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   With sustainable luxury hotels only recently becoming a trend in the

hospitality field, many hospitality professionals lack a clear understanding of

how sustainability and luxury might fit together in the built-environment and

how those decisions affect guest satisfaction. The Proximity Hotel is located

in Greensboro, NC and is the first LEED Platinum hotel and restaurant within

the United States. This hotel is the context for this case study. While the

hotel has reduced its water and energy use drastically compared to other

hotels of its size, it boasts that guests will not sacrifice a great luxury

experience (Marano, 2008; Proximity Hotel, 2009).

   In hotels, style and comfort are two key factors that contribute to a

luxury experience (Talbott, 2004); yet, sustainable design is often assumed

to be unattractive in appearance and uncomfortable (McLennan, 2004;

NEWH: The Hospitality Industry Network, 2007). The design, style, and

comfort of a hotels built-environment affect guest selection of their hotel,

their satisfaction, and their likelihood to revisit or recommend a hotel (Heide

& GrØnhaug, 2009; Kasim, 2004; Ramsaran-Fowdar, 2007; Skogland &

Siguaw, 2004).

   Values and attributes of luxury can be viewed as conflicting with the

values and attributes of sustainable design; therefore, the primary focus of

this study was to assess guest satisfaction with sustainable or luxury features

of their rooms as well as their overall perceptions of the hotel. A guest survey was developed and 241 responses were collected and considered usable. Variables studied include sustainable and comfort features within the guestrooms and general guest satisfaction indicators related to luxury, comfort, style, experience, and overall satisfaction with the hotel.

It is widely acknowledged that sustainable development includes many factors and principles. For purposes of this study the focus was limited primarily to the environmental aspects of sustainability. Guests desire to support environmentally conscious hotels, which was evident from the finding that almost half of the survey respondents indicated that their decision to stay at the hotel was influenced by the hotel's sustainable practices. Female guests consistently noted higher satisfaction levels with the room characteristics and the general satisfaction variables. Improved air quality, in-room recycling options, and abundant natural lighting were found to be sustainable features that contributed to a luxury experience, rather than detracting from one. Almost all of those surveyed said they would consider another stay at the hotel if they were visiting the same geographic area again.

A satisfactory guest experience needs to be the first and most important consideration for hotels; however, it is also important for hotels to consider sustainable development and operational practices to reduce their ecological footprint. While sustainable design is perceived by some to be aesthetically unattractive and uncomfortable (McLennan, 2004; NEWH: The Hospitality Industry Network, 2007), guests indicated high satisfaction with the room

and hotel design, room comfort, and with the overall luxury. The intersection of luxury and sustainability examined in this study indicates that, at least for the Proximity Hotel, that luxury and sustainable design within the context of a hotel environment do not conflict.

THE PROXIMITY HOTEL: A CASE STUDY ON GUEST

SATISFACTION OF SUSTAINABLE

LUXURY ENVIRONMENTS

by

Emily J. Becker

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_____
Committee Chair

APPROVAL PAGE

This thesis has been approved by the following committee of the Faculty of The Graduate School at The University of North Carolina at Greensboro.

Committee Chair_____

Committee Members _____

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Date of Acceptance by Committee

_____
Date of Final Oral Examination

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CHAPTER I

INTRODUCTION

The hospitality and tourism industry arose through the growth of capitalism, freedom and tentative relations to geographic areas, which increased the need for travel accommodations (Sandoval-Strausz, 2007). Although hotels originated to meet the needs that were born from increased mobility world-wide, the luxury hotel industry has progressed as an outlet for travelers to dreams of and fantasize about other lifestyles (Curtis, 2001). It is for this reason that the luxury hotel industry places a large focus on the guest experience along with their satisfaction and guests have high expectations. Satisfying luxury hotel consumers can be a challenge because a luxury experience varies for each individual and is highly subjective (Danziger, 2005). Considering that luxury is highly subjective and deeply related to each person's hopes, dreams, and fantasies about lifestyles, it is difficult to establish how a luxury hotel experience is formed. However, Barbara Talbott (2004), Executive Vice President of Marketing for the Four Seasons Hotels and Resorts, suggests that there are four key factors that contribute to a luxury hotel experience: style, comfort, service, and pampering.

Hoteliers understand that guest satisfaction determines the livelihood of their business; therefore, it is a major criteria for success. Satisfaction is defined as "an overall evaluation of one's experience with a service or product" (Smith & Houston, 1983). Research indicates that satisfaction is produced by meeting or exceeding a consumers pre-conceived expectations (Lakshmi-Raton & Iyer, 1988; Schank & Abelson, 1977; Smith & Houston, 1983; Smith & Houston, 1985). Recently emerging attributes that guests are beginning to expect in hotels are sustainable practices and research shows that guests consider it a hotel's responsibility to implement and embrace sustainable development (International Hotel Environment Initiative, 2002).

The earth's ecological framework is one of the core areas of importance to sustainable development (McDonough & Braungart, 2002), since current living patterns are causing extreme impacts on the environment (Chan & Lam, 2002; Daily & Elhrich, 1992). One of the outcomes of this movement was the establishment in 1983 of the Brundtland Commission by the United Nations to develop a definition of sustainability. The definition they produced, one commonly cited by scholars, is that sustainability is "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Economic Development, 1987, p.8). As one industry that has a stake in sustainable development, the hotel field is increasingly embracing this concept by seeking to implement sustainable practices to reduce their ecological footprint.

Hotels have two major stages of environmental impact: (1) during construction and building and (2) during operation, maintenance, and growth (Kasim, 2004). It is widely acknowledged that there are many aspects, attributes, and principles of sustainability and sustainable tourism development; however, this study focuses mainly on environmental building attributes and how those attributes affect user satisfaction. Therefore, for this study, the term "sustainable" mainly refers to development in the building and construction industry related to environmental efforts. Sustainable design is one technique through which the broad definition of sustainability is applied and is often used during the building and construction phase. Sustainable design originated as a way for design to lessen its footprint within our ecological framework, typically through the conservation of resources such as energy, materials, and water (McLennan, 2004). At the turn of the 21st century the United States Green Building Council's (USGBC's) Leadership in Energy and Environmental Design (LEED) standards became accepted among building professionals as a way to differentiate varying levels of sustainable building development through third party verification (McLennan, 2004, USGBC, 2007). In July 2006, only two lodging facilities in the United States had received LEED certification; however, by at the end of 2007 118 hotel locations were registered and trying to achieve LEED certification (Hasek, 2007). The USGBC noted in April of 2009 that 496 hospitality projects were registered and working on achieving LEED certification (Coleman, 2009). Recognizing the enormous

growth of sustainable building development and the LEED rating system

within recent years, the hotel industry appears to be undergoing a major

shift in values and some observers of this shift believe that the luxury

segment is leading the way (NEWH: The Hospitality Industry Network, 2007).

Some business owners are seeking to be environmentally responsible

for economic efficiency and for their own personal ethics (Tzschentke et al.,

2004). While the USGBC's LEED rating system occasionally requires a higher

original financial investment, it is also designed to save building owners

money over the life-span of the building through energy, water, and

operational savings (USGBC, 2007; Coleman, 2009). Research indicates that

some hotel managers believe that environmental initiatives in hotels would

increase economic benefits, but will decrease guest satisfaction (Penny,

2007). While hoteliers are continuing to implement sustainable practices for

ethical and financial reasons, there appears to be a conflict between guest

satisfaction of a luxury experience and the environmental efforts associated

with sustainable practices.

Kirk (1995) indicates that there is a conflict between the

environmental initiatives of sustainability and the guest satisfaction in hotels,

due to the conservation of resources, which could detract from a guest's

experience. Some attributes that are generally accepted as contributing to a

luxury hotel experience are: more space, plush or exotic materials,

sophisticated lighting that feels warm and inviting, and bathrooms with large

bathtubs and multiple showerheads (Schor, 2008). These luxury attributes

contradict those of the sustainable design movement where some of the key elements of sustainable design are: using less space when possible, materials and products that are non-exotic, recycled, natural, or are rapidly renewable, more fluorescent lighting for energy reductions, and the conservation of water (McLennan, 2004). Not only are there contradictions between sustainability and luxury design with regard to attributes, but also with perceptions of them.

In hotels, style and comfort are two key factors that contribute to a luxury experience (Talbott, 2004); yet, sustainable design is often assumed to be unattractive in appearance and uncomfortable (McLennan, 2004; NEWH: The Hospitality Industry Network, 2007). These perceptions originated in the 1960s when sustainable architecture first became a trend due to references of primitive living with little technology and very few modern comforts (McLennan, 2004; NEWH: The Hospitality Industry Network, 2007). The design, style, and comfort of a hotels built-environment affect a guest's choice for their hotel experience, their satisfaction, and their likelihood to revisit or recommend a hotel (Heide & GrØnhaug, 2009; Kasim, 2004; Ramsaran-Fowdar, 2007; Skogland & Siguaw, 2004); therefore, aesthetics and comfort largely predict a hotel's financial success. Hotel guests place a high value on the style and comfort of interior environments; yet, with common perceptions that sustainable or green design is "ugly" and uncomfortable there appears to be some conflict in both the attributes and values (McLennan, 2004; NEWH: The Hospitality Industry Network, 2007). If

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a proper synergy between a great guest experience and a hotel's sustainable goals could be reached it could open new opportunities for business endeavors (Kasim, 2004).

Vito Lotta, a regional hospitality leader at Gensler, believes current definitions of sustainability place too much focus on sacrifice for an effective synergy to be created in hospitality environments and that a revised definition of sustainability is needed for successful implementation. His revised definition is "sustainability is about fulfilling our guests' current dreams and desires without sacrificing the future generations' dreams and desires. The objective is to achieve sustainability without making it about sacrifice" (Sheehan, 2007, p. 23). Placing the guest experience as the first priority, while following the USGBC's LEED standards provides a foundation to make this synergy possible. Many environmentalists believe that ecological concerns should be the first priority for development (Hawken, 2007); however, Lotta suggests a different order of priorities. Without fulfilling the guests desires, the luxury hotel business would not survive and therefore, it is through first fulfilling the guests desire for luxury and then carefully implementing sustainable initiatives that a synergy between the two can be created.

This new way of thinking is causing hoteliers and professionals in the building industry to rethink how they form a luxury experience. One hotel that is rethinking how a to form luxurious, yet, sustainable experience is the Proximity Hotel in Greensboro, North Carolina. The Proximity, completed in

2007, has become the first LEED Platinum certified hotel and restaurant within the United States. While the hotel has reduced its water and energy use drastically compared to other hotels of its size, it boasts that guests will not sacrifice a great experience and will have a luxurious stay (Marano, 2008; Proximity Hotel, 2009). Throughout the design process of the Proximity Hotel, the guest comfort and experience received high priority at the same time creating an innovative and unique sustainable building.

Significance

With sustainable hotels only recently becoming a trend in the hospitality field, many hospitality professionals lack a clear understanding of how sustainability and luxury might fit together in the built-environment and how those decisions will affect guest satisfaction. There has been considerable research conducted on hotels related to service quality, consumer values, guest loyalty and many other areas, but few studies have been reported on guest satisfaction of sustainable features within hotel environments. This study will assist hoteliers and their design staff to understand the relationship between sustainable design and guest satisfaction so they can make more informed decisions related to hotel development.

Research Question

Because the values and attributes of luxury can be viewed as conflicting with the values and attributes of sustainable design, an important question to answer is: Do sustainable design elements of a luxury hotel affect guest perceptions of style, comfort, and luxury? The purpose of this case study was to investigate guest satisfaction of sustainable design solutions used at the Proximity Hotel. The primary focus was on assessing guest experiences with select features of their rooms as well as their overall perceptions of the hotel. A survey of departing guests was developed to ascertain the effects of sustainable design elements on the quality of the guest experience and to explore their impact on perceptions of comfort and style, two factors of a luxury hotel experience (Talbott, 2004) that directly relate to the built-environment. Though there are many cultural, economic, and social implications of sustainable development, this study seeks only to investigate how sustainable building attributes affect guest satisfaction and perceptions of luxury.

CHAPTER II

LITERATURE REVIEW

Constructs and factors of sustainability and luxury will be defined and discussed to provide a context for this investigation. Knowledge of hotel history, trends, features, and ratings assist with positioning the case study of the Proximity Hotel. Phenomenal growth of sustainable implementation into luxury hotel environments is supported by recent literature and indicated by the present growth of LEED hotels.

Sustainability

The sustainability movement encompasses holistic thinking that combines problem solving with regards to ecology, equity and the economy (McDonough & Braungart, 2002; McLennan, 2004). Holistic thinking is important in the sustainable movement and implementation of sustainable design into building practices is one method to work towards that goal due to its focus on ecologically safer building and design practices.

Defining Sustainability and The Three E's

Key scholars in the sustainability field accept the Brundtland report's definition on sustainability, generated in 1987, as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Economic Development, 1987, p.8). The Brundtland report not only developed the most commonly accepted definition of sustainability, but provided an interwoven understanding of its causes and effects (Edwards, 2005). These causes and effects were separated into three categories, referred to as the three E's, which are: equity, ecology, and economy. McDonough & Braungart (2002) illustrate this relationship in the diagram below:
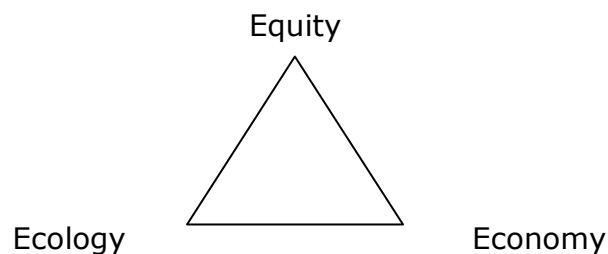
Equity

Ecology   Economy

Figure 1. Sustainable Visualization

Balance between equity, ecology, and economy place emphasis on the interconnected and dependant relationships between people, their environment, and business development and growth. The balance created by

the three E's further advances holistic thinking within the sustainability movement.

The economy category of sustainability is important because it is highly linked to jobs, financial growth, and technological advancements. Businesses must consider fiscal development and profitability to survive the economy and economic developers have the responsibility to provide shareholder value and increase wealth without harming the natural world and the people within it (McDonough & Braungart, 2002). For example, many companies seek to develop a product as cheaply as possible without considering how the development of that product and the manufacturing involved affect the environment, hence embracing capitalism. While business is important for economic growth, development has led to extreme destruction of eco-systems; therefore, accomplishing a more sustainable future takes redesigning how businesses can thrive (Hawken, 1993). A truly sustainable company seeks to find a way to provide that product and make a profit without destroying the ecosystems and while providing fair wages to their employees.

The equity category considers the fairness and treatment of the people involved with development (McDonough & Braungart, 2002). It raises questions of wages, sexism, racism, and respect for cultures (McDonough & Braungart, 2002). Social cohesion, tolerance, and compassion must be present for the fair distribution of resources such as affordable and accessible food, health-care, housing, education, and job training, hence embracing

socialism (Edwards, 2005). Humans rely so heavily on their environment for survival, which is why there are many merging concerns between the equity and ecology categories of sustainability (McDonough & Braungart, 2002). It is not fair to expose workers to hazardous toxins or destroy future generations' ability to live peacefully in the environment.

The ecology category of sustainability is the main focus of this research and, therefore, it is necessary to explore its importance. The current population is sustaining itself only by exhausting a one-time inherited reserve of natural goods, thereby reducing natural resources for future generation's survival (Daily & Elhrich, 1992). Decisions being made today about natural resource consumption affect future generations' ability to consume resources for their own needs (Edwards, 2005). Consumption of limited resources (i.e., water and oil) must be delicately balanced to protect and preserve our ecological framework.

The goal of sustainability has many factors that must be considered and to develop a more sustainable future industry development must be reexamined (McDonough & Braungart, 2002). Hawken (1993) states that:

> We have the capacity and ability to create a remarkably different economy, one that can restore ecosystems and protect the environment while bringing forth innovation, prosperity, meaningful work, and true security (p.2).

Reinventing our living patterns and how to create economic growth takes a delicate balance between economy, equity, and ecology. In essence,

sustainability is about combining the core goals of socialism, capitalism, and environmentalism to redesign our trajectory (McDonough & Braungart, 2002).

Defining Sustainable Tourism

The goal of sustainable tourism is to achieve growth in a manner that maximizes the positive impacts of tourism development while reducing negative impacts (Edgall, 2006). This is done by focusing on harmonious solutions between economic growth, socio-cultural, and the environmental aspects of development (Edgall, 2006; WTO, 2009). According to the World Wide Fund of Nature (1992) there are 10 key principles to sustainable tourism development. Edgall (2006) has summarized these principles:

1. *Using resources in a sustainable manner:* The conservation of resources – natural, social, and cultural- is crucial and makes long-term business sense.

2. *Reducing overconsumption and waste:* Reduction of overconsumption and waste avoids the costs of putting right long-term environmental damage and contributes to the quality of tourism.

3. *Maintaining diversity:* Natural, social, and cultural diversity are essential for long-term sustainable tourism and create a resilient base for the industry.

