An Analysis of the State of Sustainability in Indiana’s Luxury Hotels

An Honors Thesis (HONR 499)

by

Michael Lagestee

Thesis Advisor

Alan Yen

Ball State University

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Abstract

This thesis delves into the hotel industry in Indiana to discover the quality and quantity of sustainable practices commonly implemented in the hospitality industry of the state, as well as how effective these efforts are. Concern over the state of the environment, especially looking towards the future, is of prime importance in this piece. The abundance of increasingly efficient technologies as well as efficient models of appliances has allowed hotels to cut energy use and save money. However, each property has different levels of implementation of such technologies and individualized plans in conducting sustainable business. To provide a standard to compare Indiana hotels to, research was conducted to establish sustainable practices in place nation-wide. In turn, Indiana’s hotel industry was examined by conducting interviews at selected properties in the luxury sector of hotels in downtown Indianapolis, which are the properties most likely to implement sustainable practices, especially in their effort to serve customers with higher standards for environmental consciousness. After such interviews were conducted, the luxury hotels’ sustainable practices were examined and compared, with conclusions made about the state of sustainability in Indiana’s luxury hotels, creating a basis on which to evaluate Indiana’s hotel industry as a whole.

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Author's Statement

This project holds deep meaning for me personally, especially as a preface to my career. I look forward to my career in the field Hospitality and Food Management, and believe that my work on this thesis has helped me develop a professional and conscientious mindset that will aid me in the years to come. My concern about the state of the environment as well as the controllable negative impact that many businesses have on our natural surroundings is apparent in this work, and will continue to affect the way I live day to day as well as the way I conduct business professionally.
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Background

Sustainability has become an increasingly important concern in the world today. With the dangerous combination of wastefulness, diminishing resources, and population growth, future generations face dire threats to their living environment. Because of this, many individuals and businesses have begun to live or operate in a more sustainable way in the hope that human impact on the earth can be reduced enough to preserve the planet and its resources. These people have accomplished this by acting in a more mindful manner and by trying to find innovative ways to reduce their impact. Their efforts have been surprisingly successful, and many people have succeeded in reducing their impact through the use of more efficient technology, by minimizing trash through reuse, recycling, or composting, by implementing programs in their community or business to spread awareness and increase involvement, and through various other methods. Although these issues have received significant attention by the general public and academia, some people and businesses are still hesitant to participate in reducing the impact caused by their daily actions. This is a problem because many businesses worsen the situation by wasting non-renewable resources and creating pollution in their pursuit of profit. Thus, if being more sustainable costs more money or in any way inhibits a business's ability to continue producing and selling their products, the business is less likely to make efforts to adopt sustainable practices or to create a positive influence on the environment and society.

Transparency also affects how sustainable a business might be. If a business practice is very visible to the public and affects customers' perceptions of the business, there is more incentive to make that practice as sustainable and benevolent as possible to reflect well on the business.
However, the opposite is true as well. If some aspects are less visible, social responsibility becomes less important.

Sustainability is also very important in the hospitality industry. Hotels, resorts, casinos, restaurants, and other businesses in the industry all have varying degrees of impact on the environment in general and the communities around them in specific. However, like other businesses, the need for sustainability in the hospitality industry does not directly translate into significant motivations for them to actively be sustainable in their daily practices. This is because other considerations, such as cost or company standards, impact individual hotels in a major way and shape what sustainable practices may or may not work within their business. Other factors, such as aesthetics and customer appeal may influence this as well. Overall, if a sustainable practice has no direct positive effect on the hotel, such as reduced cost, the business has no motivation to implement the practice. Even if it helps the environment, certain aspects of sustainability may simply be seen as a nuisance. Nevertheless, the industry is experiencing various trends that push businesses to start considering their role in protecting the environment and improving the living quality. These trends include a shift in consumer demand towards sustainability, the increasing availability of efficient technologies, the modernity of the green movement, and government regulations, among others. Although all hotels may experience these trends to a certain degree, luxury hotels are the ones which are most likely to put forth the most effort towards sustainability. This is true because luxury hotels have the most customers, have the highest average daily rates (ADR), and serve customers from a wider range of locations around the world. Because of the higher cost, occupants at these hotels expect a higher level of service, including having a certain level of sustainable practices. In addition, as most well-known
brands of international hotel companies, they are more willing to engage in sustainable practices and invest resources to make it happen because these flagship hotels represent the best the company has to offer customers. Also, because of this, these hotels must maintain some level of sustainability in order to stay “modern” and prove to their customers that they care about the environment, to reflect the fact that their customers care about the environment. The diversity of customers that are served by these hotels especially brings sustainability into focus for these luxury hotels, as these travelers are more likely to look for sustainability in the facilities they pay to use. These luxury hotels provide the best and most current example of such practices to other hotels in the industry. Therefore, studying their current practices and understanding motivations influencing their decisions should provide a view of the current sustainability practices in the industry. For this project, the focus of study will be luxury hotels in Indianapolis, which will provide insight into the current state of sustainability at its best in Indiana. This is because Indianapolis is the capitol of the state, as well as the largest city. The city is a center for both business and travel, and is a host to visitors on a national scale. The city has even seen growth recently, especially with the attention drawn to it from the Superbowl it held in 2012. Luxury hotels in Indianapolis serve as the best subject for this study overall because of the likelihood of luxury hotels implementing sustainable practices, as well as the fact that Indianapolis in particular is the largest city in Indiana. Thus, the city has the hotels that serve the largest number of customers, as well as the most diverse. In order to assess the practices adopted by these luxury hotels, we will first discuss what is happening in the hospitality industry as a whole.
Sustainable Practices/Technology

