets. A number of Irish hotels have installed rainwater harvesting systems, which collect rainwater for toilet flushing.

Simple measures, such as controlling water flow to guest showers and taps can result in considerable savings, as outlined in this booklet. A significant cost associated with hot water production is the cost of energy used to heat water. Hot water typically costs 3-4 times more than cold water. Therefore, reductions in hot water use can result in substantial cost reduction. Reductions in water used by the hospitality sector not only improves competitiveness of the business but also reduces its environmental footprint, by minimising chemicals used to treat water, and energy used to pump and heat water.

The cost of purchasing or treatment of water accounts for only a fraction of the total costs associated with water. By far the largest costs are due to the energy consumed in producing hot water.

Water



Cost Savings €30,000 / Annum
Investment €3,000
Payback 1.2 months

Environmental Benefits:
Water reduced: 13,140m³ p.a.

Leak Detection Saves €30,000 on the Annual Water Bill

THE RIVERBANK HOTEL- WEXFORD



Description of Property

The Riverbank Hotel is a 3 star Hotel located in Wexford, offering 23 elegant bedrooms, meeting and banqueting facilities, restaurant, bar and leisure centre. The hotel gained certification to the Green Hospitality Programme in 2010.



Project Description

When management at The Riverbank Hotel benchmarked water consumption against the Green Hospitality national benchmark for water consumption, they realised that water consumption at the hotel was greatly above that of the Irish benchmark. The hotel then commissioned a leak detection survey to investigate possible water leaks on site.



The Results

As a result of the leak detection survey, four leaks were identified and subsequently repaired by the Hotel.

Period	Average Daily Demand	Minimum Night Flow	Estimated Annual Water Bill
Pre-Survey	75 m ³ /day	0.489 l/s	€62,960 p.a.
Post-Survey	39 m ³ /day	0.078 l/s	€32,740 p.a.
Reduction	36 m³/day	0.411 l/s	€30,220 p.a.

The table above presents the water consumption data before and after leak repair. The reduction in consumption is as a result of the remedial work carried out to repair the reported leaks and the shutting down of one metered water supply which was leaking into the ground.

The resultant cost savings for the hotel were €30,220 / annum which was 50% of the annual water bill. The hotel reduced its annual water consumption by 13,100 m³.



The Green Hospitality Programme taught us that it is crucial to monitor and measure one's consumption in order to manage costs.

Colm Campbell - GENERAL MANAGER



TOP TIP - Benchmarking your water consumption against industry standards can identify over consumption, which in many cases, can be attributed to leaks.

Dishwasher Replacement Saves €33,500 Per Year

WOODLANDS HOTEL - ADARE

Cost Savings ... €33,500 / Annum

Investment..... €0

Payback..... Immediate

Environmental Benefits:

CO₂ reduced: 27 Tonnes p.a.

Water reduced: 2000m³ p.a.

Chemicals reduced: 1000 ltrs p.a.



Description of Property

The family run, Fitzgerald's Woodlands Hotel in Adare, Co. Limerick is a 3 star, 94 bed hotel, with a leisure centre, spa, and a busy conference and events centre, which caters for weddings and conferences. In 2008, the hotel was first certified, by the Green Hospitality Programme.



Project Description

Due to a busy banqueting business the Fitzgerald family need a dishwasher that had the capacity to deal with 400 covers per day, but also operate with minimum running costs. In 2008, the Fitzgerald family invested a lot of time and effort in researching a new dishwasher for their kitchen. The running cost of a commercial dishwasher is tens of thousands of euro/annum. Taking the effort to find a well designed economical dishwasher had great rewards.



The Results

The Fitzgerald family, decided to invest €97,500 in a flight wash dishwasher, and to enter into a 5 year hire purchase agreement instead of purchasing the new dishwasher outright. The hire purchase agreement was €19,500 per year for 5 years.

The new dishwasher reduced running cost by €53,000 per year. This included reduction in electricity, water, chemicals, breakages and a reduced staff requirement. The net cost savings for the hotel, after the lease on the dishwasher was paid for, were €33,500/ annum. Over the course of the 5 year hire purchase agreement the new dishwasher saved €265,000 and paid for itself within 1.8 years. After the 5 year hire purchase agreement the dishwasher will still deliver savings of €53,000 per year.