4. *Integrating tourism into planning:* Integration into a national and local strategic planning framework and the use of the environmental impacts assessments increase the long-term viability of tourism.

5. *Supporting local economies:* Tourism that supports a wide range of local economic activities and takes environmental costs and values into account both protects those economics and avoids environmental damage.

6. *Involving local communities:* The full involvement of local communities in the tourism sector not only benefits them and the environment in general but also improves the quality of the tourism experience.

7. *Consulting stakeholders and the public:* Consultation between the tourism industry and local communities, organizations, and institutions is essential if they are to work together and resolve conflicts of interest.

8. *Training staff:* Staff training that integrates sustainable tourism into work practices, along with recruitment of local personnel at all levels, improves the quality of the tourism product.

9. *Marketing tourism responsibly:* Marketing that provides tourists with full and responsible information increases respect for the natural, social and cultural environments of destination areas and enhances customer satisfaction.

10. *Undertaking research:* Ongoing research and monitoring by the industry using effective data collection and analysis tools is essential to solve problems and to bring benefits to destinations, the industry, and consumers. (p.22-23)

These principles indicate that although environmental conservation efforts are highly related to sustainable tourism, there are also many other principles that must be integrated into tourism development to make it sustainable, such as: education, economic prosperity, strategic planning processes, continued research, cultural heritage knowledge and respect, and stakeholder involvement at all levels.

One main theory related to sustainable development is the involvement and support from stakeholders (Byrd, 2007). Stakeholders are defined as "any group or individual who can affect or is affected by" tourism development (Freeman, 1984, p.46). Key stakeholders can be individuals in the local communities, business developers, tourists, or community leaders. Stakeholder participation is important in sustainable tourism development because without it a balance between equity, the environment, and the economic aspects is hard to establish (WTO, 2009). The stakeholder theory involves identifying who the key stakeholders are and encouraging their participation in the development process. It is highly acknowledged that a key stakeholder is the tourist or guest of a host area (WTO, 2009).

It is widely acknowledged that the term "green" refers solely to the environmental and ecological portion of sustainable development and cannot by itself define sustainability. However, due to the focus of this study on the environmental design aspect of sustainability the terms "sustainable" and "green" are used synonymously.

Sustainable Design

Within the greater framework of ecology, there are many methods to reduce ecological damage. Sustainable design is one of those methods and is also referred to as ecological design, green architecture, green design, eco-effective, and environmentally friendly design (Edwards, 2005). It is defined as "a design philosophy that seeks to maximize the quality of the built

environment, while minimizing or eliminating negative impact to the natural environment" (McLennan, 2004, p.4). Its original introduction into the architectural field in the 1960s held many references to primitive living with little or no modern comforts, which led many to believe that green buildings are unattractive and uncomfortable. However, this building philosophy does not have a design style, but rather can be incorporated into many styles, can be aesthetically beautiful, and can be comfortable (Gould & Hosey, 2007; McLennan, 2004). During the first decade of the 21st century the green design movement has been maturing and growing rapidly (McLennan, 2004). One indicator of this has been the increasing acceptance of the United States Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED) rating system in many business sectors.

Sustainable Building Practices Defined by the LEED Rating System

In 1993, the USGBC began forming green building standards, and in 1998 the first version of LEED, 1.0 was released (USGBC, 2007). Based on a period of consumer input and application of the standards, extensive modifications were made and LEED 2.0 was released in 2000, which was formed for new construction and major renovation projects. The system was created to define green building standards, create competition, promote green innovation, create healthier environments for humans, support building development that has less impact on the ecology, and educate U.S. builders about green technology. LEED strives to reduce environmental impacts of

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buildings since they account for consumption of over 30% of total energy, more than 60% of the total electricity used in the U.S., and billions of gallons of potable water (USGBC, 2007).

The system is divided into five point categories, Sustainable Sites (SS), Water Efficiency (WE), Energy and Atmosphere (EA), Materials and Resources (MR), and Indoor Environmental Quality (EQ), along with an optional category of Innovation in Design (ID). The current LEED-NC (New Construction and Major Renovation) version (2.2) certifies buildings according to different levels of points and has prerequisites that must be earned under most of the five categories before points can be achieved. "Certified" buildings are the lowest level of green building acknowledged by the USGBC and to achieve this level buildings must earn 26 to 32 points. The next level is "Silver" requiring 33 to 38 points, followed by "Gold" needing 39 to 51 points for certification. Finally, to achieve the highest level of certification, "Platinum", projects must earn 52 to 69.

The USGBC's LEED standards are becoming commonly accepted among designers and builders. McLennan (2004) predicts that between 2015 and 2025 the building performance of a LEED "Gold" building will become standard for all buildings and that by 2020, with advancements in technology and further refinement of LEED standards, the LEED "Platinum" buildings will become equal to living buildings.

Luxury

A shift in the expanded accessibility of luxury, also called 'New Luxury', has made luxury hard to define. One principle definition cannot be given to luxury because it is interconnected with each person's hopes and dreams, hence making it highly subjective. Therefore, it is through the discussion of luxury's four dimensions and the four indicators of a luxury hotel experience that a deeper understanding can be gained for this study.

'Old Luxury' versus 'New Luxury'

The modern term "luxury" is derived from the Latin word "luxuria", which means the excess or the extras of life and the opposite of necessity (Danziger, 2005). When consumers discuss luxury they often discuss it in fantasy terms for a sense of fulfillment (Danziger, 2005). Many scholars agree that luxury experiences are deeply tied to individuals striving to reach self-actualization and self-fulfillment through greater knowledge, appreciation of beauty, spiritual sophistication, peace, art, culture, and aesthetics (Danziger, 2005; Harrison, Newholm, & Shaw, 2005; Michman & Mazze, 2006). Luxury is interconnected with each person's hopes and dreams and consequently varies for each individual and, therefore, is highly subjective.

'Old luxury' has been defined as snobbish, class oriented, and exclusive goods and services (Danziger, 2005; Granot & Brashear, 2008); however, 'new luxury' provides a more affordable way to experience luxury

and it is what most consumers are craving. 'New Luxury' originated during

the mid-1980's to fulfill America's emotional need for escape (Danziger,

2005; Silverstein, Fiske, & Butman, 2005). Many people desire more luxury

and Danziger (2005) describes this trend as taking luxury "from class to

mass" (p.38). With this transition, luxury went from being highly exclusive to

being widely accessible. Development of this new market has further

distorted how luxury is defined.

'New Luxury' and its Four Dimensions

Though the perceptions of factors that define luxury are subjective,

efforts to describe luxury have been made. Danziger (2005) categorizes

luxury into four dimensions that place the new and old luxury ideals into

perspective. Those four dimensions are "luxury as a brand", "luxury as luxe

product features", "luxury as non-necessities", and "luxury as the power to

pursue your passions".

Gucci, Prada, Tiffany, and Rolls Royce are iconic examples of products

that fall within the "luxury as a brand" dimension. This dimension of luxury is

about individuals purchasing luxury products or services because they are

perceived by others as being luxurious. Superior products and services are

marketed as being the best in quality to develop feelings of fulfillment. Many

iconic luxury brands have worked towards creating a quality image and

emotional connection with its consumers for nearly a century. This way of

defining luxury harkens back to the 'old luxury' because of its exclusivity,

which may be the reason that only 24% of luxury consumers defined luxury in this way.

"Luxury as luxe product features", the second dimension of luxury, is defined in terms of specific features, attributes, and qualities that are generally accepted as luxury. For example, in experiential luxuries, such as hotel environments, stylish décor, attentive service, tranquil surroundings, and other amenities transform an ordinary hotel stay into an extraordinary one and are considered to be placed in the dimension of "luxury as luxe product features". This dimension is accepted by 90% of luxury consumers.

The third dimension of luxury, "luxury as nonnecessities", is also a generally accepted way of thinking. This third dimension defines luxury by each individual consumer and what is perceived by him/her to be above a basic need. This dimension of luxury is highly subjective and represents an individualistic way of perceiving luxury. Consumers who decide to purchase a new vehicle regardless of their current cars working condition is one example of this luxury dimension. This could relate to the hotel industry, because some people might consider a night at a Four or Five-Diamond hotel a luxury rather than a necessity.

"Luxury as the power to pursue your passions", the fourth dimension, is accepted by individuals as another logical way to define luxury. The majority of luxury consumers agreed that the meaning of luxury is in buying those extras in life that make it more meaningful and comfortable (Danziger, 2005). This way of experiencing luxury may be linked to the

stressful society that is prevalent. One example of this could be spa treatments and weekend trips to encourage relaxation.

Four Indicators of a Luxury Hotel Experience

Barbara Talbott (2004), Executive Vice-President, Marketing of Four Season Hotels and Resorts, presents a model to quantify a luxury hotel experience with four specific indicators: comfort, style, pampering, and service. For this study, two of Talbott's indicators, comfort and style, have been designated as the most related indicators to the built-environment. It should be noted that Talbott's four indicators of luxury are specific to the hotel field while Danziger's four dimensions of luxury provide a broader way of defining luxury products, services, and experiences. Danziger's dimensions are considered less important to this study than Talbott's because they are not directly describing a luxury hotel guest experience; however, Danziger's dimensions provide support to explain how and why individual hotel guests may experience luxury.

Hotels

Not only do current perceptions of luxury show evidence of value manifestations, but hotels do this as well. The history of hotels and its design features tracks the value changes and shifts over time. Present hotel design

reflects our prevalent culture and desire for future growth through technology. Hotel rating systems help to define luxury by using stylistic and technological design features that are accepted by our culture and related to current desires.

History of American Hotels

Human mobility arose through the rise of capitalism, freedom and tentative relations to geographic areas, which increased the need for travel accommodations notes Sandoval-Strausz (2007). Hotels were one of the largest products of this new mobility during the 18th century. The American term "hotel" was borrowed in the 1760s from the French term, which referred to a nobleman residence, large official building, or town hall. Functional rather than simply referring to a building type, the term got interpreted into representing a high quality guest house, which was above the level of taverns and small inns. The constraints colonial communities placed on travelers was due to suspicion of strangers; however, as mobility increased that mistrust decreased and travelers and their need for lodging became more common.

Hotels held visual purposes to symbolize, through architectural forms and decoration, the pursuits of expanded commerce during agrarian times notes Sandoval-Strausz (2007). Urban areas continued to change and evolve hotel design and developers pursued larger and more lavish property endeavors that today still have historic prominence. Hotels such as the

Waldorf-Astoria Hotel (opened in 1897), the Plaza Hotel in Manhattan (opened in 1893), and Chicago's La Salle Hotel (opened in 1908) are examples of these ostentatious historic luxury centers for the elite. With the development of steel-frame construction and its affordability in the 1880s, hotels like these were able to reach heights of 10 to 22 stories, further producing a visual purpose within city contexts.

Sandoval-Strausz (2007) also notes that the rise of hotels is an important part of American history because it was a

>…physical manifestation of a distinctly American vision of mobility, civil society, democracy, and ultimately, space – a vision which, if the subsequent propagation of hotels in virtually every nation and culture on earth is any indication, has shown itself to be quite compelling (p.9).

The belief that hotels serve as architectural examples of American lifestyles and values seems to be valid with the origination of hotels; however, this idea faded over time due to inexpensive and quick construction of chain hotels. Within recent decades, the popularity of boutique hotels arose again and with it an increasing interest in design advancements have brought new life to Sandoval-Strausz's statement.

Boutiques versus Chain Hotels

In 1900, E.M. Statler opened his first hotel and forever changed the hotel industry by becoming the first hotel chain owner (Sandoval-Strausz, 2007). Rather than target elite circles of guests, he chose to target the masses through economic thrift and standardization. Statler's first hotels were cheaply constructed for one year of heavy use with the intention of demolition; however, he soon dropped this concept and opened his first permanent hotel structure in 1908, the Buffalo Statler. Selecting sites away from main streets, Statler aimed for plain structures to cut costs and increase profits. Interiors began to be transformed with his construction because he placed less focus on the exterior architecture and more on the comfortable features within guest suites like private baths, telephones, full-length mirrors, clocks, reading lamps, and stationary.

As the development of Statler hotels continued, architectural knowledge on efficient hotel layouts began to be developed. Service elevators, originally introduced into hotels in 1859, were limited due to the high cost until the mainstream addition of them occurred in the 1880s. This technology made upper floors just as desirable as lower level rooms. Statler hotel elevators were grouped together to combine machinery, bathrooms were constructed back to back for the sharing of plumbing shafts, and double loaded corridors with rooms on either side were some of the key interior features that evolved due to "Statlerization", a term used by hoteliers referring to Statlers' dominance and expansion in the field. Paul Ingram

(1996) notes that in 1900 only one percent of hotel rooms were managed by chains and this number increased over the years. By 1980, over 50% of rooms were managed by hotel chains and that percentage continues to rise. The rise of chain services cut down on individual risk and uncertainty for travelers.

In 1984, Ian Schrager and his partner Steve Rubell, originally known as the creators of Studio 54, dramatically conducted a makeover of the Morgans Hotel in New York City, a rundown small sized building. The renovation of Morgans Hotel greatly influenced the birth of boutique hotels (Rutes et. al., 2001). Like very early hotels in America, boutique hotels were originally defined by their independent management and their status as fashion statements. Boutique hotels have continued their popularity into the 21st century and have caused developers to realize that innovative architecture and design are valuable marketing assets (Rutes et al., 2001). The chain trend that emitted predictable spaces is no longer popular because:

> Today's young travelers require something new and innovative. They demand sex appeal and excitement. They want surroundings that stimulate and astonish them (Rutes et al., 2001, p. 28).

According to this quote Kemmon Wilson's 'the best surprise is no surprise' philosophy once associated with the Holiday Inn is no longer a valid

marketing tool for hotels (Rutes et. al., 2001). Even chain hotels have

started creating boutique brands, like the W hotel, that explore high fashion

architecture and design. Lobbies served as a main place for social gatherings

of high society during the beginning implementation of hotels into cities. This

prominent function faded with the rise of hotel chains, but has been re-

implemented as a core property of boutique hotels through the culture of

design.

Eleanor Curtis notes (2001) that hotels have once again begun looking

to design to define themselves in a competitive market. Guests are looking

for a place to not only rest their head and work, but also to dream and

fantasize about other lifestyles. Ian Schrager, American hotel owner and

entrepreneur, stated:

> Mass-marketing and chaining took the spirit out of interior
> spaces and their designs. I wanted to give hotels something
> new. Something that was personal with a sense of humor,
> wit, reverence, spirit and each hotel with a unique identity. I
> wanted to move away from being just a place for sleep to a
> place that could be uplifting, rich and rewarding. The
> challenge was to attach visuals to these ideas (Curtis, 2001,
> p.14).

It appears guests are looking for hotel experiences with style, service,

comfort, luxury, and those that are personal, authentic and creatively

intriguing. These needs were supported by Schrager's hotels. These

demands have pushed interior designers to take on narrative roles such as

film director, theatre set director, and authors of fiction when designing these intriguing spaces.

Distinct interiors and architectural environments affect hotel guest satisfaction, willingness to revisit, and their likelihood to recommend a hotel (Heide & GrØnhaug, 2009). This concept supports the trend for hotel interiors to provide unique experiences for guests. Visual importance through architecture and design, once important with the origination of American hotels, faded through travelers' desire for standardization in the chain hotel movement. Fortunately, a shift in traveler expectations has occurred and hotels are once again becoming important iconic symbols that represent design innovation within the country.

Current Hotel Design Philosophy and Features for Luxury Hotels

First impressions of design thinking are evident in lobby spaces, which are social interaction places not only for guests but for communities (Curtis, 2001). New design trends show the lobby as a stage for a theatrical introduction into the environment. Concepts like organic gardens (as seen in the W in New York), fashion cat-walks with DJs (as seen in the Standard in Las Vegas), and city film sets (as seen in Paris and Las Vegas) have further pushed the theatrical introductions into hotel spaces.

Even with large hotels having 3,000 rooms and guests to account for, the check-in desk is beginning to be designed for a more personal appearance. Standing height bars have inspired new designs of the check-in

desk and it is now being used as an artistic expression. Seamless transfers of information must quickly be accommodated by the design feature (Curtis, 2001).

Guestrooms are one of the most important areas in a hotel, because they are the main products offered to guests (Heung, Fei, & Hu, 2006). These rooms are looked upon by guests as an outlet to get inspiration for their own homes and dream of better lifestyles (Curtis, 2001). Safety, comfort, privacy and quiet are essential in hotels. Unique design details, technology, and controllable lighting are beginning to be important to hotel guests. Office spaces within the room are being seamlessly added through alternatives to traditional desks, such as fold out or retractable surfaces that can be tucked away when time for relaxation becomes available.

Bathrooms are where guests spend 25% of their time (Curtis, 2001), which is why they are becoming more important than in years past. Deep tubs, his and her lavatories, walk-in showers, marble and chrome finishes are some of the ways hotel designers are accommodating the increasing design demands. Minute details are important to customers such as the quality and appearance of amenities (Curtis, 2001). The One Aldwhych hotel in London and other luxury hotels are slowly adding technology, such as small plasma televisions, into the bathrooms.