The focus on sustainability in recent years has been driven by the realization that our increased use and waste of resources in the modern world is unsustainable and threatens future generations, which has resulted in increased efforts to reduce our impact on the earth and preserve our resources. This has been accomplished in the hospitality industry in various ways. Each individual hotel, or hotel chain in some cases, implements its own strategies concerning sustainability. Their strategies may include the use of sustainable technology, building materials, or programs followed by employees within the hotel.

Because of the progress made in the development of efficient and sustainable technology, hotels have become more capable of decreasing their consumption of energy or utilities by implementing these technologies, especially in their guest rooms. Hotels have been able to reduce water usage through low flow toilets, showers, and faucets. Improvements in low-flow technology have improved the experience of its use for customers because low-flow appliances can now replicate the water pressure and feel of appliances that use greater amounts of water. Based on the information shared by Environmental Protection Agency on its website, (2014), this improvement is usually accomplished through the process of aeration. In order to maintain the same water use experience that one used to have, air is added to the water stream to increase the sensation of flow. Another way to preserve water yet maintain the convenience is the use of laminar flow devices, which use small holes to create smaller, parallel streams much like a shower head. Both methods allow normal pressure while enabling reduction of actual water use. Compared to traditional faucets with flow rates of 2.2 gallons per minute, these new technologies commonly show an average reduction of 32-45 percent, or .7-1.2 gallons per minute.
Efficient showerheads have comparable reductions in water use, commonly around twenty percent or .5 gallons per minute, which can save up to 2,300 gallons of water in households alone (EPA, 2007). These water-efficient appliances can save even more for businesses, which can have an impact on the energy used in heating water as well. Another area for conservation is the use of electricity. The energy use in lighting, heating and cooling has been reduced significantly through the incorporation of new technologies. For example, the use of compact fluorescent light bulbs (CFLs) or light emitting diodes (LEDs), along with other efficient lighting systems like motion sensor and timer, has reduced the amount of energy necessary for lighting. Based on a recent study, CFLs and LEDs are the two most efficient light bulbs available in the market, with energy savings up to 80 percent (Department of Energy, 2013). In the same study, it is suggested that 90% of energy used by traditional incandescent bulbs is given off in heat, which leads to much higher cost (Department of Energy, 2013). By implementing these more energy efficient light bulbs, general households and business alike can reduce their reliance on energy and save money. Considering the nature of hotel business, which runs 24/7, 365 days a year, the amount of money and energy saved is even more impressive. Motion sensors and key card systems that detect whether or not rooms are in use have been implemented in some hotels as well, reducing the amount of energy traditionally wasted by lighting and heating left on when not in use.

Hotels may also choose to implement programs to aid their sustainable efforts and help guiding employees and customers to be engaged in different sustainable activities. Recycling programs are a common example of this. Recycling programs may include employees, and could be aimed at avoiding waste of paper in office work. Bins may also be placed in guest rooms so
that guests can have the option to recycle as well. Linen and towel reuse programs are commonly adapted by hotels, which accounts for one of major business functions that hotels have to perform daily. These programs allow customers to reuse their linens and towels during their stay instead of having them cleaned regularly. This also has another significant environmental impact since hotels get to reduce the use of chemicals and detergents in laundry, trimming down the production of waste water and succeeding treatment conducted by waste water processing stations. Other kinds of programs that have less visible benefits, such as composting programs, may be implemented by hotels but are less common. One of the reasons is that this may require additional use of space in the hotel, which has always been scarce to begin with. Often times it is hotels that have food and beverage operations on site will participate in this program because of the access to recyclable raw materials for composting.

Building Standards

The growth of the sustainability movement has led to higher standards for the sustainable construction of new buildings. New organizations have been formed to evaluate the sustainability of constructed buildings, as well. Leadership in Energy and Environmental Design (LEED), a program run by the U.S. Green Building Council (USGBC), “provides third-party verification of green buildings” through various rating systems and awards green buildings different levels of certification depending on their qualification of prerequisites for certification (“USGBC”, 2014). As stated on USGBC’s LEED website, “As an internationally recognized mark of excellence, LEED provides building owners and operators with a framework for identifying and implementing practical and measurable green building design, construction,
operations and maintenance solutions" (Katz, 2012). Through the framework provided by LEED and USGBC, construction can be completed in ways that enhance performance in areas of human and environmental health, including “sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality” (Katz, 2012).

