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Best Practices

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CLEAR AND SMART COMMUNICATION

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Resource Efficient Scotland: 8 TIPS for saving water

1 Don't leave water running while you are brushing your teeth or shaving. Wasted shaving water is equivalent to a person's drinking water for one week. While, turning the tap off each time you brush your teeth could save over 3 litres of water.

2 When boiling the kettle, only boil the amount of water you need.

3 Bath or shower? A full bath uses up to 80 litres of water, whereas a 5-minute shower uses about 35 litres. A 5-minute power shower uses about 60 litres, which still saves 20 litres of water.

4 If you see or hear a leak from a toilet, dripping tap or shower, please report it to the front of house. A leaking toilet can lose 750 litres of water per day and a dripping tap can waste enough water in a day to fill a bath.

5 Please tell us if your room doesn't need to be cleaned. This could save up to 5 litres of water per room every day.

6 By putting the plug in the wash basin each time you wash, you can save about 2 litres of water.

7 By using your towel twice and not having your sheets changed every day you will save water and energy, and also reduce the amount of chemicals going down the drain.

8 If you have any water saving ideas or read something about a new water-saving technology, please do share it with a member of staff.

RESOURCE EFFICIENT SCOTLAND

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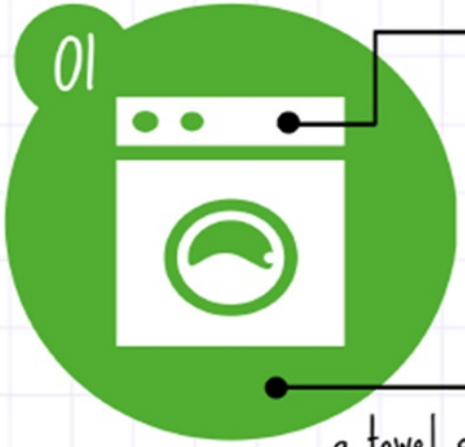
GREEN KEY – A Guide to Green savings

WATER SAVING

Each set of bed sheets requires 23 L to 30L of water to launder.

01



a towel set (bath, hand and face) requires an additional 23 L to 30L.

TOILETS

Replacing an 18 litre per flush toilet with an Ultra-Low Volume (ULV) 6 litre flush model represents a 70% savings in water flushed and will cut indoor water use by about 30%.

Using 3/6 liter dual-flush toilets will further decrease the water use.

02

LAUNDRY

The most effective means to reduce water use for laundry is to encourage guests to re-use the sheets and towels during their stay; guests re-using each towel and sheet set twice before laundering will yield water savings of 50% at a very minimal cost.

