THE UNIVERSITY OF NAIROBI

ADOPTION OF GREEN DESIGN IN THE HOSPITALITY INDUSTRY IN KENYA
(A case study of Serena Group of Hotels, Lodges and Resorts)

AUTHOR;   PAULINE N. IRUNGU

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DECLARATIONS

STUDENT'S DECLARATION

I Pauline N. Irungu do hereby declare that this thesis, presented in fulfillment for an award of a Master of Arts degree in design (MA DESIGN), is my own unaided and original work. The work has not been presented in this or any other university for academic qualification. Furthermore the research provides my own opinions and not necessarily those of The University of Nairobi.

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SUPERVISOR'S DECLARATION

This thesis has been submitted for examination with my approval as the student's supervisor.

Signed; ………………………..   Date; …………………………….

Dr. Lilac Osanjo

DIRECTOR,

SCHOOL OF THE ARTS AND DESIGN

Dr. Lilac Osanjo

Signed; ………………………..   Date; …………………………….

DEDICATION

This research is dedicated to my loving husband Mutura Muthanga. His encouragement, patience, unconditional love and unwavering support gave me immense strength throughout the study. I am truly blessed to have him in my life.

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ABBREVIATIONS

AC	Alternating Current
AKDN	Aga Khan Development Network
AKFED	Aga Khan Fund for Economic Development
APA	American Psychological Association
USGBC	United States Green Building Council
CFC	Chlorofluorocarbons
CSR	Corporate Social Responsibility
EPA	Environmental Protection Agency
GDF	Green Design Framework
GDP	Gross Domestic Product
GHA	Green Hotel Association
JKIA	Jomo Kenyatta International Airport
KAHC	Kenya Association of Hoteliers and Caterers
KATA	Kenya Association of Travel Agents
KATO	Kenya Association of Tour Operators
KGBS	Kenya Green Building Society
KTB	Kenya Tourism Board
KWS	Kenya Wildlife Service
LED	Light Emitting Diode
LEED	Leadership in Energy and Environmental Design
LPG	Liquid Petroleum Gas
NEMA	National Environment Management Authority
NSE	Nairobi Securities Exchange
TPS	Tourism Promotion Services
UNESCO	United Nations Educational, Scientific and Cultural Organization
VOC	Volatile Organic Compounds

EXECUTIVE SUMMARY

Green designs are environmental practices considered and adopted within various industries as they are considered to be environmentally friendly. These practices reduce the demand on natural resources and the ecological footprints. Sustainable and environmentally friendly practices are gaining more and more awareness as it is increasing becoming necessary to protect our natural resources and the eco-system for future generations.

The hospitality industry in Kenya contributed approximately two hundred and twenty billion Kenya shillings (Kes. 220.6bn) which is approximately four point one percent (4.1%) of the total GDP in the year two thousand and fourteen (2014). This is expected to rise by five point one (5.1%) percent by the year two thousand and twenty five (2025). The industry is one of the biggest consumers of natural resources. Adoption of green design within this industry would save the environment from degradation while still maintaining the quality of hospitality services and products offered.

Most stakeholders within the hospitality industry do not adopt green design practices as most establishments are put up for economic gain with little or no environmental considerations. Adoption of green design would position this industry highly among intended consumers especially with the current adoption of sustainable consumerism.

Serena Group (TPS-Serena) has been a leader in green design practices over the past decades winning various awards on the same. This has been through the group's thirty six (36) lodges, hotels and resorts located in East and Southern African and Southern Asia. The researcher focused on highlighting these practices through a case study approach. Samples were selected mainly through purposive sampling which included; Amboseli Serena Safari Lodge, Serena Mountain Lodge, Sweet Waters Serena Tented Camp and Nairobi Serena. The research established that the different establishments adopted green design based on different factors like geographical location. The researcher thereafter

recommends a framework which the hospitality industry can adopt to increase the uptake of green design players within the industry including the TPS-Serena.

CHAPTER ONE

1.0 Introduction

This section provides an overview that includes an explanation of drivers of green design and an understanding of the same. Design is not a style but a renaissance attitude that combines technology, cognitive science, human need and beauty to produce something the worlds didn't know was missing. Green design in this research is defined as the internal steps and deliberate efforts made by a hotel or lodging facility to adopt practices that are environmentally friendly the main purpose being to become a green hotel. There is currently no universally approved definition of a green hotel globally. Many players within the hospitality industry globally however are striving to embrace practices that lead to maintaining and improving our ecosystem, (Harris and Crane, 2007).

Recent survey shows that the hospitality industry generated five hundred and nine billion dollars ($509) in revenue worldwide in the year two thousand and eight (2008). The hospitality industry according to survey grew at a brisk pace between the years two thousand and four and two thousand and eight (2004- 2008). This growth recorded a compound annual growth rate (CAGR) of seven point one percent (7.1%). Canada's hospitality industry for example generated sixteen point one billion ($16.3) in revenues for the year two thousand and eight (2008) with a CAGR from the years two thousand and four to two thousand and eight (2004- 2008) of 6.9%, (Joel Turner, 2010).

Hotel businesses are believed to be one of the biggest consumers of natural resources. The industry is also believed to be one of the industries that discharge a lot of raw and solid waste leading to a lot of environmental degradation. These practices consequently affect the sustainability of the natural environment especially those in which the various establishments exit. Management of the environment and sustainable practices have recently become very vital issue within the global hospitality industry. Some facilities within the hospitality industry have greatly benefitted through implementation of environmental initiatives and green practices. This has greatly being through an increase in resource efficiency and an improvement in the corporate image. Green design within

the hospitality industry in Kenya is still a new concept but most industry players are willing to embrace the practices, (Margaret, Robert; 2013).

Embracing green design has over the years become a growing practice by different players in the hospitality industry. The number of green establishments within the hospitality industry in the world has rapidly increased since the year two thousand and seven (2007). There are many motivating factors for the greening of the hospitality industry. Some of these motivating factors include industry players doing it for CSR, regulations from various bodies and the government and other benefits like economic benefits. Green establishments within the industry increase every day, there is however limited research or documentation on consumer perception on the same, (Lisa Cometa, 2012).

The past decades are witness to the rapid economic growth in the hospitality industry worldwide especially through increasing consumers' consumption. Some of the main objectives of establishments within the hospitality industry trying to achieve sustainability is creating customer satisfaction and building long-term profitable customer relationship. With an increase in the social and political pressures, many lodging facilities embrace green design strategies to encourage green consumerism within the industry. Consumer perception therefore is one of the drivers of green design. Star Hotels in Milan for example encourages their guest involvement in the adoption and appreciation of green design practices. This they do through adoption of a proactive environmental policy and training its team in green thinking. Consumer perception has however not fully been embraced as a way of promoting green design in the hospitality industry in most of the world. However, with increased awareness and sensitization consumers could be a major driver in green design, (www.greenhotels.com).

One of the key business areas where there has been a lot of discussion on green design worldwide in recent years is green marketing. These discussions have led to a growing concern by different governments around the world on green marketing activities resulting to regulations being introduced. The Federal Trade Commission and the

National Association of Attorneys- Generals for example, in the United States, ended up developing thorough documents in a bid to examine the issues of green marketing. There has however being no or little examination of green marketing academically as one of the main drivers of green design. Some literature exists though most of it is sourced from divergent perspectives like the United States Green Building Council and United Nations among others on a very vital topic, (Polonsky, 1994).

Green design according to many hospitality industry observers involves the support and care of the eco-system. According to these industry observers an eco-friendly campaign should include reductions in greenhouse gas emissions, carbon neutrality, recycling and organic gardening among others. Green properties are encouraged to among other things improve on the care of the ecosystem. Kimpton's The Muse, is a hotel in New York that has greatly adopted green design practices. The mission statement adopted by the hotel chain encourages the use of non-intrusive, high quality and eco-friendly practices and services in order to support a sustainable ecosystem. Adoption of green design practices within the hospitality industry especially in Kenya is still minimal compared to the size of the industry. Increased adoption therefore would improve the care of the environment within the industry, (www.greenhotelier.org).

Green design also seeks to be resource efficient through reducing unnecessary consumption of resources. This resource efficiency include but are not limited to energy and water usage, solid waste management, installing energy-efficient lighting, low flow fixtures and participating in recycling programs. The Green Hotels Association (GHA) is one of the global bodies dealing with certification of green practices in the hospitality industry globally. The association defines a green hotel as an establishment within the hospitality industry whose players adopt environmental and eco-friendly practices. These eco-friendly practices, according to GHA, should be able to save water and reduce energy use, lead to adoption of proper and improved waste management systems all in an attempt to preserve and protect the earth, (greenhotels.com).

The United States Green Building Council has a platinum LEED rating which is used as a certification program within the USA hospitality industry. The first hotel in the United States to receive the highest Platinum LEED rating was The Proximity Hotel in North Carolina. Proximity Hotel has many sustainable design features adopted as a way of caring for the environment. These features include the use of furniture designed with locally available material and the use of low- emitting VOC paints, carpets and adhesives. The hotel also uses original artwork and accessories. The shelves used within the guestrooms are mainly made of walnut Sky Blend (a particle board that is made using one hundred percent (100%) wood pulp that is recycled and is post industrial and does not contain any formaldehyde). Walnut trees that are felled as a result of sickness or storms are used to design the hotel's bar. Trays used for room service are made of bamboo plywood, (www.proximityhotel.com).

Community involvement is a major contributor to successful green design in most parts of the world. The community largely influences the path of green design practices and shapes design in different industries especially the hospitality industry. The Ambrose Hotel, Santa Monica, California for example involves the community in reducing, reusing, recycling and composting most of their waste products. The hotel's management keeps searching and adopting the most environmentally friendly practices and alternatives. The guestrooms are especially cleaned using the most ecologically friendly and responsible products available in the market. The hotel has continued to support the communities they exist in by sourcing for raw materials from them, (ambrosehotel.com).

Kenya has seen various organizations increase the pressure for the hospitality industry players to go green. Some of these organizations are Ecotourism Kenya, KGBC, NEMA, KATA, KATO, KAHC and KTB among others. These organizations continue to encourage different industry players to adopt green design practices failure to which they would discourage prospective clients from engaging with them. One major organization at the forefront of green design within the industry has been Eco-Tourism Kenya. The organization was established in the year nineteen ninety six (1996). Its main aim was to encourage the adoption of best practices while using tourism resources, in waste and

emissions management and while working with the local community. The organization currently manages a certification program for lodging facilities within the hospitality industry using environmental and social criteria. In so doing the organization allows the recognition and awarding of hotels, lodges and resorts adopting best green design practices, (Ecotourism Kenya, 2010).

This research focused on Serena Hotels, Lodges and Resorts as a case research. The hotels, lodges and resorts were a case study mirroring the hospitality industry in Kenya on the adoption of green design. The Serena Group is believed to be a leader in the field of green design practices through eco-awareness and eco-policy implementation within East Africa and Southern Asia. One of the most recognized green practice within the group is the deliberate adoption of eco-complimentary architecture. Other green practices adopted by the group include; use of raw materials, skills and labor sourced from local communities, adoption of waste recycling practices, pollution reduction, using low energy devices and heat recovery systems, and generation of wind and solar energy. The group also embraces the community in their environmental friendly practices by training them on the importance of the same, (www.serenahotels.com).

According to Serena Hotels group's Managing Director the hotels practice a responsible attitude towards the adoption of green design practices. The hotels are also sensitive to the conservation of environmentally protected or threatened areas, species and scenic aesthetics. They also aim to achieve the enhancement of the landscape by planting indigenous trees and other plants for reinforcement. Their green design guiding principle is that they must conserve rather than exploit nature, (e-magazine, 2010; *Tourism and the Millennium Development Goals)*

The Nairobi Serena Hotel for example is environmentally friendly and has instituted several programs with the goal of protecting the earth. These programs include among others saving water and energy, and reducing solid waste responsibly, embracing the 3Rs (Reuse, Reduce, and Recycle), participating in recycling programs, saving water through controlled linen wash, use of biodegradable detergents, staff participating in tree planting projects in the city annually during rainy seasons and the use of light timers on the

premise. The hotel also uses LED bulbs and television sets that are wired with the energy saving standby mode to save energy. Photocells are also used to control outdoor lighting. Steam recycled from the hotel boilers is used in laundry operations, heating the swimming pool and in the kitchen equipment such as dishwashers and the steam operated oven, (Business Daily- 14th July, 2015).

There are thirty six (36) luxury resorts, safari lodges, and hotels that make up the Serena Group. These establishments are located in Central and Southern Asia and East Africa. The Serena Hotel Group is one of the ninety six (96) companies that make up the Aga Khan Fund for Economic Development (AKFED), a for-profit arm of the Aga Khan Development Network (AKDN). The group trades under the name Tourism Promotion Services- Serena (TPS Serena) and is listed in the Nairobi's Securities Exchange (NSE) under the symbol TPS. The group had a total of twenty five (25) properties in Africa (Kenya, Mozambique, Rwanda, Uganda and Tanzania) by the month of November, in the year twenty eleven (2011). As at that same time the group operated ten (10) properties in three (3) Asian countries (Afghanistan, Tajikistan and Pakistan), (www.serenahotels.com)

1.1 Problem statement

Serena Hotels are some of the hospitality industry establishments that have incorporated green design practices which include; the deliberate adoption of eco-complimentary architecture. Other green practices adopted by the group include; use of raw materials, skills and labor sourced from local communities, adoption of waste recycling practices, pollution reduction, using low energy devices and heat recovery systems, and generation of wind and solar energy. The group also embraces the community in their environmental friendly practices by training them on the importance of the same. Although Serena hotels have incorporated green design and practices within their premises little research and/ or documentation has been done to highlight these efforts. Green design in Kenya is yet to gain enough sensitization and awareness and it is through highlighting efforts and benefits of the same by other players that we can improve its uptake within the Kenyan hospitality industry.

Many other hotels in Kenya have however not embraced green design practices. This research focused on highlighting these green design practices and providing a frame work that can be used to increase the adoption of the same in the hospitality industry.

1.2 Objectives

Main objective;

To establish to what extent Serena hotels have adopted green design in Kenya.

Specific objectives;

- To investigate the features of green design adoptable to the hospitality industry in Kenya.
- To propose a model and/or framework of increasing the uptake and adoption of green design in the hospitality industry in Kenya.

1.3 Research questions

- To what extent have Serena hotels adopted green design in Kenya?
- What are the features of green design adoptable to the hospitality industry in Kenya?
- Which model and/or framework (if any) can be used to increase the uptake and adaptation of green design in the hospitality industry in Kenya?

1.4 Significance of research

An eco-friendly campaign should include carbon neutrality, organic gardening, reduction in green house gas emissions and recycling according to many observers within the hospitality industry. These green properties, according to the observers, are encouraged in order to educate guests and employees on various environments impacts of lodging-related operations, encourage use of renewable source and capturing of heat from power generators.

It is important for players within and without the hospitality industry to adopt green design. This would greatly lead to a reduction in energy use, improved solid waste management practices, proper water use, recycling, and ultimately all round resource efficiency. This research is aimed at establishing various ways in which green design can be adopted in the hospitality industry in Kenya to have a positive impact on the environment and the surrounding communities and to provide a framework for the same.

1.5 Justification of the research

The adoption of green design in the hospitality industry in Kenya is very low. It is unsustainable when the environment, natural resources and communities are taken into consideration. As the environment continues to worsen, it has become a persistent public concern and has recently awakened the green movement. The Kenyan hospitality industry is a global business and in order for its players to remain competitive in the global market it is important for them to adopt green design practices. Players within the hospitality industry should also conserve their key raw materials to enable them to achieve sustainability in their design and practices. This is further curtailed by the ever increasing negative impact of not embracing green design to the environment that have forced business within the industry to find new ways of adopting green design.

1.6 Scope of research

The research was based on the hospitality industry in Kenya in general. The researcher however used the Serena Hotel, Lodges and Resorts as a case research to narrow the scope of the research. Serena Hotel, Lodges and Resorts are distributed within different countries in East Africa and Central and Southern Asia namely; Kenya, Tanzania, Uganda, Mozambique, Rwanda, Afghanistan, Tajikistan and Pakistan. Due to the vast geographical distribution of these establishments the researcher could not be able to cover all the hotels. The researcher therefore selected some of the hotels in Kenya both geographically and functionally as case studies for the purposes of the research. To be able to answer the research questions stipulated in the study the investigation covered design professionals, hotel customers and hotel staff. The research mainly dwelt on the

effective ways of adopting green design to the hospitality industry in Kenya using Serena Hotels as a case research.

1.7 The purpose of research

The research's main purpose was to gather information that enabled the researcher come up with ways in which green design can be adopted to the hospitality industry in Kenya. This led to development and proposition of a model/ framework of increasing the uptake and adoption of green design in the industry.

1.8 Limitations and assumption of study

This study's main assumption was that the hospitality industry in Kenya has not adopted green design practices.

The study's limitations were mainly cost related. The research involved travelling to different destinations and in some cases having to spend significant amounts of money in this destinations that were far from where the researcher was based i.e. Nairobi.

1.9 Conclusion

Sustainability and environmentally friendly practices are starting to gain more and more importance as the awareness and need for protecting the eco-system for future generations increases. There is an increased expectation by shareholders, employees and customers on the hospitality industry in regards to responsible behavior concerning social, economic and environmental factors. The hotels currently practicing green design are still a minority in comparison to the size of the global hospitality industry. This is especially due to start up efforts and the costs associate with green design practices, (Honey, 2008)

The tourism industry being a very big industry has a large impact on the environment. The industry is however making strides in instituting and adhering to green design practices through earning green certifications. The hospitality industry in Kenya is regarded majorly as a very valuable part of the national economy and an economic boom.

The industry is the second largest earner of foreign exchange after agriculture. The hospitality industry in Kenya contributes twelve point five percent (12.5%) to the country's GDP after agriculture which generates about twenty five percent (25%), (Ondicho, 2000; Government of Kenya (GoK), 2007).

Serena Hotel, Lodges and Resorts have embraced green design in most of their premises and set a pace for the industry players within Kenya and the rest of the world to follow. Although a lot still needs to be done in the industry, the use of Serena Hotel as a case study by the researcher was a guide in seeking to understand what has been done, what can be done and the benefits and challenges of the application of green design to the hospitality industry in Kenya.

1.10 Definition of terms

Kikuyu; This is a Bantu speaking community found in Kenya. The community forms the largest ethnic group in Kenya distributed in most parts of the country but mainly found within the Central regions of Kenya.

Makuti; These are types of grass roofing used in the roofing of houses in Kenya. The makuti roofing is especially used in roofing of semi-permanent houses found in the coastal regions of Kenya and among most pastoralist communities.

Manyatta; This is a habitation in form of a building lived in by people. In Kenya the manyatta is associated with the Maasai community in Kenya as most of their houses take the shape of a Manyatta. It is a dome-shaped semi-permanent structure build mainly using cow dung and mud (soil+ water mixture).

Maasai; This is one of the nilotic pastoral communities found in Kenya and Tanzania. They form part of the forty two (42) tribes found in Kenya.

Rungu; It is a wooden baton or wooden throwing club bearing special importance and significance within various tribes in East Africa. The rungu is associated with male warriors (Morans) from the Maasai community. The warriors have traditionally used it during hunting and in warfare.