LEED awards different levels of certification to buildings based on the accumulation of points in different categories. It is possible for buildings to earn up to 110 points, which includes 100 points spread among different categories of sustainable sites (maximum 21 points), water efficiency (maximum 11 points), energy and atmosphere (maximum 37 points), materials and resources (maximum 14 points), and indoor environmental quality (maximum 17 points), as well as 10 bonus points for innovation in design or operation (see Figure 1). Based on the total amount of points that buildings qualify for in these categories, buildings are able to earn basic LEED certification at 40-49 points, silver certification at 50-59, gold at 60-79, or platinum at 80 and above. Figure 2 is an example of a building that received Platinum certificate. LEED has three separate categories of certification that are applied to the hospitality industry. These categories are Building Design and Construction, which focuses on the construction of new buildings; Interior Design and Construction, which focuses on the interior of a hotel; and Building Operations and Maintenance, which centers around the operations that occur within the business.
Figure 1: LEED Grading Categories

Main credit categories

- **Sustainable sites credits** encourage strategies that minimize the impact on ecosystems and water resources.

- **Water efficiency credits** promote smarter use of water, inside and out, to reduce potable water consumption.

- **Energy & atmosphere credits** promote better building energy performance through innovative strategies.

- **Materials & resources credits** encourage using sustainable building materials and reducing waste.

- **Indoor environmental quality credits** promote better indoor air quality and access to daylight and views.
Increasing Regulations

Governments have begun to increase regulations on reduced energy use and emissions (Butler, 2008). For example, the Energy Policy Act of 1992 is an early example of regulation that set upper limits for energy or water use, including a limit of a rate of 2.5 gallons per minute for showerheads, 1.6 gallons per flush for toilets, and 2.2 gallons per minute for faucets (EPA, 2008). Other regulations have set similar standards, and light bulb regulations are a good example. As much more efficient bulbs have come into the market, the manufacture and sale of less efficient bulbs like incandescent bulbs has banned by the United States federal government with a phase-out plan introduced. The Energy Independence and Standards Act of 2007, for example, set into motion regulations that took effect in 2012, which mandated that all bulbs...
available in the market need to be at least 25% more efficient than previous standards (United States Department of Energy, 2013). With growing concerns about the state of our environment and our ability to preserve it, regulations on greenhouse gas emissions, energy use, water use, trash disposal, and other practices could all become more highly regulated. Although some hotels have started to become more “green” on their own, government regulations concerning sustainability may force hotels to do so in the near future.

While this new standard for sustainable practices could become law nation-wide, states may have their own regulations as well. California is one of the best current examples of such regulations and is a leader in innovation when it comes to the environment. For example, while many states have made efforts to reduce greenhouse gas emissions, California made it an obligation by passing Assembly Bill 32 in 2006, which amended California’s Health and Safety Code and established a goal of reducing emissions to 2000 levels by 2010, 1990 levels by 2020, and 80% below 1990 levels by 2050 (Butler, 2008). This bill, also called the Global Warming Solutions Act of 2006, requires the California Air Resources Board to take action to reduce GHG emissions through regulation and other methods (“California global warming solutions act (ab 32) p 1). This is a good example of what may become the norm nation-wide, and also gives us insight into the effect such regulations could have on businesses.

California has been a leader in other sustainable practices as well, including waste management through trash diversion. Trash diversion is the process of disposing of waste in ways that avoid landfills or incineration, such as through recycling or composting (“Zero waste”). The California Integrated Waste Management Act has been in place since 1989, and has since enforced regulation through the California Department of Resources Recycling and
Recovery, which has overseen the diversion of 50% of California’s solid waste since 2000 (“Local government central enforcing”). San Francisco, however, has gone even further by creating a goal of zero waste, or 100% diversion, by 2020. However, even in 2010, the city had exceeded its goal of 75% diversion. Such high levels of diversion have been aided by the use of widespread composting and recycling programs, responsible disposal of hazardous items such as batteries or pesticides, and reuse programs that encourage reuse of solid waste from sources such as construction or demolition (“Zero waste”).

**Cost**

Cost has been one of the largest concerns for many businesses when it comes to improving how sustainably they conduct business. If the methods used to become more sustainable are costly, optional, and give little advantage to the business, the investment is much less appealing. However, sustainability and its implementation have become much more cost effective because of the culmination of many developments and advancements that have been made through time. “Just as Toyota’s sale of 1 million hybrids has brought down the cost of the technology and improved it greatly, so have other steps, such as GE’s advanced technology with compact fluorescent lights (CFLs)” (Butler, p 4). As sustainable technology has become more available and efficient, lower costs have made the use of many energy efficient appliances much more attractive for businesses. This is especially true because of the money they can save with reduced energy or utility use. In addition, other aspects are considered in the “cost” of new sustainable practices as well including customer perception of changes, and many hotels are now better equipped to adapt to these costs as well. For example, low flow faucet and shower heads
can now provide better pressure with the use of air, creating pressure comparable to less efficient faucet and shower heads (Butler, 2008).