Art work is an important design element that is being incorporated into hotels more carefully (Curtis, 2001). Local artwork can be incorporated into guest rooms and additional spaces such as corridors, staircases, and

elevators to keep with local themes. Some hotels such as the Bellagio Hotel in Las Vegas, are creating entire gallery areas to display well known artists and satisfy their consumers.

Hotel Rating Systems

With standardization diminishing, customization becoming more prevalent, unique trends rising, and luxury perceptions varying for individuals, the need for further characterization of luxury hotels is necessary. Walker (2005) notes that within the United States there is no formal classification of hotels implemented by the government. However, two main classifications, the AAA Diamond Rating system and the Mobil Travel Guide's Star ratings, can be used by guests to differentiate service, amenities, location, pricing, and hotel features. These standards establish multiple ways to define a luxury environment and hotel experience using a five point rating scale.

The AAA Diamond classification lists lobby design features for a four diamond hotel as:

> Spacious or consistent with historical attributes; registration and front desk above average with solid wood or marble; ample seating area with conversation groupings and upscale appointments including tile, carpet or wood floors; impressive lighting fixtures; upscale framed art and art objects; abundant live plants; background music; separate check-in/-out; bellstation (Walker, 2005, p.38).

Five-Diamond hotel lobbies have all of the above along with a concierge. The guestrooms, according to the AAA Diamond requirements for a four diamond hotel, "reflect current industry standards and provide upscale appearance" (p. 38). For a Five-Diamond hotel the guest rooms are required to reflect the same standards and "provide a luxury appearance" (p.38). Further information about the AAA diamond standards can be found in Appendix B Table 1.

The Mobil Travel Guide's five star system notes that design features of four star hotels include guestrooms that are "well lit and well furnished," fitness facilities, often with at least one pool, and usually having restaurant dining available on site. Five star hotel design features include "sumptuous" lobbies, with stylish furniture, and quality linens in guest rooms often along with technological entertainment devices, Jacuzzis and/or garden tubs, and possibly heating pools. The star system associates hotels like Mandarin Oriental Hotel in Miami, FL being as a four star facility and chains like the Four Seasons in Chicago, IL and Ritz-Carlton San Francisco,CA hotels as five star establishments. More information about the Mobil Travel Guide's star ratings can be found in Appendix B Table 2.

It is imperative to understand that star ratings available on on-line travel web-sites such as Travelocity, Expedia, Orbitz, Priceline, and Hotwire are not the same as the Mobil Travel Guide's star ratings notes Customer Reports (2005). Booking sites often create their own criteria for star levels, but they typically mix in AAA, Mobil Travel Guide ratings and their own

criteria for amenities, along with customer feedback. For example, the Venetian in Las Vegas earned five stars on Orbitz, four diamonds from AAA, and three stars from the Mobil Travel Guide. Any star ratings noted within this study are on the Mobil Travel Guide scale unless otherwise indicated.

Hotels have two basic means of providing a competitive advantage: (1) high quality or (2) low price (Bojanic, 1996). The AAA Diamond-Rating and the Mobile Travel Guide's Star rating systems create hotel categories according to quality. Another classification tool commonly used to define luxury form non-luxury hotels is by pricing segments notes Walker (2005). Hotels listed between $100 to $200 a night are considered "Up Scale", with "Luxury" hotels costing between $140 to $450 a night. A list of common hotel chains and their rating categories according to price ranges can be found in Appendix B Table 3.

While both of the formal rating systems help guests to make educated decisions about their stay, the wording used to classify the hotels can be viewed as subjective. Particularly the aesthetic terms such as "sumptuous" and "well furnished" to describe features are abstract and can be interpreted many different ways. However, this subjectivity may be due to the individual interpretation that is needed to define luxury and satisfaction.

Satisfaction and Loyal Consumers

Guest Satisfaction and Expectations

For the purposes of this study satisfaction is defined as an overall evaluation of one's experience with a service or product. Satisfaction is an outcome of an experience or service meeting the consumers preconceived beliefs about that (Lakshmi-Raton & Iyer, 1988; Schank & Abelson, 1977; Smith & Houston, 1983; Smith & Houston, 1985). Schank and Abelson (1977) define those preconceived beliefs as a script, which is defined as "a predetermined, stereotyped sequence of actions that defines a well-known situation" (p. 41). Consumers have certain expectations in regard to some repetitive former experiences like staying in a hotel. Satisfaction is highly linked to a script-based evaluation process, where a consumer compares their actual experience (script) with what they perceived that experience would be like due to their past experiences and knowledge. Considerable research about the script theory has found that if the experience meets expectations, then consumers express satisfaction with the service (Lakshmi-Raton & Iyer, 1988; Schank & Abelson, 1977; Smith & Houston, 1983; Smith & Houston, 1985).

Loyalty and its Relationship to Spatial Factors and Satisfaction

Loyalty, for the purpose of this study, has been defined as a consumers willingness to repurchase a particular product or service thereby

causing repetitive same-brand-set purchasing (Chaudhuri & Holbrook, 2001; Skogland & Siguaw, 2004). Jones, D. et al. (2007) conducted a study among hotel guests in the San Francisco Bay Area to research the relationship between satisfaction and loyalty, which has had mixed results in previous studies. The study evaluated 139 usable questionnaires. Three significant indicators were used to evaluate satisfaction with hotel quality: perceived value, facilities, and timeliness. The results indicated that though satisfaction is not a guarantee of consumer loyalty, a certain level of satisfaction has to be present before a consumer will remain loyal. This is because loyalty has behavioral and attitudinal factors that create loyalty. For example, in some instances a tourist may visit a destination and have a very satisfactory experience (attitudinal factor), but due to financial constraints may not be able to physically return to that location again (behavioral factor). However, Jones, Mak, and Sim (2007) note that hotel businesses need to focus on satisfaction to maintain consumers, revenues, and encourage future growth. While the study noted that satisfaction with all three of the significant indicators of hotel quality need to be present to increase the chance of consumer loyalty, the fact that hotel facilities was one of the core attributes to hotel quality increases the support for the spatial/design focus of this case study.

Skogland and Siguaw (2004) also conducted an investigation to test the relationship between guest satisfaction and loyalty through the analysis of 364 questionnaires. Two separate three-star properties in the mid-west

served as the sites for the study. To capture the multidimensionality of brand loyalty, the survey contained items including price insensitivity, repeat patronage intentions, actual repeat purchase behavior, and the tendency to spread positive recommendations through word of mouth. Satisfaction was measured on a 5-point Likert-type scale. One of the key findings of the study was that guest satisfaction with hotel ambience increased word-of-mouth loyalty.

Hotel ambience is consistently noted as important to guest satisfaction within hotels; however, Ramsaran-Fowdar's (2007) research supports this by providing individual hotel facility attributes that contribute to this satisfaction of ambience. The study researched gaps in the SERVQUAL tool, a generic service satisfaction measure non-specific to hotels, to investigate areas that may need to be added to the SERVQUAL instrument to provide a more holistic view on guest satisfaction in the hotel industry. In-depth interviews were conducted over a period of two months with 32 tourists in Mauritius, which is off the coast of Africa in the southwest Indian Ocean. The interviews lasted from 45 minutes to an hour and all of the questions were open-ended. The findings show importance for physical design and spatial attributes that affect comfort or style perceptions of guests. Tourists placed high emphasis on the tangible environment, in particular hotel and room décor. Comfort level, modern appeal of furniture, hotel room design, appealing interior and exterior design and décor, aesthetically pleasing lobby, hotel image, quiet room sound levels, and in-room and hotel technology were some of the key

spatial factors discovered during this study that impact guest satisfaction of their hotel experience. Spatial attributes are directly related to design decisions and affect the comfort and style factors of a luxury hotel as previously discussed. Satisfaction with hotel ambience and hotel facilities has been noted to increase word of mouth loyalty and be a significant indicator of hotel quality; therefore, more research must be done on the relationship between guest satisfaction with the built-environment and sustainable architecture.

Guest Satisfaction in Green Hotels

Kassinis and Soteriou (2003) conducted surveys of hotel managers throughout Europe to investigate environmental management practices and its effects on performances, particularly through exploring its relationship to guest satisfaction and loyalty. A total of 1,238 high-end hotel managers in Austria, France, Germany, Greece, Italy, Portugal, Spain, the United Kingdom, Cyprus, Malta, and Monaco were sent questionnaires and invited to participate in the study. The study tested questions on a seven-point scale (strongly agree 1 and strongly disagree 7) about three factors: the hotels' market performance, environmental management practices, and customer satisfactions relationship to loyalty. Environmental management practices were defined by energy and water saving measures and the use of recycling practices. This study found that environmental management practices in the

hotel industry are positively related to market performance, customer satisfaction, and guest loyalty.

In a study of environmental management in hotels in Macao, China, Penny (2007) surveyed hotel managers on their perceptions of green hotel attributes, management, and importance. The questionnaire included open-ended and attitudinal questions, which were sent to 81 hotel managers and 37 responses were received and analyzed. Most respondents agreed or strongly agreed that adopting green strategies would have economic benefits (62.2%) and contribute to a better hotel brand image and competitiveness (64.9%); yet, very few (29.7%) hotels had implemented a written environmental policy. A little less than half of the hotel managers (43.2%) either disagreed or were uncertain that the environmental initiatives would increase guest satisfaction and 56.8% of the managers agreed or strongly agreed that those initiatives increase guest satisfaction.

Penny's (2007) research findings are not completely consistent with the findings of Kassinis and Soteriou's (2003) research. Kassinis and Stoeriou (2003) found a positive relationship between environmental practices and guest satisfaction and, while the majority of Penny's (2007) respondents did agree with this concept, close to half were unsure or did not believe that there was a positive relationship. More research in this area would be helpful for further conclusions to drawn. Both of these studies gathered information from hotel manager viewpoints and this study attempts to further investigate guest satisfaction in sustainable hotels from the guest perspective.

The Developing Relationship of Luxury and Sustainability in Hotels

The Conflict of Sustainability and Luxury

A large component of sustainability is focused on reducing the footprint that humans have on their environment by reducing resource consumption to the necessities (Kirk, 1995; McLennan, 2004). By contrast, luxury has historically been defined as the non-necessities that make life more comfortable (Danziger, 2005). The values of sustainable development create a perceived conflict with the values of luxury. Kirk (1995) indicates that there is a conflict between the environmental initiatives of sustainability and the guest satisfaction in hotels, due to the conservation of resources that could detract from a guest's experience. Not only are there differences in values, but also in attributes and perceptions of sustainability and luxury.

Some sustainable design attributes that are generally accepted as contributing to an ecologically safer future are: space efficiency, materials and products that are non-exotic, recycled, natural, or are rapidly renewable, more fluorescent lighting for energy reductions, and the conservation of water (McLennan, 2004). However, common attributes of a luxury hotel experience are: more space, plush or exotic materials, sophisticated lighting that feels warm and inviting, and bathrooms with large bathtubs and multiple showerheads (Schor, 2008). These luxury attributes resemble apparent contradictions of typical sustainable design attributes. Moreover, not only are

there "contradictions" between sustainability and luxury design with regard to attributes, but also with how they are perceived.

In hotels, style and comfort are two key factors that contribute to a luxury experience (Talbott, 2004); yet, sustainable design is often assumed to be unattractive in appearance and uncomfortable (McLennan, 2004; NEWH: The Hospitality Industry Network, 2007). These perceptions originated in the 1960s when sustainable architecture first became a trend with references of primitive living with little technology and very few modern comforts (McLennan, 2004; NEWH: The Hospitality Industry Network, 2007). The design, style, and comfort of a hotel's built-environment affects a guest's choice for their hotel experience, their satisfaction, and their likelihood to revisit or recommend a hotel (Heide & GrØnhaug, 2009; Kasim, 2004; Ramsaran-Fowdar, 2007; Skogland & Siguaw, 2004). As a result, aesthetics and comfort are viewed as largely predictive of a hotel's financial success. Hotel guests place a high value on the style and comfort of interior environments; yet, with common perceptions that sustainable or green design is "ugly" and uncomfortable there appears to be some conflict in both the attributes and values (McLennan, 2004; NEWH: The Hospitality Industry Network, 2007). If a proper synergy between a great guest experience and a hotel's sustainable goals could be reached it could open new opportunities for business endeavors (Kasim, 2004).

Reevaluating the Synergies of Sustainability and Luxury in Hotels

According to Heung et al. (2006), green or sustainable hotels can be defined as "hotels which adopt policy that is safe, healthy and environmentally friendly, implement green management practices, advocate green consumption, protect the ecology and use resources properly" (p.273). The hospitality field is reevaluating how to successfully combine luxury and sustainability together in a way that does not detract from a great guest experience. When combining sustainability and luxury, the guest experience is very important (Sheehan, 2007). Current definitions of sustainability place too much focus on sacrifice to be effective in hospitality environments and a revised definition is needed for successful sustainable implementation. That definition is:

> sustainability is about fulfilling our guests' current dreams and desires without sacrificing the future generations' dreams and desires. The objective is to achieve sustainability without making it about sacrifice (Sheehan, 2007, p. 23).

The USGBC's LEED standards may provide a framework for hotels to achieve a balance between sustainability and meeting guests' expectations. This is because the LEED rating system provides third-party verification of sustainable goals, but also seeks to provide more comfortable environments for building occupants (Sheehan, 2007). If hotels are to thrive, a focus on

meeting guest's dreams and desires while still reducing their ecological

footprint is needed.

Tara Mastrelli, the managing editor at Hotel Design magazine, stated
that:

> words like green hotel and eco-tourism have conjured up
> images of crunchy hippie retreats for far too long. Sustainable
> hospitality is at a tipping point, and the luxury segment is
> leading the charge for a much-needed makeover. The new
> model is all about what being green can add to the guest
> experience, not what it can take away (NEWH: The Hospitality
> Industry Network, 2007, p.14).

Mastrelli's statement indicates that previous sustainable buildings during the

1960's up until recently did not focus on comfort, but rather their ecological

impact first. McLennan (2004) supports this by noting that original

sustainable building development was unattractive and primitive in design.

Hotels with rough materials and bare necessities are not indicative of a

luxury experience. However, belief that sustainability can actually increase

guest satisfaction seems to be transforming the luxury hotel industry.

However, more research is needed to see if this type of relationship between

sustainability and luxury is possible.

Demand for Sustainable Consumption and Guest Preferences

Kasim (2004) tested tourism consumers' ethical and environmental

considerations related to their travel desires in Penang Island, Malaysia.

Approximately 450 tourists were approached to participate in interviews and,

of the responses obtained, 225 were considered useful. Results of the study concluded that hotel guests are reluctant to step outside of their comfort zone to support more sustainable consumption of services. Tourists seemed to choose their hotel based on three core areas: service quality, price, and hotel's atmosphere. These three areas are more important in hotel selection than sustainable interests; however, 69.3% of tourists cited the hotels' environmental record and 64% identified the hotels' labor rights record was important to very important in their selection of a hotel. Though sustainability may not have been the most important selection criteria, this study shows that guests still view it as important. Kasim (2004) states that the study shows that if a proper synergy between a great guest experience and a hotel's sustainable goals could be reached it could open new opportunities for business endeavors, which is similar to Mastrelli's statement. Since the Kasim study in 2004, sustainable interests have continued to grow at a rapid pace, but the balance between a great guest experience and sustainable development needs to be accomplished.

D'Souza (2004) states that green consumers are highly environmentally friendly in their purchasing of green products whenever they have the opportunity to do so. While some consumers prefer to use lodging with green practices, some research indicates that the majority of consumers are not willing to pay extra for these services (Manaktola & Jauhari, 2007). There seems to be a scale on which each individual is willing to consume

more sustainable products and services, but depending on their ethical

beliefs they may or may not be willing to pay more it.

Harrison, Newholm, and Shaw (2005) note that ethical purchasing is

very broad topic and can be oriented towards a company or a product.

Affluent societies can strive for self-actualization through both hedonistic and

ethical consumption; however, their research shows that many consumers

are compelled to consider ethics in their consumption. Harrison et al (2005)

defines seven external factors that are increasing ethical consumption and

those are:

- the globalization of markets and the weakening of national governments
- the rise of transnational corporations and brands
- the rise of campaigning pressure groups
- the social and environmental effects of technological advance
- the social shift in market power towards consumers
- the effectiveness of market campaigning
- the growth of a wider corporate responsibility movement

Through these seven factors, consumers may be trying to maximize their

political power and effectiveness. Increasingly consumers are expressing

their ethical beliefs through consumption, which is related to the construction

of their self-image just as luxury has the ability to do so.

A survey was taken at international airports in Australia, the United

States and the United Kingdom, and the results indicated that two thirds of

American

tourists interviewed nowadays consider it part of a hotel's
responsibility to actively protect and support the environment,
including local communities, and are more likely to book a
property with a responsible environmental attitude"
(International Hotel Environment Initiative, 2002, p.1).

Since guests are looking for this type of experience, the design field can

support the advancement of this growth through their design approaches.