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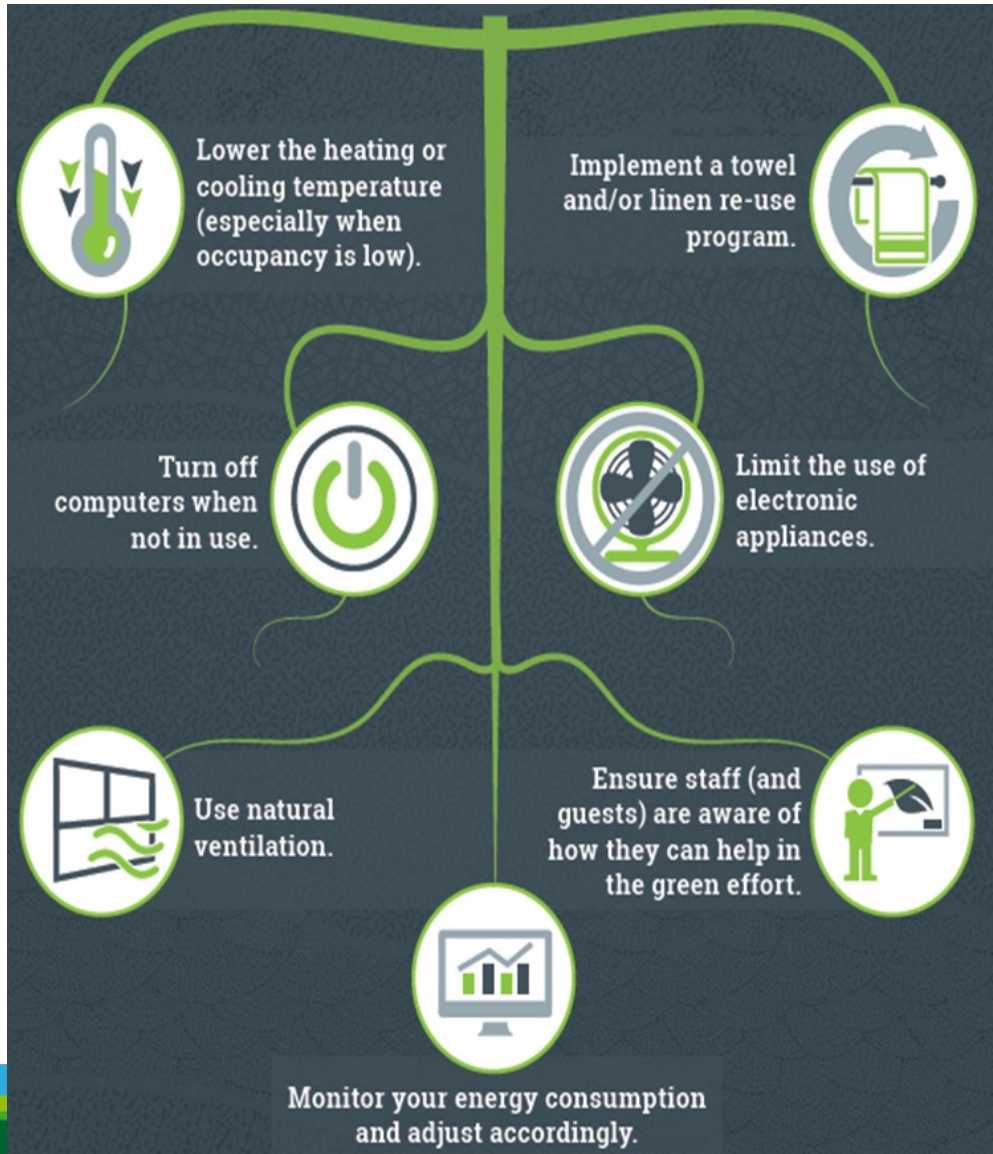
Hotel News Now: How to reduce energy consumption



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ENERGY

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Energy - LED lights

Example for 50 hotel rooms, used 8h/day

	Typical lighting	LED lighting
Fittings	6x50W Halogen GU10	6x10W LED GU10
Total watts (50 rooms)	15000W	1800W
Annual cost	€5,545	€665
Product life	2000h	40000h
Energy savings	0%	88%
Savings in 5 years	€0	€24,390

ENERGY– Occupancy based management

Hotel studies have shown that sold rooms are unoccupied for 12 or mor hours per day.

Hotel operators can link their energy management system (EMS), reservation system, and automated check-out system together to keep an unsold room ventilated but with minimal heating or cooling.

A sold room can then be heated or cooled to a comfortable temperature an hour before a guest's scheduled arrival.

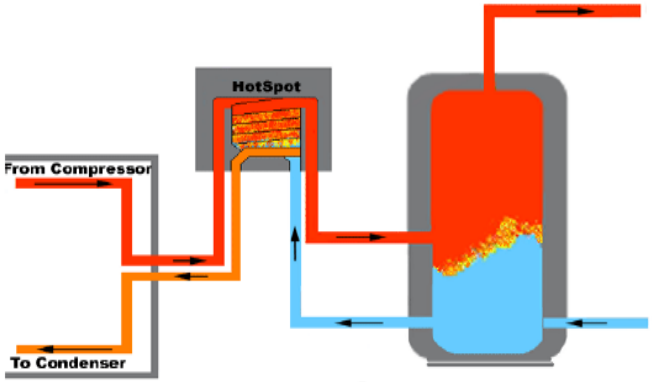
EMS can enhance guest comfort while reducing energy costs by 35% to

ENERGY– Key-card sistem

Using a key-card system can reduce per room energy usage by 25%-45% with a payback of 1-2 years

- The **Westin Convention Center Pittsburgh** invested $120,000 into a keycard system which allows guests to activate the entry light, bathroom light, pole light upon entry. The hotel saw a payback after just 10 months with an initial savings of 10% energy reduction the first year with greater savings predicted for the future.
- **Aloha Surf Hotel in Waikiki** installed in all 204 guestrooms in January 2012, the hotel has seen an average of 45% in energy savings on lighting.