Break down of savings

ELECTRICITY	€6,000
HOT WATER	€10,000
CHEMICALS	€5,000
BREAKAGE	€4,000
LABOUR	€28,000
TOTAL SAVINGS	€53,000 Per Annum



TOP TIP - Replacing old inefficient equipment with new more efficient equipment can reduce costs significantly

When purchasing a new piece of equipment one has to weigh up the running costs as these costs will far out-weight the purchase cost in the lifetime of the equipment.

David Fitzgerald - MANAGING DIRECTOR



Cost Savings €1,540 / Annum

Investment €350

Payback Under 3 Months

Environmental Benefits:

Water reduced: 657m³ p.a.

Urinal Control Saves €1,540 for Bar/Restaurant

REVOLUTION BAR & GASTROPUB - WATERFORD



Description of Property

The Revolution Bar and Gastropub is a busy modern bar and night-club in the heart of Waterford City. This bar is renowned for its great food. The Revolution Bar has been a member of the Green Hospitality Programme since 2011.



Project Description

Water costs are a significant cost for the bar and restaurant sector, with up to 55% of these costs associated with water used for flushing toilets and urinals. In 2010, when the bar was undergoing some renovation work, the owner decided to take measures to control urinal flushing.

Like most urinals, urinals in the Revolution Bar were set to flush their 15 litre cisterns every 15 minutes, 24 hours a day. This results in 525 tonnes of water being flushed down the drain each year for each set of urinals, at an approximate cost of €1,200.

The Revolution Bar controlled this wasteful flushing by installing a Passive Infrared Detector (PIR) on 2 sets of urinals, which reduced flushing by 70%. The PIR ensures that urinals only flush when toilets are occupied.



The Results

The original urinal settings were consuming 1,051 cubic meters of water per year. The new PIR system reduced this by 657 cubic meters of water saving €1,544 per year on water costs. The new PIR system cost €350 to install, giving a payback period of just under 3 months.

Toilet cisterns

In addition 14 old toilet cisterns, which had a flush volume of 10 litres were replaced with new cisterns that had a flush volume of 6 litres. With an average 840 flushes per week and 43,680 flushes per year, this retrofit measure reduced water consumption by 174,720 litres/ annum. This reduction in water use by 174 m³ saved the owner €408 per year.



TOP TIP - Urinal flushing should be linked to toilet occupancy. Uncontrolled urinal flushing 24 hours per day is a needless waste of potable water and is equivalent to 'a leak by design'.



After looking at our business with power and water in mind, we have reduced our overall utility bills by nearly 40% with 3 simple steps. Investment in new equipment, staff awareness, lighting control.
Jim Flash Gordon - MANAGER

Cost Savings ... €10,914 / Annum

Investment €11,000

Payback 12.1 Months

Environmental Benefits:

Water reduced: 4,829m³

Water Management Programme Saves €10,914

CARLTON ATLANTIC COAST HOTEL - MAYO



Description of Property

The Carlton Atlantic Coast hotel is a 4 star property with 85 bedrooms, a restaurant, bar & bistro, and a leisure centre with a 17 meter swimming pool, sauna & steam room. The Carlton Atlantic Coast hotel was awarded the Green Hospitality Gold Award and received the Special Category Award for Most Improved Water Management in 2008 at the Green Hospitality Awards.



Project Description

An analysis of water usage was carried out throughout the property and an 18 month plan was drawn up to reduce water consumption. This plan tackled all areas with mains water consumption, particularly bedrooms, public toilets and the leisure centre.

- All taps throughout the hotel were fitted with aerators which reduced water flow from 8.5 litres per minute to 5.5 litres per minute (even lower flows can be achieved)
- Toilet cistern flush was adjusted from a flush of 6.5 litres to 5 litres
- All water taps in public toilets were replaced with automatic push taps
- Urinal flushes were adjusted from 1 every hour to 1 every 2 ½ hours
- A carbon filter and flocculent dosing system was installed in the plant room for chemical dosing of the pool water. This system has reduced the number of times required to back wash the pool from twice a week to once a fortnight
- A 6,000 litre Green Water harvesting tank was installed to service the public toilets. The hotel harvests 250,000 litres of rainwater per annum



The Results

The Atlantic Coast has reduced its annual water consumption by 4,800 m³ per annum – equal to 28% of consumption. Consequently the hotel reduced its water costs by saving of €10,914 / annum. In 2008 the hotel invested €11,000 on various water saving measures. The payback on this investment is just over one year.