Gustin and Weaver (1996) collected surveys at airports in Atlanta, GA

(241 respondents), Washington, DC (165 respondents), and Manassas, VA

(83 respondents) to evaluate a consumer's intention to stay in a hotel based

on the environmental practices used by that hotel. Of the 489 surveys

distributed the researchers had an 81.2% usable response rate. Not changing

towels unless requested during stays lasting over one night, automatic

lavatory faucets in the guest rooms, and low flow showerheads were the

least preferred green strategies; however, despite being the least preferred,

these strategies did not affect respondents' likeliness to stay at a hotel

implementing those strategies. It appears that some sustainable design

features may not be preferred by hotel guests but those features are not

factored into their hotel selection criteria.

In a more recent study conducted in five-star hotels in China, Heung,

Fei, and Hu (2006) found that hotel employees and guests noted that good

daylighting, fresh air and clean drinking water were the most important

qualities of a green hotel. Most of the attributes of a green hotel discussed in

this research overlap with the USGBC's LEED rating system, which includes water savings, daylighting, fresh air, recycling systems (also called waste management), and environmentally friendly material usage. The research showed that there is a need and market for green hotels; yet, consumers still need further education on what truly defines a "green hotel". Combining Gustin and Weaver's (1996) research with Heung, Fei, and Hu's (2006) findings indicates that some green features may not be preferred; however, it is important to study what sustainable design decisions may positively affect the guest satisfaction.

Tzschentke et al. (2004) found that small service business owners make environmentally responsible decisions to save money and for their own personal ethics. Perceptions about green hotels are changing and people's desire for products and services that support a more sustainable future is growing (Harrison, Newholm, & Shaw, 2005), but the guest must still remain as the most important factor for hotel growth. While guests and hoteliers consider it important that hotels implement environmentally friendly business practices, many untruthful marketing schemes have made it hard for them to understand which properties are truly green.

Greenwashing Forcing Sustainable Measuring

Currently many hotels that are adopting sustainable practices (Coleman, 2009); however, many hotels are implying through marketing schemes that they are greener than they truly are. Unfortunately, consumers

who are unaware of sustainable standards may have a hard time differentiating exactly what hotels are truly green and which ones are merely marketing themselves as such. Standards, such as the USGBC's LEED rating programs, are providing a way for consumers to differentiate green hotels from those merely marketing themselves in that light.

One of the problems that the lodging industry, along with many other industries, is trying to overcome is "greenwashing." Greenwashing was created by companies purposely portraying themselves as green and disseminating misleading information to project an environmentally friendly image (Ho, 2003). Many companies are marketing themselves as being environmentally responsible without being able to prove that this is truly the case, which makes it harder for consumers to recognize which companies are truly implementing sustainable practices (Ho, 2003). This problem is evident in hotels due to lack of standards.

Research shows that there are some inconsistencies in sustainable hotels due to the lack of clear standards (Kasim, 2004). One example of this is the Green Hotel Association (2007), which offers guidelines and ideas for general managers, chief engineers, and executive housekeepers on how to implement sustainable concepts and products into their hotel. However, to join the organization, all a hotel is required to do is pay $100. According to the website, in exchange for this fee, a hotel receives a bi-monthly Greening Newsletter, an internet listing as being involved with the organization, a "green" hotel pole to be placed outside of hotel, and flags for the front desk

(2007). While an organization used to exchange ideas, techniques, preferred products, and concepts can be beneficial to companies, organizations such as this one may be furthering greenwashing in the market by not requiring members to abide by true sustainable guidelines or standards. Green hotels are becoming more popular (Gustin & Weaver, 1996; Kasim, 2004). With growing demand for these hotels, it is unfortunate that some companies are inappropriately and successfully marketing their hotels as green with little or no effort (Heung, Fei, & Hu, 2006; Kasim, 2004).

LEED Hotels and Continuing Sustainable Goals

In recent years the lodging industry has begun to embrace the LEED building standards set by the USGBC (Coleman, 2009). These standards were originally developed for commercial buildings, but the lodging industry has recently begun incorporating it into their hotels (Hasek, 2007). A few of the first LEED certified hotels in the United States are: The Vancouver Conference Center and Hotel in Vancouver, WA, The University of Maryland's Inn and Conference Center in Aldelphi, MD, along with The Orchard Garden Hotel and The Gaia Napa Valley Hotel, which are both in San Francisco (The Associated Press, 2007).

According to De Lollis (2007), it was noted that there was a 20% increase in hotel rooms from 2006 to 2007. This increase was the largest growth in the hotel field for more than seven years. Hasek (2007) noted that in July 2006, only two lodging facilities in the United States had received

LEED certification, but at the end of 2007 118 hotel locations were registered

and trying to achieve LEED certification. As of April 2009, the USGBC has

announced that 496 hospitality projects are pursuing LEED certification and

13 have already earned certification (Coleman, 2009). Clearly there has been

enormous growth with regards to interest in LEED among the hospitality

industry within the past two years. Research of this phenomenal growth will

assist in the growth of this movement by ensuring that thoughtful design can

begin to bridge the gap between luxury and sustainability, two concepts with

different values and attributes.

Hotels have two major stages of environmental and social impact that

overlap in concepts but differ in execution: (1) during construction and

building; and (2) during operation, maintenance and growth (Kasim, 2004).

Hotels earning LEED certification are taking the initial steps involved with

sustainable operation through green design and construction of a hotel. Yet,

after the development and LEED building certification process are complete,

additional steps must be taken to maintain a sustainable philosophy. The

International Tourism Partnership (n.d.) reinforces that this type of

sustainable thinking must be incorporated into all levels of the organization.

The six areas that need to be addressed in all hotels are: (1) policy and

framework, (2) staff training and awareness, (3) environmental

management, (4) purchasing, (5) people and communities, and

(6)destination protection. Sustainable hotels must consider much more than

offering or implementing a few green qualities. They must constantly develop

strategies to address operational issues related to business growth, ethical issues, and environmental issues to achieve a balance of the economic, equitable, and ecological sustainable categories as previously discussed (McDonough & Braungart, 2002).

The Proximity Hotel

One example of a sustainable hotel is Quaintance-Weaver's Proximity Hotel in Greensboro, NC, which opened in early November 2007. It received LEED "Platinum" certification in 2008 by earning 55 of the 69 points available under the LEED New Construction version 2.2 rating system. Though the hotel uses 39% less energy and 33% less water than a typical hotel of its size, Dennis Quaintance, the CEO and CDO (Chief Design Officer) of Quaintance-Weaver, consistently states that guests will not sacrifice any comfort or luxury. Quaintance notes that the USGBC's LEED rating system is a good model to follow because it gives their sustainable practices credibility (Marano, 2008). There is a lot of greenwashing and his company did not want to be accused of contributing to that problem.

The hotel contains 147 guest rooms and maintains an average occupancy rating of 60%. It is a Four-Diamond hotel by the AAA Rating system, but the price ranges for the hotel are in the luxury category with rooms varying in price from $190 to $350. Some of the design features exceed the requirements for a Four-Diamond hotel, such as a lobby with comfortably spacious seating areas and a grand reception station. Design

inspiration for the hotel was drawn from the Proximity Mill located within Greensboro, NC and mixed with design elements of Manhattan style lofts. White concrete pressed to look like old wood, stained concrete walls, large scale modern artwork customized for each room, high ceilings, stylish furnishings, large operable windows, and sleek contemporary sliding barn doors to the bathroom are some design features that express this inspiration.

Quaintance believes that luxury and sustainability can harmoniously merge when the guest experience is the first priority. He feels strongly that sustainable design does not and should not have an aesthetic, but rather seamlessly be incorporated in the environment. Consistently, Dennis Quaintance has said that the solar panels on the top of the building are the only noticeable green feature of the hotel and that guests will not sacrifice a luxury experience (Marano, 2008). Currently, very little published research exists to support more developments like the Proximity Hotel. Guest perceptions related to satisfaction and luxury have yet to be thoroughly explored within the context of a sustainable hotel.

This study seeks to further understand guest satisfaction of a sustainably developed hotel, which exists within the larger context of its host area, Greensboro, NC. The Proximity Hotel has several ethical standards on employee treatment, implements many educational outreach programs, sought to enhance the cultural heritage of the area by focusing on the history of the Proximity Mill, and implemented other principles of sustainable development. Sustainable tourism and development involve many other

aspects outside of the environmental issues and the relationship those issues have on guests; however, those other aspects were not included within this study due to time constraints.

Summary and Purpose of Study

Because the values and attributes of luxury can be viewed as conflicting with the values and attributes of sustainable design, an important question to answer is: Do sustainable design elements of a luxury hotel affect guest perceptions of style, comfort, and luxury? The purpose of this case study was to investigate guest satisfaction of sustainable design solutions used at the Proximity Hotel. The primary focus was on assessing guest experiences with select features of their rooms as well as their overall perceptions of the hotel. A survey of departing guests was developed to ascertain the effects of sustainable design elements on the quality of the guest experience and to explore their impact on perceptions of comfort and style, two factors of a luxury hotel experience (Talbott, 2004), which directly relate to the built-environment.

With sustainable hotels only recently becoming a trend in the hospitality field, many hospitality professionals lack a clear understanding of how sustainability and luxury affect the guest experience. There has been considerable research conducted on hotels related to service quality, consumer values, guest loyalty and many other areas, but few studies have

been reported on guest satisfaction of sustainable features within hotel environments. It is important to explore sustainable principles and how they can be incorporated successfully into hotels so the footprint of hotel development and operation can be reduced. Increased knowledge about these relationships could help hoteliers and hotel designers to make more informed decisions about how to create a sustainable luxury guest experience.

CHAPTER III

METHODOLOGY

Instrument Development and Description

Sources of sustainable design manifestations within the hotel environment were identified and cross compared to design decisions related to comfort and style. A guest survey (see Appendix C) was developed based on a qualitative analysis of previous investigations of sustainable design factors related to guest preferences (Gustin & Weaver, 1996; Heung et al., 2006), and input from the owner and staff at the Proximity Hotel.

The survey instrument was developed to better understand guest satisfaction of sustainable interior guestroom attributes and their overall experience with the hotel. Ten room characteristic variables (representing indoor air quality, water features, and lighting) of the guestroom and six variables included to measure overall guest satisfaction with general features of the hotel (i.e., guest room design, aesthetics, overall luxury) were studied. These items were measured on a 5-point expectations scale with 1 representing "Far less than I expected", 3 "Met my expectations", and 5 "Far better than I expected." It is important to note for this study that a 3 is considered as satisfactory and not neutral. Previous research has demonstrated that satisfaction is linked to meeting consumer expectations

(Lakshmi-Raton & Iyer, 1988; Schank & Abelson, 1977; Smith & Houston, 1983; Smith & Houston, 1985); therefore, the term satisfaction is used in this study to explain the level to which guest expectations were met or exceeded.

Respondents also were asked to indicate if they were aware of the hotel's sustainable practices prior to their stay and, if so, if that knowledge influenced their decision to stay at the hotel. This section of the instrument was developed to determine if the Proximity Hotel's sustainable practices attracted guests with environmentally conscious preferences (D'Souza, 2004; Harrison, Newholm, & Shaw, 2005; International Hotel Environment Initiative, 2002; Manaktola & Jauhari, 2007). Guests also were asked to indicate if any sustainable practices negatively or positively affected their stay and, if they were willing to return to the hotel if their travels brought them back to the Greensboro, NC area. An open-ended question also was included to ask respondents for any other feedback they wanted to share. Several additional questions relating to sleep comfort also were added at the request of the hotel owner. Because these questions were not directly related to the purpose of the study their analysis is not included. Finally, guests were asked to indicate their room number, the date they completed the survey, the number of nights they stayed at the hotel, their age, their gender and reason (business or pleasure/leisure) for staying at the hotel.

Sample Population and Data Collection

Convenience sampling was used for this study. The survey was distributed nightly along with their guest bill under guestroom doors to all guests checking out the next day by the Proximity Hotel staff. Guests staying multiple nights and guestrooms with multiple occupants only received the received the survey once, the night before their departure. Included as part of the survey was a brief description and purpose of the study (see Appendix C). Guests were asked to voluntarily fill out the survey; no incentive was given for their participation. The survey took approximately five to ten minutes to complete. Completed surveys were asked to be returned to the front desk or left in the room to be collected by the housekeeping staff. All completed surveys, once retrieved by a Proximity Hotel staff member, were placed in one common collection location to be picked up by the researcher.

A pilot survey was distributed for four nights. During the pilot survey period, the hotel had an average 26.5 percent occupancy rate. Ninety one surveys were distributed for the pilot study; 17 surveys were collected and were analyzed with the result being no changes or revisions were necessary. The survey was then distributed for 48 consecutive nights after the analysis of the pilot survey. During this period of data collection, the hotel averaged a 42.9 percent occupancy rate. In total, including the pilot period, the survey was distributed for 51 nights. The surveys were distributed between mid-January and mid-March in 2009.

Study Variables

The ten room characteristic variables included assessments of eight sustainable design features and two comfort features. The sustainable design features were: indoor air quality, natural lighting, room lighting, hot water, shower, sink, toilet, and in-room recycling. These eight design features are related to sustainable interiors and the USGBC's LEED system, since the LEED rating system encourages those specific attributes in building development and the hotel received LEED points towards their Platinum certification for implementing those interior attributes. The two comfort features were temperature control and sound protection.

The six general guest satisfaction variables were: guest room comfort, guest room design/aesthetic, overall hotel design/aesthetic, overall hotel luxury, overall hotel experience, and overall hotel satisfaction. Three of the six general guest satisfaction variables (guest room comfort, guest room design/aesthetic, and overall hotel design/aesthetic) test luxury. Both the guest room design/aesthetic and the overall hotel design/aesthetic were used to test Talbott's (2004) luxury model, which indicates that style is a key factor to a luxury experience. Talbott's (2004) model was also used when guests were asked about the guest room comfort, since comfort is another factor of a luxury hotel experience tested within this study.

Luxury was analyzed through two dimensions: (1) by asking respondents directly about hotel luxury on a 5-point scale and (2) by asking

guests about comfort and style factors of the hotel or guest room on a 5-point scale. Another way that luxury was examined was by analyzing open-ended responses that indicated the guest had a "luxury" stay. The two dimensional tests of luxury are tested through the four of the six general guest satisfaction variables and those are: guest room comfort, guest room design/ aesthetic, overall hotel design/aesthetic and overall hotel luxury.

Overall guest satisfaction and guest experience are the last two factors tested within the six general guest satisfaction variables. These two variables represent the guest experience as a whole and their satisfaction with that experience. These variables provide a differentiation between the individual room or hotel characteristics.

The factors of a guest stay category contain three questions about sustainable practices and one open-ended query where guests can make comments or suggestions about their stay. This section of the survey was included to assess guest awareness of sustainable practices used in the hotel and to evaluate if those practices influenced their decision to stay at the hotel. It also provided an opportunity for guests to identify those sustainable practices and hotel characteristics and whether they positively or negatively affected their stay. To draw further conclusions about staying at the hotel as a "luxury experience," open-ended responses related to comfort and luxury were analyzed.

Data Coding

To enable inclusion of the maximum amount of response data, it was necessary to recode some response items. In a small percentage of cases, respondents reported multiple descriptive characteristics. These were re-coded as follows: In instances where multiple ages of guests within one room were provided, the average age was used. Where multiple ages of an adult and a child were indicated, the age of the adult was used. In cases where both male and female were identified as the respondents and reasons for stay were noted as both business and pleasure/leisure, the responses were assigned a "both" category. When multiple ratings were given for one of the 10 room characteristics or the six general guest satisfaction variables, the average of the two ranges was used.

The respondents' room numbers were used to assign their data responses to one of four room types: (1) King, (2) Double Queen, (3) King Spa, and (4) other, to building orientation (North, South East, West) and to the number of windows within each room (one window or two or more windows).

Age categories were created by breaking the sample population into three approximately equally sized groups: 18 to 37, 38 to 49, 50 and up. The number of nights stayed was grouped into three categories: one night, two nights, and three or more nights.

Open-ended responses were coded by the researcher into categories through the following steps:

1. The original list of the 10 room characteristics and six general guest satisfaction variables was used as a framework for grouping comments.

2. Comments representing spatial attributes, sustainable practices, luxury factors (comfort, style, and service), or other hotel features not included in the study's original 16 variables were used to create new categories.

3. Similar categories were then combined.

4. When several categories held similar themes, one thematic label was created and the original categories became sub-categories within that label.

5. Comments relating to multiple categories were assigned to each applicable category.

6. For each category, comments were further broken down into positive and negative groups and the frequency of the positive or negative responses was noted.

7. Comments were not coded if they were deemed as ambiguous statements or if a determination could not be made of their positive or negative meaning.

8. Categories with four or less guest responses were then excluded from the analysis if they were (A) not related to the study or (B) could not be combined with another category because the meaning of the comment would become distorted. For example, less than five guests noted that they preferred additional or different equipment in the hotels workout facility. This category could not be combined with other categories, such as "Hotel or Room Design/Architecture" or "Hotel or Room Furniture", because the meaning of the comment would be changed. This category was also not related to the study and, due to its low frequency, was excluded from the coding.