Samburu; These are semi-nomadic pastoralists in Kenya mainly found in the Rift Valley and North Eastern regions. The names the Samburu people mainly use on themselves are; Lokop or Loikop although they do not agree on the meaning.

Shamba; This is defined as a piece of ground or land used for the purposes of cultivating food crops, planting flowers and trees among other vegetative uses.

1.11 Organization of the thesis

Chapter one (1) presents the background information and the introduction to the research. The chapter introduces the basic green design principles and gives a general overview of the Serena Hotels, Lodges and Resorts. Chapter two (2) gives the literature on green design and the different principles of the same. The chapter also discusses various applications of green design and drivers of the same within various hospitality industries and bodies in different parts of the world. The chapter introduces theoretical frameworks used for the research and defines the design process applicable in the adoption of green design in various scholarly contents.

Chapter three (3) provides a view and explanation on the type of research methods used to conduct the research. The chapter expounds on the design process used for the research and why, the population used and how the researcher came up/ selected a sample from the same. The section also highlights the methods of data collection; analysis and presentation that guided the research are also explained.

Chapter four (4) discusses the research findings based on respondents from four (4) Serena establishments under the TPS- Serena group selected to be the sample and professional designers who formed the focus group. In this chapter the researcher also

discusses the overall details of the respondents. Conclusions and recommendations are presented in chapter five (5). A green design framework is proposed in answer to one of the research questions. The chapter also presents areas of further research and highlights the contributions made by the research to knowledge.

CHAPTER TWO

LITERATURE REVIEW

2.1 overview

The United Nations defines the environment as where we live according to the UNEP sustainability report in the year twenty thirteen (2013). Throughout this research the researcher's reference to environment is informed by the KGBS definition of environment. KGBS defines the environment as the surrounding. This they expound by stating that the environment is everything affecting an organism during its lifetime, conception to end of life.

Dr.Gillaspy (2013) defines environmental sustainability as the practice of interacting responsibly with the eco-system or environment with the intention or hope of avoiding depletion or degradation of natural resources allowing them long-term environmental quality. This definition of environmental sustainability is what the researcher refers to in her reference of the same in this research. Environmental sustainability ensures that the current population needs are met without put in jeopardy the needs of future generations. According to Frej, 2005, green design can be described the practice in which design increases efficiency by applying or using resources in a way that reduces the effect on the environment and human health in general. This efficiency is increased during the designs' life cycle by being better oriented, designed, constructed, operated, maintained and removed.

Green hotels are described as environmentally friendly lodging premises that practice and employ sustainable and green practices reducing environmental impact in their day to day running. This they do by practice and application of programs that lead to water saving, energy reduction and waste consolidation among other green practices. Some hotels develop their own green programs in which green design is through various self-made practices. The different program could range from waste management practices to

reduction of carbon emissions to use of organic food to encouraging guests to recycle towels to the use of sustainable energy systems among others. Green design for hotels not only applies to environmental friendliness but also includes sustainability, (Michael L., 2008)

The United States Green Building Council describes a green hotel, lodge or resort as one that assures the healthiest and possibly safest environment through its construction and lifetime operation. This is done effectively through the least disruptive use of land, energy and water resources. In describing green hotels the United States, Green Building Council continues to describe a green hotel as one which emulates all of the natural systems and conditions of a pre-developed, developed and complete site, (www.usgbc.org).

The International Eco-tourism Society defines ecotourism as the practice of responsible travel, running of operations and design of tourist destinations and other natural areas to conserve the environment and promote the well being of local communities, According to The International Ecotourism Society, (http://www.ecotourismkenya.org/).

Observers within the hospitality industry claim that a green campaign should include carbon neutrality, recycling, reduction in green house gas emissions and organic gardening. These and various other green properties are encouraged within hotels to encourage use of renewable energy sources, capture waste heat from those using power generators, encourage recycling, and educate guests on the impacts of lodging-related operations to the environment. Hospitality properties and establishments should adhere to remain green and practice green design in order to reduce energy inefficiency, water usage, improve on solid waste management, employ green marketing strategies and participate in recycling programs among others. While going green is the right thing to do, staying green is a bigger challenge for most players within the hospitality industry. It is therefore important to develop a framework that acts as a guide for players in the hospitality industry to operate within, (Michael L., 2008).

To answer the research questions the researcher was guided mainly by drivers of green design as listed by the GHA;

- Competitive advantage
- Green certifications and regulations
- Consumer perceptions and beliefs
- Green marketing.
- Support and care of the eco-system.
- Resource efficiency
- Reduction in operational cost
- Peaceful co-existence

(www.greenhotels.com)

2.2 Drivers of green design

2.2.1 Competitive advantage

One of the major drivers of green design for hotels is that going green creates a competitive advantage for hotels that practice the same. This is so especially through the retention and attraction of skilled employees. Employees are the backbone of any establishment within the hospitality industry. One of the major challenges experienced within the hospitality industry is employee turnover as the cost of training and recruiting new employees is very high. Retaining employees therefore leads to a competitive advantage within hotels as when they are able to keep them long enough to understand the establishments and their visions it becomes very effective to run the businesses. Various studies show that environmental conscious establishments within the hospitality industry have greater employees loyalty as employees identify more with employers that are in line with current environmental trends. A valuable method of creating passion and encouraging teams to achieve green goals especially within a work force is the use of environmental initiatives like awards and trainings. An inclusive working environment in which the staff/ employees are educated on company's' environmental policies, included in environmental practices, keeping them challenged to achieve environmental goals

excites them. This allows them be able to identify with any establishment. Through this practice turnover rates are reduced saving different establishments in the industry recruiting and training expenses especially for new employees, (Lisa C., 2012).

Hilton Hotel's approach to the issue of high employee turnover is an initiative that seeks to train their employees who wish to build careers within the organization. This they do through the Hilton University initiative. Marriott hotel similarly launched a program to reduce employee turnover rates. The program is designed to aid in retention of employees. This they do through various in-house trainings and inclusion of employees in environmental practice through various awards within the hotel. The Marriott Hotel's managements noted that retention of employees is both good for business and as a social practice. They went on to note an improvement of employee turnover rates by one percentile (1%) would lead to between ten billion and fifteen billion ($10-15) in financial savings, (Joel T., 2010).

The Orchard Garden Hotel's manager in speaking about the importance of reducing employee turnover added that one cannot lead through sending memos. He went on to note that for effective achievement of green design within any establishment in the hospitality industry the staff should be included front to back in the green practices within the establishments. This is important in attaining sustainability goals as it is important to sensitize every employee on what the hotel is doing so that they can not only participate but also own the green practices within the establishments, (Dicum, 2007).

The Cedar House Sports Hotel creates that competitive advantage in their green practices by also using their employees to create a good perception to the consumers. This they have done by engaging staff member to create roof top gardens that attract birds and insects for guests to observe. To ensure that this practice is successful the staff members get rewards with every increase in customer numbers. Roof top gardens act as an attraction to customers and thus attract more guests to visit the hotel. The gardens however also serve to improve the green practices within the hotel. This is mainly

because they are used to cool the rooms within the hotel especially during summer reducing the use of AC and improving energy efficiency, (Dicum, 2007).

Hotels can create and enhance their corporate image through adoption of green design practices. This would result in enhancing and increasing their competitive advantage for not only the individual hotels but also for other brands they may have. Guests who frequent Starwood's Element hotel for example mainly also visit other sister properties owned by Starwood in other locations. This is due to their appreciation of the environmental efforts made by the hotel especially by encourage adoption of green design practices, (Graci & Dodds, 2008).

2.2.2 Green certifications and regulations

Green certifications are a major driver of green design practices within the hospitality industry especially in developed countries. The certifications ensure that there is no '*greenwashing*' by the hotels but rather they are really going green. Greenwashing in businesses or products refers to claims of the business or product being green while only one or two green practices have been adopted. This in short refers to a product or businesses masquerading as green while in actual sense most of the practices or elements are not green. Most businesses do this in order to mislead prospective customers as being environmentally conscious. Green certifications in most parts of the worlds are carried out by private organizations and bodies. Most governments however have started adopting this green practices especially within construction laws and policies, (www.greenhotels.com).

The major objective of a green certification program is to ensure that hotels within the industry are adhering to best green practices. The certifications also ensure that these establishments exhibit awareness of sustainability and in so doing also achieve balanced excellence in at least three critical areas: economic development, social responsibility and stewardship of the natural environment. Green certifications are not common in most of the African states but are very vital in other continents. In Kenya for example there are no set guidelines to be followed or green certifications required for establishment in the

tourism industry to operate. One of the many global programs available to the hospitality industry for environmentally friendly certification is the Green Hotel Association (GHA), (Michael L., 2008).

In most developed countries, it is a requirement that a number of green initiatives are adopted and put in place before they commence any operations. To achieve this, a number of audits and inspections are carried out on the specific business before operations. These audits are both global and local depending on the geographical location of the various establishments. Some of the most common global green certifications include but are not limited to;

1. *The Kenya Green Building Society*

KGBS is a membership based society in Kenya which was formed to advocate for the design, construction and management of green buildings. The society rates the built environment and trains the building industry players on green design practices. It is registered with the World Green Building Society among this societies one hundred (100) other members, (kenyagreenbuildingsociety.co.ke).

2. *The Green Seal's Certification For Lodging Facilities*

This certification is done by the Green Seal Organization whose headquarters are in the United States of America. The main aim of the certification is to help consumers identify certified green services and products. Science-based standards audited and inspected by highly qualified professionals are met for Green-Seal certified products before they are verified. The requirements needed before the certification are among others; meeting set standards for water consumption, waste management, purchase and use of hazardous materials and energy use. The ratings are then issued in order of strength from Gold, silver or bronze, (www.greenseal.org).

1. *The EPA Energy Star For Hospitality Facilities and Properties*

This is a United States based program that is used in certifying the efficiency of buildings. It is mainly done through inspection and auditing of energy practices and use within the various establishments. The first step for hotels to begin this certification process is monitoring and evaluating the energy use within their buildings for a specified period of time. A two thousand and ten (2010) EPA Benchmarking Factsheet reported that over five thousand (5000) properties and facilities have begun adopting this benchmarking globally. The report also indicates that well over four hundred (400) have earned the 'Energy Star' certification. Serena Hotels, Lodges and Resorts are however yet to conform to this certification, (www.energystar.gov).

2. *The Audubon Green Leaf Rating Program*

The program was developed by TerraChoice Environmental Marketing a partner of Audubon International in order to encourage lodging properties, tourist destinations and conference centers to increase their eco-efficiency. Various businesses that apply for this certification are rated with one-five (1-5) Green-Leafs. The Green Leaf rating and certification is a global initiative that is yet to gain enough sensitization. Serena Hotels, Lodges and Resorts are yet to conform to this certification, (greenleaf.auduboninternational.org)

3. *The Green Globe 21 Certification*

This certification is a third party certification based on the nineteen ninety two's (1992) UN Earth Summit's Agenda's twenty one (21) principles of sustainable development. These require hotels to meet standards and criteria of green design within their construction, operations, maintenance and products end of life. The certification certifies hospitality and tourism businesses ensuring that they meet the Global Sustainable Tourism Criteria (GSTC) one of the requirements under this certification. Some of the Serena Hotels, Lodges and resorts are in the process of conforming to this certification, (www.greenglobeint.com).

2.2.3 Consumer perceptions and beliefs

A belief can be defined as a proposition that conveys information about the relationship between two independent concepts according to Kendler (1968). A perception is described as the process involved with a person receiving, selecting, organizing, and interpreting information to create a significant image of the environment they exist, (Choi & Chu, 1999).

The last decade has seen a number of threatening environmental problems emerge threatening human life but most especially the ecosystem. These problems have included but not been limited to; pollution especially water and air pollution, the depletion of the ozone layer, global warming, erosion of farmlands and loss of various exotic species. Over consumption and depletion of natural resources have been some of the major causes of these problems. . Industrial nations especially have shown the highest per- capita consumption of these natural resources. There is, therefore, urgent need for human behavioral changes, changes in consumer perceptions and beliefs and a change in various unfavorable cultural practices for the world at large to be able to achieve any remedies for these problems. Developing cleaner and more efficient technologies as the world becomes more and more digitalized would go a long way in reducing these problems, (Oskamp, 2000).

Green consumerism is the act or process of purchasing any services and/or products which are environmentally friendly and that not cause any environmental depletion or damage to the ecosystem. This act is also referred to as environmental purchasing. Consumers embrace green consumerism within the hospitality industry for different reasons. One of the main benefit that consumer embrace green consumerism is as a way of education. Consumers are generally curious and eager to learn new things and stakeholders can capitalize on this to provide a learning platform for their consumers on the importance of greening the hospitality industry. One certification that requires information about sustainable practices by establishments within the hospitality industry is the Nordic Swan Certification in Europe. This is an eco-label certification that requires

industry players to provide this information freely and in a way all guests can read, see and comprehend, (Mainieri, Barnett, Valdero, Unipan, & Oskamp, 1997).

Sustainable development program are mainly as a result of types and levels of consumption levels that are unsustainable. It is therefore very vital for consumers to be sensitized on green consumerism and sustainable consumption practices not only in the hospitality industry but other industries as well. The conception of sustainable consumption as stipulated by the United Nations Environment Program comprises various key issues in regards to consumer perception and beliefs. These key issues encourage sensitizations of the importance of green consumerism and embracing green practices by consumers within any industry by meeting certain key practices. These key practices are among other; enhancing the quality of life, taking a life-cycle perspective on products and services, meeting standard needs, waste minimization and improving efficiency. Another key practice is taking into consideration the equity dimension and at the same time reducing the environmental and health damage caused by any product or service, (Ken P.; 2010).

There's an increased demand for green products and services within the hospitality industry that is normally as a result of environmental conscious consumers. The number of clients and consumers in general willing to seek out environmental friendly establishments in the hospitality industry is however relatively low compared to the size of the industry globally. This is mainly due to the financial difference between green hotels and those that are not. Green design is an expensive undertaking and as such most hotels go ahead to include their costs of being green to the costs incurred by consumers within their establishments. In the recent years however the sensitization of the importance of green design and green consumerism within the hospitality industry has significantly created a middle ground for guests to comfortable enjoy these green establishments, (Shaw, 2000).

Experts conducted a study on India's lodging-consumers to survey the consumer attitudes towards green practices in the lodging facilities. The experts established that

approximately twenty two percentile (22%) of the consumers lean towards more environmentally friendly lodging facilities. In a separated study conducted on Swedish and Polish hotel consumers, one of the seven categories established as reasons why hotels go green was consumer demand. This is mainly because the demands for environmental initiatives by consumers create a niche and reasonable market for hotel players to meet. An example of this is the Colony Hotel in Maine whose stake holders found that after they began positioning themselves as a green hotel their occupancy increased by one fourth (¼), (Shaw, 2000).

As the demand for green practices within the hospitality industry improves there's a need for a study on consumer attitudes and perceptions by stakeholders before commencing operations or putting up new buildings/ facilities within the industry. This would greatly enable the industry players better understand environmental needs of their intended customers and in so doing retain them. With this practice hotels offering green practices of green environments are likely to experience higher consumer retention rates that those that are not. This is mainly because more and more consumers are increasing becoming devoted to environmental practices within the hospitality industry. In USA for example approximately forty three million (43,000,000) travelers are environmentally concerned, (Lisa C., 2012)

Green consumption behavior according to Ken P. (2010), involves various forms of consumer beliefs and perceptions. These are in one or more of the following consumer process stages;

1. *Recognition of need or want*; People and mainly consumers have various basic wants and needs. These needs and wants may range from food, shelter, and clothing, security to entertainment, peace, joy and tranquility among others. In the context of consumer economies various needs and wants are articulated to have evolved into a person's pursuit "Comfort, Cleanliness and Convenience". This pursuit of comfort, cleanliness and convenience has been seen to be a major to influence to consumers in their demand for a better adoption of green design practices within the hospitality industry, (Ken P., 2010).

2. *Information Search;* Most consumers gather information on products or service they intend to 'purchase' through various sources. Family, friends and commercial sources are the most common ways of information gathering among various consumers. Consumers may also gather information via sources such as consumer guides, websites or other internet sources. This is not the case for all consumers however as some also consume products or services habitually or impulsively. Green consumers however often go the extra mile to seek out information on how green products or services they intend to buy are. The key information issue for most consumers who are sensitive to pro green practices is ecological literacy. Ecological literacy is described as the level or degree of understanding environmental issues by consumers and their ability to comprehend the end-of-life of products and services they consume and the relationship of the same to the environment, (Ken P., 2010).

3. *Evaluating alternatives;* one of the most fundamental consumer behaviors implying the process of evaluating between various alternatives and options of any product or service is choice. Consumers' green behavior involves the consumer being able to make a choice between different options availed to him/her. Green design within the hospitality industry should be a common practice within all establishments and not just a named few. This would in turn offer consumers a choice of different experiences with various products or services within the industry improving the consumer belief or conception of green design. By having various establishments adopt green design practices, the consumer perception is improved to one that identifies and embraces greed design practices as a way of life within the industry, (Ken P., 2010).

4. *Use and post-use;* For many products and designs within the hospitality industry, a holistic environmental impact greatly depend on post purchase consumption behavior and product use. There are various ways that products may be discarded after use. This would include discarding by storing, reselling, trading, loaning/giving to people who may need them more that we do or through other means like charity retailers. The aspects of pot-use for any product within the hospitality industry should be a major focus area in improving consumer belief

and perception of green design and should be environmentally friendly. This consumer behavior aspect for most products is however often neglected by most players within the hospitality industry. Players that have made effort on the same however have mainly focused on recycling behaviors, attitudes and motivations, (Ken P., 2010).

5. *Economic Rationality;* Economic incentives that may include but not limited to penalties for specific behaviors, financial rewards and subsidies for various products, services and designs can be used as one way of encouraging green consumption. These incentives however are dependent on consumer awareness and the understanding of economic implications of consumption behaviors and practices. The awareness and understanding is however often lacking or inadequate. This is improved through various green marketing strategies that would create awareness on the same to consumers. (Ken P., 2010).

6. *Media;* Green consumption behavior is greatly influenced by the media. In the recent years there has a great dependency by the public on the media for information on various products and services. The media is therefore a vital tool in educating consumers on environmental effects of various products and services to the environment and the eco-system as a whole, (Ken P., 2010).

2.2.4 Green marketing

Green marketing according to the American Marketing Association seminar (AMA) is defined as studies on adverse and/or positive environmental impacts caused by consumption of natural resources and communicated through various information channels. It is applicable to industrialized and consumer products and services and is generally a very wide concept of marketing. Green marketing according to the AMA is defined as the act of encouraging the sale and purchase of products and services that are environmentally safe. It is highly driven in most industries by a growing concern on the care of the eco-system and most players even go an extra mile to advertise their commitment in reducing the impacts their products and services have on the environment, (Michelle K., 2014).

The popular and professional press has had a lot of discussions and sensitizations on environmental issues especially through marketing initiatives. Environmental Marketing and Green Marketing are terms that have appeared popularly in the press. Green marketing has becoming a central focus in many governments' especially in developed countries. This has led to regulation of the same through the adoption of laws and policies governing the same. The National Association of Attorneys-Generals and The Federal Trade Commission in the USA for example have greatly examined green marketing issues through development of extensive documents. These seek to increase and encourage the adoption of green design within various industries in the different states, (Polonsky 1994).