TOP TIP -There are numerous low cost options for reducing water cost with a payback of only 12 months.

Water Consumption	2007	2008
WATER USAGE m³	17,000	12,200
WATER REDUCTION m³		4,800
% REDUCTION IN 2008		28.35%
COST SAVINGS		€10,900
INVESTMENT		€11,000
PAYBACK TIME		12.1 Months



Source Details:

Green Hospitality Programme www.greenhospitality.ie

Cost Savings €1,470 / Annum

Investment €2,350

Payback 1.6 Years

Environmental Benefits:

Water reduced: 99%

Waterless Urinals Save €1,470 for Bar/Restaurant

STRANDHILL BAR & RESTAURANT - SLIGO



Description of Property

The Strandhill bar and restaurant, located in Strandhill, Co. Sligo, was established in 1913. The bar has just one set of urinals.



Project Description

Water conservation has gained a lot of attention during the last few years as businesses have identified water as a significant utility cost.

To address the issue of increasing water costs for commercial buildings, Strandhill Bar and Restaurant identified a solution for water conservation in their urinal system. At the time, there were six conventional urinals on the premises served by a 20 litre cistern. In addition to excessive water consumption, cleaning detergent and urinal blocks were used for maintenance of these urinals.

A proposal was made to retrofit the conventional urinals with inserts containing a chemical trap which allows the urinals to work completely without water or flush valves. The system is touch-free, easy to install, improves restroom sanitation and eliminates odours.



The Results

The cost-benefit-analysis revealed a total savings of €1,300 per year on water charges and €169 in maintenance costs from installation of the new Waterless Urinal systems, giving a total saving of €1,469 per year. The project's estimated cost was €2,350, and the estimated payback time was 22 months.

Since the installation of this waterless urinal system in the Strandhill bar and restaurant in 2009, the cost of waterless urinal systems has reduced dramatically meaning, pay back periods in the region of six months.



Cost Savings €10,000 / Annum

Investment €8,500

Payback 10 Months

Environmental Benefits:

Water reduced: 5,000m³ p.a.

Shower Head Replacement Saves €10,000

FERRYCARRIG HOTEL - WEXFORD



Description of Property

Ferrycarrig Hotel, Co. Wexford offers 102 guest rooms, meeting rooms and extensive leisure centre offering stunning waterfront views. The hotel is certified by the Green Hospitality Programme. Ferrycarrig Hotel has had an environmental management system in place since 2004, when it first became involved with the EPA, Cleaner Greener Production Programme. Since that time it has actively implemented resource efficiency measures.



Project Description

Due to increasing water and energy costs management decided to reduce hot and cold water consumption by installing low flow shower heads. Shower flow rates of 26 litres per minutes were reduced to 6 litres per minutes with low flow shower heads.



The Results

The reduced flow rate had no impact on customer satisfaction. This is verified by customer feedback. However the reduced flow rates have saved the hotel €5,000 per annum on reduced water costs and approximately €5,000 on reduced heating costs.

The cost of replacing the shower heads in the 102 guestrooms, including the cost of labour was €8,500, providing a payback period of 10 months



Source Details:

Green Hospitality Programme www.greenhospitality.ie

Cost Savings.... € 17,800 / Annum

Investment..... €5,850

Payback..... 4 Months

Environmental Benefits:

Water reduced: 9000m³

Water Efficiency Programme Saves €17,800

CASTLETROY PARK HOTEL



Description of Property

The Castletroy Park Hotel is a luxury 4 star hotel located just 2.5 miles outside of Limerick city. It has over 100 rooms, spa, salon and leisure centre. The Castletroy Park Hotel is a member of the Green Hospitality programme and has achieved a Silver award.



Project Description

Management of the Castletroy Park hotel, concerned by its high water costs, had a water survey provided by a water control and leak detection specialist. This survey identified several opportunities for the hotel to reduce its water consumption. These included:

- Low flow shower heads
- Low flow taps
- The identification of a leak in a hot water tank ball cock



The Results

The leaking pipe was estimated to be costing €13,000 a year. As this was a hot water leak, the cost of the water wasted included the cost of heating the water. This pipe was easily repaired at a cost of €50. To put this in context the cost of repairing the leak was recouped in less than 34 hours. This shows the value of a leak detection survey.

The water survey also recommended the installation of low flow shower heads and taps. The hotel changed shower heads in its 107 rooms and in its leisure centre to low flow shower heads. The taps in the hotel were also upgraded.