Data Analysis

Response data sets of grouped variables of age, gender, reason for stay (business or pleasure), and number of nights stayed were compared to the 10 room characteristic variables and the six general guest satisfaction variables to analyze frequencies and differences in mean expectation levels. Statistical comparisons were made using analysis of variance tests. Throughout this study, statistical significance is noted as $p<0.05$.

CHAPTER IV

RESULTS

Sample Description

Over the course of the 51 nights of data collection a total of 1,840 surveys were distributed to guests. . A total of 241 usable surveys were collected, representing a 13.1% participation rate. Of the 241 surveys, 46.1% were completed by males, 47.8% by females and 6.1% were identified as being completed by both a male and female. Of those respondents who indicated the reason for their stay (n = 121), 50% noted they were there for business and 50% noted they were there for pleasure/leisure. Guests varied in age from 18 to 86, with a mean age of 43. Approximately half of the guests were between the ages of 30 and 49 with the next largest age group being between 50 and 64. The majority of guests stayed only one night (67.4%), with the next largest group of guests staying two nights (18.9%) and the remaining guests (13.7%) indicating their stay was between three to 10 nights.

Data Findings

Analysis of the 10 room characteristics and the six general guest satisfaction variables revealed that most variables were rated as meeting or exceeding the guests' expectations. For the purposes of this analysis, a mean score is given along with a percentage breakdown of the extent to which the guest expectations were met or exceeded.

Both the 10 room characteristic variables and the six general guest satisfaction variables received an 89% or higher on the met or exceeded expectation scale and all of the variables received over a 3.5 mean score, which falls between meeting the guest expectations and being better than the guest expected (see Table 1). Examination of the findings show that over 95% of guests agreed that the overall hotel luxury met or exceeded their expectations. Almost half of respondents noted that the guestroom and overall hotel design/aesthetic were far better than they expected. The shower, temperature control, sound protection, and hot water variables received the lowest satisfaction percentage scores; however, close to 90% of respondents still marked these as meeting or exceeding their expectations. Indoor air quality, natural lighting, and in-room recycling were all marked as meeting or exceeding over 97% of guest expectations, with almost half of the guests noting that the natural lighting was far better than they expected. The six general guest satisfaction variables were given higher satisfaction scores (exceeded expectation ratings) as a group than the ten room

characteristic variables group. Data also were analyzed by computing three composite variables using the room characteristic variables and comparing them by gender, age, length of the guest stay, whether guests were aware and influenced to stay at the hotel by the sustainable practices, and by open-ended comments given by respondents.

Table 1.
Responses to Room Characteristic Variables and General Guest Satisfaction Variables by at least Two-Thirds of the Sample

		Extent Guest Expectations were Met or Exceeded			
		Total that Met or Exceeded Expectations	**Met Expectations**	**Better than I Expected**	**Far better than I Expected**
	M	**Percent**	**Percent**	**Percent**	**Percent**
Room Characteristics					
Indoor Air Quality	3.77	98.8	42.7	33.6	22.4
Temperature Control	3.54	90.4	44.6	26.2	19.6
Natural Lighting/Windows	4.15	99.6	26.1	31.1	42.3
Room Lighting	3.69	91.2	38.8	26.2	26.2
Sound Protection	3.72	90.0	33.1	30.1	26.8
In-room Recycling	3.85	97.8	38.4	31.0	28.4
Hot Water	3.56	89.1	42.7	24.7	21.8
Shower	3.74	91.6	34.3	30.5	26.8
Sink	3.70	95.8	41.8	33.1	20.9
Toilet	3.60	95.8	47.9	31.2	16.7
General Guest Satisfaction					
Guest Room Comfort	4.04	97.9	27.5	34.2	36.2
Guest Room Design/Aesthetic	4.23	97.9	18.4	33.1	46.4
Overall Hotel Design/Aesthetic	4.29	98.8	16.6	34.0	48.0
Overall Hotel Luxury	4.05	95.9	24.9	32.8	38.2
Overall Hotel Experience	4.17	98.3	20.3	36.9	41.1
Overall Hotel Satisfaction	4.17	98.8	20.4	37.9	40.4

Composite Variables of Air Quality and Temperature, Lighting, and Water

Eight of the room characteristic variables were used to form three composite variables to analyze if some similar qualities indicated high or low satisfaction patterns. An air quality and temperature variable was created by combining the indoor air quality and the temperature control variables. A lighting composite variable was formed by computing the average of the natural lighting and room lighting variables. Finally, the hot water, sink, shower, and toilet variables were combined to form a water composite variable. These composite variables did not show any significant patterns. These three cluster variables were analyzed by age, gender, room type, and reason for stay. Analysis of the age groups, reason for stay, and room type compared with these three variables did not show any significant findings.

Guest Gender

Table 2 highlights that female guests noted higher satisfaction ratings on average than men did for all of the variables. A higher mean score was found for females in both the 10 room characteristic variables and the six general guest satisfaction variables. Hot water and shower variables display the largest difference between female and male mean scores. The gender differences found were not related to their age, reason for their stay

(business or pleasure/leisure), or the sustainable practices influence on hotel

selection criteria.

Table 2.
Room Characteristic and General Guest Satisfaction Variables by Gender

	Female			Male		
	N	M	SD	N	M	SD
Room characteristics						
Indoor Air Quality	109	3.82	0.83	105	3.69	0.80
Temperature Control	108	3.60	0.93	105	3.44	1.05
Natural Lighting/Windows	109	4.23	0.82	105	4.14	0.84
Room Lighting	109	3.76	0.97	104	3.64	0.97
Sound Protection	108	3.75	1.03	104	3.74	0.97
In-room Recycling	109	3.98	0.86	98	3.74	0.88
Hot Water*	107	**3.76**	0.89	105	3.36	1.02
Shower*	109	**3.93**	0.88	103	3.56	1.06
Sink	109	3.81	0.86	103	3.62	0.85
Toilet*	109	**3.74**	0.84	104	3.50	0.82
General Guest Satisfaction						
Guest Room Comfort	108	4.13	0.82	105	4.00	0.89
Guest Room Design/Aesthetic	108	4.31	0.76	104	4.18	0.93
Overall Hotel Design/Aesthetic	109	4.36	0.73	105	4.24	0.86
Overall Hotel Luxury	109	4.17	0.85	105	3.96	0.94
Overall Hotel Experience	109	4.29	0.77	105	4.10	0.83
Overall Hotel Satisfaction*	108	**4.30**	0.73	105	4.09	0.83

Note. *Bolded means show significiant differences as defined by $p < 0.05$.

Guest Age

The three age groups reported little overall difference in the level to

which their expectations were met between the six general satisfaction

variables. Respondents age 50 or older noted higher levels of satisfaction in

the 10 room characteristics variables than those in the 18 to 37 age group;

however, neither group was significantly different than the middle age group

(38 to 49). The oldest age group rated the sound protection and toilet

variables significantly higher than those in the youngest age range. The

complete results by age group are presented in Table 1 of Appendix D.

Length of Stay

Those that stayed longer tended to have a slightly lower level of

satisfaction related to the room characteristic and general guest satisfaction

variables than those that stayed a short time; however, the level of

satisfaction was still high. There were no statistical differences found by

analyzing the variables according to the number of nights stayed. The results

by length of stay are presented in Table 2 of Appendix D.

Room Types, Building Orientation, and Natural Lighting Results

Room Type

Double Queen, King, and King Spa rooms were the most commonly

occupied room types by respondents. The King Spa rooms, which have a

larger bathtub than the Double Queen Rooms and a separate shower, noted

a higher mean difference than the Double Queen rooms for the shower

variable. Overall, the guests staying in the King Spa rooms gave higher

satisfaction scores for the six general guest satisfaction variables than guests

staying in the King and Double Queen rooms. The only exception to this was

the rating of hotel luxury, which held virtually the same mean rating between the King Spa and King rooms. The results of this analysis are in Appendix D Table 3.

Building Orientation

Room numbers were used to assign building orientation (north, south, east, west) with the majority of rooms facing west or east. Building orientation status was then used to analyze whether guest responses to temperature control were different according to the orientation of their room within the hotel, that is, to see if those guests staying on the south and west sides of the building had lower scores in temperature control, since typically those building orientations receive more heat gain. Although, guests staying in rooms facing north and west noted higher mean scores ($M = 3.95$ and 3.58, respectively) in temperature control expectations than those staying in south ($M = 3.15$) and east ($M = 3.46$) oriented rooms. Comparison of temperature control expectation ratings indicated no significant differences.

Number of Windows

Room numbers also were used to assign surveys into two groups: those from rooms with one window and those with two or more windows. Respondents that had more than two windows in their guest rooms reported significantly higher levels of satisfaction with the natural lighting variable

than those with only one window; however, both groups of respondents rated

the natural lighting in their rooms as exceeding their expectations. The

results of this analysis are in Table 3 below.

Table 3.

Natural Lighting/Windows Results Compared to Number of Windows in Guestrooms

	Natural Lighting/Window Variable		
	N	*M*	*SD*
Number of Windows in Room			
One Window	154	4.06	0.85
Two or More Windows	74	4.38	0.77

Awareness and Influence of Sustainable Practices on Stay

Over two-thirds of the respondents noted that they were aware of the

sustainable practices before their stay and of those respondents almost half

indicated that those practices influenced their decision to stay there (see

Table 4). Almost all of those surveyed said they would consider another stay

at the hotel if they were visiting the same geographic area again.

Table 4.
Sustainable Practices Awareness, Influence of Stay, and Return Rates

	N	Yes Percentage	No Percentage
Awareness of Sustainable Practices Prior to Stay	238	78.8	25.3
Influence of Awareness on Decision to Stay	186*	50	32.3
Willingness to Return	228	96.5	3.5

Note. *17.74% of respondents noted that the influence of awareness on their decision to stay question was not applicable or that their stay was booked by another party.

Guests that knew of the sustainable practices at the hotel before their stay and noted that those practices influenced their decision to stay there reported higher levels of satisfaction than those that knew about the sustainable practices, but were not influenced to stay there because of it. The room comfort, shower, and indoor air quality were reported as significantly higher in those that chose to stay at the hotel due to the sustainable practices. Whether or not the sustainable practices influenced the guests' selection of the hotel, had no relation to their reason for stay, gender or age.

Guest Comments

Results of the classification of open-ended responses by the author are presented in Table 5. Indoor air quality, appreciated green practices, hotel or room design/architecture, a great experience/hotel stay, and staff/service

were the most frequently noted positive categories. Fourteen respondents

noted that they noticed no differences due to the sustainable practices, which

for this study is considered positive. Hot water was the most frequently

reported (N = 10) negative response.

Table5.
Open-Ended Response Frequencies

Category	Total Positive Responses	Total Negative Responses
Room Characteristics		
Air Quality and Temperature		
Indoor Air Quality	14	0
Temperature Control	2	5
HVAC-Loud	0	6
Lighting		
Natural Lighting	8	0
Room Lighting	2	3
Bath lighting	0	6
Master Switch	9	0
In-room Recycling	4	1
Water		
Water Pressure	2	5
Hot Water	2	10
Shower Pressure	1	6
Sink	1	5
Overall Sustainable Practices		
Reinforce Sustainable Home or Business Making Goals	5	0
Appreciated Green Practices	17	1
No Difference Noticed Due to Sustainable Practices	14	0
Comfort		
Sound Protection	4	4
Hotel and Room Comfort	5	0
Style/Design/Aesthetics		
Hotel or Room Design/Architecture	19	2
Hotel or Room Furniture	4	3
Overall Hotel		
Hotel Luxury	4	1
Great Experience/Hotel stay	15	0
Individual Attributes of Hotel		
Restaurant or Room Service	5	0
Bed, Linens, or Pillows	5	6
Service Quality		
Staff/Service	14	0

Note. 113 Respondents noted comments, with some responents giving multiple comments; therefore, the number of comments is larger than the number of respondents.

CHAPTER V

DISCUSSION

Guest satisfaction in hotels is remarkably important for a hotel business to thrive. Pleasant design and aesthetics of a hotel causes increased satisfaction, loyalty, and perception of a luxury experience. Luxury experiences vary for each individual (Danziger, 2005) and some consumers are looking to experience luxury while being environmentally conscious about their purchasing of hotel services. This study investigated sustainable design features, consumer awareness of sustainable practices and the relationship that awareness has on influential purchasing of services, and guest satisfaction within the context of a sustainable luxury hotel.

The attributes and values of luxury and sustainability can be viewed as conflicting; therefore, do sustainable design elements of a luxury hotel affect guest perceptions of style, comfort, and luxury? The purpose of this study was to investigate guest satisfaction of sustainable design solutions used at the Proximity Hotel. A primary focus of the study was the assessment of the guest experience with select features of their rooms as well as their overall perceptions of the hotel. In particular, comfort and style, two factors of a luxury hotel experience (Dickinson & Vladimir, 2004) that directly related to the built-environment, were tested.

Expectations and Satisfaction

Based on previous research that demonstrated that satisfaction was created by meeting or exceeding consumer expectations (Lakshmi-Raton & Iyer, 1988; Schank & Abelson, 1977; Smith & Houston, 1983; Smith & Houston, 1985), the term satisfaction was used for this study to explain the level to which guest expectations were met or exceeded. A score of 3 to 5 was used to explain the level to which guest expectations were met (3) or exceeded (4 and 5). The high mean scores ranging above 3.5 for both the 10 room characteristic variables and the six general guest satisfaction variables indicated high guest satisfaction within the context of this sustainable luxury hotel.

Room Characteristics

Of the 10 room characteristics, eight were directly related to the sustainable practices or design decisions implemented by the hotel. Of those eight sustainable variables, hot water and the shower received the lowest satisfaction ratings. The majority of the hot water at the Proximity Hotel is heated through solar panels, which may account for the "lower" (though still very positive) satisfaction ratings of the system. Because the surveys were distributed during the winter season when the periods of available sunlight are reduced, this may have affected the supply of hot water. While a low-flow

showerhead may be a room feature that some guests prefer not to have, this study found similar findings to that of Gustin and Weaver (1996) who reported that guests' overall satisfaction or likeliness to stay at a hotel implementing this strategy was not affected. Both the hot water and shower room characteristics were given over a 3.5 mean response, which corresponds to a satisfactory guest experience with those variables.

Indoor air quality, natural lighting, and in-room recycling were the sustainable features that the guests were satisfied with the most, with the percentages of guests noting those features as meeting or exceeding their expectations as 98.8%, 99.6%, and 97.8% respectively. The Proximity Hotel implemented several sustainable features consistent with the USGBC's LEED rating system to improve indoor air quality such as being mindful of material and product off-gassing during the selection process and replacing indoor air with fresh (outdoor) air more frequently than required by building codes. The majority of the hotel (97%) has a direct line of sight to the outdoors and, therefore, natural lighting. Each guest room has an operable window and a commingled recycling bin. These three sustainable features may contribute to a luxury experience as oppose to detracting guest satisfaction. A study by Heung, Fei, and Hu (2006) found that guests consider fresh air and natural lighting as important attributes to a green hotel. It can reasonably be concluded that all hotels, both sustainable and non-sustainable, could increase guest satisfaction by implementing more natural lighting, in-room

recycling programs, and should take multiple actions to improve the air quality within the hotel.

Temperature control and sound protection were the two comfort features of the room tested. In this study temperature control and sound protection received some of the lowest expectation ratings; yet, approximately 90% of the guests felt that these features met or exceeded their expectations. An increasingly common method for controlling energy use in hotels is through built-in temperature controls that automatically turn off air conditioning and heating when guests leave the room; however, the Proximity Hotel has chosen not to implement this type of system in the rooms, because they preferred their guests to have control of their room temperature to improve their comfort. It is typical that spaces on the west side of a building receive more heat gain and, as a result, the temperatures are more difficult to control. Yet, guest rooms facing east and west, the majority of the rooms at the hotel, showed no significant difference in their satisfaction level of the temperature control. This suggests appropriate resistance of heat gain on the west side of the building. The guest rooms in the hotel were designed to minimize as much sound as possible by multiple (3) layers of dry-wall and eliminating dead space between bathroom walls by placing the plumbing in the floor. Even though the temperature control and sound protection variables received lower mean scores than other attributes, the hotel carefully implemented measures to increase guest comfort in these areas. Guests may not have understood how to operate the temperature

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controls or may have had noisy neighbors that reduced their perceived satisfaction of these variables.