Reduced energy and utility use has made sustainable practices much more cost effective, but this is especially true for new green buildings. The construction of green buildings to LEED standards has led to significant reductions in the waste of energy and utilities, which in turn lead to decreases in cost and generate payback on the owner’s original investment. “Whereas building a green hotel used to cost a premium, current studies show that the cost of building to LEED standards is not greater than conventional approaches, while those buildings are healthier for occupants and less expensive to operate” (Butler, p 2). According to a report issued in 2003 by the California Sustainable Building Task Force and the U.S. Green Building Council, LEED-certified buildings typically experience “lower energy, waste and water costs, lower environmental and emissions costs, and lower operational and maintenance costs, and increased productivity and health” (Butler, p 6). The report noted a drop in green construction premiums over time as well.

**Methods**

Sustainability efforts in the hotel industry was selected as the central issue to be addressed in this study, defined as purposeful and planned actions in a hotel aimed at reducing its detrimental effects on the environment. Because the prime investigator was a resident of the state, Indiana was selected as the site of interest for the study. While Indiana has not been known as a center for international travel, its capital has brought increased attention to the state on a national level. The state capital, Indianapolis, is growing significantly after the Super Bowl that
took place in 2012. The entire hotel industry has benefited from such a mega-event, as well as the growth of the city that has followed. Additionally, the majority of hotel properties in the downtown Indianapolis area are luxury hotels, which are adjacent to the Indianapolis convention center and Lucas Oil Stadium. These landmarks bring an abundant diversity of travelers, and the proximity of the hotels to these landmarks gives them access to this group of travelers. Given the fact that the hotel business consumes a lot of resources and generates a significant amount of waste daily, society’s demand for sustainability has pushed hotels to reduce their impact on the environment. This is especially true for large hotels which host the most traveled customers, who generally look for sustainable efforts in the hotels they choose to stay at. With attention being drawn to the city at a national scale, these travelers have brought increased demand for sustainable practices. Therefore, luxury hotels were chosen over other classes of hotels because they draw the most customers, charge the highest daily rates, and have the funds to react to this demand.

Various points of interest were taken into consideration to determine what qualifies as sustainability efforts in the hotel industry, including sustainable building construction, the use of efficient technologies to reduce resource use, and the implementation of programs that target increased recycling or trash diversion. These topics encompass the sustainable efforts that hotels most commonly make, and allow categorization of efforts made by individual hotels. Implementation of these factors was researched at a national level, providing a standard for comparison that could be used to evaluate sustainable efforts in place in Indiana hotels. To gather information on the state of sustainability of Indianapolis’s luxury hotels, interviews were conducted at multiple sites in the city.
For this study, we sought participants that were identified as luxury hotel employees in Indianapolis that held management or other relevant positions involved in making managerial decisions related to sustainability practices within the hotel. A main reason of selecting participating individuals was due to their direct involvement and knowledge of sustainable action within their respective hotel property. Although this group of participants differs from the general population, the sample group was important in revealing first-hand information about current developments in sustainability at their hotel property. While individuals in the general population may want to address this issue, our sample group represented individuals who have direct involvement in the implementation of sustainability in the hotel industry in Indiana, and thus can provide the most relevant information about the successes and failures they have experienced within the state.

Interviewing was selected as the research method for this study because the defined participant group has relevant first-hand experience dealing with the current state of sustainability in the hotel industry in Indiana and how it has changed in recent years. These participants will be able to provide information about the level of effort that hotels in Indiana have put towards adopting sustainable practices, the barriers to sustainability, if any, that exist in Indiana, and their personal experiences and opinions concerning the real-world implementation of sustainability in the state's hotel industry. Additionally, using semi-structured interview with opened questions will enable participants to provide qualitative information that can yield more insights on the sustainability issues related to hotel operation.

The materials used for the study included a prepared list of ten questions to be asked during the interview as well as a yes/no checklist to be filled out by each participant. The ten
questions were prepared so that they would target the participant’s experiences with sustainability in Indiana and their hotel’s involvement in various sustainable practices that are in use in the hotel industry nation-wide. The checklist participants filled out inquired about their hotel’s implementation of specific energy efficient appliances and sustainable programs in the hotel room, such as energy efficient lighting, low-flow faucets, showers, and toilets, lighting and HVAC occupancy sensors, recycling bins, or linen reuse programs. Upon completion, the hour-long, semi-structured interviews were professionally transcribed. The information gathered was then analyzed to compare the participants’ experiences in hotels in Indiana to the standard that has been set nation-wide.

**Analysis**

Three different properties participated in the interview process, and will be referred to as properties A, B, and C. Each property has had separate and different experiences with the implementation of sustainability within their hotel. The interviews helped shed light on the different factors that control the kinds of sustainable actions made in hotels in Indiana, as well as nation-wide. The three main areas that were discussed with the three properties concerning their implementation of sustainability included the hotels’ structure itself, the hotels’ recycling practices, and the hotels’ use of resources.
Building

All three properties interviewed were relatively dated, with the oldest being around 100 years old, the second oldest at 37 years old, and the newest at a modest 17 years old. Age has been one of the obstacles confronting the implementation of sustainability in all three hotels. This is true because of the cost and difficulty of retrofitting, a process which takes place over time. It is difficult to compare older hotels such as these to new builds, which have the latest technology and building materials available and are also able to plan sustainable aspects of construction in advance, making implementation much simpler. Many beneficial changes have been made over time in regards to newer efficient technologies, which consume much less resources and save hotels money. More efficient models of lighting, low-flow faucets, sinks, and toilets, and more efficient HVAC systems, among other technologies, have replaced older models. These kinds of improvements in technology have become more mandatory within the industry because of the reduction in cost associated with them, and some even come with other advantages, such as rebates. Even with the advances made with technology and the fact that hotels are more capable than ever to become more environmentally friendly, a hotel operating in a property built before these advancements will have a significantly harder time adapting to them and incorporating them.