Location	No.	Old Flow rate	New flow rate	% reduction in flow rate
Guest room shower	107	16.2 Ltr/min	6.1 Ltr/min	62%
Leisure centre shower	9	30.0 Ltr/min	6.1 Ltr/min	79%
Taps	n/s	8.0 Ltr/min	5.0 Ltr/min	37.5%

The savings achieved from the installation of the low flow shower heads and aerators for the taps is estimated to be €4,800 per annum.

The total cost of shower and tap changes, including labour, was €5,800. Total savings of €17,800 / annum have been achieved through this water efficiency programme giving a return on investment of just 4 months.



KEY MESSAGE - Recording baseline water consumption at night, when there should be little consumption can identify that you have a leak!



TOP TIP - Carrying out a water survey is the first step towards reducing water costs



Source Details:

Green Hospitality Programme www.greenhospitality.ie



What our members say...

The Green Hospitality Programme has allowed our hotel to revolutionise the way we manage our resources and control some significant expenditure. The results speak for themselves. Just to mention one key success, we went from Zero to 85% recycling in 3 years, The Green Hospitality Programme does what it says on the tin!

Paul Gallagher, President IHF, Buswell's Hotel, Dublin.

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The Green Hospitality Programme is a 'No Brainer', We have got back 100 times what we have put into it – the programme has opened our eyes to improved efficiency in our business through a simplified environmental management approach. I would recommend the programme to a businesses of all sizes.

Patricia Kennedy, Proprietor, The Mooring Bar and Restaurant, Portmagee, Co. Kerry.

.....

The GHA Program has provided Sodexo with an environmental management system that we can use to measure our performance in each of our client sites across the country. This provides cost efficiencies for our clients by reducing utilities such as gas, electricity and water usage. The programme compliments Sodexo's "Better tomorrow Plan" which targets reducing our environmental impact and reducing our carbon footprint in Ireland and globally.

Aidan Walker , Account Director, Sodexo Ireland.

.....

I have worked with the Green Hospitality Programme with the Armada and Hotel Doolin for the past four years. I see it as one of the best business decisions that I have made, being a win all round situation for the business. Certification to the Silver Award has improved our brand image, resulted in substantial cost savings, and provided exciting challenges for the team. I have continually recommended the programme to colleagues in the industry, and have no hesitation in saying it will be something they will thank me for.

John J Burke Managing Director, Armada Hotel and Hotel Doolin, Co. Clare.

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The Green Hospitality Programme compliments Rezidor's award winning Corporate Social Responsible (CSR) programme, known within the Rezidor Group as Responsible Business. The GHP provides Rezidor with additional environmental reporting and benchmarking tools. The programme has resulted in remarkable savings through no cost and low cost measures. In addition corrective actions can be anticipated in a timely manner; this should convince and inspire any business to join this programme.

Caitriona McGroary, Responsible Business, Rezidor Ireland.



Note from the Author, James Hogan.

Green Hospitality Programme and Clean Technology Centre

Since 2004, the Clean Technology Centre, CIT, and Hospitality Solutions Consulting Ltd, have been actively involved in assisting hundreds of Irish Hospitality businesses to improve their resource efficiency through simple, no cost, and low cost solutions. In this booklet we manage to identify a number of technologies and ideas through case studies which demonstrate the quick cost savings and which can be achieved by those brave and smart enough to invest time and resources. We have learned that once management get a taste of these cost savings, they are most likely to seek further opportunities, invest further and consequently save more. Success breeds success. There is no limit to the resource efficiency opportunities as new opportunities continually arise with changes in technology, legislation and rising utility costs.

I would like to thank the owners and staff from all the hospitality businesses who generously offered their time and information to make this booklet possible.

I would like to thank Cornelius Kelleher, Marion Moynihan, Colman McCarthy and Dermot Cunningham from the Clean Technology Centre who assisted me in the development of this booklet. I would like to thank my colleague Maurice Bergin from the Green Hospitality Programme, and SEAI for their contributions.

Finally, I would like to thank Jonathan Derham and Keiron Philips from the EPA for their support and patience.

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Printed on 100% recycled paper

ISBN 978-1-906953-12-6

Published by CIT Press, Cork Institute of Technology, Bishopstown, Cork, Ireland

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Resource Efficiency in the Hospitality Sector

Case Studies



www.greenhospitality.ie