Individual Factors to a Luxury Hotel Experience (Style, Comfort, and Service)

Style is one of the four factors to a luxury hotel experience (Talbott, 2004) and it is also been found to be the strongest area associated with guest loyalty (Skogland & Siguaw, 2004). While sustainable design is perceived by some to be aesthetically unattractive (McLennan, 2004), the Proximity Hotel had exceptionally high satisfaction results for both the guest room and hotel design/aesthetic with over 97% of the respondents agreeing that it met or exceeded their expectations. Almost half of the guests indicated that the hotel design/aesthetic was far better than they expected (Mean rating = 5). The most common open-ended survey response, noted by 19 respondents, was a positive perception of the hotel or room design/architecture. Guest responses such as "I stay in a lot of modern hotels in NY and this one is the most aesthetically pleasing" and "I love the fact that though this is a green hotel, it feels quite posh and leading edge in design," suggest that style was not sacrificed at the expense of the hotels sustainable design initiatives. Research indicates higher guest loyalty occurs when there is satisfaction with the hotel design and aesthetics (Heide & GrØnhaug, 2009; Skogland & Siguaw, 2004). Since the guests in this study

indicated high satisfaction with the hotel design, it is likely that the guests at the hotel will continue to be loyal consumers.

Room comfort, one of the six general guest satisfaction variables, was rated by over 97% of responses as meeting or exceeding their expectations, with over two thirds of guests indicating that the comfort of the room exceeded their expectations. These results indicate that comfort, another factor to a luxury hotel experience (Talbott, 2004), was not sacrificed within the context of this sustainable hotel.

Service and staff were not originally included in this investigation due to the focus on guest satisfaction of the built-environment; however, 14 guests noted the service or staff as being positive in the open-ended response analysis. No survey respondent made a negative comment about the service or the staff. Service is another factor of a luxury hotel stay (Talbott, 2004) and while it was not directly tested in the survey instrument, guests appear to be satisfied with the service and staff.

Luxury

The two dimensional tests of luxury showed high guest satisfaction both with the luxury experience and the style and comfort factors of a luxury hotel, which relate to the built-environment. Also, the analysis of the open-ended response frequencies showed that four guests directly noted luxury in relation to their hotel experience. These statements are presented below in

Table 1. The results of the two dimensional tests of luxury (1. comfort and style and 2. luxury) and the open-ended responses indicate that guests were satisfied with the luxury experience created and the sustainable features used in the hotel did not detract from their luxury experience, with some noting that those features added to their perception of luxury.

Table 6.
Open-Ended Luxury Comments

Positive Luxury Responses
"The design, comfort, & luxury were our first considerations (in booking a stay with the hotel)."
"Happy to see sustainable 'green' practices are competitive with other non-sustainable luxury hotels."
"The luxury while being being "green" positively affected our stay."

"Overall, we really enjoyed our stay. The design (inside + outside) was beautiful, and it's great that a hotel that utilizes sustainable practices can still provide a luxurious, comfortable experience."

Negative Luxury Responses
"I love a hand shower and my wife a big bath. Water conservation measures contradict these luxuries. "

Sustainable Awareness and Influential Purchasing with Stakeholders

For some guests, the sustainable features may have even added to an increased perception of luxury. Almost half of the respondents said they were aware of the sustainable practices of the hotel prior to their stay and that those practices influenced their decision to stay at the hotel. This response indicates that guests were aware of sustainable development and that there is a viable market for these types of business developments. Fourteen

respondents indicated through open-ended comments that they appreciated the green practices, with some of them saying that those practices gave them "peace of mind" about their stay. Consumers are increasingly using their purchasing power to advance movements that they support (Harrison, Newholm, & Shaw, 2005). Guests consider it a hotel's responsibility to implement and embrace sustainable development (International Hotel Environment Initiative, 2002) and the results of this survey indicate that guests are financially supporting those developments through their reservation choices.

With guests being a group representing core stakeholders in the success of the Proximity Hotel, the findings of a high level of satisfaction with the characteristics of the rooms and the hotel in general suggests that the hotel is providing a guest experience that is likely to produce repeat and expanded business.

Hotel Experience, Satisfaction and Loyalty

An analysis of the hotel experience and hotel satisfaction demonstrated positive results with exceptionally high mean scores of 4.17. Over 98% of guests expressed that the hotel experience and hotel satisfaction met or exceeded their expectations, with well over two-thirds of respondents signified those variables exceeded their expectations. The open-ended frequency analysis found 15 guests specified either that they had a

great stay or great hotel experience. These results further illustrate that a sustainable hotel does not have to detract from a great guest experience or satisfaction.

Female guests consistently noted higher levels of satisfaction throughout both the 10 room characteristic variables and the six general guest satisfaction variables. Previous research has indicated that there are differences in how women experience comfort and that women have different hotel selection criteria than men (Karjalainen, 2007; McCleary, Weaver, & Lan, 1994). Howell et al. (1993) found through her study that room décor was very important to female business travelers. With high mean satisfaction scores related to the hotel and room design, females may have rated the 10 room characteristic variables higher than males because their overall satisfaction with the hotel and room design was high. Future studies about gender differences in hotel satisfaction of sustainable luxury environments may help to further explain these findings.

Ninety-six percent of the respondents indicated that they were willing to stay at the hotel again if they were in the area again, demonstrative of hotel loyalty. Only one guest out of 241 responses noted that they were unwilling to stay at the hotel again due to the sustainable practices of the hotel; their issue was a reaction to the non-smoking policy of the hotel. However, hotels with smoking rooms have decreased indoor air quality, which was noted by most guests as being positive. Such a high percentage of

guests who are willing to stay at the hotel may be indicative of a high return

rate, which is important any hotel business to thrive.

Conclusion and Recommendations

The Proximity Hotel was careful throughout the building and

development process to consider the guest experience, while still integrating

sustainable practices. This thinking is similar that of Vito Lotta's philosophy

about sustainable hospitality that:

> sustainability is about fulfilling our guests' current dreams and desires
> without sacrificing the future generations' dreams and desires. The
> objective is to achieve sustainability without making it about sacrifice
> (Sheehan, 2007, p. 23).

Guest satisfaction is extremely important for hotels to thrive and it is,

therefore, important for hoteliers and hotel designers to consider guest

satisfaction in every decision. It is by first considering the guest experience

that sustainable practices can be successfully integrated into the hotel

industry and its built-environment. By viewing decisions through this lens, as

Lotta discusses and the Proximity Hotel executed, sustainable practices can

be viewed as adding to a guest experience, rather than detracting from it.

Though hotels are not the number one cause of gross pollution or

ozone depletion it is important they implement sustainable practices to

reduce their ecological footprint (Chan & Lam, 2002; Kirk, 1995). It is evident that guests desire to support environmentally conscious hotels, with almost half of the survey respondents indicating that their decision to stay at the hotel was influenced by the sustainable practices. It is believed that adopting sustainable practices, both during the building and operation processes, can increase a hotel's competitiveness and brand image (Penny, 2007). If those practices are implemented correctly with the guest experience in mind it can help a business to thrive in an increasingly competitive market (Kasim, 2004). Hoteliers should use this to their advantage to enlarge their consumer base; yet, they should not use inappropriate marketing schemes to draw green consumers, while demonstrating little or no real sustainable practices (Heung, Fei, & Hu, 2006; Ho, 2003). The USGBC's LEED rating systems helps to prevent this type of "greenwashing" by providing third party verification of sustainable development.

In-room recycling, improved indoor air quality, and an increased volume of natural light are sustainable design characteristics that guests favor and are well integrated into the LEED rating system. Some sustainable characteristics, such as low-flow showerheads and sink faucets, may be less preferred; however, they did not affect the overall guest experience, which is consistent with Gustin and Weaver's (1996) research. Even the least preferred room characteristics did not receive lower than an 89% satisfaction rating. If over half of the respondents were unsatisfied with certain room

characteristics, serious recommendations not to include those features would be warranted; however, the findings in this study found no such results. It can reasonably be concluded that though select guests may not prefer some sustainable design features (low-flow water fixtures), those preferences have little effect on the overall guest experience. Mastrelli stated that "the new model is all about what being green can add to the guest experience, not what it can take away (NEWH: The Hospitality Industry Network, 2007, p.14). Improved air quality, in-room recycling options, and abundant natural lighting were found to be sustainable features contributing to a luxury experience, rather than detracting from it as Mastrelli notes.

McLennan (2004) defines sustainable design as "a design philosophy that seeks to maximize the quality of the built environment, while minimizing or eliminating negative impact to the natural environment." With 17 guests noting through open-ended comments that they appreciated the green practices or that those practices gave them a peace of mind about their stay and by finding specific attributes of sustainable design that guests rated high satisfaction with, it can be concluded that sustainable design can improve the quality of the hotel's built environment.

A satisfactory guest experience needs to be the first and most important consideration; however, it is important for hotels to consider sustainable development and operational practices to reduce their ecological footprint. The intersection of luxury and sustainability examined in this study indicates that, at least for the Proximity Hotel, that luxury and sustainable

design within the context of a hotel environment do not conflict. In fact, some sustainable design features such as indoor air quality, natural lighting, and in-room recycling programs appear to increase guest perception of comfort and a luxury experience. Combining the increasing trend of sustainable luxury hotel development with Sandoval-Stausz's (2007) concept that American hotels serve as architectural examples of people's lifestyles and values could reflect a larger movement towards sustainable luxury experiences.

Limitations

The Proximity Hotel, located in Greensboro, NC, is a four diamond hotel by AAA. Results of this study may not be correlated to hotels with higher diamond ratings and there may be other innovative sustainable practices implemented in hotels that need to be studied. Therefore, as more luxury hotels begin to embrace sustainable practices it is important that businesses and researchers continue to study the relationship between those practices and a luxury guest experience.

The response rate of 13.1% may be considered low, although the analysis of 241 respondents represented a reasonably good size sample. A higher response rate may have increased validity of the study and yielded varying results. The 42.9 percent occupancy rate of the hotel was low and

may have reduced validity of this study; however with the struggling economy in the beginning of 2009 when this study was conducted, many hotel occupancy rates also were low during this time period. Also, informing the respondents that the study investigated sustainable practices may have limited the responses to guests that were particularly interested or aware of those practices.

During the streamlining of the survey some questions were either not included or were reformed to be more generalized. In particular original questions asking about the water pressure of the sink and shower were generalized to "sink" and "shower" variables. Asking guests more directly about the pressure of the water fixtures may have produced different results. To increase guest participation in the study, the decision was made to limit the number of questions; therefore, some room and hotel characteristics and spaces were not tested. A longer survey covering more areas such as the restaurant, lobby, and hallways may generate interesting results. Examining service and pampering, two of the factors of a luxury hotel experience (Talbott, 2004) that were largely untested for this study, may provide further support to both this study and the advancing sustainable hospitality field.

Sustainability is about balancing the economy, the environment, and equity (McDonough & Braungart, 2002); however, this study focused on the environmental features of sustainable development and how those features affect guests' perception of comfort, style, and luxury. Though the Proximity

Hotel has implemented ethical business practices in its operational stages and other principles of sustainable development this study did not discuss or explore other sustainable considerations. More in-depth studies in relation to the Proximity Hotel and other LEED hotels could create a deeper understanding on how to balance the ecological, social, cultural, educational, and economic impacts during sustainable development. For example if hotels take certain precautions to assure their employees are treated ethically, do guests notice a higher level of service? Currently, third-party verification of ethical standards is not available and, therefore, hard to study; however, research that investigates the relationship between ethically sustainable business practices and guest perceptions are greatly needed in the hospitality field.

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KEY DEFINITIONS RELATED TO STUDY

Boutique Hotels – hotels that are independent of chains and often known for their fashion statements (Rutes et al., 2001).

Ethical or Green Consumers - consumers are highly environmentally friendly or ethically cautious in their purchasing of products whenever they have the opportunity to do so (D'Souza, 2004; Harrison, Newholm, and Shaw, 2005).

Greenwashing – a marketing scheme used by companies to purposely portray themselves as green to project an environmentally friendly image, while not taking proper steps in reducing their environmental footprint (Ho, 2003).

Loyalty - a consumers willingness to repurchase a particular product or service thereby causing repetitive same-brand-set purchasing (Skogland & Siguaw, 2004;Chaudhuri & Holbrook, 2001).

Luxury Hotel **-** the definition of luxury is constantly evolving and varies for each person; however, hotel guests consistently list comfort, style,

pampering, and service as the four areas that define luxury to them (Talbott, 2004).

Satisfaction - an overall evaluation of one's experience with a service or product. It is an outcome of an experience that meets or exceeds a consumers preconceived beliefs about that product or service (Lakshmi-Raton & Iyer, 1988; Schank & Abelson, 1977; Smith & Houston, 1983; Smith & Houston, 1985).

Script - "a predetermined, stereotyped sequence of actions that defines a well-known situation" (Schank & Abelson, 1977, p. 41).

Sustainability - "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Economic Development, 1987, p.8).

Sustainable Design - "a design philosophy that seeks to maximize the quality of the built environment, while minimizing or eliminating negative impact to the natural environment" (McLennan, 2004, p.4).

Sustainable Hotel/Green Hotels - "hotels which adopt policy that is safe, healthy and environmentally friendly, implement green management

practices, advocate green consumption, protect the ecology and use

resources properly" (Heung, Fei, & Hu, 2006, p.273).

COMPARISON OF HOTEL RATING SYSTEMS

Table 1.

Summary of AAA Diamond-Rating Guidelines (Walker, 2005, p.138)

General	◈	◈ ◈	◈ ◈ ◈	◈ ◈ ◈ ◈	◈ ◈ ◈ ◈ ◈
	Simple roadside appeal Limited landscaping	Average roadside appeal Some landscaping	Very good roadside appeal Attractive landscaping	Excellent roadside appeal Professionally planned landscaping	Outstanding roadside appeal Professional landscaping with a variety of foliage and stunning architecture
Lobby	Adequate size with registration, front desk, limited seating and budget art, if any	Medium size with registration, front desk, limited seating, carpeted floors, budget art and some plants	Spacious with front desk, carpeted seating area arranged in conversation groupings, good-quality framed art, live plants, luggage carts and bellstation	Spacious or consistent with historical attributes; registration and front desk above average with solid wood or marble; ample seating area with conversation groupings and upscale appointments including tile, carpet or wood floors; impressive lighting fixtures; upscale framed art and art objects; abundant live plants; background music; separate check-in/-out; bellstation	Comfortably spacious or consistent with historical attributes; registration and front desk above average; ample seating with conversation groupings and upscale appointments; impressive lighting fixtures; variety of fine art; abundant plants and fresh floral arrangements; background music; separate check-in/-out; bellstation that may be part of concierge area; concierge desk
Guestrooms	May not reflect current industry standards	Generally reflect current industry standards	Reflect current industry standards	Reflect current industry standards and provide upscale appearance	Reflect current standards and provide luxury appearance
Service	Basic attentive service	More attentive service	Upgraded service levels	High service levels and hospitality	Guests are pampered by flawless service executed by professional staff

Table 2.

Summary of Mobil Travel Guide's Star-Rating system (Walker, 2005, p.140)

One Star ☆ **(Economy)**	Typically smaller hotels managed by the proprietor. The hotel is often two to four stories high and usually has a more personal atmosphere. It's usually located near affordable attractions, major intersections and convenient to public transportation. Furnishings and facilities are clean but basic. Most will not have a restaurant on site but are usually within walking distance to some good low-priced dining. Public access, past certain hours, may be restricted. Typical national chain: Econolodge, Motel 6.
Two Star ☆☆ **(Moderate)**	Usually denotes independent and name brand hotel chains with a reputation for offering consistent quality amenities. The hotel is usually small to medium sized and conveniently located to moderately priced attractions. The facilities typically include telephones and TVs in the bedroom. Some hotels offer limited restaurant service; however, room service and bellhop service are usually not provided. Typical national chain: Days Inn, LaQuinta Inn.
Three Star ☆☆☆ **(First Class)**	Typically these hotels offer spacious accommodations that include well-appointed rooms and decorated lobbies. Bellhop service is usually not available. They are often located near major expressways or business areas, convenient to shopping and moderate to high-priced attractions. The hotels usually feature medium-sized restaurants that typically offer service breakfast through dinner. Room service availability may vary. Valet parking, fitness centers, and pools are often provided. Typical national chain: Holiday Inn, Hilton.
Four Star ☆☆☆☆ **(Superior)**	Mostly large, formal hotels with reception areas, front desk service, and bellhop service. The hotels are most often located near other hotels of the same caliber and are usually found near shopping, dining, and other major attractions. The level of service is well above average and the rooms are well lit and well furnished. Restaurant dining is usually available and may include more than one choice. Some properties will offer continental breakfast and/or happy hour delicacies. Room service is usually available during most hours. Valet parking and/or garage service is also usually available. Concierge services, fitness centers, and one or more pools are often provided. Typical national chains: Hyatt, Marriott.
Five Star ☆☆☆ ☆☆ **(Deluxe)**	These are hotels that offer only the highest level of accommodations and services. The properties offer a high degree of personal service. Although most five-star hotels are large properties, sometimes the small independent (nonchain) property offers an elegant intimacy that cannot be achieved in the larger setting. The hotel locations can vary from the very exclusive locations of a suburban area to the heart of downtown. The hotel lobbies are sumptuous, the rooms complete with stylish furnishing and quality linens. The amenities often include VCRs, CD stereos, garden tubs, or Jacuzzis, in-room video library, heated pools and more. The hotels feature up to three restaurants all with exquisite menus. Room service is usually available twenty-four hours a day. Fitness centers and valet and/or garage parking are typically available. A concierge is also available to assist you. Typical national chains: Ritz-Carlton, Four Seasons.