ENERGY– Heat recovery



Free hot water can be obtained from cooling and refrigeration equipment. Hot refrigerant gas from the compressor enters and flows in the opposite direction as the water flow. The water picks up the heat, cooling the gas and recycling excess heat that previously would have been thrown away.

Free pool heating, for example, can be obtained by recycling the air thrown away by the air conditioner, increasing, at the same time, the efficiency of the air conditioner itself and **save up to 40% of the energy bill.**

ENERGY– Solar shower

Solar showers with a capacity of at least 20 liters of hot water (about € 400-800 each) can be easily installed in camping, swimming pools and bathing areas. There is no need to carry pipes for hot water but just a simple connection to the cold water pipe to the integrated solar collector. A built-in modular solar panel along its back side heats the water in its solar collection tube to temperatures up to 55° C.

Assuming a use of five showers a day for 90 days a year, the **savings that results can be quantified in about 30 cubic meters of natural gas or 20/22 litres** of diesel per year.

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ENERGY – Hotel A Quinta da Auga

A Quinta da Agua (Spain) is a 4 star hotel hosted in a 18th century paper factory restored in 2009. The hotel has 59 rooms, a restaurant, a Spa and a conference centre.

- Installation of **solar panels for hot water and 2 heat pumps** (system used for heating and cooling floors). Especially interesting in these old stone buildings due to its thick stone exterior walls that provide them with a large inertia.
- **High efficient electric equipment**: titanium electric plates in the kitchen and 2 boilers micro (electricity / hot water - pools and health spa) powered by combustion of gas. Electricity generated goes directly into the hotel's own network.

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ENERGY – Locanda della Valle Nuova

Locanda della Valle Nuova (italy) is a small agro tourism offering B&B, Dinners, Swimming pool, Riding facilities.

- Installation of **photovoltaic panels covering 100% of electric consumption**, solar collectors providing hot water in summer and a wood stove for hot water and heating when the solar energy is not enough. When renewed in 1999, the walls and roof were insulated and double glazed windows installed.
- **Energy saving procedures**: washing machine and dishwasher operated only when full, set of the lowest washing temperatures and shortest programs, washing machine uses preheated water (heated through solar collectors).

ENERGY – Radisson Blu Hotel & Spa

Radisson Blu Hotel & Spa, located in Cork (Ireland), 4 star property with 129 rooms and suites. Facilities include spa and fitness centre, restaurant, bar and nine meeting rooms.

- Identification of **procedures optimising energy using equipment**. 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.
- Electricity consumption reduced by 19% and gas consumption reduced by 6% over a two year period. This has led to a **yearly energy cost reductions of € 70,000.**

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ENERGY AND WATER – The Westin hotel

The Westin Dublin (Ireland) was awarded 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 Westin Hotel Piloted a ‘make a green choice‘ programme, offering guests the option to declining housekeeping, if staying for more than one night, and being rewarded with a €5 voucher for the bar/ restaurant or 500 Starpoints per night of housekeeping declined. The hotel has calculated that each time housekeeping is declined, there are the following environmental benefits: 186 litres of water reduced; 0.19 kWh of electricity reduced; 7.3kWh of natural gas reduced; reduced cleaning chemicals.
- During the pilot programme 17% of total guests choose to decline housekeeping.