Green marketing incorporates various activities that include product modification, production processes, packaging designs and materials, all of which are required to have adopted green design practices. In describing green/ environmental marketing, it is safe to say that various important practices should be constituted. These practices should be able to generate and facilitate exchanges that satisfy prospective consumers in terms of sustainability and environmental consciousness, (Polonsky 1994).

According to various hospitality industry observers eight three percent (83%) of hospitality industry consumers globally believe that companies should have effective environmental programs. More than eighty percent (80%) of global online consumers believe that companies and industry players in hospitality should produce and use products that adopt green design practices. This product need to be among others energy efficient and embrace the use of recyclable packaging materials, (Adeline, Teoh; 2013).

An increase in environmental awareness to both the consumers and the business has led to a great increment in the uptake of green design practices in the hospitality industry. The result has been a shift in consumer perspective and environmental appreciation in which consumers now are more receptive to the adoption of a more sustainable and environmental friendly livelihoods. This is evident both in the hospitality industry and in other businesses worldwide. Environmental considerations according to various authors

need to be integrated into all area of new product development, marketing and communication. This is in order to continue this uptake of green design practices. Environmental awareness has resulted to an increase in products that are environmentally friendly resulting to the creation of new environmental ethics and effecting changes in consumerism, (Michelle K., 2014).

Some of the most efficient ways of green marketing is the use of labels. Green labels are also referred to as eco-labels and are very common practices within hospitality industry players that adopt green design practices. Most of these eco-labels are informative to the consumers especially on the ingredients of various products and sensitization of end-use practices. There are other forms of eco-labels emerging. Other aspects of the consumption process like life span labeling are influenced by these eco-labels. Labels can be used as a major tool in green marketing by giving consumers important information on the product's potential life cycle, repair potential or recycling and reusing potential. Eco-labels can also be used to improve the information balance between consumers and producers and mitigate the erosion of trust buy consumers which is greatly caused by greenwashing and wrong media coverage. Some establishments within the hospitality industry also embrace green initiatives within the establishments as green marketing tools, (Ken P., 2010).

2.2.4.1 Advantages and drivers of environmental/ green marketing

There are various reasons for hospitality industry players' increase in the adoption of green marketing practices. The commonly cited reasons are mainly;

1. Environmental marketing is viewed by different organizations as an opportunity they can use to achieve the businesses' objectives, (Keller 1987, Shearer 1990).

Firms marketing their products and services with a bias towards environmental sensitivity in most if not all cases often end up having a competitive advantage over those marketing the same products or services with non-environmentally biased alternatives. To meet objectives in environmental marketing different firms have strived to embrace environmental conscious practices over others. Examples of some of these firms are;

- McDonald cited consumer concern on polystyrene production and the depletion of the ozone layer and replaced their clam shell packaging with waxed paper, (Polonsky, 1994).

- Increased consumer concern on the death of dolphins through their driftnet fishing technique resulted to Tuna manufacturers modifying their fishing technique to greener and more sustainable ones, (Polonsky, 1994).

- A demand for less environmentally harmful products saw Xerox introducing a high quality recycled photocopier paper,(Polonsky, 1994)

2. A belief in a moral obligation for social and environmental responsibility is another reason why establishments embrace green marketing strategies. Although this may not necessarily be used as a marketing tool by these firms in any way it serves to show responsibility of these firms towards the eco system, (Davis 1992, Freeman and Liedtka 1991, Keller 1987, Shearer 1990).

An example of such a firm is Coca-Cola. Coca-Cola however does not promote its environmental practices or use them as green marketing tools. Large sums of money are invested in a number or recycling practices and in reducing environmental impacts by modifying their packaging. Although Coca-Cola is concerned about the environment and adopts green design practices many consumers hardly realize or understand them as they do not use these practices as marketing tools. Walt Disney World (WDW) is another company that adopts environmentally friendly activities but does use the practices as marketing tools. The company has a very elaborate waste management program and has put very efficient infrastructure in place for the same. This is however not highlighted in most of the company's general tourist promotional activities, (Murphy, 1985).

3. Government bodies are forcing company's into embracing environmental friendly practices making this another reason why companies are adopting green marketing, (NAAG, 1990).

The regulations are mostly designed to protect consumers in a number of ways including; 1) aid in the reduction of harmful goods; 2) Reduce the consumption of harmful goods to the environment by both industries and individual consumers; 3) Ensuring that consumers are able to evaluate the environmental compositions of products, (NAAG, 1990).

4. Green marketing is also embraced in most establishments in the hospitality industry to create an edge for the various businesses that place them as better destinations in relation to their competitors. Firms are pressured to change or improve their environmental marketing activities by competitors' environmental activities especially in cases where the competitors are adopting greener marketing activities Most firms have emulated competitors practicing green marketing strategies in order to not lose customers and this has greatly led to modifications in green design practices within the hospitality industry, (Polonsky, 1994).

5. Reduction in operation cost is a driving force too towards adoption of green marketing strategies. For most hotels, green marketing strategies require the establishments to adopt green practices so as to have something to market. Firms are also forced to modify and adopt environmental marketing strategies by adopting green design practices due to cost factors especially those associated with waste disposal or reduction in material usage. This is a bid to reduce cost of operations, (Azzone and Manzini, 1994).

Green marketing also involves selling or educating the public and consumers on green practices in different establishments. Firms can also position themselves as those that can provide different materials that they would otherwise regard as waste to other firms that may use these as a raw material. The need for unsustainable raw materials requiring unsustainable means to get them is reduced. Waste levels are also reduced. This is a win-win situation especially for industry players as both the cost of raw materials and that of waste management are reduced. A good example of this is an Australian firm which produces acidic waste water during the production process and sells the water to a different company involved in the neutralization of base materials and elements (Polonsky, 1994).

2.2.5 Support and care of the eco-system

As the hospitality industry is one of the biggest industries in the globally there is a lot of environmental impact both negative and positive caused by the same. As global warming increases, natural resources are depleted and pollution gradually mounts, going green is

becoming more important than ever in this industry. Reducing these ecological footprints involves thinking about any products' from production to its end-of-life. Within the lodging industry, an important part of the hospitality industry, it also involves a reduction of these ecological footprints within the day to day running of the lodging facilities. This involves consumption practices like heating, cooking, cooling, laundry, products used like shampoos, soaps and gels among others. Disposable products have a larger footprint on the ecosystem that reusable, refillable or recyclable products and thus should be reduced, (Lisa C., 2012).

When it comes to the care of the environment in the hospitality industry the environment and tourism are believed to go hand in hand. Consumers visit various destinations in order take part in activities such as skiing, diving, hiking among others. These activities would not be possible if the environment in which they are to take part is not taken care off. Global climates however continuously threaten to destabilize these areas where tourism activities take place. This is through flooding of coastal area, melting glacier and snow packs, this may in turn cause aridity in various area and decrease biodiversity which threatens wildlife, another tourist attraction. Tourism also contributes to climate changes through un-environmentally friendly tourist activities that lead to over-consumption of natural resources. This mainly apply to tourist activities, transportation means that are energy inefficient, consumption of goods and services, carbon emissions and through unsustainable lodging activities among others. The hospitality industry's organizations, bodies and leaders as well as the United Nations World Tourism Organization (WTO) are encouraging all sectors of the hospitality industry to stop over-consumption and reduce green house gas emissions that increase global warming, (www.greenhotels.com).

There are some hotel owners and hospitality industry players that have succeeded in adopting green design practices reducing the impact of their designs and operations on the eco-system. Some of these are:

1. *The Muse, Kimpton's Hotels, in New York*

The hotels' captures their green design practices in their mission statement. The hotels' mission statement encourages both the guests and employees of the hotels to support a sustainable world by the use of non-intrusive, eco-friendly and high quality products and services. There are a number of strict corporate environmental policies that govern various departments within the establishments that all hotel properties and departments are expected to adhere to. The policies include; organic foods and beverages, environmental friendly products to be used within the operations of all departments, reuse and recycle programs especially for linen, energy efficient practices and efficient water conservation practices. The hotels also offer pedicabs which are used as sustainable local transportation means for guests' commutes as well as hybrid cars. The hotels have continued to introduce and practice new and improved green initiatives through their green initiative program commonly referred to The Earth Care Program. One of the major green design practices by this hotel is the use of large windows to allow for use of natural lighting and reducing energy consumption as shown in figure 2a below, (kimptonhotels.com).

Figure 2a; large windows for natural lighting at the Kimpton's Muse
Source; kimptonhotels.com

2. *The Seaport and World Trade Center in Boston*

These properties adhere to various eco- friendly practices within the establishments. These practices include: allergy/asthma-friendly rooms, green cleaning products, ozone-gas laundry services, resource and in-room recycling, biological decomposing, smart thermostats and transportation subsidies. One of the unique offering is the company's green wedding package. This package plan includes a collection of environmentally sensitive elements and products like use of biodegradable and/or recyclable products for decorations, (seaportboston.com).

3. *The Intercontinental Hotel Group- (IHG)*

The IHG is an international company within the global hospitality industry owning several large hotel brands. Some of these hotel brands owned by IHG include Flagship Brand Intercontinental Hotels and Resorts, Crowne Plaza and Holiday Inn. To encourage energy saving practices within and without its establishments The IHG introduced innovative energy saving campaigns dubbed 'Green Engage' and conducted online. These campaigns helped reduce its energy use and carbon emissions. The online campaigns are still run by the group and are used as a way of encouraging hotels of similar sizes to compete and evaluate on best energy conservation practices. This has led to an increased uptake and adoption of green design practices within various establishments in the hospitality industry in areas where the establishments exist, (Joel T., 2010).

4. *The Hilton and Fairmont Hotels*

The Hilton in demonstrating their accountability and credibility in their environmental conservation claims partners mainly with government bodies. One of such partnerships is with the United States Department of Energy for the hotels' establishments found in the United States. The intention of this particular partnership is mainly to help hotel players reduce energy consumption within their establishments. Fairmont Hotels formed a partnership with the United Nations Foundation's World Heritage Alliance (UNWHA) aimed at promoting and practicing conservation and sustainable tourism. The partnership

way of environmental conservation was sensitive to these hotels particularly as they are found in or adjacent to UNESCO World Heritage sites, (Joel T., 2010).

5. *Staff Awareness and engagement*

Staff awareness and engagement is another important issue that should be taken into consideration in the adoption of green design practices especially within the hospitality industry. This is important as hotels are very people intensive operations and awareness and engagement of staff is crucial for the successful uptake of sustainable programs. Hilton hotels for example initiated a program to engage and train staff on environmental practices within the hotels in the year two thousand and six (2006). One year after the initiation of the program energy emissions reduced by approximately ten percent (10%) and water use reduced by approximately five percent (5%).

Scandic Hotels in Scandinavia are among the largest hotels in the country. The hotel chain has one hundred and forty (140) hotels under their management and all set a goal to become the most environmentally friendly and energy efficient company in Scandinavia. This was to be done through the high level of services and facilities offered in each establishment through focusing on its employees as a means of diving both social and economic performance. The program included training programs on ecological sustainability and also on a program to save money spent on unsustainable programs like sending paper Christmas cards and donating it to a more worthy environmentally sustainable endeavor in the establishment, (Joel T., 2010).

6. *The Confederation Place Hotel (Kingston, ON)*

The hotel is a one hundred (100) room full service hotel which also has a conference centre. The London Ontario's Energy Works approached the hotel to install solar panels to be used for water heating. The hotel installed twenty (20) solar panels which could preheat water by twenty five to thirty (25-30) degrees saving over seventy percent (70%) of the energy used in water heating. This project cost the fifty two thousand ($52,000) dollars. Of this cost of the project approximately fourteen thousand ($14,000) dollars was eventually recovered through grants from the government. Approximately ten thousand

($10,000) dollars was also recovered through energy saving in the first year of using the solar panels. The hotel was also able eliminate approximately twenty (26) tones of carbon emissions through reduction in gas usage, (Joel T., 2010).

7. *Institutionalized Environmentalism – Fairmont Hotels*

Most hotels embracing green design practices within the hospitality industry are doing so by adopting self-made environmental policies. These policies are tailor made to suite the mission and vision statements within the various establishments. One of the biggest hotel operators within the hospitality industry globally is The Fairmont Hotel. Environmental plans and practices are a core value for all of their establishments and are a must-have as part of the business mission. A 'green-team' is established as part of the hotels' policies in the various establishments to help find area and ways of improving the environmental efficiency within different departments and increasing the adoption of green design in the various hotels, (Joel T., 2010).

2.2.6 Resource efficiency

Many hospitality industry observers globally claim that an eco-friendly campaign should include various environmental friendly practices. These practices include but are not limited to reductions in greenhouse gas emissions, carbon neutrality, recycling and organic gardening. Green design practices within the industry are especially encouraged to capture waste heat from power generators, be energy efficient, and participate in recycling programs and train guests and staff on environmental impacts of non- green practices among others. This ultimately leads to better care of the eco-system, (www.greenhotelier.org).

One of the most successful ways of being resource efficient within the hospitality industry is buying locally. This could be done through sourcing of various materials like artwork, furniture, textiles, etc., from neighboring environs and communities, before widening the scope to other geographical areas such as entire country, region, continent and the globe. Sourcing of local materials locally greatly reduces the emission of carbon

by vehicles used in transportation of materials from other longer distances and in turn also support the local communities economically, (www.greenhotelier.org).

Reclaim, recycle and reuse are other ways of being resource efficient. A lot of accessories within establishments in the hospitality industry are made out of recycled or reused materials. These recycled and/or reused products are usually very unique pieces of art and act tourist attractions. Hotels should therefore be encouraged to embrace products made of recycled and reclaimed materials such as; furniture, rugs, carpets, fabrics and art accessories among others, (www.greenhotelier.org).

The careless use of water within the hospitality industry is one of the major ways which result to a careless use of natural resources. The careless use of water in buildings causes a variety of environmental problems that mainly culminate into unsustainable water management practices especially for the waste water. Under many building codes within different construction laws and policies all water used in buildings must be of portable quality. After use, waste water must be routed through water treatment either within or without the sites before being released to the ecosystem. Some establishments within the hospitality industry including Serena Hotels, Lodges and Resorts have successfully embraced this practice but these still needs to be improved, (Vivienne, J. Owens., 2011).

Energy-efficiency as a green design practice should be at the heart of any interior design for any hospitality industry establishment seeking to adopt green design practices. Energy efficiency can especially be achieved by installing high-efficiency materials, products and materials. These materials could range from a variety of products like; lightly painted walls for capturing daylight and reflecting heat from other objects, heat retention walls, curtains that are heavily insulated keeping the cold and sun out and low energy systems. According to the USGBC, buildings loose eighteen percent (18%) of their heat through the windows. A study conducted by the Caledonian Glasgow University in the year two thousand and eight (2008) showed that heat loss through building windows was reduced by approximately fourteen percent (14%) by using heavy curtains. To achieve this Hilton Hotel's Waldorf Astoria in New York continuously

encourage the stuff to close windows using curtains and shut blinds when rooms are not in use, (www.greenhotelier.org).

Good lighting is a central focus in the design of most lodging facilities in the hospitality industry. Lighting however is one of the greatest consumers of energy. Use of low energy light bulbs reduces energy consumption in hotel and other lodging facilities by approximately four (4) times. Other energy efficient practices that reduce energy consumption is the use of dimmers and motion detectors. Lampshades and a range of lamps could be designed in more innovative ways by using recycled materials such as glass, plastic and wood among others. LED lights are used as art pieces and accessories in various spaces within the W. Hotel in Fort Lauderdale, Florida. These custom-designed LED lights are an important part of the interior design and deco in the hotel, (www.greenhotelier.org).

Floors and walls are an integral part of hotel designs and are a key element in achieving green designs within the hospitality industry. Designers could also use elements having chemicals that are not environmentally harmful for the design of various floors and wall materials. Some of these environmentally friendlier materials that can be used include; linoleum, wood, cork and other recyclable and biodegradable materials. Other green options are natural slate and stone as they have a built-in-durability essential for them to cope with high traffic levels especially when used to design floors. Recyclable carpets are also becoming a very popular choice for hoteliers. Kingsgate Marriott Conference Hotel, US, adopted green practices in renovating the corridors and elevator lobbies within the premises. During these renovations vinyl wall coverings from six floors was removed and placed in reclamation bins. The wall coverings were later shipped to be recycled into new wall coverings for the elevator lobbies and corridors in another establishment owned by the hotel, (www.greenhotelier.org).

Efficiently incorporating fibers and fabrics as major design elements in the hospitality industry could be a major way of adapting green design in the hospitality industry. Fabrics and fibers within the industry are majorly used in the designing of duvet covers, bed sheets, mats, napkins and table clothes and curtains and soft furnishings. To

successfully adopt best green design practices using fabrics and fibers it is important to use fabrics and fibers manufactured using processes with the most minimal environmental impact. Some eco-fabrics that could be adapted in adopting greed design include; organic cotton, recycled/reclaimed cotton, organic linen, recycled PET (polyethylene terephthalate), bamboo fiber and hemp, (www.greenhotelier.org).

Orchard Garden Hotel, US

The luxury Garden hotel too embraces green design practices. The hotel adopts recycling practices within most of its department to reduce on waste and its impact on the environment. Most of the fabrics made of recycled material are also machine-washable and fire- rated for increased efficiency and reduction in chemicals associated with dry-cleaning. The fluorescent light bulbs fitted in the hotel use sixty percent (60%) less energy than normal bulbs. The light bulbs also last ten (10) times longer than normal bulbs and generate approximately seventy (70%) percent less heat saving on energy used for air conditioning. Climate control systems have also been installed in each guestroom, (www.greenhotelier.org).

Ambrose Hotel in Santa Monica

The hotel embraces reducing, reusing and recycling practices as a way of adopting green design. It composts and continuously carries out research and studies in a bid to come up with green design practices and alternatives to be adopted in the cleaning of various spaces within the hotel. The hotel through these studies has been using some of the most ecologically friendly cleaning products. The Ambrose hotel greatly supports the local community by sourcing raw materials from them. Applications in various internal operational areas within the hotel like energy conservation, water conservation, non-toxic housekeeping practices, waste reduction, alternative transportation, staff and guest awareness, and community service are all guided by green philosophies. The hotel also has unique practices geared towards promoting green practices that include: preferred parking spaces for hybrid vehicles, 'Here there and everywhere' e-newsletter, green meeting planner, and complimentary bus passes for hotel employees. These green design

practices by the hotel have effectively increased operation efficiency for the hotel. Some green design practices within the hotel are as shown in figure 2b below, (ambrosehotel.com)
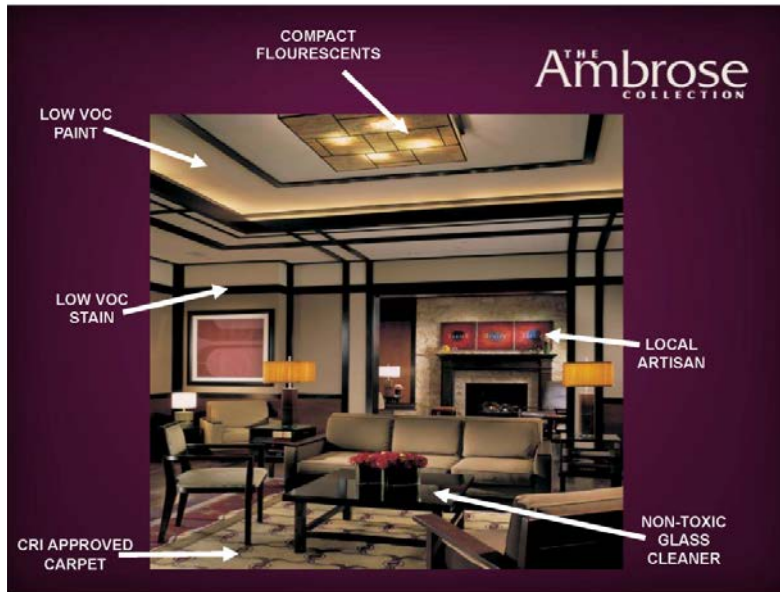
Figure 2b; Green design practices at The Ambrose Hotel, Santa Monica
Source; ambrosehotels.com

2.2.7 Reduction in operational cost

Adoption of green design practices could translate to the hospitality industry realizing substantial reductions in operating costs. Reduction in operational costs within the industry could also translate to creation of a competitive advantage for establishments that embrace this green design practices. Reduction in employee turnover rates also greatly reduces the cost of operations. Different authors have shown that employees within the hospitality industry are more loyal to establishments that are environmentally conscious reducing costs associated with high turnover rates, (Lisa C., 2012).