Notably, none of the three properties interviewed were LEED certified. This is certainly because of the age of the facilities and the difficulty of retrofitting. New builds are able to fulfill LEED certification requirements much more easily because the requirements can be planned for and implemented during construction. It is much more difficult to alter an existing system to meet requirements, and many properties more than a decade old may encounter many barriers in
trying to do so. Even if drastic alterations are possible, the costs involved may be prohibitive. For these reasons, most LEED certified buildings come with new construction.

Recycling

As shown by California’s exemplary trash diversion efforts, recycling can be a good indicator of the effort being consciously put towards sustainability. However, recycling practices are commonly less thorough in Indiana, meaning that fewer outlets are available for recyclable goods and recycling itself can be something that is overlooked. Each of the properties interviewed had different experiences with recycling overall.

The interviewee at Property A, a renovated 101 year-old property, explained that Indiana is behind in the "green" movement, especially concerning recycling and trash diversion efforts. Other states like California have made great strides in their trash diversion efforts, and have pushed involvement by setting standards and goals such as 100% trash diversion within a certain time frame. Indiana, in contrast, does not have such optimistic standards, and businesses are much less motivated to find ways to divert trash because of this. Costs associated with recycling have been a barrier to recycling efforts for many businesses, and hotels are not excluded from this.

Shredding companies have helped this somewhat, and Property A has experienced mixed results with implementation of shredding within office settings. The availability of shredders in the office helped encourage recycling, but employee involvement has been another barrier to such recycling efforts. The hotel had started the shredding program as an attempt to reduce trash output compared to former trash compacter use. However, without enough employee
involvement, this reduction was unsuccessful. The difficulty of changing workplace habits played a large role in this. One factor involved in inspiring employees to be involved in sustainable efforts is the job descriptions of positions that employees hold. For many employees, the extra effort involved in sustainable practices is not worth it if they do not perceive the action to be part of their job. Because of this, job descriptions have to be updated at times to include tasks such as sorting trash to separate recyclables. Other changes come with the addition of these tasks to jobs, such as the use of gloves and other protective equipment.

The use of iPads and increased technology use in general has also helped decrease the use of paper, as it is easier for employees and guests to access electronic copies of documents that traditionally have been printed on paper. The availability of news on cell phones has created significant savings through the prevention of paper waste. Other efficient uses of technology have benefited the hotel as well, including express check out and the ability to mail receipts to customers.

At Property B, a 37 year old hotel, there were initially not very many recycling efforts within the hotel. Eventually the hotel formed a partnership with Indy Recycle Fiber, a company that could recycle for them but also that gave them green recycling toters as well as smaller individual boxes for offices. This partnership inspired the creation of a recycling program, which included the use of the recycling containers provided to them, as well as the use of signage around the hotel to inform employees and get them involved. Awareness and getting involvement has been a persistent obstacle, and "hammering in the idea" for employees has remained a central issue in the implementation of recycling programs within the hotel. Cost has been a concern as
well, and bringing recycling into the hotel required looking at budgets each month to ensure that
recycling could fit into the business’s expenses.

Today, the hotel takes advantage of “single stream” recycling through a company called
Ray’s, allowing different kinds of recyclables to be collected into one container instead of
multiple. This saves space as well as effort, making it easier for customers and employees to
participate. Similar recycling facilities have provided Property B with a large toter for plastic and
glass, a cardboard compacter, and other materials and supplies. These materials helped keep
initial costs low, leaving only a monthly pick-up cost. This cost still had to be approved,
budgeted, and monitored, however.

Property B has taken their trash diversion efforts past simply recycling, however. The
property has taken advantage of other ways of putting what would have been trash to good use.
One example of this is the hotel’s partnership with the Salvation Army. Through this partnership,
the hotel is able to donate unused or partially used lotion and shampoo bottles from guest rooms,
which are then recycled by the Salvation Army. Most shelters in Indianapolis are desperate for
such things, so when guests partially use them, the Salvation Army will pick them up for free as
long as the hotel gathers them. There are businesses that try to reuse soap and shampoo in this
way in other parts of the U.S., but this option is somewhat expensive for hotels located in
Indianapolis and the massive effect is not apparent like other regions in the nation. This is
because the businesses that do this are currently not prevalent in the Midwest. The businesses
process partially used toiletries so that they can be used again, and then sends them to places
where such supplies are less common, like third-world countries. Bar soap, for example, is
steamed and sanitized, then sent to third world countries where the use of soap helps eradicate
disease. Some hotels lie in a range where these companies will process such toiletries for free, but this process is not as available here, especially in east coast or Midwest. Because of the distance, the main cost for hotels in Indianapolis is in sending these supplies to be processed, which can add up quickly because of transportation costs.