WATER

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WATER - Most common water saving devices

	Potential savings	Indicative cost
Flow restrictors	30-40%	1-3 €
Tap aerators	30-50%	2-6 €
Efficient shower heads	40-50%	3-10 €
Shower on-off switch and shower timers	30-40%	3-8 €
WC Tank Bag	10-20%	0,5-2 €
WC new cassette with dual flush	20-50%	50-100 €
Waterless urinals	90%	300-600 €

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WATER - New and old models of kitchen appliances

	Old Standard	New Standard	Water Saving Efficiency
	5.3 L/rack	2.6 L/rack	2.7 L/rack
	7.5-19 L/min	6 L/min	1.5-13 L/min
	95-132 L/hr	7.5 L/hr	87.5-124.5 L/hr
	5.7 L/lb	1.1 L/lb	4.6 L/lb

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WATER - Swimming pool operations

Check level sensors and float gauges regularly to prevent overflow

Conduct regular reviews on the effectiveness of filtration plant

Use high efficiency tools, e.g. high pressure jets, for poolside cleaning

Cover up the pools when they are not in service to minimise evaporation

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WATER - Landscape management

Select soil with high water holding capacity for landscaping works		Plants with similar water requirement should be grouped and planted together
	Adopt efficient irrigation, e.g. automatic irrigation, to control water consumption	
Watering in the morning or evening instead of in the middle of the day to minimise water loss through evaporation		Inspect irrigation equipment regularly and repair any defects or leakage promptly

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WATER – Henderson's Restaurant

Henderson's is set in Edinburgh (Scotland) and includes a retail outlet, an organic artisan bakery, a deli shop, a table-service bistro, a café and a restaurant employing over 50 people.

- **Toilet cisterns** had a capacity of 9 litres. Placing low-cost devices in the cisterns reducing the flush volume to 6 litres, decreased annual water use by 350 m^3. The two **urinals** had no flush control and it was estimated they used 370 m^3 of water per year. Fitting passive infrared sensors, water use was decreased by up to 75%.
- Henderson's reduced its water costs from £1,259 in April 2011 to £838 in April 2012 (–33%).

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WATER – Castletroy Park Hotel

The Castletroy Park Hotel (ireland) is a 4 star hotel with over 100 rooms, spa, salon and leisure centre.

- Management of the hotel had a **water survey** identifying a leak in a hot water tank, estimated to be costing €13,000 a year, that was easily repaired at a cost of €50.
- 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. The **savings achieved** is estimated to be €4,800 per annum and the total cost of shower and tap changes, including labour, was €5,800.

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%

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WATER – The Golden Sands

The Golden Sands is a 5 star resort set in Malta. While under construction a decision was taken to build a hotel which consumed as little water as possible, at a competitive price.

- A **sewage treatment plant** operating since mid-2006 produces 30,000 m^3 of 2nd class water per annum, used to flush toilets and for irrigation (approximated cost € 500.000). Of this water, more is produced than is needed by the hotel and in fact, 30% of the water generated is donated to the Parks Department for the irrigation of afforested areas, public gardens and roundabouts.
- **The plant saves the hotel the equivalent of € 25,500** in water per annum. An additional advantage is that the hotel can make do with a smaller reverse-osmosis unit than it would have otherwise needed.

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WATER – Revolution Bar and Gastropub

The Revolution is a modern bar and night-club in Waterford (Ireland). Like most urinals, urinals in the Revolution Bar were set to flush their 15 litres cisterns every 15 minutes. 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% saving €1,544 per year on water costs. The PIR system cost €350 to install, giving a payback period of just under 3 months.
- In addition 14 old **toilet cisterns**, with a flush volume of 10 litres were replaced with new ones that had a flush volume of 6 litres. With an average 840 flushes per week, this retrofit measure reduced water consumption by 174,720 litres/ year and saved the owner €408.

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WASTE

WASTE – Separated collection

Give each guest room a recycling bin

Separate Guests recycled waste on every floor

Separate out canteen waste for recycling

WASTE – Disposal and recycling

Light tubes and bulbs should be disposed in an environmentall y friendly manner

Waste oils should be collected and sent to authorized recycling facilities

Dead batteries from TV remotes and doorlocks can be sent to recyclers

Fluorescent tubes contain mercury which need to be properly treated

WASTE – Reduction of packaging

Reduce the use of disposable single-dose products: sugar bowls should be preferred to single dose packets and juices in refilled jugs

If the quality of the tap water allows it to be offered, it can be offered as it is or it can be filtered before being offered in carafe or dispenser

On tap selling of dish-washing and laundry liquids

WASTE – Paper waste reduction

A Massachusetts Institute of Technology research compared the seven most common drying methods in public toilets and concludes that paper towels and warm air hand dryers have the highest environmental impact, generating 70% more carbon emissions than the newest technology on the market (cold air-driven hand dryer)