Implementation and adoption of green design practices has been proven, through various studies, to be a major source of economic gain in the hospitality industry. The Hyatt Regency International Hotel in New Zealand installed energy saving systems that were based on rrom occupancy. This program turns common appliances and systems on and

off when the guest is in and out of the room respectively with the exception of necessary appliances like the refrigerator and alarm clock. This practice saves the hotel fourteen thousand dollars ($14,000) annually. Earning a higher yield per customer is also another benefit associated with reduced operational costs. The Marriott Hotel in Maryland also adopted these energy saving systems that are believed to save the hotel approximately thirty percent (30%) less electricity than any other comparable property. The hotel is therefore able t save on energy bills and at the same time yield a higher return per customer in comparison with their competitors charging same rates but not adopting energy saving systems, (DeLollis, 2007).

2.2.8 Peaceful co-existence

The relationship between the hospitality industry, the employees within the industry, the surrounding communities and the environment in which various establishments in the industry exist is a major driver in the adoption of green design within the industry. Positively impacting employees, the community and the environment creates a conducive environment for effective adoption of green design within the industry, (www.greenhotels.com).

Hospitality industry players and the lodging facilities especially have the greatest impact on the environment they exist in and the surrounding communities. This is mostly because they have a direct economic impact on the communities around them through various activities like sourcing raw materials and providing employment opportunities among others. This greatly results in peaceful co-existence with surrounding communities enabling seamless operations within the different establishments, (www.greenhotels.com).

CSR initiatives within most establishments in the hospitality industry are often shelved in today's economy in order for companies to focus more on their operations. CSR initiatives however are core drivers of green design practices in any industry and if embraced could lead to an increase in the adoption of the same within the hospitality industry, (Joel T., 2010).

2.3 Problems associated with green design

Adoption of proper green marketing strategies is one of the major problems associated with the adoption of green design in the hospitality industry. For firms to successfully adopt green marketing strategies they must ensure that the marketing practices do not breach any marketing laws and regulations and are not misleading to the consumers. This sometimes proves difficult and firms have faced various law suits for not achieving the same. Green marketing claims that must be adhered to and are a major problem for most industry players are;

- Clearly stating the environmental benefits of the product or service.
- Explaining the environmental characteristics of the product or service.
- Ensuring negative environmental factors are taken into consideration.
- Using meaningful terms and pictures that can be easily understood by the consumers.
- Explaining how environmental benefits are achieved using the product or service.

(www.usgbc.com)

Most companies and establishments modify their products due to consumer concern and this sometimes become a failure as sometimes consumer perceptions are not always correct. McDonald's for example sparked an environmental debate on the environmental safety of their products when the company replaced its clam shells with plastic paper due to consumer demand. Some scientific evidence however suggests that in taking a production to end-of-life approach for both products used by McDonald's polystyrene is definitely least environmentally harmful. The debate on these products has being going on for a while but if this is the case however, this would mean that McDonald's bowed to consumer pressure but ended up choosing a more environmentally harmful option, (Polonsky, 1994).

In attempting to become socially responsible some establishments within the hospitality industry face the risk of adopting an environmental responsible action in today's context that may be found to be harmful in the future. This is mainly because the eco-system has become so unpredictable due to the careless use of its natural resources. The aerosol

industry switched to hydro fluorocarbons (HFCs) from Chlorofluorocarbons (CFCs) to reduce green house gas emissions and was later informed that HFCs are also a green house gas, (Polonsky, 1994).

Government policies and laws that lead to green certifications especially within the hospitality industry motivate the industry into being more environmentally responsible. Although these certifications allow consumers to make more environmentally friendly choices it is hard to establish policies and laws to address all environmental issues. The existing policies, laws and guidelines that have been developed both locally and globally to reduce harmful environmental practices within the hospitality industry only address a very narrow set of existing environmental issues. A lot more still needs to be done to address all environmental issues and this requires a lot of resources that may not be available immediately, (Schlossberg 1993).

In creation of competitive advantage some competitors follow the 'leader' in adopting certain practices that may not be entirely beneficial to both the environment and the establishment. Sometimes a 'leader' can have mistakes in the practices they adopt causing the 'followers' to adopt this same mistakes while reacting to competitive pressure. One such example is the Mobil Corporation which while following the competition introduced "biodegradable' plastic bags. The conditions through which these plastic bags were disposed however did not allow biodegradation to occur. This resulted to the corporation being sued by several states in the USA for using misleading advertising claims, (Lawrence, 1991).

Establishments within the hospitality industry may not necessarily be forced to deal with vital issues of environmental degradation through the push to reduce their costs or to increase their profits. End-of-life solutions such as recycling and reusing may not necessarily lead to a reduction in waste but may end up shifting it around. It is therefore important that as hospitality industry players adopt green design practices as an effective way of reduction in operation cost, they are vigilant to adopt practices that indeed lead to reduction in environmental degradation, (Polonsky, 1994).

2.4 Theoretical framework

The Fishbein and Azjen's (1975) Reasoned-Action Model and the Azjen's (1985) Theory-of-Planned- Behavior are the theoretical frameworks and constructs that contributed to the comprehension of this study.

2.4.1 Reasoned-Action Model

This theory is an antecedent to the second theory used in the research (the theory of planned behavior). The theory explains that the intention to perform a certain behavior determines the execution of that behavior. The theory suggests that subjective norm and attitude towards behaviors are a result of behavioral intention, (Azjen and Eishbein, 1980).

Chart 2.4a; The reasoned-Action model
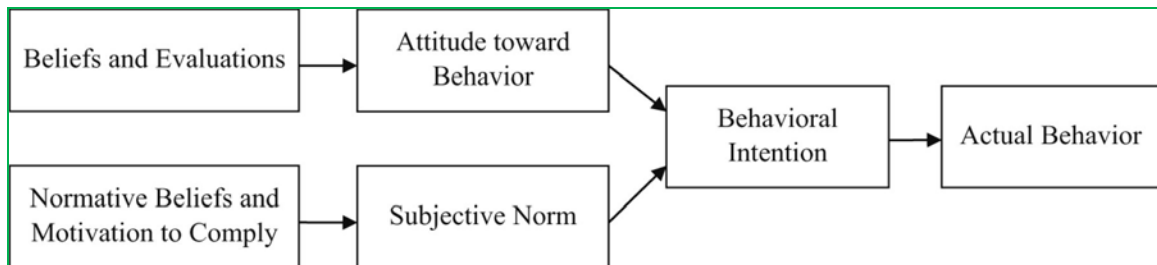
Source; www.google.com

2.4.2 The theory of planned behavior

This theory is explained as an improvement to the reasoned action theory and was proposed by Azjen (1985). The theory states that behavioral intentions are some of the perceived behavioral controls that result from subjective norms, behavioral control and attitude towards behavior. Generally positive behaviors such as sustainable behaviors and practices are seen to promote good behavioral intention. Obstructions like a conception that a behavior may not have any positive impact for example on the environment may however hinder perceived behavioral control, (Azjen, 1985)

Chart 2.4b; The theory of planned behavior
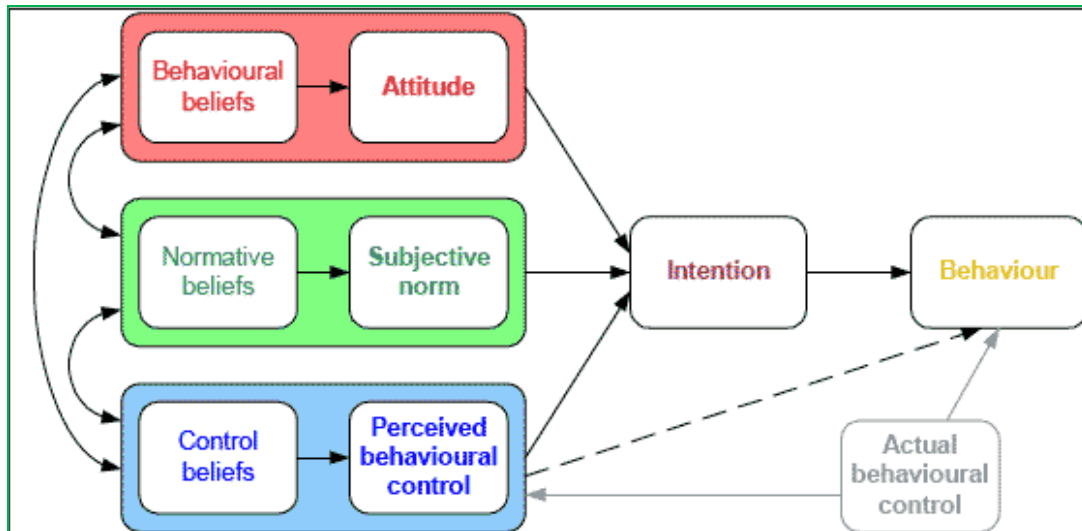
Source; www.google.com

2.5 Design process

The word "design" often refers to the art of making anything using a conscious mind. It is a process that is used to systematically solve problems. A design process is described as a systematic problem-solving strategy, with different criteria and constraints, used to develop many possible solutions that are geared towards solving or satisfying human needs or wants and narrowing down the possible solutions to one final choice. The design process usually occurs in various teams where each team member contributed different kinds of ideas and expertise towards solving a design problem. There are many different design processes used in different fields depending on the nature of any job or project, (www.westcampus.scusd.edu).

One of the most common design processes is the double diamond design process. This design process was developed at the Design Council in the year two thousand and five (2005) through in-house research to simply and graphically describe the design process. The design process is divided into four main phases which are; discover, define, develop and deliver. These four (4) phases are used to showcase the different ways in which designers think and act, (www.designcouncil.org.uk).

The first phase of the double diamond model is the 'discover' phase. This phase marks the beginning of the project and starts with the initial idea which is often sourced from a discovery phase. User needs are also identified in this phase that may include; user and market research, managing information and designing of research groups. The second of the model is the 'define' phase. The interpretation and alignment of user and market needs to the specified business objectives are achieved in this phase. Project development, management and sign-off are the key activities during this phase, (www.designcouncil.uk).

The third phase of the double diamond model is the 'develop' phase. Solutions are developed, iterated and tested within the design team and are led by the project objectives. During this phase a number of key objectives and activities are involved which include visual management, development and testing methods and multi-disciplinary working. The final phase of the model is the 'deliver' phase where final products and services are launched within the relevant industries, clientele or companies. During this phase there are key activities involved which include final testing, approval, launch, evaluation and feedbacks, (www.designcouncil.org.uk).

According to different publications there are five (5) major stages involved in any design process. These stages are;

1. *Define the problem*

Within any design process this stage begins with the identification and establishment of specific user and market needs. The perceived need, in some cases, may not be really needed hence the importance to identify the specific need and whether the need is actually there. It is however important for a designer to make sure that he/she has enough information about the problem they intend to solve before delving into production or design details. This confirms that the designer is in a position to come up with a clear, unbiased and unambiguous definition of the problem which can address the actual and specific user and market needs, (Seyyed Khandani, 2005).

On establishing the need the design/design team together with any relevant personnel involved in the design process define the specific problem. The problem is defined in a clear and easy to understand statement normally referred to as the 'problem statement'. The problem definition is achieved through data collection, running various design experiments, performing of impact-access evaluations to any affected community or area (especially in case of lodging facilities in the hospitality industry). A criterion for success is then developed. This is mainly based on the designer's background knowledge on the project at hand and applies to the specific problem statement. The criterion is also based on the research that the designer or design team has conducted in defining the problem, (Seyyed Khandani, 2005).

Seyyed Khandani (2005) states that a common criteria for success in design projects usually includes the problem definition statement with the preliminary criteria listed below,

- Low cost.
- Safe; especially in regards to children
- Detrimental to the environment
- Aesthetically pleasing
- Easy to use and operate.

2. *Gathering of pertinent information*

All information necessary to carry out the design is gathered before going any further in the design process. Facts about the problem can be revealed through gathering of the information resulting to a redefinition of the problem. It is through this stage that the designer or design team may discover mistakes, false starts or strengths brought out by other designers with similar projects. Gathering pertinent information can be done through internet sources, articles, books, journals, indexes and catalogues, (Seyyed Khandani, 2005).

3. *Generate multiple solutions*

This stage involves creativity and a lot of patience. Existing solutions to the design problem are examined and torn apart to find out why they did not initially solve the said problem. After establishing any weakness(es) on pre-existing solutions focus shifts to how to improve them. New ideas, methods and tools are thereafter consciously combined by the designer/ design team producing a totally unique but sensible solution to the design problem, (pbs.org).

4. *Analyze and select a solution*

Once a sensible solution has been identified and worked on/ designed an analysis of the different solutions is done. Analysis, within the design process, is described as the use of technical knowledge in the evaluation of the proposed designs. This greatly determines which solution is best suited for implementation in the specific project/ job/ design problem. Before deciding which design solution to implement, each alternative solution is analyzed and evaluated against the selection criteria defined in the earlier stages of the design process. Several types of analysis are carried out to achieve the same. The most common analyses however are as listed below, (www.saylor.org).

Functional analysis: This analysis is used to determine the probability of the proposed design functioning as it should in solving the design problem. This analysis is very fundamental to the evaluation and design success of the various design solution proposed to solve the design problem. A design solution that does not function is a failure if even if it ends up meeting all other criteria, (www.saylor.org).

Industrial design/Ergonomics: Ergonomics is the human factor in a given design. It is also a study of how people interact with various designs, products or spaces. Any solution to a design problem can only be rated as a success if it effectively serves the end user, (www.saylor.org).

Product safety and liability: The assurance that the proposed design does not cause injury or any harm to humans or any other subject interacting with the proposed design is the primary consideration during this analysis. This analysis also extends to property and environmental damage that may result from the use of the design, (www.saylor.org).

Economic and market analysis: The sole purpose of the hospitality industry players is to generate income and make profits. Sales features, potential market benefits, manufacturing costs and advertising are some of the major criteria that need to be analyzed to ensure that the design meets income generation needs of stakeholders within the industry, (www.saylor.org).

Regulatory and Compliance: The regulatory and compliance analysis is very vital as it ensures that any proposed designs meet regulatory needs of all concerned bodies. The analysis also ensures that the proposed design(s) complies with all certifications, rules or any needs required by any relevant bodies or government. In the case of the adoption of green practices in the hospitality industry this refers to green certifications that are required before and during operations of any establishment in the industry, (www.saylor.org).

5. *Testing and implementing the design solution*

This final stage of the design process refers to the testing, production and implementation of proposed design solutions. During this stage the designer considers various methods of implementation such as developing proposals, prototyping, making models, documentation and/ or applying for patents where necessary. At this stage the design is also refined against any changes proposed by the client, (www.saylor.org).

Testing and verification is vital in every stage of the design process. This is mostly because if a designer does not test and verify the design at every stage he/she may end up making costly mistakes in later stages of the design process. The final design is also tested and verified and then communicated effectively to all concerned parties before implementation, (www.saylor.org).

2.6 Conclusion

The practice of green design within the hospitality industry is picking up speed especially with the emerging importance of concepts like carbon trading and energy efficiency among others. An introduction and successful implementation of government regulations and policies on green design and green certifications by various bodies continues to support the adoption of these green practices within the industry. It is however important for government legislation on green design practices and certifications to become a main focus for the hospitality industry in a bid to increase the adoption of green design practices. Support by relevant government bodies and other stakeholders in this policies and laws being implemented are some of the area that lead to a successful adoption of green design within any industry.

Over the past several decades, hoteliers and tour operators in various parts of the world have turned their focus to the importance of sustainability in the hospitality industry. This has been so mainly because it relates to hotel development and operations, including the environmental, economic and social impact. Sustainability through green design practices in various industries is one of the most important issues currently facing our world. The Orchid, Mumbai for example is an inspiration for hotels that are attempting to adopt green practices in India. It stands out to be the shining exemplar of the advantages of green hospitality and sets the precedent for success in providing luxury with environmental responsibility. This has been done through successful adoption of various green design practices that have proved beneficial to the establishment, the community and the environment.

One of the biggest players in ecotourism is the hospitality industry. There is therefore need to prioritize the greening of this industry in order to reduce the ecological footprints by products and services in the industry from the production to end-of-life. By adopting this way thinking in embracing green design players in the hospitality are able to think about the production, use and end-of-life of any product or service that they introduce within their establishments. Green design practices therefore require to be thought through before implementation to ensure that they lead to reduced environmental degradation and not vice-versa.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This section provides a view and explanation on the research methods used to conduct the research. The chapter expounds on the design process used for the research and why, the population used and how the researcher came up/ selected a sample from the same. The section also highlights the methods of data collection; analysis and presentation that guided the research are also explained.

Research, according to Ranjit (2005), is one of the many ways used to find answers to questions in a study. Ranjit (2005) in explaining research, says that when one says that they carrying out research with the intention of finding answers to questions they are implying that in carrying out the research;

- A framework of a set of philosophies is being used in undertaking the research.
- The research is been undertaken using procedures, techniques and methods tested for reliability and validity.
- The researcher intends to be unbiased and objective.

In explaining the characteristics of research, Ranjit (2005) goes on to say that research should be controlled, rigorous, and systematic. In addition to that research should also be valid and verifiable, empirical and critical. Webster (1985) describes research as a process of searching or investigating exhaustively. It is a diligent and careful search, examination or studious inquiry aimed at discovering and interpreting facts, revising and accepting theories or laws in the light of coming up with new laws, facts and revised theories. A research is simply a collection of data on a specific topic, (Webster, 1985).

An applied research was carried out in this study as through the research the researcher hoped to propose a framework that can be used to solve the problem of adoption of green design to the hospitality industry in Kenya. The research design was mainly qualitative

and a case research approach was used in undertaking the research. The research population was the hospitality industry in Kenya. The hospitality industry is a big industry and as such the researcher would not be able to carry out the research in the entire industry. In this regard the population sample was selected from the Serena Hotels, Lodges and Resorts from where a sampling unit was picked. The sample was selected using the purposive and convenient sampling techniques. Data was basically generated using interviews, observations and questionnaires. The data collected was analyzed using thematic analysis and narrative analysis. Ethical considerations were put in place e.g. the researcher was expected to maintain the confidentiality of research participants where necessary.