Table 3.

Listing of Hotels by Price Segments (Walker, 2005, p.139)

Budget $29–$39	Economy $40–$60	Midprice $60–$100	Up Scale $100–$200	Luxury $140–$450	All-Suites $95–$175
	Holiday Inn Express	Holiday Inn	Holiday Inn	Crown Plaza	
	Fairfield Inn	Courtyard Inn Residence Inn	Marriott	Marriott Marquis Ritz-Carlton	Marriott Suites
		Days Inn	Omni	Renaissance	
		Radisson Inn	Radisson		Radisson Suites
	Ramada Limited	Ramada Inn	Ramada		Ramada Suites
	Sheraton Inn	Sheraton Inn Four Points	Sheraton	Sheraton Grande	Sheraton Suites
			Hyatt	Hyatt Regency Hyatt Park	Hyatt Suites
Sleep Inns	Comfort Inn	Quality Inn	Clarion Hotels		Quality Suites Comfort Suites
		Hilton Inn	Hilton	Hilton Towers	Hilton Suites
		Doubletree Club	Doubletree		Doubletree Suites
Thrift Lodge	Travelodge Hotels	Travelodge Hotels	Forte Hotels	Forte Hotels	
			Westin	Westin	
Sixpence Inn	La Quinta				
E-Z-8	Red Roof Inn				
	Best Western				
	Hampton Inn				Embassy Suites

APPENDIX C

PROXIMITY HOTEL SURVEY

THE UNIVERSITY of NORTH CAROLINA

GREENSBORO

Dear Proximity Hotel Guest,
I am Emily Becker, a graduate student in the Department of Interior Architecture at the University of North Carolina at Greensboro. For my master's thesis project, I am asking guests about their experiences with some of the sustainable (green) practices used by the Proximity Hotel. Would you do me the favor of completing this form? -- Emily J. Becker

Room number_____ Today's date _____ How many nights was your stay?_____ Age _____ Gender _____
Main reason for your stay *(circle one)*   Business or Pleasure/Leisure?

Please rate each item by placing a check in the appropriate box

The Guest Room	Far less than I Expected	Less than I Expected	Met my Expectations	Better than I Expected	Far better than I Expected
Indoor Air Quality					
Temperature Control					
Natural Lighting/Windows					
Room Lighting					
Sound Protection					
In-room Recycling					
Hot Water					
Shower					
Sink					
Toilet					
Comfort					
Design/Aesthetic					
The Hotel in General					
Overall Design/Aesthetic					
Overall Luxury					
Overall Experience					
Overall Satisfaction					

For the following, sustainable (green) practices are defined as environmentally responsible design features and practices.
Please circle your answer or fill in a response.

Did you know that this hotel uses *sustainable practices* prior to your stay?	Yes	No	
If so, did it influence your decision to stay here?	Yes	No	Not applicable/booked by another party

Please tell us if you noticed anything you would consider to be a *sustainable practice* that negatively or positively affected your stay.

Did you sleep well?	Yes	No	

If not, was your sleep negatively affected by anything having to do with the hotel? If so, what?

If your travels brought you to Greensboro again, would you consider staying here?	Yes	No	

Did you notice anything else that you'd like to share with us?

Thank You!
Please return this survey to the front desk or you may simply leave it in the room.
You might be interested to know that the Proximity Hotel and Print Works Bistro are the first in the hospitality industry to earn the highest level of certification, LEED Platinum, with the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) program. If you'd like to learn more, you may visit the Information Center on level one near the pool, view the last few pages of your guest directory or inquire at the front desk. You may also visit the web site: www.proximityhotel.com.

APPENDIX D

ADDITIONAL RESULTS TABLES

Table 1.
Room Characteristic and General Guest Satisfaction Variables by Age

	18-37			38-49			50+		
	N	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*
Room Characteristics									
Indoor Air Quality	74	3.66	0.83	82	3.93	0.81	69	3.75	0.81
Temperature Control	74	3.41	1.00	82	3.69	0.95	68	3.51	0.99
Natural Lighting/Windows	74	4.11	0.89	82	4.21	0.78	69	4.29	0.80
Room Lighting	74	3.62	0.96	82	3.67	0.99	68	3.84	0.97
Sound Protection*	73	**3.52**	1.04	81	3.78	1.02	69	**4.00**	0.84
In-room Recycling	72	3.79	0.94	80	3.90	0.85	66	3.89	0.84
Hot Water	73	3.42	1.05	81	3.78	0.90	69	3.48	0.95
Shower	73	3.66	1.04	82	3.90	0.95	68	3.65	1.00
Sink	73	3.59	0.81	82	3.84	0.82	68	3.72	0.91
Toilet*	73	**3.40**	0.85	82	3.70	0.84	69	**3.75**	0.79
General Guest Satisfaction									
Guest Room Comfort	74	4.03	0.89	82	4.09	0.81	68	4.10	0.88
Guest Room Design/Aesthetic	73	4.22	0.87	81	4.35	0.76	69	4.20	0.88
Overall Hotel Design/Aesthetic	74	4.35	0.85	82	4.32	0.77	69	4.28	0.76
Overall Hotel Luxury	74	3.99	1.01	82	4.20	0.81	69	4.03	0.89
Overall Hotel Experience	74	4.08	0.90	82	4.32	0.68	69	4.19	0.80
Overall Hotel Satisfaction	73	4.07	0.85	82	4.32	0.68	69	4.20	0.81

Note. *Bolded means show significiant differences as defined by $p < 0.05$.

Table 2.
Room Characteristic and General Guest Satisfaction Variables by Length of Guest Stay

	One Night			Two Nights			Three or More Nights		
	N	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*
Room Characteristics									
Indoor Air Quality	157	3.82	0.77	44	3.73	0.87	32	3.53	0.95
Temperature Control	157	3.58	0.96	44	3.56	1.02	31	3.19	0.91
Natural Lighting/Windows	157	4.19	0.81	44	4.07	0.82	32	4.16	0.99
Room Lighting	156	3.70	0.98	44	3.66	0.99	32	3.59	1.01
Sound Protection	155	3.72	1.01	44	3.66	0.94	32	3.91	1.02
In-room Recycling	154	3.87	0.84	42	3.90	0.85	30	3.63	1.03
Hot Water	155	3.57	0.95	44	3.64	0.92	32	3.34	1.12
Shower	155	3.76	0.93	44	3.75	0.94	32	3.53	1.29
Sink	155	3.70	0.85	44	3.73	0.79	32	3.56	1.05
Toilet	156	3.58	0.83	44	3.66	0.75	32	3.59	1.01
General Guest Satisfaction									
Guest Room Comfort	157	4.02	0.86	43	4.19	0.86	32	3.94	0.91
Guest Room Design/Aesthetic	156	4.21	0.82	44	4.36	0.93	31	4.19	0.98
Overall Hotel Design/Aesthetic	157	4.28	0.78	44	4.20	0.80	32	4.44	0.88
Overall Hotel Luxury	157	4.04	0.93	44	4.09	0.83	32	4.03	0.96
Overall Hotel Experience	157	4.16	0.81	44	4.25	0.72	32	4.16	0.95
Overall Hotel Satisfaction	157	4.15	0.81	43	4.30	0.60	32	4.16	0.95

Table 3.
Room Characteristic and General Guest Satisfaction Variables by Room Type

	Double Queen Room			King Room			King Spa Room		
	N	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*
Room Characteristics									
Indoor Air Quality	25	3.76	1.01	131	3.74	0.77	63	3.79	0.80
Temperature Control	25	3.64	1.03	130	3.53	0.92	63	3.40	1.05
Natural Lighting/Windows	25	3.82	1.00	131	4.22	0.80	63	4.17	0.79
Room Lighting	25	3.40	1.19	131	3.76	0.95	62	3.56	0.97
Sound Protection	25	3.56	0.96	130	3.75	0.99	62	3.73	1.06
In-room Recycling	25	3.92	1.03	125	3.89	0.87	62	3.73	0.81
Hot Water	25	3.52	1.00	129	3.45	0.98	63	3.76	0.85
Shower	25	3.60	1.08	131	3.69	0.97	62	3.84	0.96
Sink	25	3.64	1.03	131	3.67	0.79	61	3.66	0.89
Toilet	25	3.44	0.92	130	3.55	0.82	63	3.68	0.78
General Guest Satisfaction									
Guest Room Comfort	25	4.00	1.00	130	4.03	0.85	63	4.05	0.87
Guest Room Design/Aesthetic	25	4.24	1.05	130	4.22	0.84	62	4.34	0.68
Overall Hotel Design/Aesthetic	25	4.28	0.94	131	4.26	0.82	63	4.35	0.68
Overall Hotel Luxury	25	3.84	0.99	131	4.09	0.89	63	4.05	0.88
Overall Hotel Experience	25	4.16	1.03	131	4.17	0.79	63	4.21	0.74
Overall Hotel Satisfaction	24	4.21	0.93	131	4.15	0.79	63	4.25	0.73

APPENDIX E

PROXIMITY LEED CREDITS

The Proximity Hotel (2009) has provided the following overview of

their sustainable practices and their LEED New Construction points that they

have earned from the USGBC.

⊗. PROXIMITY₅ HOTEL

The Proximity Hotel and Print Works Bistro are certified LEED Platinum by the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) program. LEED is the USGBC's rating system for designing and constructing the world's greenest, most energy-efficient and high performing buildings. Opened in late 2007, Proximity Hotel and Print Works Bistro are the first in the hospitality industry to obtain the USGBC's top level of certification.

Dennis Quaintance, the CEO and CDO (Chief Design Officer) of Quaintance-Weaver: "When we started the design process four years ago, I would have never believed that we could use 39.2% less energy and 33.5% less water without one iota of compromise in comfort or luxury and with minimal additional construction costs. It just goes to show what a determined team can accomplish if they use common sense and get a little bit of help from the sun."

His "sun" comment refers to the 100 solar rooftop panels that heat water for the AAA Four Diamond hotel. To illustrate how the hotel and bistro save energy without negatively affecting guest comfort, he asks, "How is it a compromise for a guest to shower with water that is heated by the sun? Or, how is it a compromise for a bistro guest if his or her dishes are washed with solar heated water?"

Rigorous testing for a variety of water saving products was done by Quaintance and his family at their home, and it is paying off. The hotel and restaurant is on track to use two million gallons less water during the first year, saving more than $13,000 by spending less than $7,000 in additional construction costs.

"I've come to believe it is an urban legend that employing sustainable practices with new construction is too expensive," says Quaintance. "We are very happy with the results, including the costs and returns, of everything that we did for these two buildings. It's not easy—but it's not hard. And it's definitely worth it."

LEED certification considers energy use, lighting, water and material use as well as a variety of other sustainable strategies. LEED verifies environmental performance, occupant health and financial return. LEED was established for market leaders to design & construct buildings that protect and save precious resources while also making good economic sense.

"Proximity Hotel is to be commended for achieving LEED Platinum. This facility is one that both the community and its guests can be proud of," said Rick Fedrizzi, President, CEO, Founding Chair, U.S. Green Building Council. "Proximity is a showcase for high-performance, energy-efficiency, a healthy environment and an inspiration for others."

Built and operated by Quaintance-Weaver Restaurants and Hotels, the Proximity is just a stone's throw away from its sister businesses, Lucky 32, Green Valley Grill and the Four Diamond O.Henry Hotel. For more information visit www.proximityhotel.com.

PRINT·WORKS · BISTRO ·

About the U.S. Green Building Council

The U.S. Green Building Council is a nonprofit membership organization whose vision is a sustainable built environment within a generation. Since USGBC's founding in 1993, the Council has grown to more than 17,000 member companies and organizations, a comprehensive family of LEED® green building rating systems, an expansive educational offering, and a network of 78 local chapters, affiliates, and organizing groups. For more information visit www.usgbc.org.

About LEED®

The LEED® (Leadership in Energy and Environmental Design) Green Building Rating System™ is a feature-oriented rating system that awards buildings points for satisfying specified green building criteria. The six major environmental categories of review include: Sustainable Sites, Water Efficiency, Energy and Atmosphere, Materials and Resources, Indoor Environmental Quality and Innovation and Design. Certified, Silver, Gold and Platinum levels of LEED green building certification are awarded based on the total number of points earned within each LEED category. LEED can be applied to all building types including new construction, commercial interiors, core & shell developments, existing buildings, homes, neighborhood developments, schools and retail facilities.

Incentives for LEED are available at the state and local level and LEED has also been adopted nationwide by federal agencies, state and local governments, and interested private companies. For more information, visit www.usgbc.org/LEED.

MORE ABOUT SUSTAINABLE PRACTICES AT PROXIMITY AND PRINT WORKS
Here is a sampling of the 70+ sustainable practices at Proximity Hotel & Print Works Bistro:

- The building uses 39.2% less energy than a conventional hotel/restaurant by using ultra efficient materials and the latest construction technology.

- The sun's energy heats hot water with 100 solar panels covering 4,000 square feet of rooftop.

- 700 linear feet of stream were restored by reducing erosion, planting local, adaptable plant species and rebuilding the buffers and banks.

- The bistro bar is made of salvaged, solid walnut trees that came down through sickness or storm and room service trays made of Plyboo (bamboo plywood).

- Variable speed hoods in the restaurant use a series of sensors to set the power according to the kitchen's needs and adjust to a lower level of operation (typically 25% of their full capacity). The sensors also detect heat, smoke or other effluents and increase the fan speed to keep the air fresh.

- Geothermal energy is used for the restaurant's refrigeration equipment, instead of a standard water-cooled system, saving significant amounts of water.

- North America's first Regenerative Drive model of the Otis' Gen2 elevator reduces net energy usage by capturing the system's energy and feeds it back into the building's internal electrical grid.

- Abundant natural lighting, including large energy-efficient "operable" windows (7'4" square windows in guest rooms) connects guests to the outdoors by achieving a direct line of sight to the outdoor environment for more than 97% of all regularly occupied spaces.

- Building materials with recycled content include reinforced steel with 90% post consumer recycled content, sheetrock 100%, asphalt 25% and staircase steel 50%. Concrete contains 4% fly ash (224,000 pounds), the mineral residue left after the combustion of coal that is diverted from landfills.

- 87% of construction waste was recycled, diverting 1,535 tons of debris from landfills.

- Water usage has been reduced by 33.5% by installing high-efficiency Kohler plumbing fixtures, saving three million gallons of water the first year.

- Air quality is improved by circulating large amounts of outside air into guestrooms (60 cubic feet per minute) and doing so in an energy efficient way by employing "energy recovery" technology where the outside air is tempered by the air being exhausted.

- Regional vendors and artists were used for materials to reduce transportation and packaging.

- Low-emitting volatile organic compound (VOC) paints, adhesives, carpets, etc. reduce indoor air contamination.

- Guestroom shelving and the bistro's tabletops are made of walnut veneer, over a substrate of SkyBlend, a particleboard made from 100% post-industrial recycled wood pulp with no added formaldehyde.

- A green, vegetated rooftop in test containers is planted on the restaurant to reduce the "urban heat island effect." This helps reflect the heat and slows rain runoff, as well as insulates the roof.

- "Education Center" for sustainable practices includes tours of our "green" hotel for guests, symposia and outreach programs for students of all ages.

- Bicycles are available for guests to ride on the nearby five-mile greenway.

LEED-NC
NEW CONSTRUCTION

PURPOSE	The Leadership in Energy and Environmental Design (LEED) Rating System was designed by the US Green Building Council to encourage and facilitate the development of more sustainable buildings.
LEED CREDITS	The environmental categories are subdivided into the established LEED credits, which are based on desired performance goals within each category. An assessment of whether the credit is earned or denied is made and a narrative describes the basis for the assessment.
CREDITS ACHIEVED 55	The applicant has provided the mandatory documentation which supports the achievements of the credit requirements, achieving the associated points. Currently the project has scored the adjacent points in this category.
RATING	**Platinum**
OFFICIAL SCORES	Official LEED v2.2-2008 Scores: Certified: 26-32 Silver Rating: 33-38 Gold Rating: 39-51 Platinum Rating: 52+

CREDITS EARNED **12**

SUSTAINABLE SITES   POSSIBLE POINTS 14

CONSTRUCTION ACTIVITY POLLUTION PREVENTION — PREREQUISITE
The project has followed local erosion and sedimentation control standards and codes, which are more stringent than the NPDES program requirements.

1 **SITE SELECTION**
The hotel site does not meet any of the prohibited criteria.

1 **DEVELOPMENT DENSITY; COMMUNITY CONNECTIVITY**
The project has been renovated or constructed on a previously developed site within 1/2 mile of a residential zone or neighborhood with an average density of 10 units per acre net and within 1/2 mile of at least 10 Basic Services.

1 **ALTERNATIVE TRANSPORTATION: PUBLIC TRANSPORTATION ACCESS**
The project is located within 1/4 mile of one or more stops for two or more public or campus bus lines usable by building occupants.

