

THE ENVIRONMENTAL IMPACT OF HOTELS: THE FUTURE IS GREEN

Abstract: With the increase in both casual and business travel, the levels of waste produced by guests have grown exponentially and the only way to remedy this situation is through the reorganization of existing practices in favor of more environmentally friendly solutions. Luckily, as guests become more and more sensitive to environmental issues, the demand for green products and services continues to grow, guests nowadays are more concerned than ever with their environmental footprint and will gladly take their business to hotels which strive for sustainability. As such going green is no longer simply a matter of consciousness, but a business opportunity not to be overlooked. Green hotels are an enterprise which favors sustainable living techniques without sacrificing the comforts of modern life.

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Introduction

Escaping the mass-produced uniform travel experience, eco-friendly practices are becoming greatly appreciated by conscious guests who are seeking for more authentic and unique touristic experiences. Nowadays, environmental practices are already part of the guests' daily lives and are changing the way they travel. [24]. Guests are recognizing the importance of environmental conservation and are increasingly seeking hotels that supports environmentally friendly and sustainable tourism. Acknowledging this, hotels around the world are developing award-winning environmental, economic, and socio-cultural programs that preserve both the culture and support the local economy.

The aim of this paper is to critically analyze and discuss the environmental impacts and its effects on the hotel industry. This paper will also explain the various positive effects of hotels embracing green revolution.

Environmental impact of hotels

Individually, hotels do not have a significant negative impact on the environment. Collectively, however, they can be very wasteful and consume huge amount of resources. Its guests are consuming resources such as energy and water on a daily basis and generating a great deal of solid waste and effluents. The considerable environmental effects of hotels contribute to problems, many of which are international in scope, with the major one being a climate change [2,4]. Hotel operations produce emissions of greenhouse gases, which are released into the air, in particular, CO₂ and

chlorofluorocarbons [23,30]. Moreover, it has been shown that of all commercial buildings, hotels exert the greatest negative influence on the environment.

Hotels that adopt ecologically friendly designs and operations by adopting environmental practices, such as lowering pollutant emission, procuring green goods, and conserving water and energy, are deemed to be green hotels [3,16]. According to Ecomall [11], green hotels should strive to reduce their effect on the environment through measures such as energy conservation, waste reduction, and water conservation.

1. *Energy*: Excessive energy consumption directly impacts the environment. Bringing in energy saving and green alternatives will save money and benefit the environment too. According to Gössling et. al. [13] “the average energy consumption per bed per night in hotels might be in the order of 130 Megajoules. Hotels generally use more energy per visitor than local residents, as they have energy intense facilities, such as bars, restaurants, and pools, and have more spacious rooms” [13]. Besides that, there are numerous appliances, heating, cooling and lighting systems within a hotel premise that consume a great amount of energy. Chen et al. [8] suggests that “Electrical equipment should be switched off when not needed. With intelligent room functions, the electrical appliances switch off, apart from the refrigerator, no matter whether the guest is in the room or not. By intelligent room functions electricity is adjusted according to the guest’s presence in the room. When the rooms are not occupied heating and cooling should be switched off. For artificial lighting compact fluorescent light (CFL) use 75 % less energy than standard incandescent bulbs. In addition, they last 10 times longer. This lighting is suitable for those areas that require lighting most of the time. If a colorful option is desired, then light emitting diode, LED lighting is preferable. LEDs are bright and provide more color rendition”. Guest and employee education can significantly contribute to energy saving. By finding creative ways to educate them just by informing, without entreaties or making them feel guilty, is an efficient strategy [19].

2. *Waste* – Several streams of solid waste generated by the hotels includes plastic, paper, glass, wood, organic (kitchen), old durables, electric and electronic equipment, green waste, clinical waste, hazardous, sands (from the filters of pools), dust, metals, packaging and waste packaging, batteries, solid waste from biological treatments, hazardous substances from funnels and especially from the kitchen funnels [31]. The goal of being a green hotel is to eliminate as much as possible the negative impacts on the environment, both by reducing your consumption of resources and by changing the practices so that the waste hotels’ produce can be used as raw material by someone else [1]. As a recommendation, hotels should first incorporate a measuring mechanism in order to obtain the total volume of waste produced. As a further recommendation, hotels should adopt appropriate measuring mechanisms in order to be able to quantify the volumes of wastes produced per department. By adopting these measuring mechanisms, hotels will be able to set more accurate and effective targets, which will result in a more rational reduction of solid wastes [31]. Since, the core for waste reduction is reuse, reduce and recycle, by following these steps, a hotel can allow even zero waste to be landfill. One estimate identified “that an average hotel produces in excess of one kilogram of waste per guest per day that accumulates to thousands of tons of waste annually” [5,17]. Approximately 30 percent of waste in hotels can be diverted through reuse and recycling.