3.2 Research process

In carrying out the research, the researcher followed a research process guided by Ranjit's (2005) understanding of the research process as in table 3.2a below. Ranjit defines a research process as the formula or method used to come up with a research, carry out the research, analyze it and present it.

Table 3.2a: The design process

Formulating the research problem	Conceptualizing the research design	Gathering instruments for data collection	Writing a research Proposal
Writing a research report	Processing data	Collecting data	Selecting a sample
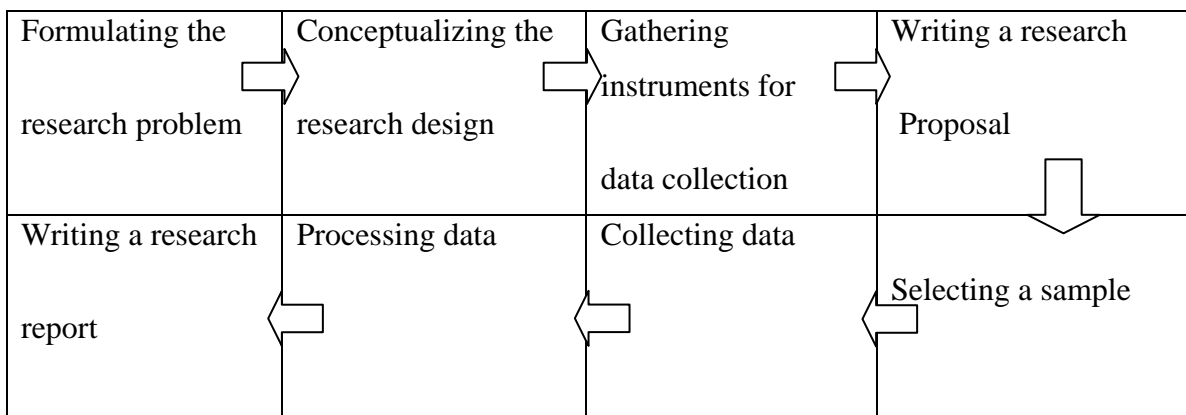
Source; Author

3.3 Philosophical assumptions

According to John W (2007) there are various philosophical assumptions consisting of different things that directly or indirectly influence how we conduct research. These are;

a) *Ontology*; According to John W (2007) it refers to a stance towards the nature of reality and its characteristics.-

b) *Epistemology*; John W (2007) describes epistemology as an assumption involved with how the researcher knew what he knew. This is mostly by the amount of time the researcher spends in a field carrying out research. The longer he or she stays in the field the longer he or she knows about the participants.

c) *Axiology*; these are the roles of values in the research – in qualitative research the researcher admits the research's value-filled nature. The researcher reports the value-laden nature of the information he/she has gathered as well as actively reports biases and values of the research, (John W., 2007)

d) *Rhetoric*; John W (2007) describes rhetoric philosophical assumption in research as the language of the research.

e) *Methodology*; This philosophical assumption in research is described as the method used in the process, (John W., 2007)

This research concentrated on three fundamental philosophical assumptions that can influence the way we understand and conduct research as cited by John W. (2007) and these assumptions are epistemology, axiology and ontological assumptions as described in the table 3.3a below.

Table 3.3a: Philosophical assumptions guiding the research

Assumptions	Questions	Characteristics	Implications for practice (Examples)
Ontological	What is the nature Of reality?	Reality is subjective and the multiple, as seen by participants in the research.	The researcher will use quotes and themes in words of participants and provides evidence of different perspectives.
Epistemological	What is the relationship Between the researcher and the being researched?	Researcher attempts to lessen distance between her/him and that being researched.	The researcher will collaborate, spend time in the field with participants, and becomes an "insider".
Axiology	What is the role of value?	Researcher acknowledges that research is value-laden and that biases are present.	The researcher will openly discuss values that will shape the narrative and include her own interpretation in conjunction with the interpretations of participants.

Source; Author

3.4 Research design

This research used a case research design. This researcher used Serena Hotels, Lodges and Resorts as the case study for the research. The hotels were a case study as they are one of the Hotels of The World that have applied green design.

In describing research design, Yin (2002) views a research design as a logical plan this is used by the researcher in getting from point 'A' to 'B'. 'A' is defined as the set of research questions to be answered and 'B' is defined as answers to the research questions or conclusions. A number of steps that include the collection and analyses of relevant data are found between point 'A' and 'B'. According to Ranjit (2005) however a research design is described as a structure, strategy and plan of investigations conceived to get

answers to research problem and/ or questions. Ranjit (2005) describes a plan as a program or complete scheme of the research. A plan gives an outline of what the researcher intends to do in carrying out the research from their operational implications and writing of the hypotheses to the analysis of data and recommendations if any.

A research design is described as a blueprint used in conducting research maximizing control over various factors which can interfere with the validity and reliability of the findings. A research design is useful to the researcher as it aids in developing a plan and implementing the research in the best way to obtain intended results. This in turn increases chances of obtaining information which can be associated with actual situations, (Burns & Grove, 2011).

Nachmias and Nachmias (1992) argue that a research design can be described as a plan which is use as a guiding factor for the researcher as he/she collects, analyzes and interprets observations within the research. It is a logical proof model allowing a researcher to draw inferences on causal relations among the variables under investigation. Philliper, Schwalb and Samsloss (1980) however view research as an investigation blueprint that deals with four problems which are; the research questions, the relevant data, the data to collect and analyzing the results

3.4.1 Case study research

In researching the adoption of green design in the hospitality industry in Kenya, the researcher applied the case study research design as explained by Ranjit (2005). The hospitality industry is big and includes hotels, lodges, restaurants and motels and as such the researcher would not be able to research the whole population. A case research was therefore studied as a representation of the whole population. The Serena Hotels, Lodges and Resorts are prominent for their adoption of green design within most of their premises. The researcher used Serena establishments as a case study for the research to answer the research questions.

The process of studying social phenomenon through individual case analysis is referred to as the case study method. A person, process, group, episode, society, community or any other unit of social life may form the case being studied. All relevant data to the case is gathered and organized in the case study research in terms of the case. This majorly provides an opportunity for the researcher to thoroughly analyze specific details that might often be overlooked in using other research methods. The case study approach is pegged on the assumption the case being studied is a typical one and that through thorough analysis, generalizations can be made that are applicable to other cases of the same type, (Ranjit, 2005).

In defining a case study, Stake (2005) defines it as a choice of what is to be studies as opposed to a methodology. Stake (2005) views a case study as a case which is found within a bounded system. Denzin and Lincon (2005) however present a case study as an inquiry strategy, a thorough research strategy or a methodology. However, many social scientists like Shavelson and Towness (2002) are convinced that surveys and histories are better suited for the descriptive phase of a research and that a case study is appropriate only for the exploratory phase of research. They, Shavelson and Towness (2002) believe that the only ways of conducting explanatory or casual inquiries is through experiments.

A central tendency is the essence of a case study and it tries to bring out a decision or a set of decisions; why they were taken, how they were implemented and what were the results, (Shchramm, 1971). John W. (2007) on the other hand views a case study as a qualitative research method in which the researcher explores many bounded systems (cases) or a single bounded system (case), through a detailed data collection method using multiple information sources. These sources of information may include observation, documents, audio visual material, interviews and report. The researcher thereafter uses case-based themes to report a case description, (John W., 2007).

Case studies are born from the desire to comprehend difficult social phenomena allowing the researcher to maintain a meaningful and holistic characteristic of life events such as; individual life cycles, organizational relations, industry maturation. A case study is an inquiry investigating a contemporary phenomenon in the contexts of real life. This is so

especially in cases where the boundary between the context and the phenomenon are not very clear, (Yin 2002).

A multiple case study style (collective case study) was the case study style used in this research. A case study style is a research design in which though the researcher selects one issue of concern, multiple relating case studies are selected to illustrate the issue but are termed collectively as a case study. The researcher in may select, for the purposes of the research, participants from several sites, several programs, or participants from one site to show a research topics different perspectives. This style uses the logic of replication, whereby the researcher replicated the data collection procedures from each case, (John W., 2007).

3.5 Research approach

This research mainly used a qualitative research approach. The research was however aided by survey research approach. Qualitative research is a situated activity which is used to locate the observer in the world. It is comprised of interpretive material practices which turn the world into a series of representation that include interviews, photography, memo to self, recordings, conversations and make the world visible. The approach therefore involves an interpretive, naturalistic approach to the world by trying to interpret or make sense of phenomena in terms of meaning people add to them through investigating things in their natural setting, (Denzin and Lincoln (2005)

3.6 Research population

A sum total of all objects, members or subjects conforming to a certain set of specifications are referred to as a population, (Polit and Hungler, 1999). It consists of all the subjects you want to research. Ranjit (2005) however views a population as the class or subjects living or comprising the city or area within which the researcher selects a few subjects to investigate with the aim of finding answers to the research questions. Serena Hotels, Lodges and Resorts were the case study in this research and hence the population. Its collection of 36 unique hotels, resorts, lodges and camps, forts and palaces are located

in East and Southern Africa and in Southern Asia in the following countries; Kenya, Tanzania, Zanzibar, Rwanda, Uganda, Mozambique, Pakistan, Afghanistan and Tajikistan. These establishments are in some of the world's most interesting, enchanting, historic and exotic settings.

3.7 Research sample

Samples were selected from the pool of Serena Hotels, Lodges and Resorts in the country (Kenya) to make the sample size using both purposive sampling and convenient sampling methods. Amboseli Serena Safari Lodge, Sweet Waters Serena Tented Camp and Serena Mountain Lodge were selected using purposive sampling. Nairobi Serena Hotel picked using convenient sampling. The researcher employed simple random sampling to draw a sample of twenty four (24) respondents from the four (4) Serena Hotels, Lodges and Resorts. This comprised three (3) staff members and three (3) guests from each of the units. A focus group containing five (5) professional designers also formed part of the sample.

Ranjit (2005) defines sampling as the method of choosing a few subjects to participate in research from a bigger group. These subjects become the basis for predicting and estimating unknown information prevalence, outcome or situation that regards the population/ bigger group.

According to Brink (1996) and Polit & Hungler (1999) a sample is chosen to take part in research and is a subset a larger group. It is a section of a whole normally selected to take part in the research process through the provision of information.

According to Ranjit (2005) a sample is a group of subjects from whom the researcher collects the required information required in the research. A sample's properties are studied to acquire data regarding the population especially when desling with people and is a small part of the statistical whole. It is a set of subjects (people) chosen from a bigger whole (population) for research or survey, (Webster, 1985).

3.7.1 Sampling procedure

Sampling is defined as the process or method of choosing a fraction of the whole or population to represent the population, (LoBiondo-Wood & Haber 1998; Polit & Hungler 1999). The researcher applied the non- random/ non- probability sampling technique to select the sample from the population.

Ranjit (2005) defines non-probability sampling as a method of sampling used to select subjects from a population when the number of elements/ subjects in a population is either unknown or cannot be identified. The selection of elements is therefore dependent upon other considerations.

Samples were selected from the pool of Serena Hotels, Lodges and Resorts in the country to make the sample size using both purposive sampling and convenient sampling methods.

3.7.1.1 Purposive sampling

Another name for purposive sampling techniques is non probability sampling, purposeful sampling or qualitative sampling. Certain units are selected based on a specified purpose as opposed to being randomly selected, (Tashakkori and Teddlie, 2003).

This sampling method is also referred to as judgment sampling and due to the informant's qualities is defined as the deliberate choice. This technique hardly requires any specific number of respondents or underlying theories. In this sampling technique the researcher simply decides the research topic or what he/she intends to investigate and goes ahead to find correspondents willing to share any information they know on the said topic. The informants selected in this sampling method are people who have the relevant information on the topic of research and are both willing and able to voluntarily share that information and knowledge, (Bernard, 2002).

The researcher's ability to make informed judgment on the right correspondents to use in the research in order to achieve the study's objectives is the primary consideration in this sampling method. The researcher only approaches correspondents who in his/ her

judgment are willing and are highly likely to share information on the topic of research. The sampling method is especially very helpful in cases where the researcher intends to describe a phenomena, develop something about which very little is known or seek to construct a historical reality, (Ranjit, 2005).

Purposive sampling is divided into three major categories and in addition there is a category that involves in multiple purposive techniques. Each of these categories contains various types of strategies as described by Flick (1998) below;

- One of the categories is one which the researcher samples to achieve comparability or representativeness: The technique is mainly used in cases where the researcher intends to; a) set up comparison among various types of cases; or b) select, as closely as possible, a broader group of cases.

- Another category of purposive sampling is one in which the research is sampling unique or special cases: In cases where a specific case, individual cases or a group is the major focus of the research and not the issue this category of purposive sampling is employed.

- The third category of purposive sampling is called sequential sampling: It is mainly applied when; a) the sample gradually changes in the process of gathering information; or b) The generation of theories or themes is the main goal of the research study or project.

  Selecting units on the basis of their relevance to the research questions as opposed to their representativeness is defined as gradual selection.

The final category is that which involves the researcher using multiple purposive sampling techniques to select a sample: This category involves using many techniques within the same study to achieve best results and meet the study/ research's objectives.

For the purposes of this study the researcher applied the 'sampling to achieve representativeness or comparability' technique and the 'sampling special or unique cases' technique as the researcher sought to compare data given by different respondents in the different Serena Hotels, Lodges and Resorts selected as samples.

3.7.1.2 Convenient sampling

This method of sampling according to De Vos (1998) and LBionda and Haber (1998) is defined as the use of readily available and willing correspondents in a research or study. In convenience sampling samples may be gathered from the inclusion of any case a researcher comes across and finds it fit to include it in the research after it meets the study's criteria. In this sampling method the researcher simply selects convenient elementary units from the population for the purposes of collecting data. It is very easy for a researcher to get participants in convenient sampling .

The sampling method is a type of non-random sampling where units of a target population are chosen and used for study for meeting a certain criteria. The criteria may vary from availability at a specific time to ease of access to willingness to take part in the research to geographical proximity among others, (Dörnyei, 2007).

For the purposes of this research, there are various reason that led the researcher to apply purposive sampling to select some of her correspondents. These are;

- Ease of sampling as the sampling method has minimal rules governing the process of gathering samples, (Creswel, 2009).
- Compared to other sampling methods the convenience sampling methods is more cost effective and saves more time. The enabled to researcher get the sampling unit required in an inexpensive way and relatively cheaper, (Creswel, 2009).
- The sampling method was useful in cases where the researcher needed to gather relevant data but could not do so in other areas that needed formal access or were denied access. This is because the samples eventually selected using this sampling method were selected conveniently, (Creswel, 2009).

3.7.2 Sample size

Ranjt (2005) defines a sample size as the number of subjects from whom the researcher obtains the required information for his/ her research. A general rule of the thumb in obtaining a sample size is that the researcher should always use the largest sample possible in if the sample size consist of less than three sample units. The larger the

sample the more representative it is going to be, smaller samples produce less accurate results because they are likely to be less representative of the population (LoBiondo-Wood & Haber 1998). For this research the sample size comprised of three (3) members of staff and three (3) guests from four (4) Serena Hotels, Lodges and Resorts namely; Amboseli Serena Safari Lodge, Nairobi Serena Hotel, Serena Mountain Lodge and Sweet Waters Serena Tented Camp and a focus group of five (5) design professionals.

3.8 Data collection

The research applied both primary and secondary methods of data collection as shown in table 3.8a below. The secondary data collection methods were mainly documents. The primary data collection methods for the research were interviews, observations and instrument administration. These methods are listed by Geoffrey, David and David (2005) as the most effective data collection/generation methods for qualitative research. Yin (2003) recommends six types of data collection methods for case research approach. They are namely; documents, archival records, interviews, direct observation, participant observation and physical artifacts. John W. (2007) however notes that data collection methods in a case research approach are extensive, drawing on multiple sources of information (e.g. observation, interviews, documents and audio visual material).

Table 3.8a; Data collection methods

SOURCE	METHOD	TYPE	INTRUMENTS	PARTICIPANT
Primary Source	Interviews	Structured interviews	Interview schedule	Hotel managers and design professionals
		Unstructured interviews		Other hotel staff eg; waiters , cleaners and hotel guests
	Instrument administration	Questionnaires	Collective questionnaires	Hotel guests Hotel staff Design professionals
	Observation	Participant	Camera,	The researcher will gather required data from the hotels through observation.
		Non participant	Notebook	
Secondary source	Documents		Publications Earlier research Records Mass media	

Source; Author

3.8.1 Interviews

The researcher conducted unstructured interview to collect data guests in Serena Hotels, Lodges and Resorts. Ranjit (2005) defines an unstructured interview as any person to

person interaction between two or more individuals with a specific purpose in mind. The strength of the unstructured interviews is the almost complete freedom they provide in terms of content and structure. The researcher was free to order these in whatever sequence suites the subject being interviewed at the moment and the research question were answered through these interviews. This method of data collection mainly sought to establish to what extent Serena Hotels, Lodges and Resorts have adopted green design in Kenya.

Open-ended/ unstructured interviews are the most common types of interviews in a case study research design. In this type of interviews opinions and facts of the matter about topics or events being investigated is what the researcher sets out to achieve. Correspondent's opinions about the events or topics may also be sought and this may be used to stimulate further inquiry. The interviewing method is advantageous as the correspondents may also suggest other sources of information or correspondents for the researcher to interview, (Yin, 2002)

For this type of data collection the researcher used two (2) types of unstructured interviews as described by Ranjit (2005).

- **The in-depth interviews**; these are geared towards understanding the perspectives of the correspondents on the research topic and expressed in their own words and are usually face-to-face encounters. Through this method of data collection it is assumed that the rapport between the researcher and the informant is enhanced through the repeated interaction leading to in-depth and accurate information.
- **Narratives**; this type of data collection has no predetermined content except that the researcher seeks to hear the personal experience of a person with an incident or happening that relates to the research topic. The researcher listens passively as the informant gives their experience. Having a complete narrative session the researcher will need to write detailed notes and in some instances give them back to the informant/ respondent to check for accuracy.

Structured interviews were conducted to collect data from staff within Serena Hotels, Lodges and design professionals. According to Ranjit (2005), an interview schedule with a certain order of predetermined questions and having specific wording is used to gather information from the various correspondents in structured interviews. There's uniformity of information assured in this data collection method which makes comparability of data on different areas of study attainable. This data collection method also requires less interpersonal skills than the unstructured interviews.

In focused interviews/ structured interviews the respondent is interviewed for a shorter periods of time. The interview may still remain open-ended and assume a conversational manner but the researcher follows a certain set of order for the questions derived from the case study protocol, (Yin, 2002).

3.8.2 Observation

The researcher applied both participant and non-participant observation to carry out the research. Ranjit (2005) describes participant observation as a method of data collection in which the researcher participates in the activities the research participants are undertaking in order to collect the data. Ranjit goes on to describe non- participant observation as a data collection method in which the researcher remains a passive observer in the activities the research participants are undertaking in order to collect data. Both participatory and non-participatory observation applied in the data collection for this research. This was so mainly within Serena Hotels, Lodges and Resorts as the researcher observed to what extent green design had been adopted within the establishments.