1 **ALTERNATIVE TRANSPORTATION: BICYCLE STORAGE; CHANGING ROOMS**
Secure bicycle racks/storage has been provided for at least 5% of all peak building users within 200 yards of a building entrance and shower/changing facilities have been provided within 200 yards of the building entrance for at least 0.5% of Full-Time Equivalent occupants.

1 **ALTERNATIVE TRANSPORTATION: LOW-EMITTING; FUEL EFFICIENT VEHICLES**
Preferred parking has been provided for low-emitting and fuel-efficient vehicles for 5% of the total vehicle parking capacity of the site.

1 **ALTERNATIVE TRANSPORTATION: PARKING CAPACITY**
The parking capacity has been sized to meet, but not exceed, the minimum local zoning requirements, and that preferred parking has been provided for 5% of the total provided parking spaces.

1 **SITE DEVELOPMENT: PROTECT OR RESTORE HABITAT**
A minimum of 50% of the site area that does not fall within the building footprint has been restored with native planting.

1 **SITE DEVELOPMENT: MAXIMIZE OPEN SPACE CREDIT**
Local zoning requirements do not require open space, so an area of open space has been allocated which is equal to or greater than 20% of the total site area.

1 **STORMWATER MANAGEMENT: QUANTITY CONTROL**
Existing Imperviousness less than or equal to 50%. A stormwater management plan or stream channel protection strategy has been implemented that protects receiving stream channels from excessive erosion.

| 1 | **STORMWATER MANAGEMENT: QUALITY CONTROL** |

| 1 | **HEAT ISLAND EFFECT: ROOF CREDIT** |

Reflective roofing materials have been used for at least 75% of the project's roof surface.

| 1 | **LIGHT POLLUTION REDUCTION** |

The maximum candela value from interior fixtures does not intersect transparent or translucent exterior building surfaces OR automatic lighting controls turn off non-essential lighting during non-business hours and the Lighting Power Density is within the LEED Allowable threshold and the percentage of site lamp lumens above 90 degrees from nadir is no greater than 2%.

| CREDITS EARNED | 4 | **WATER EFFICIENCY** | POSSIBLE POINTS 5 |

| 2 | **WATER EFFICIENT LANDSCAPING** |

The landscaping and irrigation systems have been designed to reduce irrigation water consumption from a calculated baseline and the irrigation water used on site is supplied by a non-potable source.

| 2 | **WATER USE REDUCTION** |

Water use has been reduced by 33.5% through the use of low-flow fixtures.

| CREDITS EARNED | 16 | **ENERGY; ATMOSPHERE** | POSSIBLE POINTS 17 |

FUNDAMENTAL COMMISIONING — PREREQUISITE

MINIMUM ENERGY PERFORMANCE — PREREQUISITE

FUNDAMENTAL REFRIGERANT MANAGEMENT — PREREQUISITE

The project's HVAC & Refrigeration systems do not contain CFC-based refrigerants.

| 9 | **OPTIMIZE ENERGY PERFORMANCE** |

The energy modeling output indicate a 39.2% savings between the design case and the budget case based on ASHRAE 90.1-2004.

| 3 | **ON-SITE RENEWABLE ENERGY** |

Calculations indicate that 8.49% of the building's regulated energy cost is provided by on-site renewable energy.

| 1 | **ENHANCED COMMISSIONING** |

| 1 | **ENHANCED REFRIGERANT MANAGEMENT** |

The base building HVAC & Refrigeration equipment does not exceed the LEED Ozone Depletion and Global Warming maximum threshold formula.

| 1 | **MEASUREMENT; VERIFICATION** |

The project has developed and implemented a measurement and verification plan consistentwith Option (D) of the IPMVP.

| 1 | **GREEN POWER** |

35% of the Electricity is from renewable sources.

| CREDITS EARNED | 6 | **MATERIALS; RESOURCES** | POSSIBLE POINTS 13 |

STORAGE; COLLECTION OF RECYCLABLES — PREREQUISITE

Appropriate facilities for recycling have been provided.

| 2 | **CONSTRUCTION WASTE MANAGEMENT** |

The project diverted 1,535 tons (86.9%) of on-site generated construction waste from landfill.

| 2 | **RECYCLED CONTENT** |

22.4% of the total building materials content, by value, have been manufactured using recycled materials.

| 2 | **REGIONAL MATERIALS** |

45.9% of the total building materials value is comprised of building materials and/or products that have been extracted, processed and manufactured within 500 miles of the project site.

| CREDITS EARNED | 12 | **INDOOR ENVIRONMENTAL QUALITY** | POSSIBLE POINTS 15 |

MINIMUM INDOOR AIR QUALITY PERFORMANCE — PREREQUISITE

The requirements of ASHRAE 62.1-2004 have been met.

ENVIRONMENTAL TOBACCO SMOKE (ETS) CONTROL — PREREQUISITE
No smoking is allowed in the building and designated exterior smoking areas are located at least 25 feet away from entries, outdoor air intakes and operable windows.

OUTDOOR AIR DELIVERY MONITORING
A CO_2 monitoring system has been installed.

INCREASED VENTILATION
Outdoor air ventilation rates have been increased to all occupied spaces by at least 30% above the minimum rates required by ASHRAE Standard 62.1-2004.

CONSTRUCTION INDOOR AIR QUALITY MANAGEMENT PLAN: DURING CONSTRUCTION
The project developed and implemented a construction IAQ management plan that followed the referenced SMACNA Guidelines. A copy of the project's IAQ Management Plan and photos highlighting the implemented IAQ measures have been provided.

LOW-EMITTING MATERIALS: ADHESIVES; SEALANTS
All adhesive and sealant products comply with the VOC (Volital Organic Compounds) limits.

LOW-EMITTING MATERIALS: PAINTS; COATINGS
All indoor paints, stains, and clear finishes comply with the VOC (Volital Organic Compounds) limits of the referenced Green Seal and SCAQMD standards.

LOW-EMITTING MATERIALS: CARPET SYSTEMS
Installed carpet systems comply with the VOC (Volital Organic Compounds) limits of the CRI Green Label Plus Testing Program.

CONTROLLABILITY OF SYSTEMS: LIGHTING
Sufficient lighting controls have been provided for all shared multi-occupant spaces and that at least 50% of the individual workstations have been provided with lighting controls.

CONTROLLABILITY OF SYSTEMS: THERMAL COMFORT
Individual comfort controls have been provided.

THERMAL COMFORT: DESIGN
The project has been designed to maintain indoor comfort within the ranges established by ASHRAE 55-2004.

THERMAL COMFORT: VERIFICATION
A post-occupancy survey will be conducted to determine occupant thermal comfort satisfaction.

DAYLIGHTING; VIEWS: DAYLIGHT 75% OF SPACES

DAYLIGHTING; VIEWS: VIEWS FOR 90% OF SPACES
97.15% of critical visual task areas have direct access to views of the outdoors.

CREDITS EARNED 5

INNOVATION; DESIGN PROCESS

POSSIBLE POINTS 5

INNOVATION IN DESIGN
Achieving views for 97.15% of critical visual task areas.

INNOVATION IN DESIGN
Green Building Education efforts.
1. Poster board narratives
2. A series of "Sustainable Practices Symposiums" available to the public
    (a) Outreach to the education community
    (b) Providing speakers (in the first year, over 70 speaking engagements were fulfilled by team speakers)
    (c) Sustainable Practices tours (over 9,000 in the first year)
3. NC A&T State University collaboration program with their Center of Energy Research and Technology

INNOVATION IN DESIGN CREDIT
Restoration of 700 linear feet of stream to the NC Department of Water quality standards.

INNOVATION IN DESIGN
Over 40% of the building materials sourced locally.

LEED ACCREDITED PROFESSIONAL
A LEED AP has been a participant on the project development team.

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APPENDIX F

DESIGN RECOMMENDATIONS

Significant Factors in Overall Hotel Design

The Proximity Hotel interiors were designed by Bradsaw Orrell, of Bradshaw Orrell Interiors, along with Douglass Freeman, Angie Kenny, Nancy Quaintance, and Dennis Quaintance. The hotel did not seek out an architecture firm first to create design bids, because Dennis Quaintance and his staff wanted more control over the design and architecture of the hotel. The process started with a great amount of research on historic textile mills both in and outside of Greensboro, NC. The Proximity Cotton Mill and Proximity Print Works Mill were part of Cone Mills, one of the world's largest manufacturers for denim fabric and the United State's largest printer of home-furnishings fabrics. The two mills were called Proximity due to their closeness to each other and the cotton fields. The Proximity Hotel was built to reflect historic mill architecture. The choice of the location of the Proximity was due to the availability of the land, its closeness to Dennis Quaintance's other hotel/restaurants (The O'Henry Hotel, Green Valley Grill, and Lucky 32 restaurant), and the fact the only existing mills in Greensboro available for possible renovation at the time the Proximity was being conceived were in areas that were less than ideal for luxury development.

Though the original Proximity Cotton Mill was not used, some design inspiration came from its original features. Tall ceilings, large windows, and exposed ceilings are a few of the features used to facilitate a mill-like appeal. After designing a new building that looked like a textile mill, an amalgam of styles from David Hicks, Ray and Charles Eames, and Eero Saarinen were used to design the interior. Throughout the design process the goal was to provide guests with rooms that had a New York City loft-like appeal. These precedents formed a classically modern interior that mixed comfort with simplicity.

Many hotels design their building footprint around the most functional room layout, which usually locates guest rooms off one major corridor. The square form of mill buildings is not consistent with the typical tall thin rectangular forms of hotels, so the hotel rooms are located off two major corridors with a connecting elevator lobby and guest living room on each floor. Elevators that generate electricity on its descent for its ascent are used in the hotel. The guest living room is a business center/lounge with comfortable seating, refreshments, and a computer with a printer. Most hotels only offer one to two business centers; therefore, having one on every guest floor, with a total of six, is an added luxury for guests.

The 147 guest rooms available offer comfortable, modern custom-made seating. Ceilings within the rooms appear to be painted wood; however, they are actually stamped concrete with recycled fly ash. Lighting within the guest rooms can be controlled individually or through a master

light switch. Though compact fluorescent lighting is used in the guest rooms, the rooms appear warm in color. The hotel implemented very large windows in each guest room, with some rooms offering several window bays. The natural lighting used throughout the hotel gives great access to the wonderful views surrounding its property. An adjacent lot nearby was preserved as parkland by the hotel and contains a preserved stream. This provides a deeper connection to the 2.5 acres of nature surrounding the property and allows a small eco-system to be viewed by guests and staff.

Guest bathrooms contain low-flow showerheads, water closets, and lavatories that help the hotel to reduce its water use. A large sliding door to the bathroom conserves space and assists in providing the loft-like aesthetic. Plumbing pipes were placed within the floors to avoid dead space between the bathrooms to decrease sound travel between rooms. Most rooms contain a bathtub, except for the regular King rooms. Solar panels located on top of the building heat the majority of the water for the hotel.

The two-level lobby space provides comfortable sitting areas with quaint background music. LED candles flicker at night and increase the ambience of the space. Fabric curtain walls soften the appearance and balance the use of concrete used throughout the hotel. The warm-toned, stained concrete walls contain recycled fly-ash in them as well and were used to speak the language of a historic mill. A small connector guides guests through their outdoor garden space and into their restaurant.

Luxury hotels typically include a restaurant on-site and the Proximity Hotel is no exception. The Print Works Bistro is connected to the hotel and provides fresh comfort food in a vibrant environment. The restaurant also has many sustainable design features such as geothermal refrigeration, abundant natural lighting, sustainably manufactured products and materials, and chefs who seek to purchase local in-season food. The restaurant building adds variety and diversity to the architectural development due to its "add on" appearance. It was designed to appear like the loading docks of a textile mill, which are usually separated from textile mill building.

Two event spaces at the hotel, called the Weaver Room and the Revolution Room, continue the modern clean aesthetic. Many hospitality event spaces use very large patterned carpet to hide stains; however, large patterns with multiple colors are hard to coordinate with varying event colors, themes, and styles. The Proximity Hotel uses very neutral beige carpet. Event planners and in-house florists and chefs provide extra services to make occasions personal.

Designer Statement and Recommendations

As an Interior Designer, former guest of the Proximity Hotel and Print Works Bistro, and the researcher for this case study, I wholeheartedly enjoy and support the design and sustainable practices that the hotel has implemented. Boutique hotels are known for their unique statements of style

and innovation and, through my observations, I feel the Proximity Hotel exemplifies these qualities. The guest room design and amenities are well thought through.

A recommendation for other hotels that plan to employ sustainable practices is to offer at least some rooms with bathtubs. Though bathtubs use a lot of water and are typically used less often than showers, providing bathing options may be important to guests. Under the LEED NC v.2.2 including bathtubs does not detract from LEED water saving credits; however, future LEED versions may change this. Even if this occurs I recommend that bathtubs remain an option for at least some luxury hotel guest rooms. As an example, the Proximity Hotel provides a spa bathtub option to guests in its "King Spa" rooms. This may also be a great way to market to different clientele.

Water savings is an area where hotels applying sustainable design solutions might detract from the luxury experience of their guests. Low-flow lavatories and water closets must work properly and cause guests no problems. Low-flow shower-heads tend to receive more negative responses from guests than other water saving features; therefore, implementing these fixtures may come after other water saving techniques have been used. One water saving practice that is not directly related to guest comfort is the use of non-potable water for landscaping, which the Proximity Hotel also implemented, could help reduce water use and has very little opportunity to detract from a guests' luxury experience. In terms of a general order of

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priority, I recommend first implementing landscaping that needs no potable water, then implementing low-flow lavatories and water closets, and lastly replacing showerheads with low-flow fixtures and removing bathtubs when needed for additional water savings. This order of water saving techniques in hotels places the guests needs and desires first, while still encouraging water savings. It would not seem logical to install low-flow water fixtures in the guest rooms and use excess water for landscaping. As with all sustainable design features being implemented in hotels the consideration of the guest must come first.

Textiles have been slow to embrace the sustainable techniques and materials. Dennis Quaintance, the owner of the hotel, repeatedly states that the hotel had a very difficult time finding sustainable luxury textiles during their building process. Many commercial textiles have sustainable features; yet, the luxury textiles industry needs to advance their techniques and include more sustainable products.

Some guests noted that the lighting in the hotel is dim; however, this is consistent with ambient hotel spaces and the mill-like aesthetic. One innovative way that the hotel implemented compact fluorescent lighting (CFL) within the hotel rooms was by surrounding those lights with warm colored shades or gels. This transforms the light into a warmer tone and is more aesthetically pleasing than the cold colors emitted from CFL's. However, this technique was not used in the bathrooms of the guest rooms and the lighting in there was starker than throughout the rest of the hotel.

This is a minor detail that most guests probably would not recognize; however, it could slightly improve how users perceive the space. The bathroom only has one overhead light fixture available and offering another source of light, for example sconces on or near the mirror may reduce unflattering shadows that are caused by only having overhead lighting.

Another recommendation is related to the circulation between the hotel and the restaurant. The Print Works Bistro restaurant is a separate building on the property which has positive and negative effects on the design. The negative effect is that the connector between the restaurant and the hotel has awkward circulation and the restaurant may not be visible to all guests staying the hotel. However, restaurants that are physically separated from hotels appear to draw a larger customer base than simply the hotel guests. The Print Works Bistro has become a high-end restaurant for local diners and is facing a high traffic road within the city, which helps to draw new customers in.

Circulation issues also arise within the hotel between the small retail space and the lobby. The Proximity Hotel has a very small retail space that offers magazines, snacks, and some other items that may accommodate travel conditions or needs; however, this feature often goes unnoticed to guests because it is so hidden from the lobby space. Many hotels want to offer a small retail space and, yet, implementing it without detracting from the design of the lobby can cause issues. Signage to indicate that this feature

exists may help improve sales of the space and increase guest awareness of this hotel attribute.

Historic textile mills, which the hotel was designed to look like, could appear to pose a conflict with luxury since mill spaces are typically unadorned with decorative details; yet, this purposeful design aesthetic did support the concept of sustainability. For example, walls of stained concrete and exposed ceilings in the hallways prevented the use of unnecessary drywall, wallpaper, and decorative features. This "less is more" philosophy does fit well within the concept of sustainability because it uses fewer resources, but initially appears to pose a conflict with luxury ideals. However, clean, modern spaces are considered chic, which may help to provide a harmonious balance between sustainability and luxury within an interior environment. This study did not find that the guests reported sacrificing luxury due to the modern design and many even specifically stated that they enjoyed the modern aesthetic of the hotel.

With guests noting over 95% satisfaction with the overall luxury and 97% satisfaction with the room and overall hotel design/aesthetic, it can easily be concluded that very few changes or design recommendations are needed. Sustainability is not a static concept and, therefore, the Proximity Hotel and other sustainable hotels should continue to seek methods for reducing their energy, water, waste, and material consumption. However, with the Proximity becoming the first LEED "Platinum" hotel and restaurant in the United States and with the positive results of this study, other hotels

should view the hotel as a precedent to study sustainable luxury hotel

development.