Hand dryer environmental impact

1 = lowest impact,
7 = highest impact

	Global warming potential	Human health	Ecosystem quality	Cumulative energy demand	Water consumption	Land occupation
Airblade™ aluminium	1	1	1	1	3	1
Airblade™ plastic	1	1	1	1	1	1
XLERATOR®	3	3	3	3	4	3
Standard warm air dryer	7	7	4	6	7	4
Cotton roll towels	4	3	6	4	1	6
Paper towels virgin	5	5	7	7	5	7
Paper towels 100% recycled	5	5	4	5	5	5

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WASTE – Food waste reduction

- Lighter portion for dishes available in the me
- Smaller plates in the buffet
- Prevent over-ordering
- Doggy bags to take leftovers home
- Donation of surplus food to charities

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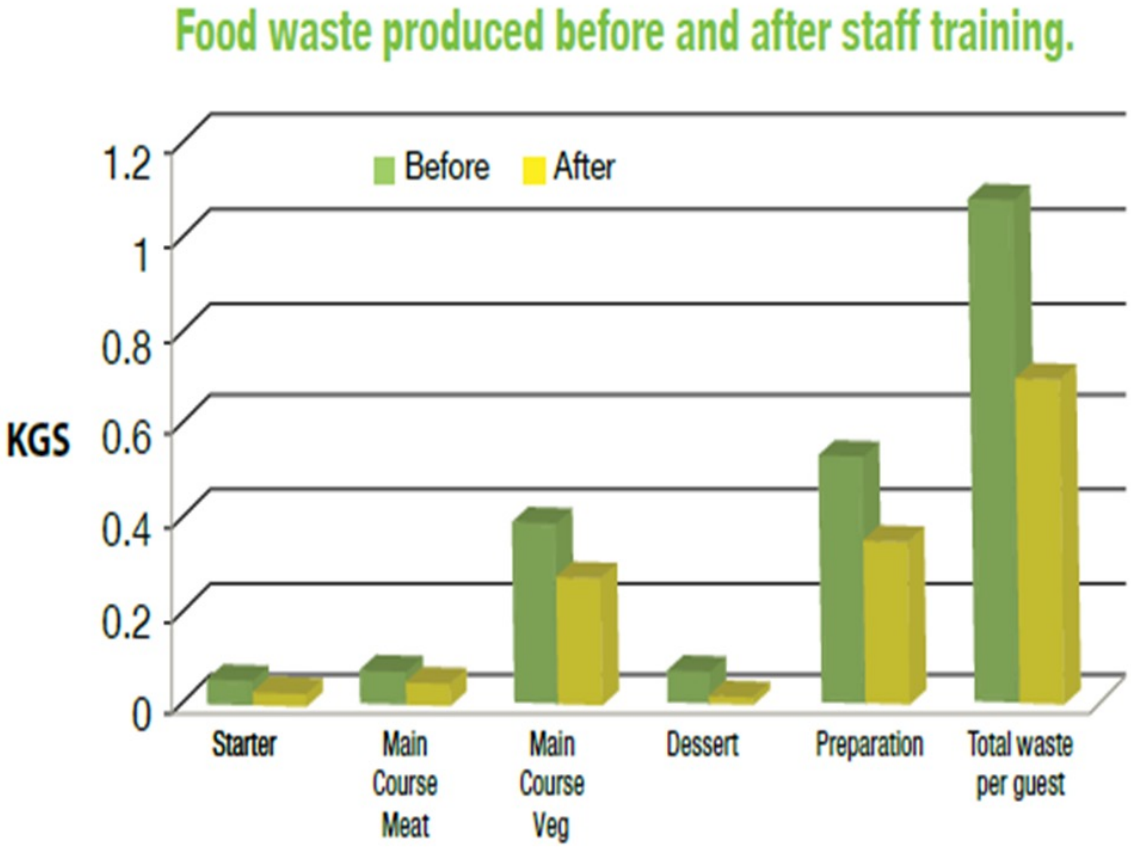
FOOD WASTE – Fitzgerald's Woodlands Hotel

The family run, Fitzgerald's Woodlands Hotel in.Limerick (Ireland) is a 3 star, 94 room hotel, with an events centre which caters for weddings and conferences.