This method of collecting primary data is a systematic, purposive and selective way of listening or observing a phenomena or interaction related to the research topic as it takes place. When correspondents are too involved in the interaction they may change their natural way of doing things. A researcher may also not be able to provide objective information on the research topic if instead of being interested in the perception of the correspondent he/she becomes more interested in the correspondent's behavior. In such

cases observation then becomes the best method of gathering the relevant information, (Ranjit, 2005).

Information gathered in this research through observation was recorded mainly using narratives (notes). According to Ranjit (2005) the narrative way of recording observation involves the researcher recording a description of the interactions observed in his/her own words. In so doing the researcher usually makes notes in his or her words while observing the interaction and from this notes he/she is able to interpret the interaction or draw conclusions from it. Though a deeper understanding into the interaction is provided by this method, the researcher may end being biased in his/her observation resulting to a biased interpretation and/or conclusion.

Mechanical devices were also used as a way recording observation. According to Ranjit (2005) videotapes and photographs are used to record data gathered though observation for ease of analysis later by the researcher. This becomes extremely advantageous as the researcher can view these recordings over and over in order to get a more objective conclusion. The researcher can also invite other professional to view the recordings aiding him in coming up with unbiased and objective conclusions. In cases where subjects may end up acting differently in front of a camera however, the data collection method becomes a disadvantage as data collected may not be a true reflection of the situation.

3.8.3 Instrument administration

Instrument administration through collective questionnaires was administered as another method of data collection. The researcher administered questionnaires to some of the staff members in Serena Hotels, Lodges and Resorts. This mainly applied in Nairobi Serena where some of the correspondents were not available for interviewing. Ranjit (2005) defines questionnaires as a list of questions used in data collection the answers to which are recorded by the respondent.

The questionnaires were administered through mailed questionnaires where the researcher sent the questionnaires to prospective respondents by mail accompanied by a

cover letter indicating the purpose of the research. To achieve high response rate the researcher made a point of personally visiting the different correspondents especially Nairobi Serena where the questionnaires were administered. This method of data collection mainly sought to investigate features of green design adoptable to the hospitality industry in Kenya.

3.8.4 Documents

This data collection method was the main source of secondary data. The researcher used data that has already been collected by someone else to extract only the required information for the purpose of this research. The four (4) categories of the documents data sources used were mainly;

- Publications
- Earlier research on similar topics
- Records from people that have written historical or personal records that may provide the information needed.
- Mass media where the researcher used reports published in newspapers, magazines and other media articles to collect data.

This method of data collection was used to gather data and information that aided the researcher in proposing a model/framework of increasing uptake and adoption of green design in the hospitality industry in Kenya.

3.9 Data analysis

The data collected was analyzed using thematic analysis and narrative analysis.

3.9.1 Thematic analysis

This method of data analysis is commonly described as a way of identifying, analyzing and reports themes within information or data collected. The method does not only describe and organize data believed to have rich detail of the research topic but it also it interprets different research themes. Different themes capture different and specific area

in relation to the research questions. The themes captured are then presented within the data set in a sequential or patterned level of response. Thematic analysis is advantageous as it is a very flexible data analysis method, (Braun and Clarke, 2006).

There are two primary methods of identifying themes or patterns in thematic analysis. These are to-down way or theoretical/ deductive and bottom-up way or inductive. In the bottom-up way data is coded without attempting to fit it in a researcher's preconception or an existing coding frame. It is an analysis method mainly driven by data while a theoretical thematic analysis intends to be driven by the researcher's analytical or theoretical interest in a topic and is more analyst-driven.   The theoretical thematic analysis method gives a more detailed analysis of some data aspects and a lesser rich description of all the information gathered, (Braun and Clarke, 2006).

According to Boyatzis (1998) thematic analysis is method of analyzing, organizing, describing and reporting themes found within the data collected that is usually set in rich detail. The method also interprets different aspects of the research topic or area under study. Within the collected data the data collection method provides a more detailed account of either one or a group of themes. This is mainly in relation to a theme that is common across or the data collected or a specific area of interest within collected data (semantic approach), (Clarke & Kitzinger, 2004).

Thematic data analysis method is one of most commonly used methods of data analysis and is best suited to analyze a wide range of qualitative data as it often viewed as an introduction to qualitative data. It is not dependant on any approaches to data collection or to any specific theory /theories and ts overall aim is to identify key themes from data collected as opposed to having superficial themes, (Caulifield and Hill, 2014).

There are six major steps outlined as the most appropriate guides and steps used in carrying out thematic analysis. These steps are;

1. Familiarity with the data collected

A researcher should be able to be familiar with the breadth and depth of the content of the data collected before commencing the actually data analysis process. This familiarity involves active, extensive and repeated reading of the data with an intention of seeking patterns and meanings of various discussion topics. As the researcher is reading the data he/she is comfortable able to identify possible themes and start coding the ideas. Note taking is essential as a researcher reads through the data to enable him/her to mark coding ideas that can be referred to in subsequent steps, (Braun and Clarke, 2006).

2. Generation of initial codes

Data collected using verbal methods, interviews, and media and recorded in various instruments or tools would then need to be transcribed into written form. This aids in thematic analysis as at this stage initial codes are produced from the data collected and are used in identifying latent or semantic features of the data. This refers to the most basic element or segment or raw data regarding a phenomena that can be accessed in a meaningful way, (Boyatzis, 1998).

Different data coding methods are used in thematic analysis. In this research however the researcher used a manual data coding method. The researcher did this through writing of notes and texts being analyzed, identifying potential themes using highlighters and colored pens, and using notes to identify different segments of the data for coding, (Braun and Clarke, 2006)

3. Getting themes

In this step different codes are sorted into potential themes and coded data extracts is collated within these identified themes. Visual representations are extensively used to aid in sorting different codes to themes. This can be done by using tables and mind maps, coding them, and arranging them on a pile as per their codes, themes and sub-themes, (Braun and Clarke, 2006).

4. Review of themes

Themes defined in the earlier stage are refined at this step. This may be done using two distinct levels. Level one is the coded data extracts' level where the researcher forms a coherent pattern after reading and considering all collated extracts for each theme. Level two is similar to level one but the difference is that the extracts are carried out in relation to the whole data set. The researcher in considering the validity of individual themes in relation the data also considers the accurate reflection of the thematic maps on the whole data set. The analytical and theoretical approach of analysis by the researcher in most cases affects what is viewed as an accurate representation. At the end of this step it is expected that the researcher has a good idea of what the different themes are and how they fit together. The researcher is also expected to understand what overall story these themes tell about the data, (Braun and Clarke, 2006).

5. The naming and definition of themes

This basically means the essence that each theme is about and also determining exactly what aspect of the data as a whole each reviewed theme captures. The researcher is expected to conduct and write a thorough analysis of each individual theme. The researcher is also expected to ensure that themes do not overlap in order to identify the specific story each theme is telling in relation to the objectives of study, (Braun and Clarke, 2006).

6. Production/ writing of a report

Production and/or writing of a report is the last step in thematic analysis. A report is produced or written to enable the researcher narrate a complicated story to a reader in a way convincing them of the validity and merit of the research analysis. Sufficient evidence of the different themes found within the data should be well brought out and indicated in the report, (Braun and Clarke, 2006).

3.9.2 Narrative analysis

This type of analysis is a type of case-centered research analysis that mainly focuses on close readings of stories told by participants. This is done in order to understand correspondents' experiences and/or social phenomena through the form and content of stories analyzed as textual units. In this type of analysis both the story teller and the listener are important as they encompass narrated life experiences as forms of discourse, from which the researcher is able to learn about the topic of research, (Yin, 2002).

Narrative analyses exist in different forms. Some of the analysis focuses on 'content' of stories; others focus on 'meaning' and sometimes the analysis focuses on both. The preferred form of narrative analysis depends on philosophical position, (Josselson R., 1996).

One of the reasons why narrative analysis is so appealing resides in the belief that narratives or stories hold special powers as windows into the individual and social world. Some academic critics however are opposed to the view that narrative is essential to human experience (Sartwell, 2000; 2006). Sartwell one of the critics claims that we are in an era obsessed with language but we should instead acknowledge that most of our daily experience is not articulated in words. According to Sartwell we see, hear, smell, feel much more than what we say, write or otherwise express.

Stories within the narrative analysis are treated as knowledge *per se*. This constitutes 'the social reality of the narrator' and conveys a sense of a person's experience in its depth by using the actual words spoken. This also includes some of researcher's part in any conversation in a bid to be transparent about the relational nature of the research, and the ways in which these stories are shaped through dialogue and co-construction. This is also as way of providing a reflexive layer with regard to the researchers positioning, (Etherington, 2007).

3.10 Ethical considerations

The ancient Greek philosophy of moral life is one of the most common and widely known area where ethics are deeply rooted. This ancient Greek philosophical inquiry refers to ethics as principles capable of influencing critical change of any previous actions and choices considerations. Ethics are believed to be a philosophy branch that deals with dynamics of decision making mainly on what is wrong or right, (Kelma, 1997)

Nuremberg trials, used to try the Nazi war criminals after the Second World War, are some of the areas where key principles of ethical guidelines can be traced back to. The Nazi war criminals reasponsible for various atrocities and crimes against humanity during the war were tried in Nuremberg, Germany leading to the *Nuremberg code* being adopted. This code has over the years become an ethical guidelines' foundation in relation to the use of human participants in any circumstance or event. Since the nineteen thirties (1930s) the APA had had various discussions concerning ethical considerations. The APA's first ethical code was however accepted and published in the year nineteen fifty three (1953) having adopted Nuremberg code's major ethical principles and have since then being revised severally. The APAs ethical code's recent revision was carried out in the year nineteen ninety two (1992), (Kelma, 1977).

For the purposes of this research the ethical considerations that the researcher applied were mainly;

- Obtaining free and informed consent.
- Maintaining confidentiality and privacy of research participants.
- Right to anonymity of research participants.
- Negotiating access.
- Using appropriate methodology.
- Reporting the research appropriately and completely.

3.10.1 Obtaining free and informed consent

This is the most common method in social research. Informed consent involves making sure that the research correspondents are adequately made   aware of the type of information the researcher requires from them, why the information is being sought, what purpose it will be put to, how they are expected to participate in the study, and how it will directly or indirectly affect them. Research consent from any correspondents should be voluntary and without pressure of any kind, (Ranjit, 2005).

3.10.2 Maintaining confidentiality and privacy of research participants

In the research context, Wiles (2013) states that confidentiality is taken to mean that identifiable information about individuals collected during the process of research will not be disclosed. It also implies that the identity of research participants will be protected through various processes designed to anonymously use them unless they specifically opt to be identified. In a case where a researcher may not able to promise anonymity he/she can address confidentiality. This involves the management of private information by the researcher geared towards protecting the subject's identity.

Braun and Clarke (2013) reiterate the issue on maintaining confidentiality and privacy of research participants by stating that there's a general need to maintain privacy and confidentiality of participants. This is a need for self-determination which means that the participants know about their right to withdraw from research during or after it has taken place.

3.10.3 Right to anonymity of research participants

King and Horrocks (2010) argue that as much as confidentiality and anonymity are often taken to mean the same thing in research, they are not the same. Though the ideas are similar, they have quite different meanings that are important in relation to qualitative interviewing. They define anonymity as the concealing of the identity of the participants in all documents resulting from the research, therefore actively keeping secret the identity of the research participants.

Yin (2011) argues that in nearly every study, participant anonymity, together with the use of pseudonyms, is the option of choice. Yin continues to state that most studies tend to name their locations and in some cases the researcher may decline to name the location if it can readily lead to anyone identifying an otherwise anonymous participant.

3.10.4 Negotiating access

In any research it is the researcher's duty to find people and places that will let them "in", for the purposes of carrying out research. Finding correspondents who want to participate in a research is a key part of qualitative research design. It is also one of the reasons why qualitative researchers call the people involved in the research "participants" rather than subjects. In case of rejection the researcher should not take it personally but should instead try other correspondents that can also help in the research. Data collection is all about practicing to learn how to negotiate access to carry out research, and failure is part of this learning process, (Tracy, 2012).

3.10.5 Using appropriate methodology

One obligations of research expected of the researcher is the use of appropriate methodology in conducting study. It is unethical to use a method or procedure the researcher knows to be inappropriate, (Ranjit, 2005).

3.10.6 Reporting the research appropriately and completely

Case study research completeness can be categorized in three ways. The first categorization is the complete case. This is one in which the boundaries of the case (distinction between the phenomenon being studied and the context) are given explicit attention. It is done by the researcher declaring at the outset of his/her research that only arbitrary time intervals or time boundaries will be considered for the research. Collection of evidence is the second categorization. The complete study is expected to convincingly demonstrate that the researcher expended exhaustive efforts in collecting data. The third categorization involves the absence of certain artifactual conditions in the research/ study.

These conditions are like exhaustion of resources or the researcher running out of time among others. A responsible researcher should be able to designs a research that can be completed even with these constraints, (Yin, 2003).

The research methodology used by the researcher in conducting the research is as summarized by chart 3.10a below.

Chart 3.10a; Research methodology

Research Approach (Qualitative/ Survey)

Philosophical Assumptions (Ontological, Epistemological, Axiology)

Research Design (Case study Research Design)

Population- (TPS- Serena) **Sample-** 4 Serena premises; (*Amboseli Serena, Serena Mountain, Nairobi Serena, Sweet Waters Serena*) **Sample Size**= (3 guests+ 3 staff) in each premise+ Focus group of designers (5) **Sampling Methods**; Purposive sampling and convenient sampling

Data collection methods *Primary Data*; Interviews, Observation, instrument administration *Secondary Data*; Documents

Data Analysis (Thematic analysis, Narrative analysis)

Source; Author

CHAPTER FOUR

FINDINGS AND DATA ANALYSIS

4.1 Overview

In this chapter the findings were based on respondents from four (4) Serena establishments under the TPS- Serena group. The establishments are namely; Amboseli Serena Safari Lodge, Serena Sweet Waters Tented Camp, Serena Mountain Lodge and Nairobi Serena Hotel. Professional designers and architects also formed part of the correspondents. The researcher discusses the overall details of the respondents in section four-point-two (4.2) and in answering the research questions and meeting the objectives of the research the researcher discusses the findings from section four-point-three (4.3) onwards.

4.2 Details of the respondents

For the purposes of this research, the researcher engaged senior management and naturalists who deal with the day to day running of the Serena hotels, lodges and resorts. These senior staff members also make sure that green practices were adhered to at the premises. Hotel guests also formed part of the correspondents as shown in table 4.2a below. The respondents comprised of three (3) staff members and an average of three (3) guests from each of the four (4) hotels and five (5) professional designers and/or architects formed a focus group. From the guests interviewed approximately fifty eight percent (58%) of them were international tourists while approximately forty three percent (43%) were local tourists. Of the professional designers and architects approximately sixty percent (60%) were male while approximately forty percent (40%) were women.

Table 4.2a: Distribution of correspondents

Hotel	Staff Members	Guests	Others
Amboseli Serena Safari Lodge	3	3	
Sweet Waters Serena Tented Camp	3	3	
Serena Mountain Lodge	3	3	
Nairobi Serena Hotel	3	3	
Design professionals (Designers)			5
TOTALS	**12**	**12**	**5**

Source; Author

The researcher in conducting the research aimed to answer the research questions and meet the research objectives. The interview guides were therefore in line with the research objective and the questions in the interview guides mainly sought to answer the major research questions.

1. **Amboseli Serena Safari Lodge**

Located within the Amboseli National Park and close to the Kenya-Tanzania border, Amboseli Serena Safari Lodge (Amboseli Serena) is approximately two hundred and fifty (250) kilometers from Nairobi. The lodge is located within Kajiado County and can be accessed through road, a drive of approximately four (4) hours from Nairobi. The lodge can also be accessed through where transfers can be offered by the lodge from the airstrip which is approximately eleven (11) kilometers from the lodge. Access by road is off Mombasa road through Emali - Loitokitok road via Iremito or Kimana gates of the Amboseli National Park. The geographical position is Latitude two thousand and forty degrees (2040') south and Longitude thirty seven thousand and sixteen (37016') East of Greenwich Meridian. This location is shown in figure 4a below.
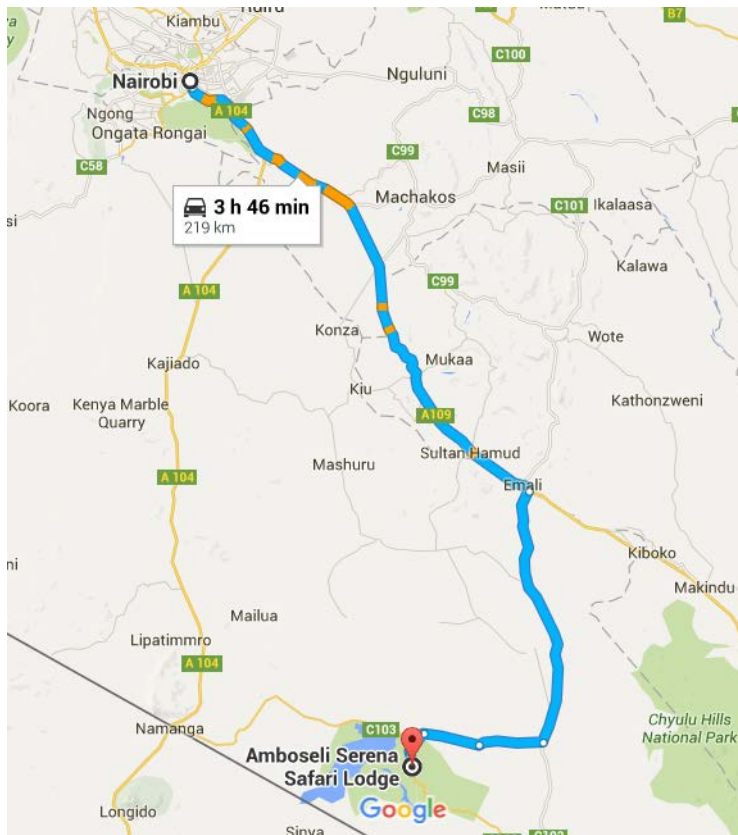
Figure 4a; Amboseli Serena Safari Lodge's location from Nairobi

Source; https://www.google.com/maps/

The lodge was inspired by the local communities (mainly the Maasai), and most of the designs are cultural based inspired by the Maasai culture. The lounge arrangement for example depicts the Maasai homestead and the bar area depicts cattle coming in to drink water. The idea was to fit in with the community in their designs and involve the local Maasai community in the same. This was done by using locally available material, workforce and designs. One of the major attractions is that Amboseli Serena overlooks Mt.Kilimanjaro and there is a series of swamps close whose water mainly comes from the melting snows of Mt. Kilimanjaro. The swamps are the main sources of water and are a major source of tourist attraction as they attract different kinds of animals who come to drink water from them. Game drives, nature walks and bird watching are also main sources of tourist attraction as well as the Maasai dance performances and visits to traditional Maasai Manyattas. As part of Serena Hotels' reforestation program guests are also invited to plant trees to restore the land.