3. *Water* - Tourists and residents alike require a clean and dependable supply of water for survival including drinking, cooking and cleaning. However, water is integral to the amenities usually expected by tourists, such as swimming pools, landscaped gardens, and golf courses. Water also supports industries such as agriculture that support the tourism industry [27]. Thus, tourists demand more water than local residents on a per capita basis [12]. It has been estimated by Salen [28] that 15,000 cubic meters of water would typically supply 100 rural farmers for three years and 100 urban families for two

years, yet only supply 100 luxury hotel guests for less than two months [20]. Water consumption per guest per night is between 170 and 440 liters in the average five-star hotel [17]. Some hotels have even estimated that only a small percentage is consumed in the guest rooms and the rest is used by the chambermaids during cleaning [21]. The practices for a hotel to implement in order to conserve water is to install flow controllers of low-flow fixtures. This is best implemented in the areas that require less water pressure, for instance kitchens and public toilets. Installing toilet tank fill diverters in older toilet, it can save about 3/4 gallon of water per flush. Adopting waterless laundry machines can save up to 80% of hotel water usage. A infrared sensor in the taps and showers allows water usage only when the object is underneath them or until the allotted quantity of wash has been delivered. It can reduce water consumption by 70%. Another way of encouraging guests to spent minimum time in the shower is to place a timer in the shower to monitor the time spent. When designing water management what needs to be taken into consideration is whether these methods are suitable for guest rooms or if there is another alternative [8,25].

Taking a stand for sustainability: greening trends in hotels

Hotels around the world are taking steps to improve their green credentials in an effort to cause the least possible damage to the environment. After all, in an era of climate change, a hotel stay is not only about the usual creature comforts but also about environmental sustainability. It's also quickly becoming a priority — if not a moral imperative — for hospitality leaders and hotel businesses around the world.

The green hotel concept originated in Germany in the 1980s. There are quite a few names for describing green hotels, such as “Eco-Hotel” or “Ecological Hotel”, “Eco-efficient Hotel”, “Eco-friendly Hotel”, “Environmentally Friendly Hotel”, and other terms. The Green Hotel Association [14] defines a green hotel as follows: “The hotel itself has environmental performance. The hotel management method must actively focus on saving energy, water resources and reducing waste, and avoiding the loss and waste of resources to maintain the global environment. Green hotels usually implement environmental protection measures to reduce the negative impact on the environment, and environmentally responsible practices (ERPs) contain sustainable environmental standards, regulatory orders, best environmental protection measures, environmental protection labels, and environmental management systems (EMSs) and environmental indicators” [9].

But until quite recently, the hotel industry has been rather oblivious of the extent of environmental damage caused by its services and operations. The last two decades, however, have brought about an increased environmental awareness among the general public, the emergence of social environmental movements, and the development of the concept of “green consumerism”. This has eventually spurred growing criticism of existing tourism/hotel practices [6]. Demands have even come from governments or regulators require hotels to implement green practices [22]. So, now hotels are consistently becoming greener. The hotel industry has been pursuing green practices since the 1990s due to fluctuating economic levels and a strong focus on customer service [10]. Hoteliers are increasingly aware that the environment and its protection are crucial to hotel industry development and performance.

As with any cause worth fighting for, trends in hotels are forcing an implementation of programs for air quality (such as providing a smoke-free environment and live plants in each suite), sustainable land use, energy efficiency (such as solar panels), waste reduction/management, recycling, resource conservation, water quality/conservation that will ultimately result with environmental consciousness, a pleasant retreat for guests and a more profitable business. As such is, Habitat Suites opened in 1985, is a model hotel where sustainability is a part of its core values [15]. Their goal is to continue to progress

and to lead the way in sustainable, responsible business practices shown in Table 1. In 1991, they became a charter member of the Green Hotels Association - long before, as they say “it was popular to be green”.

Table 1. Responsible business practices of Habitat Suites

<p>Efforts in Alternative Energy</p> <ul style="list-style-type: none"> • They operate Solar Panels on every building of our property. • They use Solar Thermal where possible. • They provide 2 EVC (Electric Vehicle Charging) Stations exclusively for our guests.
<p>Air Quality and Biodegradable, Natural Products</p> <ul style="list-style-type: none"> • They clean our furnishings and carpeting using safe, plant-based, zero harsh chemical detergents. • They offer all-natural, safe for the environment guest amenity detergents and shampoos. • They maintain a strict non-smoking policy for our property and suites. • They renovate and repair with Low Volatile Organic Compound (VOC) Paint. • In every suite there is a live potted plant, to help promote a naturally clean air quality. • Their suite's windows are operable to allow fresh air into the space.
<p>Land Stewardship & Organic Landscaping</p> <ul style="list-style-type: none"> • Their landscaping upkeep uses no pesticides or herbicides. • Mature, native plants and trees grace our gardens and form a self-sufficient ecosystem. • They encourage our guests to harvest the many edible organic herbs and fruits we offer from our trees and gardens. • They send our food waste out to return the nutrients to the soil in the form of compost.
<p>Recycling & Reuse</p> <ul style="list-style-type: none"> • Recycle bins are located in every suite and throughout the property grounds for convenient and responsible waste disposal. • Employees recycle and reuse materials as part of their commitment to Habitat Suite's Core Values. • Guest amenities and key cards are produced with post-consumer content. • They are affiliated with Austin Creative Reuse and Austin Material Marketplace to obtain and/or donate previously used materials for our back office. • They compost our breakfast food waste to return organics to the earth.
<p>Energy and Water Efficiency</p> <ul style="list-style-type: none"> • Each suite contains a motion and occupancy sensing thermostat that prevents the heating and cooling of empty rooms. • They use only energy-saving LED and Compact Florescent (CFL) Bulbs. • Their public restrooms contain motion sensing lighting fixtures. • They renovate and replace with appliances with Energy Star Certification • They operate low GPM flush toilets to save thousands of gallons of water annually. • Rainwater barrels are located around the property for rainwater harvesting and reuse. • All kitchen and bathroom sinks contain faucet aerators. • Suite shower heads are considered low GPM. • They operate a Linen & Towel Reuse program to save electric, gas, water and human energy loss. • They operate energy-efficient commercial washers in our housekeeping facilities.