Property B has also implemented the use of a rooftop planting area and greenhouse, which has enabled other forms of reuse. The greenhouse itself cost $250 in lumber cost, as well as the cost of maintenance over time. The hotel’s goal was to grow enough food that could be used by the hotel’s restaurants to offset this cost, while creating an outlet for “green” initiatives, which has been successful. A portion of leftover food and coffee grounds from the hotel’s restaurants is composted to help reduce food waste while providing a nutrient-rich food source for plants. Runoff water is collected and used to water plants. Containers used in the delivery of food, such as the Styrofoam containers that fish are delivered in, have been reused as portable planters. The greenhouse has faced some issues as well, nevertheless. Indiana’s weather, including strong winds, has presented itself as an obstacle to the rooftop garden. Different materials have been experimented with, such as plexiglass, but a more permanent solution is necessary. Forthcoming construction is a concern as well, and some planters have been moved to other roof areas temporarily. Increasing the implementation of composting, reuse, and recycling in all of the hotel’s restaurants has been difficult, especially because of a lack of space. Composting technology, including machines currently available for commercial kitchen use, could help with this in the future, but the use of these is currently cost prohibitive. Other uses for roof space have been considered as well, including beekeeping, which would also provide honey to be used in the hotel’s restaurants.
The interviewee at property C explained that the hotel’s recycling practices depend on a balance between customer demand and cost. The hotel’s main focus concerning recycling is making it available to customers that are interested in recycling or sustainability, so that they will be able to continue living the way they please while visiting the property. The interviewee compared this to fitness rooms commonly present in hotels, which allow guests who are interested in fitness to continue pursuing a fit lifestyle while staying at the hotel of their choice. If such features are not available, then customers are more likely to choose another hotel. Thus, recycling and other sustainable features available at hotels also have to do with staying competitive, since sustainability has been viewed as a way to attract customers who are conscious about this issue and want to practice it even when they are away from home. This is also a positive social responsibility image for hotels want to present in the public.

**Resource Use**

The information gathered from the interviews conducted at these three properties made it clear that cost control was a key driver behind the implementation of resource-efficient technologies. As improvements have been made in the efficient production of sustainable technology available today, the cost of acquiring the technology itself has dropped over time (Butler, p 4). Because of this lower initial cost, along with the cost reduction that comes with the significant reduction of resource and utility use, most hotels today implement as many of these technologies as possible into their buildings and guest rooms. However, similar to the difficulty
that older hotels have achieving LEED standards, the actual level of implementation depends on each hotel’s capability to install or retrofit newer technologies into older facilities. Because of this, each property’s individual efforts to reduce resource use is slightly different. Each property gave some information about the reduction of resource use during the interview process, and interviewees also filled out a checklist indicating their use of specific reduction measures. These include the use of low-flow appliances, occupancy sensors or other methods of turning off lights and HVAC when not in use, energy-efficient lighting and HVAC, as well as the use of linen reuse programs which enable guests to reuse towels to reduce the amount of laundering necessary each day.

In the interview at property A, the interviewee explained that many different factors determine how much effort a hotel puts into its sustainable efforts. Laws that set standards for sustainable efforts, such as a limit on light bulb wattage or water flow limitations on faucets, toilets, and showers, are the most effective tool in increasing participation in sustainability. As more efficient forms of these everyday technologies become available, the use of these newer forms should be implemented because at the end of the day less resources will used where they are unnecessary, which leads to conservation of our resources and less waste overall. The interviewee at property A shared their opinion that, “businesses should be required to reduce their impact, especially with the availability of technology making it possible.” Cost, too, is a considerable inspiration for the use of resource-efficient technology, which provides savings that can add up quickly. Awareness and marketing about a property’s sustainable action are important as well within hotels, as they promote employee and customer participation in a hotel’s programs which can be essential in successful implementation of sustainability within a hotel. The
checklist filled out at this property revealed that the hotel has implemented low-flow toilets, faucets, and showers; HVAC that shuts off when not in use; energy efficient lighting in most places throughout the hotel; and a linen reuse program. Lights that turn off automatically were not yet available at this property, but have been implemented in some new builds of the same brand.

Many changes have been made at Property B over time, especially in regards to newer efficient technologies, which consume much less resources and save the hotel money. More efficient models of lighting, low-flow faucets, sinks, and toilets, and more efficient HVAC systems, among other technologies, have replaced older models. The two employees interviewed at the property commented that these kinds of improvements in technology have become more mandatory within the industry because of the reduction in cost associated with them, and some even come with other advantages, such as rebates. The checklist filled out at this property indicated that the hotel has implemented the use of low-flow toilets, faucets, and showers; HVAC that turns off when not in use as well as lighting in certain areas; the use of energy-efficient lighting and HVAC; as well as a linen reuse program for guests.