2. Sweet Waters Serena Tented Camp

Sweet waters Serena Tented Camp was officially opened in the year nineteen eighty eight (1988). The camp is located on fifty (50) acres of land leased within the Ol-Pejeta conservancy in Nanyuki, Laikipia County. The camp is seventeen kilometers (17km) from Nanyuki town and two hundred and seventeen kilometers (217km) from Nairobi City. It can be accessed by road (from Nairobi one take approximately three to four (3-4) hours) or air (through Nanyuki airstrip and a 'meet and greet' and transfer service can be provided) as shown in figure 4b below. It has fifty six (56) guest tents with a bed capacity of one hundred and twenty (120) visitors and a total work force of one hundred and ten (110) employees. Private verandas have been designed for each tent overlooking the water hole. The former manager's house of this once colonial farm houses the Rhino Restaurant which offers a variety of authentic cuisine, both local and international. The Kashoggi bar is designed to center on a blazing log fire while the 'Waterhole' Bar overlooks the waterhole offering a good place for guests to view the animals.
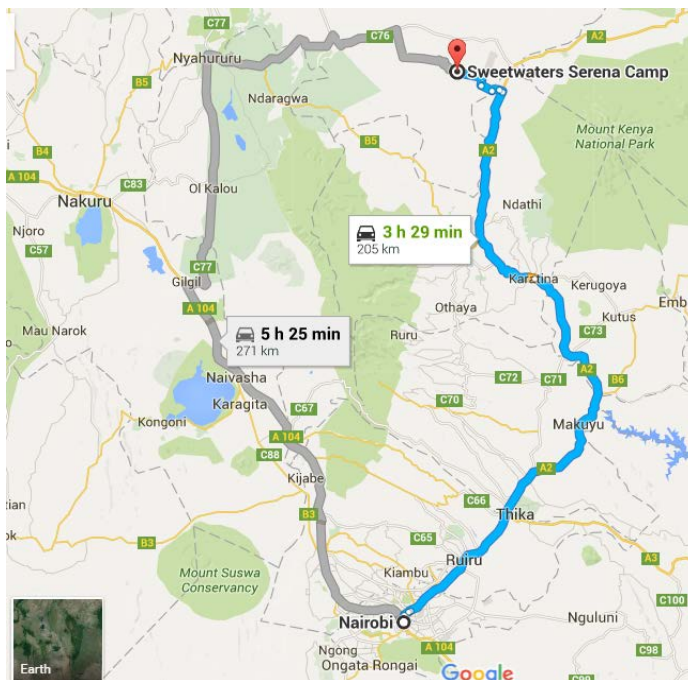
Figure 4b; Sweet Waters Serena Tented Camp's location from Nairobi
Source; https://www.google.com/maps/

The conservancy is home to endangered black and white rhinos, leopards, elephants, buffalos and lions, chimpanzees, Grevy's Zebra, Jackson's hartebeest among other animals and is managed as a wildlife sanctuary working to conserve and preserve wildlife. The conservancy is also greatly vested in community development through CSR activities by the various lodges and resorts found within the conservancy. These activities enhance community development through the provision of financial assistance to projects on water, health, education, agriculture, infrastructure, livestock extension and other community- based tourism activities.

Most of the design of the camp was influenced by cultures of the neighboring Kikuyu and Samburu communities. The camp promotes environmental conservation through remittance of various fees by guests and establishments within the conservancy enabling a collection of funds necessary for the conservation of the wildlife.

3. Serena Mountain Lodge

Ken Clark, a keen sport hunter during the Kenyan colonial era was hunting in the mountain (Mt. Kenya) and spotted a water hole. He then built a tree house near the water hole that was later converted to a tourist lodge. Mwatu Wamai (A Kenyan businessman) initiated the conversion of the tree house to a tourist lodge and is a major shareholder of Serena Mountain Lodge. The lodge was later transformed into a tourist lodge whose design was mainly inspired by the neighboring Kikuyu community. Availability of raw material (timber) influenced its wooden design and the skulls and tusks from the Ken Clark's hunting expeditions were used as accessories in the space.

The lodge is located at two thousand and thirty four (2,134) meters above sea level, on the lower slopes of Mt. Kenya. It is about one hundred and ninety three kilometers (193km) or two to three hours (2-3 hrs) from Nairobi as shown in figure 4c below. The open-air viewing-deck found within the lodge area overlooks a salt-lick and a water hole which attract a large number of elephants and buffalos. A tunnel leading to a photo-hide offers spectacular photographic and viewing opportunities meters away from the water hole.

Serena Mountain Lodge boasts of forty one (41) non-smoking cabin-styled rooms, a tree-top dining room and a bar with a central fireplace. The tourist activities within the lodge include trout fishing in the mountain streams, walks through the forest (guided), trips to high mountain moorlands and luxury climbs of the mountain that usually take five (5) days.

Figure 4c; Serena Mountain Lodge's location from Nairobi
Source; https://www.google.com/maps/

4. **Nairobi Serena Hotel**

A mebr of the 'Leading Hotels of the World', the Nairobi Serena Hotels has consistently being named the best hotel in Nairobi by international guests, travel magazines, tours and travel operators and airlines alike. The hotel is located within the city of Nairobi in Nairobi County along Kenyatta Avenue and opposite the All Saints Cathedral Church. It is a five (5) minutes walk from the Central Business District (CBD) and a thirty (30) minutes drive form JKIA as shown in figure 4d below.

Figure 4d; Nairobi Serena Hotel's location from Jomo Kenyatta International Airport
Source; https://www.google.com/maps/

Most of the designs in the hotel are inspired by a Moroccan theme. The colors and deco are eclectic African themes and designs (Pan-African). The Aksum (an Ethiopian name) bar for example has an Ethiopian themed deco. A pan-African theme is featured in the entire deco which features art and design inspirations from Ethiopia, West Africa, East Africa and the Maghreb. The hotel's 'Mandhari' restaurant is renowned for its wide range of Kenyan fine dining cuisine. There's a health club and spa commonly referred to as

'Maisha Health Club' and a conference centre offering world class services and designs sourced mainly from recycled material.

The hotel comprises a total of one hundred and eighty three (183) rooms and suites. The hotel's main selling point is business and travels. The hotel is among the heritage sights of the world. Hangings and Arts within the hotel are inspired by most of the art at the Joseph Murumbi Art gallery and the Nairobi Museum.

4.3 Governmental regulations/ green certification

All the four Serena establishments visited confirmed that there are indeed international and local green certifications required for hotels within the hospitality industry. Green certifications are selling points for hotels in Kenya but there are no specific ones required for hotels before operations. The certifications are not mandatory and have to be applied for at a fee by the participating hotels as they are used to market hotels to prospective guests. NEEMA certifications are however mandatory. The Serena Hotels, Lodges and Resorts takes part in eco-rating by Eco-Tourism Kenya. The rating is a way of certifying green design and conservation practices within the hospitality industry in Kenya. The premises are also operating under the Serena Group of Hotels and Lodges' environmental policy that states; 'Ours is to conserve not exploit'. This policy guides all the establishments in their conservation practices and acts as an internal way of green certification.

In the year two thousand and thirteen (2013), Amboseli Serena Safari Lodge won the 'Ecology Award', an international award for 'Best Ecological Lodge in Kenya'. Through this award the lodge earned itself a gold rating by Eco-Tourism Kenya. There are NEEMA audits and certifications required that the lodge has conformed. These certifications certify that the lodge is environmentally friendly (for example in relation to the park the certifications certify that the lodge is adding value instead of degrading the ecosystem). There's a NEEMA certification that is done every quarter in a year to certify that the sewage (affluent waste) has been treated before discharging it to the sewer system or the environment. The lodge has also conformed to this certification.

There are international World Travels Awards seeking to award best green- hotels which Amboseli Serena won the Best Green Hotel in Kenya in 2015. There is also a Green Globe Award that rates and certifies green hotels; the lodge got a Silver rating in the two thousand and fifteen (2015) year awards. Serena Mountain Lodge's current rating through the eco-rating by Eco-Tourism Kenya is silver while Serena Sweet Waters Tented Camp has a gold rating on the same. The Sweet Waters Serena Tented Camp received a gold rating from eco-tourism Kenya in the year twenty fifteen (2015) in recognition of their green design practices as shown in figure 4e below.

Figure 4e; Eco-rating certificate awarded to Sweet Waters Serena Tented Camp
Source; Author

Approximately sixty percent (60%) of the guests at Serena did not have any idea that there were any green certifications the group of hotels, lodges and resorts conformed to. Those who were aware (approximately forty percent (40%)) had only learnt through seeing the framed certificates on the walls of the premises. Some of the employees (approximately twenty five percent (25%)) too were not aware if there are any certifications required. The employees were however aware that the hotels, lodge and resorts participated in the eco-rating by eco-tourism Kenya on conservation.

4.4 Consumer perception and beliefs

Consumer perception does not affect the initial design of the Serena Premises but may affect a change in an existing design. Approximately ten percent (10%) of the correspondents believed that consumer perception influenced the design of the premises to what they have become today.

Though Amboseli Serena's design was inspired by the local communities (mainly the Maasai), all the guests stated that they visited the lodge because it blends with the environment. The guests also stated that they preferred Amboseli Serena as a holiday destination because most of the design is from locally available materials that make the lodge a unique green destination. This they said makes the lodge more acceptable as it is selling the local community and avoiding use of fossil fuels in transporting material by using locally available materials in most of the designs. Figure 4f below shows the reception area at the lodge where Maasai storage gourds hang on the ceiling as accessories and is a major tourist attraction.

Figure 4f; Maasai gourds used as ceiling accessories at Amboseli Serena Safari Lodge
Source; Author

At Serena Mountain Lodge, two (2) out of the three guests (3) interviewed said that they visit the lodge to experience nature walks and get sensitization on environmental conservation. They also take part in tree planting and enjoy watching buffalos at the water point. Initially some rooms were facing away from the water point but guests

preferred to watch the animals hence rooms facing away from water point were redesigned to face the water point. The guests also influenced the increase in the size of windows as the trees around the area were blocking out most of the natural light. This increased the amount of natural light in the rooms. Guests also wanted a closer look at animals hence a tunnel was designed to make the space more open.

Approximately ninety percent (90%) of all the correspondents at Serena Mountain strongly believed that the design of the lodge was not influenced by consumer perception. One of the staff members explained that the lodge design was greatly influenced by the widely travelled Agha Khan fraternity and was built around the culture of the neighboring Kikuyu community hence most of the design takes inspiration from forms and accessories found in the community and culture. Most of design changes or improvements are decided by the head office- The Agha Khan foundation. The naturalist explained that the lodge was born out of a hunting sport. He explained that Ken Clark was keen sport hunter during the colonial era and as he was hunting in the mountain he spotted a water hole. He then built a tree house near the water hole that was later converted to a tourist lodge. Mr. Mwatu Wamai (a business man) initiated the conversion to a tourist lodge whose management was later transferred to the Serena Group and he is a major shareholder to-date. Availability of local raw material (timber) influenced its wooden design and the skulls and tusks from the hunting expeditions were used as accessories in the space.

All the staff correspondents at Sweet Waters Serena believed that consumer perception did not influence the design of the camp. They explained that most of the design was influenced by cultures of the neighboring Kikuyu and Samburu communities. The design's main aim was to blend with the natural environment hence the use of vey large windows and also to incorporate the local communities and their cultures.

Of the three (3) staff members interviewed at Nairobi Serena one (1) was not sure if there were any local certifications required for hotels but confirmed that globally there are there. The two that were aware stated that there's an international eco-rating system for

green hotels and lodges. The system is still being adopted in Kenya. There's is also an eco-rating on green practices by Eco-tourism Kenya and another one by the World Tourism Organization. The hotel conforms to all of them. In the just concluded Eco-rating by the World Tourism Organization, the hotel was named Africa's Leading Green Hotel 2015/ 2016.

4.5 Green marketing

Green marketing is greatly adopted at all the hotels, lodges and resorts visited by the researcher. This is done through sensitization of green practices that mainly involve conservation exercises within each premise. Guests are sensitized on these conservation practices when they visit the different premises by being involved in conservation exercises. At Amboseli serena the naturalist confirmed that most of the green marketing is not done from the lodge. Through 'Born Free', an organization working with the Serena head office to 'Save Lions' reforestation and conservation efforts are being marketed. The Lodge Manager explained that by partnering with Green Globe, they started planting trees 20 years ago and creating awareness to/ sensitizing guests on the same by involving them in the tree planting exercise. Through participatory observation the researcher took part in this tree planting exercise as shown in figure 4g below.

Figure 4g; Guests tree planting exercise (the researcher) at Amboseli Serena Safari Lodge
Source; Author

The researcher through participatory observation established that reforestation exercises and the nature walks are a major selling point at Serena Mountain. Most guests plant trees and have their names engraved near their trees this has led to awareness and a growth in the guests' numbers over the years. The engraving of guests' names against the trees planted ensures that the guests own the exercise and are compelled to market the lodge. The naturalist at the lodge explained that conservation through tree planting and use of locally available materials for the design are a strong marketing tool for the lodge as they are eco-tourism practices.

The naturalist went on to explain that tree planting exercises by the lodge started in the year two thousand and one (2001). Since then the lodge management together with their guests have worked to improve the Aberdares, Mau and Mt. Kenya forests. The assistant manager at the lodge went on to explain that indeed green marketing is very important for the lodge. The major selling point for the lodge is, according to her, are nature walks and reforestation exercises which are used to add value to the lodge and sensitize guests on conservation. The structure having being made out of locally available materials and accessorized with available skulls and tusks from previous hunting expeditions is also another green marketing strategy used at the lodge.

The researcher established that Sweet Waters Serena practices most of their green marketing initiatives as do the other three (3) Serena Lodges and Hotels; through conservation exercises. Forestation programs within the conservancy are however the camps' biggest green marketing strategy. Tree planting drives are greatly used as green marketing strategies especially at the beginning of long rains as each employee is given seedlings to plant.

One (1) out of the three (3) correspondents from Nairobi Serena Hotel confirmed that there are green marketing strategies at the hotel. The hotel usually observes the 'Earth Hour'. This is done by switching off all the main lights for a period of one (1) hour and lighting candles quarterly. Through this practice awareness on care of the eco-system (earth) is done.

4.6 Support and care of the eco-system

4.6.1 Green house gas emissions

Green house gas emissions are dealt with in the four (4) Serena establishments in different ways for each premise. The emissions mostly come from generators that are used as back-up power sources for three (3) of the four (4) premises and as a sole power sources in one (1) premise. Incinerators and running engines are also another source of carbon emissions within the four (4) Serena establishments visited.

i. *Generators*

Three (3) out of the four (4) Serena Hotels, Lodges and resorts visited by the researcher are powered by hydro-power connected from the national grid. The hydro-power however is sometimes not reliable due to power outages and hence the use diesel-powered generators as back-up power sources. In the case of Amboseli Serena however the generators are the main power source as the lodge is yet to be connected to national grid due to its geographic location within the Amboseli National park. The lodge is mitigating carbon emission by using an inverter system for the machines and also using smaller engines with synchrony system that do not consume a lot of diesel. Regular servicing of machines, especially generators, is also another way they ensure that carbon emissions are regulated/ reduced.

At Serena Mountain the main source of power is the national hydro-power from the national grid and generators are only used as back-up when there are power outages. Regular servicing of these generators ensures that carbon emissions are regulated/ reduced. At Sweet Waters Serena the generators in use have absorbents in their chimneys that reduce the impact of carbon to the environment by absorbing most of it. The Nairobi Serena Hotel rarely uses generators as it is served by two power lines. In case of use, the generators have absorbents in their chimneys and filter pipes which emissions pass through. These absorbents and filters reduce the impact of carbon to the environment by absorbing most of it.

ii. Car engines

Running engines within the different hotels, lodges and resorts are also a major source of green house gases. All the four (4) Serena premises are dealing with these emissions mainly by encouraging drivers to switch off engines and encouraging tour companies to car-pool instead of having many almost empty vehicles headed to same destinations. In Amboseli Serena and Sweet Waters Serena the management deals with the gas emissions by sensitizing and even encouraging drivers not to leave engines running when vehicles are not in use.

Due to location of Serena Mountain within a forest area the trees are used as carbon takers reducing the carbon emission produced from the running engines from vehicles coming into the lodge. The Nairobi Serena Hotel is located within the Nairobi Central Park, a public park. Tree planting within the park and the hotel compound helps with carbon emission especially from vehicles. The trees act as carbon intakes.

iii. Tree planting

The vigorous tree planting exercises carried out within all the hotels, lodge and resorts ensure that carbon emissions are taken in by trees. At Amboseli Serena reforestation in the lodge was started in the year nineteen ninety one (1991) by the then KWS Director. Since then approximately one million two hundred thousand (1.2 million) trees have been planted. An electric fence has since been erected around the lodge to reduce destruction of young trees by wild animals. At Serena Mountain reforestation exercises are central to the lodge as visitors come from far and wide to take part in this conservation exercise. Tree planting exercises within and around the lodge are a major selling point for the premise.

At Sweet Waters Serena employees together with the guests plant five thousand (5000) trees every year to purify air and consume carbon. The camp also provides fifty (50) seedlings bi-annually to their employees who mostly come from the neighboring area to plant for air purification. . Toward the end of the years two thousand and fourteen (2014) and two thousand and fifteen (2015), the Nairobi Serena Hotel together with sister units

too gave five thousand (5,000) tree seedlings to their staff. Each person was given fifty (50) seedlings as a drive to encourage reforestation. These trees are to be used as carbon intakes. Photographs were encouraged during the planting exercises as a way of looking back and encourage further reforestation.

iv. Products and Fuel

The use of biodegradable/ eco friendly products within all the four (4) hotels, lodges and resorts also reduces green house emission. Regular checks are done to confirm that products used within the establishments are biodegradable by using government laboratories certified by NEEMA.

Wood fuel is slowly being substituted in all the four (4) premises by use of other environmentally friendly sources. At Serena Mountain there is no use of charcoal or firewood to cook as these have a lot of carbon emission but instead they use LPG cooking gas to cook. Volcanic rocks found within the area are used in the burners for heating rooms reducing the use of wood fuels in the fire places. Sweet Waters Serena too does not use wood fuels as a source of energy for either heating or cooking. Solar heaters are used for water heating and LPG gas used for cooking.

At Amboseli Serena solar water heaters are used for water heating especially within the guests' rooms. At the Nairobi Serena Hotel a lot of trees have been planted as carbon intakes and for circulation of fresh air. LPG gas is used as a source of fuel in the kitchen as opposed to charcoal grills. The hotel rarely uses diesel generators as it is served by two power lines.

4.6.2 Recycling, reducing and reusing

All the four (4) Serena hotels, lodges and resorts embrace recycling, reducing and reusing within the different premises as a way of engaging local communities and also as a way of caring for the environment. Art pieces and deco are designed using recycled objects and in some instances objects no longer in use are re-used as accessories. Approximately seventy percent (70%) of all correspondents however were not aware of recycling,

reducing and reusing practices within the premises and the thirty percent (30%) that were aware had not being sensitized about it but rather found out by chance.

i. *Accessories and art objects*

Recycled art objects and accessories are very common within all the four (4) the Serena hotels, lodges and resorts used in the research. According to the Amboseli Serena manager, disposing old and used art pieces may be harmful to the ecosystem especially as the lodge is located within a national part hence most objects are embraced as art pieces within the lodge. At Sweet Waters Serena postcards sold and used at the lodge are sourced from the local community and are made out of elephant droppings found within the area. Beaded artifacts sold at the camps shop and those used in accessorizing the camp are sourced from local community. They too are also made out of recycled material especially bones and wood.