Source: *Habitat Suites*

Why go green?

Hotel’s sustainability has become a priority for forward-thinking guests and hoteliers in recent years. With high waste generation and water consumption rates, many hotels have realized the negative impacts they’ve had on the environment. Hotels around the world are now working to improve their environmental footprint while simultaneously improving the guest experience. Today’s guests’ support hotels that share their values. Guests’ are increasingly seeking out ecofriendly travel options, and some are even willing to pay extra to support a hotel’s sustainability program. According to booking.com, 68% of global travelers intend to stay at an eco-accommodation in 2018 [29]. In total, we can determine three reasons why hotels should go green:

• *Long term monetary gain while going green* - Brebbia and Pineda [7] claim that financial savings are one of the most significant factors that influence the implementation of environmental initiatives in a hotel. This is especially evident for hotel businesses that operate in a highly competitive market and where the cost of energy, water and waste disposal are high. These practices reduce resource consumption, which helps the hotel to save money in the long run. Many green practices can actually become self-funding by reducing the hotel's operating costs. Nevertheless, for instance, if it is replacing standard incandescent light bulbs with longer-lasting high-efficiency bulbs is fast becoming a very popular way for hotels to reduce their energy bills or water saving laundry systems—which use up to 80% less water, up to 50% less energy, and provide a superior clean that leaves laundry softer for longer. Hyatt Regency in Reston, Virginia was able to reduce the water consumption of their laundry operation by nearly 80%, and their heating utility and chemical use by half after making the switch to a low-water laundry system. They drastically cut the cost of their laundry operation, without making guests reuse dirty towels or linens [18].

• *Guests are seeking out eco-friendly places to stay* – Being a customer orientated industry, it is no wonder that hotel began responding to guests demand as they adapt to becoming the venues in which environmentally aware, health conscious guests want to stay, eat, play, exercise and relax [26].

• *Meeting the environmental regulations* - The fact that a lot more guests are becoming more environmentally conscious is not the only factor that contributes to the decision to go green. As the public becomes more sensitive to the Earth's environment, policymakers also take notice, passing new laws and regulations designed to limit pollution. In some cases, however, new regulations may be passed to contend with a specific emergency. Environmental guidelines and procedures help in protecting the hotel business and the well-being of guests by ensuring that the hotel's natural surroundings are beautifully preserved for guests well into the future.

Conclusion

The hotel industry is known for its luxury and for that has been blamed for its wasteful use of resources. As the star rating of a hotel goes up, hotels tend to consume greater amounts of resources, leave larger ecological footprints (food, energy, construction land, textile and waste) and have greater impacts on the environment. But, the concept of “green” or eco-friendly hotels is getting increasingly popular now. The perks of luxury where guests can take long showers with insane water pressure while indulging in all kinds of miniature plastic bath products, in a room heated to whatever temperature their skin pleases is the reason why an average hotel releases between 160 kg and 200 kg of CO₂ per square meter of room floor area per year and the water consumption per guest per night is between 170 and 440 liters in the average five-star hotel and produce 1 kg of waste per guest per night. Hotels are realizing that something needs to be done to conserve the environment. As, seen, hotel already begun to explore the option of becoming more sustainable, allowing them to benefit economically from executing environmental and social initiatives. Whether is installing energy-efficient technologies such as appliances, lighting, heating and cooling systems or embrace recycling, saving water, where installing toilet tank fill diverters in older toilets can save about 3/4 of a gallon of water per flush or transitioning to low water laundry machines can save up to 80% of hotel water usage, implementing alternative energy sources everything can make a difference for both the environment and the hotel.

Besides the fact, that guests push hotel towards for responsible and environmental working, the hotels could and should as well encourage guests to be green. Something like putting cards in each room asking guests to turn out the lights when they leave, or reuse towels if possible. Make recycling bins readily available to guests and be sure that they are aware of your green programs. When guests see that the hotel is making an effort to help the environment, they will generally want to do their part as well.

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