The interview at Property C revealed that as well as cost, company standards are also a large driver behind the use of sustainable technology in hotels. The company has a “keep it green” program, in which the hotel goes through a certification process to ensure that the hotel is using certain efficient items, such as filters, automatic timers on lights, etc. Monthly reports are also made about what will be done to save money, and many items are sustainability-based. Listing the annual energy spend and what has been done to reduce energy use is a requirement of the company, which makes efforts to achieve the company’s set standards more important at each
location. This is also done to be able to show customers what sustainable efforts have been made
company-wide, which helps achieve brand loyalty. According to the interview at this property,
the green movement has a double meaning—it looks great, but also saves money. Saving money
is the main drive behind involvement from a business perspective, meaning that sustainability is
worth the effort because it’s a cost savings. Unlike Property A, Property C revealed an opposite
opinion when asked if hotels should have to reduce their impact. The interviewee at this hotel
explained that if you can adhere to what your customer wants AND save money it will get done,
but it should not be required. It was further explained that businesses should not be required
to do anything, and that the customers should make the decision. The customer can choose not to
stay somewhere if the business is not doing their fair share. This is how the market runs itself—
you respond to what the customer wants. Still, the increased focus on sustainability in society has
changed the way the hotel conducts business. For example, ordering products has shifted towards
items that are more sustainable because of this increased demand, including light bulbs and
filters. The checklist from Property C showed that the hotel has implemented the use of low-flow
toilets, faucets, and showers; lights and HVAC that turn off automatically, energy-efficient
lighting and HVAC, and a linen reuse program.

Comparing the programs implemented by three properties, it is common to see that the
same or similar types are implemented. It is understandable that these programs have direct
relationship with daily operation and interaction with customers. However, the width and depth of
implementation are different. The common presence of these programs also indicates that the
implementation has become the standard expectation in the industry.
Conclusions

Like many other kinds of businesses, sustainability is usually not a top priority in the hotel industry. Everyday operations in a hotel focus on many other important factors in the day-to-day processes of the organization. The implementation of meaningful changes in the operation to make it more sustainable or environmentally-friendly can take a lot of planning and resources, and without bringing many significant benefits to the business itself, these changes are easily put on the back burner. A hotel is divided into multiple functioning parts, including the front office, housekeeping, engineering, sales, accounting, catering, etc. Each of these is managed within their own department, and from there all departments are managed to ensure that each unit and the business as a whole runs smoothly. Each department encounters different concerns on a daily basis, and these concerns make up the core of what is important in the daily operations of a hotel. Overall, the business is concerned about whether customers are coming in, having a positive experience, and receiving good service, and whether or not the hotel is profitable and has a positive reputation. Where sustainability fits into this equation depends on multiple factors, but in general sustainability has been seen as an increasingly important concern within hotels simply because the matter is becoming more important to the general public, domestically and internationally.

From a business standpoint, laws, customer demand, company policy, and cost seem to be the most influential drivers behind meaningful changes in the amount of sustainable actions that hotels take. However, the actual level of sustainability present at each hotel, in each city, each state, and even each region will be different. There are too many internal and external variables that one has to consider. Location, culture, customer base, and the way each individual
business runs can all affect the perceived importance of the effort necessary to conduct business more sustainably. For example, California has obviously incorporated sustainability concerns into its local government and culture, which has shown by the state's increasing efforts to reduce its effect on the environment. This variance in concern about the importance of the "green" movement can be seen here in Indiana, as well as anywhere else. For a number of reasons, Indiana's hotel industry does not stick out as particularly sustainable. It is not a location that is setting trends, but it has started to pick up on some of the more important changes that have become the "norm" in the industry, especially those that have benefits for the hotel as well. Most hotels in the state have implemented energy efficient technologies because they simply save money. Simple renovations such as updating old lighting to CFLs or implementing water-efficient faucet and shower heads are the most common changes because they are relatively simple to implement and require little maintenance. More complex and meaningful changes, such as implementing recycling or trash diversion programs or achieving LEED certification, are less common especially in states where conducting business in an environmentally-friendly manner is not a major concern.

One of the more important factors that affects the level of sustainability at a specific property is the building itself that the business takes place in. In general, older builds have much more trouble becoming sustainable in the modern world. New builds now have the opportunity to incorporate sustainable factors into the plans for the facility, thus making it easier to open a highly sustainable hotel or one that is LEED certified. This definitely gives Indiana more hope for a sustainable future in its hotel industry, especially with Indianapolis continuing to grow and attracting more tourism. As new major properties are being built, we will likely see more
properties that are LEED certified or that are much more sustainable in general. Since LEED certified and otherwise more environmentally-friendly properties have become more prevalent nationwide, it has become a more efficient process overall. Properties built to be more energy efficient as a whole will likely become much more common in Indiana as this trend continues.

Laws and company policy must be followed at any property, so these two things also shape the ways that a hotel is sustainable. Because different kinds of technologies have become more efficient, most states have developed laws restricting the use of less efficient and unnecessarily wasteful, older technologies. Company standards likewise encourage the use of efficient technology and appliances, since they save money. From a management perspective, these guidelines must be followed. Outside of these rules, however, management is free to put as much effort into sustainability as they please.