- **Reduction of food waste generated during wedding** events through: better portion control, when serving main courses; educing waste trimmings on vegetables and meat; serving vegetables in large central dishes, rather than serving individual portions; staff awareness raising and training.
- 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.

FOOD WASTE– Fitzgerald's Woodlands Hotel

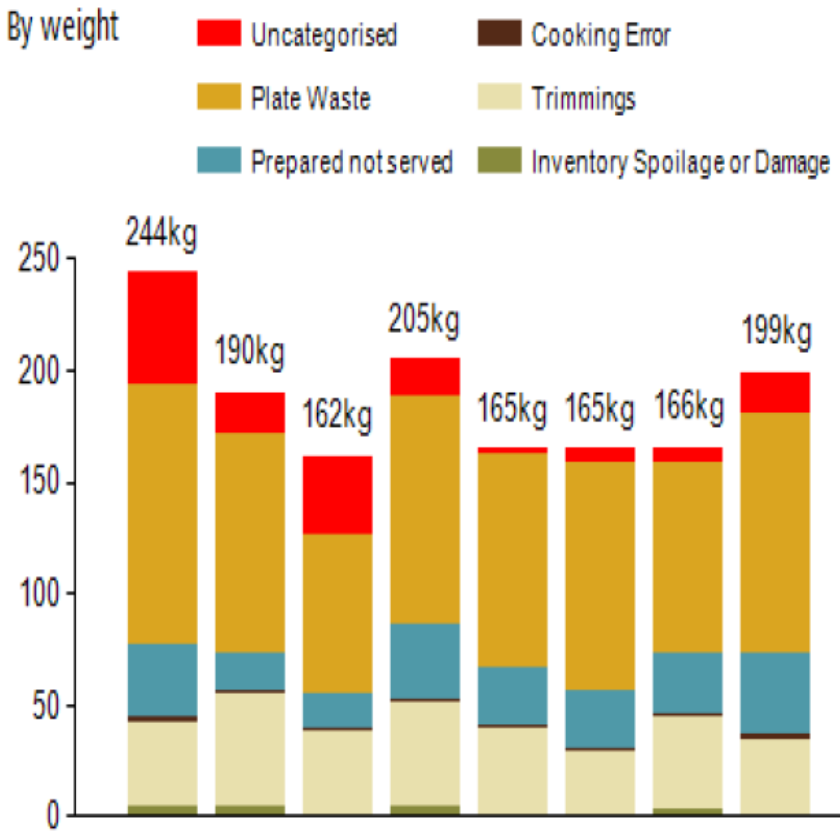


FOOD WASTE – Salutation Hotel

The Salutation Hotel (UK) took part in an eight week trial to actively monitor and reduce food waste. By using a **smart meter to measure food waste**, the hotel was able to identify savings and reduce the amount of food being thrown away. It successfully **reduced the weight of food waste per cover by 36%** and achieved yearly financial savings worth approximately £10,900.

- **Reduced plate sizes** for buffet operations, with customers able to come back for more;
- More **on-the-go preparation/cooking** (rather than large batches in advance);
- Reductions in the quantity of **toast 'automatically' offered** for breakfast;
- Better use of **trimmings and leftovers**, e.g. vegetables in soups etc.

FOOD WASTE – Salutation Hotel



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WASTE – Village de la Guyonnière

Since the campsite Village de la Guyonnière (France) opened it always have been committed to preserve the environment and surrounding nature. So, the camp fields kept their original shape, **no trees were cut to create new areas and the vegetation has been preserved**. Since 2015 the campsite has been awarded with the EU Ecolabel.

- The camping installed an **eco-fountain** when water is being filtered three times before it can be used, making it a high quality water source. Cool water is available, both with and without gas. Ecological cleaning solutions are also available at the eco-fountain. The camp site store sell reusable and biodegradable bottles.
- The eco-fountain works with a card which guests will receive when arrive and that can be charged at the camp site store with any amount needed (for example 10 euro). A liter of cooled water from the eco-fountain costs 10 cents (water with gas will cost 15 cents).

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