Besides these factors, cost is another leading concern that affects a hotel property's sustainability. If it costs too much to implement a new form of sustainability technology, a new program, new renovations, etc, then it is less likely that these changes will be pursued by hotels. However, changes that are cost effective, or that even provide savings, are much more likely to be accomplished. Implementing new forms of sustainable action, with little to no effect on cost or profit fall in between, such as volunteering in the local community, and these kinds of supplemental action take place from property to property depending on the management and individuals that work there.

Customer demand clearly shapes hotel's level of sustainability as well. As shared in the interview with property C, hotels often try to accommodate the kinds of lifestyles that guests prefer to have, whether that includes an exercise routine or the ability to recycle. Different kinds
of guests look for different levels of sustainability at properties that they stay at. Everyday tourists may simply prefer to be able to recycle, but business travelers and groups have different preferences, especially since these groups tend to stay at properties for longer periods of time and put more thought into the properties they choose to stay with. These guests often look for more in-depth factors concerning sustainability, and might avoid properties that are less concerned with sustainability. These different sources of demand for environmentally friendly hotels have started to be reflected in hotels in Indiana, especially in smaller ways like the presence of recycling programs. However, this demand will help Indiana continue to shift towards conducting business with less impact on the environment.

Property C is a good example of a property that approaches sustainability from a business standpoint. The property, following certain standards set by the company, has implemented things like energy and utility efficient technologies and programs like linen reuse because of their cost savings through reductions in energy and utility use. In most cases, hotels in Indiana probably approach sustainability from this standpoint. As brands of hotels set certain standards concerning energy savings, especially in relation to concurrent cost savings, the individual properties within each brand follow these standards. In addition, these properties may find more individually-suited sustainable actions, such as those that appeal to their specific customer base or those that come with additional cost savings. At property C, the hotel has also incorporated some other forms of sustainable progress to appease its modern customer base, such as those who prefer to recycle when possible. Beyond this, in states like Indiana where sustainability is not seen as a major priority, unlike other states like California, many hotels only put as much time and effort into sustainability as the benefits they expect in return.
Property B is a good example of a hotel in Indiana where sustainability is not simply seen from a business standpoint. Sustainability is often an afterthought in conventional hotel operations and because of this, it can come down to individuals in the business that are motivated to make an impact, or companies that make a point of being "green." As stated before, special concerns about sustainability and the "green" movement from a company or individual perspective can definitely lead to more significant sustainable action. Property B shows us what can happen when company-wide efforts towards sustainability and individuals' efforts within a hotel combine. The company that this property belongs to has made a point of being "green" and involving it's hotels in sustainability, especially through individual teams at each property that focus on sustainability and the improvements that can be made at the property level. These teams include members that represent the various departments within each property, meaning that each department is able to represent their own individual needs and ideas for improvement. Beyond this functional manner of planning, property B has proved its commitment to sustainability through the variety of different kinds of sustainable action its team members have made. Beyond the more traditional use of energy efficient technologies, the property has gone out of its way to find unique ways to reduce its impact as well as finding ways to help the local community.

Property B shows us that people and businesses in Indiana are aware at least of the different kinds of ways that they can go above and beyond to become more eco-friendly. Hotels like this one help set a higher standard for the other hotels in the industry. By setting an example, properties like property B set themselves apart from the competition and also help spread awareness. With time, customer preference for hotels that are environmentally friendly could help drive other properties to become as involved in being sustainable as this property. Although
Indiana is still far behind some other states in the race to save the environment. The natural effects of supply and demand may help shift the state towards a more eco-friendly place.

Although property A has made a lot of sustainable progress, the age of the property has definitely made it harder to become a “green” property. Retrofitting is more difficult than new builds, and although the property has almost certainly seen some renovations in its century of existence, it is still impressive that this property has managed to include sustainability in the changes that have been made in more recent years. The hotel has made changes in its use of more energy-efficient and utility-efficient appliances, recycling programs, and the prevention of waste through office recycling programs and the use of technology to reduce paper use. It is clear that although this hotel is somewhat aged, which is an obstacle in the development and implementation of sustainability within the hotel, the property has put forth an effort to stay with the times and prevent unnecessary waste where possible. Operating a hotel in an older property also makes it more difficult to achieve higher forms of recognition, such as becoming LEED certified.

All in all, it is clear that a lot of different factors contribute to the overall effectiveness of the effort put into sustainability in Indiana’s hotels. In general, the state and its capitol have shown a lot of growth, and hotels have started to adapt to customer demand for greener hotels. As more attention is drawn to the state and as new hotels are built, we should see this shift towards increasingly sustainable hotel properties continue. Hopefully, as it becomes more common place to build new and highly sustainable businesses, it will become easier for older properties to retrofit and upgrade as well. For now, it comes down to the individual properties and their ability to incorporate sustainability into their culture while still thriving from a business
standpoint. At the moment it seems that hotels in Indiana have become sustainable as it is either convenient or mandated, but it seems that this may shift as more progress is made in the “green” movement nationwide.
**Works Cited**