Outdoor lights used within the compound are made from recycled metal plates. Most art products sold within the curio/ souvenir shops located in all the four (4) Serena premises are mostly made out of recycled material. Figure 4h below shows an assortment of designs sourced from the various establishments visited made out of recycled or reused material sourced from the premises and from within the local communities. The objects are artifacts made from recycled wood at Serena Mountain; A key holder made or reused Maasai rungus at Amboseli Serena; A kerosene lamp reused for lighting at Serena Sweet Waters; and a Laundry basket made of recycled and reused fabric at Nairobi Serena.
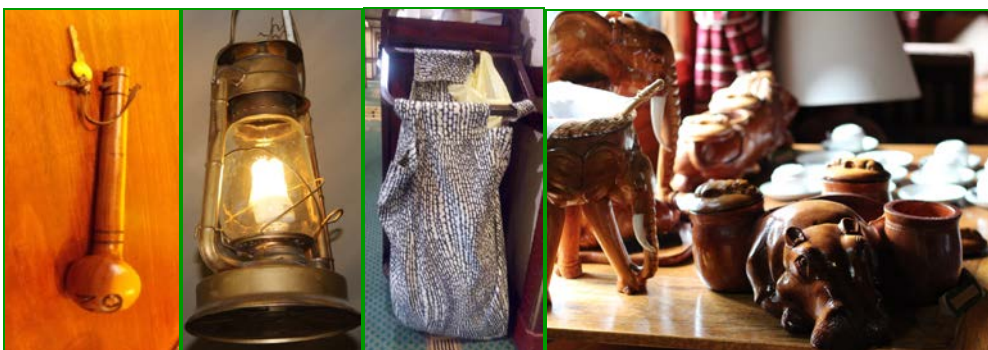
Figure 4h; Art and other accessories made out of recycled or reused materials
Source; Author

ii. Linen

In all the four (4) Serena premises the researcher visited, it was highlighted that visitors are also encouraged to embrace recycling and reusing by using their towels more than once. This helps reduce power use and water wastage during laundry. This is done using placards placed in each room. Recyclable towels are used in the washrooms for drying hands to avoid unnecessary use of electric hand dryers or paper tissues that are made from trees leading to deforestation. At Nairobi Serena Hotel towels in the health club are coded different colors according to the guests' preferences for ease of recycling by willing guests.

Through interaction with guests in the various Serena premises this was confirmed as approximately forty percentile (40%) of the guests interviewed recycle the towels especially those staying within the for more than one day. This is done by hanging towels on provided hooks within their rooms to indicate to the 'room service' that the towel is for recycling. For those guests who did not wish to recycle their towels they are asked to leave towels on the floor or beds as an indication of the same.

iii. Plastics

The Amboseli Serena manager informed the researcher that the national government has in the recent past tried to have each county treat waste independently within the counties. This has however not being successful as most counties do not have the capacity or set up relevant infrastructure and resources to do so. At the Amboseli Serena waste is sorted into different categories and coded. Plastic waste is packed and transported to go-downs in Nairobi for recycling by licensed companies. The plastics are being recycled to make fencing poles being used within the lodge.

At Serena Mountain Plastic waste is transported to the Nyeri county governments' recycling factory in the neighboring Karatina town for recycling. At Sweet Waters Serena waste is sorted at the camp and recyclable waste transported to Nairobi in trucks twice every month to a recycling plant. The camp then uses fencing poles made out of these recycled plastics for fencing as they are long lasting and termite resistant. At Nairobi

Serena Hotel water bottles are collected by water companies and recycled/ reused. Plastic waste is collected by outsourced waste management companies and transported to recycling plants.

iv. Waste

Within the four (4) different hotels, lodges and resorts a lot of human, kitchen and garden waste is produced. Different measures are being undertaken by different premises to deal with these kinds of waste mainly due to their different geographical locations. At Amboseli Serena food remains are composited and used in the forest to reduce the salinity of the soil. This is greatly being used as a way of improving conditions for trees to grow. The food remains are also used in the flower garden around the lodge to enrich the soil. Used milk packets are being reused as planting bags for trees in the tree nursery instead of buying plastic bags within all the four (4) establishments visited as shown in figure 4i below.

Figure 4i; Reusing of milk packets to plant tree seedlings
Source; Author

Serena Mountain has an incinerator for incinerating non-recyclable waste. Milk packets are however not incinerated as they have a foil lining that does not burn. The milk packets are being reused as bags for planting seedlings in the tree nursery. A biogas plant is in the process of being designed and installed that will help in the recycling of waste (animal, human and crop waste). This is a source of renewable energy and the biogas produced will be used for cooking and lighting. At Sweet Waters Serena and Serena

Mountain food waste is mainly collected by members of the local communities who use them as feed for their pigs.

At Nairobi Serena Hotel the steam produced by the water boilers is reused in the laundry rooms which later condenses into water that is recycled back into the system. The steam is also reused in steam rooms (sauna) reducing electricity use for the same. Water and steam from the laundry cleaning system is treated and reused back within the same system. Waste water from the kitchen is recycled and used in fish ponds that are a tourist attraction within the premise. The grass and flower gardens are also watered using recycled water from the kitchen. Food waste is sold to farmers at a disposable fee for use as feed for their livestock.

4.6.3 Shamba

Shambas (organic gardens) are a common practice within two (2) out of the four (4) premises used in the research. The shambas provide the premises with assorted vegetables which are used in their kitchens. This reduces emission of carbon through vehicles that would otherwise be used to go long distances for the vegetables. Organic gardening also increases the soil fertility within these areas creating conducive environment for growth of different plants. The nature of the shambas is however determined by the geographical location of the different premises.

Due to the location of Amboseli Serena within the Amboseli National Park organic gardening is not allowed by relevant authorities. This is because through vegetables planted in the gardens animals that get used to these plants affect their normal eating cycle and this could be disadvantageous for the animals should the lodge ever shut down. The lodge however has many flower gardens that are fertilized using food waste from the lodge. There is also a tree nursery that has both indigenous and exotic trees where they source the trees used for the reforestation exercises.

Serena Mountain has a kitchen garden for some of their vegetables. The garden however is not big or adequate enough to service the whole lodge so they end up buying some

vegetables from the local community. Animals within the forest are also a hindrance to a big vegetable garden as they destroy the crops. Some of the water for use within the camp is pumped from a natural stream in the forest where it is purified and piped for use within the lodge. The stream water is however substituted with piped water from the Nyeri County's Water and Sewerage Company.

Sweet Waters Serena has an organic garden that is commonly referred to as the 'Mega Shamba. The garden provides the camp with most (approximately eighty percent (80%)) of the vegetables required for operations within the camp. This leads to reduced carbon emissions from vehicles that would otherwise go distances to transport the vegetables. There are also flower gardens within the camp that are fertilized using some of the food waste from the lodge. The hotel space within Nairobi Serena is rather small to allow for organic gardening. The hotel is also regulated by the county authority and as such cannot practice any organic gardening. There are however many flower gardens within the establishment.

4.6.4 Renewable energy sources

Renewable energy sources within all the different hotels, lodge and resorts have not been fully embraced/ tapped as reliable energy sources even in premises located within areas where these energy sources can be tapped. This is mostly due to lack of funds to do so and in some cases lack of sensitization to the relevant authorities on the importance of the same to the business and the environment in general. All the correspondents from the Nairobi Serena Hotels confirmed that there are no renewable energy sources in use in the establishment.

i. *Lighting*

Most sources of lighting within three (3) of the four (4) hotels, lodges and resorts (Sweet Waters Serena, Serena Mountain and Nairobi Serena) are sourced from the national grid whose source of power is hydro-electric- power. Amboseli Serena however is not connected to the national grid as yet due to its geographic location within the Amboseli National park but plans are in the pipeline to have most of the power sourced from biogas and solar. The lodge currently uses generators as a source of lighting.

ii. Heating and cooking

Heating within two (2) of the four (4) premises with the exception of Serena Mountain and Nairobi Serena is done using solar power. This is renewable energy tapped from the sun and produced using solar panels and solar water heating apparatus within the different premises. At Serena Mountain however the same is not attainable due to its geographic location within a forest which experiences cold climate most of the year. Heating within this lodge is therefore done mostly using hydro-power from the grid. Volcanic rocks found within the area are also used for heating rooms at fireplaces reducing the use of wood fuel. At Nairobi Serena all the correspondents confirmed that renewable energy is not used and that water heating is done using boilers. Cooking at all the four (4) premises is done using LPG gas.

iii. Biogas and other natural sources

Biogas and other natural or renewable energy sources like wind have not been harnessed within all the Serena Hotels, Lodges and Resorts. This is mainly due to lack of funds and unfavorable geographic location. At Amboseli Serena solar energy is used within the lagoon (for recycling and purifying waste water) and also for water heating in most of the areas within the premise.

At Serena Mountain wind energy and solar energy is very difficult for them. This is because the lodge is located within a forest and trees act as wind breakers and the area experiences very minimal sunlight most of the year as the climate is mostly cold and wet. A biogas plant is however in the process of being designed and installed within Serena Mountain that will use recycled waste (animal, human and crop waste) to produce renewable energy in form of gas that can be used for cooking and lighting. Volcanic rocks found within the area are also a source of renewable energy and they are used in the burners for heating rooms reducing the use of wood fuels.

4.6.5 Environmental practices

Within all the four (4) Serena hotels, lodges and resorts, staff training on environmental conservation is done in collaboration with the head office in Nairobi. There are regular

programs within these premises like 'Litter Collection Day', 'Environmental Day' and tree planting exercises that sensitize both the staff and guests on caring for the ecosystem. Posters and placards are also used as training and sensitizations material on the care of the eco system and green practices and are placed in different location within the premises. These placards are as shown in figure 4j below and are used to encourage guests to reuse their towels reduce water and energy use during laundry. Brochures made of recycled material are also used for training.

Figure 4j; Placards sensitizing guests on recycling of towels
Source; Author

At the Amboseli Serena staff training on environmental conservation is done in collaboration with the head office just like within the other three (3) Serena hotels, lodges and resorts. There are regular programs in the lodge like 'Litter Collection Day' that sensitize both the staff and guests on caring for the ecosystem. Guests are also encouraged to use biodegradable products provided by the lodge during their stay. The lodge also collaborates with the neighboring communities to sensitize schools and other institutions on importance of reforestation by taking part in tree planting exercises together. There is an 'Environmental Day' specific to the lodge on the fourteenth (14th) of every month. On this day staff members take part in reforestation, training and guests' sensitization exercises to improve on the support and care of the ecosystem. Guests are sensitized on the importance of conservation using brochures made of recycled materials.

At Serena Mountain and Sweet Waters Serena guests are sensitized on energy conservation by using printed media like signage. These types of signage act as reminders

for them to switch off lights when not in use and also to embrace natural lighting by opening the available big windows. Security personnel are mandated to walk round the lodge switching off lights that are not in use. Guests are sensitized on the importance of recycling by being encouraged to recycle their towels. This has mainly being done by use of placards made out of recycled materials and placed in their rooms. Through participating in reforestation exercises guests are made aware on the importance of caring for the ecosystem.

At the Nairobi Serena Hotel guests are sensitized on the importance of recycling through placards in their rooms. If any guest wishes to recycle towels or beddings they are advised to leave a note in the room indicating the same. The laundry staff is periodically trained on the importance of recycling the steam and grey water. The hotel staff is also trained on a quarterly basis on the importance and ways of reducing environmental degradation. Staff members are trained occasionally on the care of the ecosystem. Due to the location of the hotel within a city the trainings are done within the sister units like the lodges, resorts and camps.

4.7 Resource efficiency

4.7.1 Energy efficient bulbs and voltage

Within all the four (4) Serena hotels, lodges and resorts energy efficient bulbs are used. These are mainly LED bulbs with low wattage hence conserve energy. At Serena Mountain all bulbs being used in the lodge are energy efficient bulbs. The bulbs are energy saving LED lamps all approximately seven (7) watts. Energy voltage within the lodge is controlled to regulate when the power is being over used. The lodge has also installed circuit breakers that control the power supply and overloads. Electric relays have been installed to manage power in the lodge in different phases whenever any power phase is out.

At Sweet Waters Serena automatic switches are installed to censor energy mismanagement like overheating. There are also censor- master switches installed for

street and pathway lights that ensure outdoor lights go off automatically during the day and when not in use. Energy saving LED lamps are being used with a wattage of approximately seven (7) watts. At Amboseli Serena all bulbs in use within the lodge are also energy saving bulbs including the flood lights.

Nairobi Serena's duty manager, house keeper and supervisor are charged with ensuring lights are off when spaces are not in use. The hotel is trying to adopt a system where the keycard puts lights on when in one is in any of the rooms and off when out. The hotel recently had a total change of the lighting system where bulbs were replaced with energy saving bulbs. The energy saving bulbs produce minimal heat when switched on and do not consume a lot of power. This has led to reduction in the use of ACs especially within most offices. Television sets have been replaced with eco-rated television sets to reduce overconsumption of energy. Closet lights are automatic and go on when the closet is opened and off when it is closed. The light switches also have a control knob that dim or increase the light in rooms as per the preference of the guests.

4.7.2 Design and Volcanic Rocks

The design of all the four (4) Serena hotels, Lodges and Resorts has been very deliberate to ensure energy efficiency within the premises. Amboseli Serena is designed in the shape of a Maasai manyatta though the design is done using concrete. This is because concrete has a self cooling effect that ensures the spaces are naturally cool avoiding unnecessary use of fans and heaters. There a lot of trees within the compound those also ensure there is a cooling effect within the lodge facilities. All the hotels, lodges and resorts visited by the researcher had utilized big glass windows and doors to allow enough natural lighting during the day reducing the use of artificial light. At Sweet Waters Serena for example the use of big doors and windows allows for use of natural lighting which is very energy efficient as this reduces the need for use of artificial lighting within the spaces. The makuti roofing used within the camp's facilities has a cooling effect that reduces the use of AC to cool the rooms. At Serena Mountain volcanic rocks are used in the burners for heating rooms reducing the use of wood fuels as ahown in figure 4k below.

Figure 4k; Volcanic rocks used in burners for heating rooms at Serena Mountain Lodge
Source; Author

4.7.3 Generators

For three (3) of the four (4) Serena hotels, lodges and resorts visited use of generators is usually as a back-up plan when main national power lines fail or when there are power black-outs. At Amboseli Serena however the generator system is a synchronized system and is one of the main sources of power. For energy efficiency the system is turned off at night and the lodge uses energy stored up in batteries.

4.7.4 Kitchen waste and Grey water management

Waste management practices have been embraced within the Serena hotels, lodges and resorts' premises as a way of resource efficiency and caring for the eco system. Approximately sixty five percent (65%) of the correspondents were however not aware of any waste management practices by the different premises. Amboseli Serena's kitchen waste is collected and given to farmers in the neighboring community as feed for their pigs. The lodge also has a compost pit that they use to bury kitchen waste turning it into manure that fertilizes the forest soil. This is done as they are not allowed to feed the animals to avoid interfering with their eating cycle. Grease traps are used for pipes through which grey water passes to trap any oils (grease) before the water is treated and released to the eco-system.

At Sweet Waters Serena the drainage systems for the grey water also have grease traps that trap any grease before the waste gets into the septic tank. The trapped grease is

packed in recycled tanks and transported to Nairobi for proper disposal. Food waste from the kitchens in Serena Mountain and Sweet Waters Serena is given to members of the neighboring communities and used as feed for their animals like pigs. At Nairobi Serena Hotel the grey water (from the kitchen) goes through a recycling system and it is then used for watering gardens and also in the fish ponds. Food waste is sold to a company called 'Pig Swing' for use as animal feed.

4.7.5 Black water management

Black waste management varies with the different Serena Hotels, Lodges and Resorts. Nairobi Serena does not have the capacity to treat their black waste in-house and they therefore have connected the drainage system to the Nairobi county governments' systems. The naturalist at Amboseli Serena highlighted that the sewer waste is treated through a very elaborate lagoon system. Clean water from the lagoon system is used as a fish pond and houses different kinds of fish. Excess clean water from the lagoon is discharged to the environment and enriches the national park.

Serena Mountain uses septic tanks to treat black water by silting and later releasing the clean water to the ecosystem. Some of the black water goes into the county council's sewer lines for treatment. At Sweet Waters Serena the sewers' septic system manages the sewer waste through French drains that channel it to a soak pit. This soak pit creates an aquatic wetland that enhances vegetation through ground sip-age.

4.7.8 Solid waste management

Sorting of waste into different categories mainly; plastics, recyclables, solid, organic waste is a common practice within all the four (4) Serena Hotels, Lodges and Resorts. These aids in differentiating between recyclables waste, reusable waste and waste that can neither be recycled nor reused. At Amboseli Serena burning of plastics or any kind of waste is prohibited within the lodge to avoid carbon emissions. The plastics are transported to Nairobi for recycling while most solid waste from the kitchen is used as

manure for the flower gardens. Cartons and paper boxes are recycled to make colored toilet paper though this is not a practice done at the lodge.

At Serena Mountain plastic waste is collected and taken for recycling to the Nyeri county government's recycling factory in neighboring Karatina town. Incinerators are used for burning some of their non recyclable waste. Waste from each tent at Sweet Waters Serena is sorted into four main categories mainly; plastics, recyclables, solid, organic waste. The recyclables are transported for recycling to Nairobi twice a month to a recycling plant while the rest is burnt in an incinerator. The ash from the burnt waste is used as fertilizer in the organic garden which they refer to as the 'mega shamba'.

At Nairobi Serena Hotel waste is separated into different categories namely; food, oil, paper and plastics. The waste is sorted, coded and put in colored refuge bags i.e. green-recyclable, blue-food, red- meat, clear- plastics. Food waste is collected by outsourced farmers and companies as feed for their livestock. Plastic waste is collect by relevant waste management companies and taken to recycling factories. Water bottles are collected by water companies for recycling.

4.7.9 Reduction in operation cost

NEEMA is proposing that different counties manage waste within the counties but most of them do not have the required infrastructure to do so. Most of the recyclable waste is transported from all the four (4) Serena hotels, lodges and resorts to Nairobi for recycling. This is an expensive venture to both the hotel and the ecosystem. The venture is expensive as during transportation a lot of time and money is wasted and also there are carbon emissions from the transporting trucks. For most of the design of all the four (4) Serena hotels, lodges and resorts locally available materials and skills have been used reducing the cost of transporting them. Most of the ground employees within Serena hotels, lodges and resorts are also sourced from the local communities greatly reducing the cost of operation within the premises.

At Amboseli Serena locally available materials, workforce and designs were used to achieve the design of the lodge. The lodge design is inspired by the Maasai culture and locally available Maasai artifacts have been used as accessories within the lodge. The Maasai artifacts are also used as souvenirs at the gift shop reducing cost of sourcing for the same elsewhere. At Serena Mountain availability of raw material (timber) influenced its wooden design. The skulls and tusks from Mr. Clarks's hunting expeditions were used as accessories in the space reducing cost. The lodge sources for vegetables and other products for use in the day to day operation of the lodge from the neighboring Kikuyu community who are farmers.

Sweet Waters Serena engages the Samburu people in the thatching of the tents at different times of the year. The local Kikuyu people are used as performing artists for the guests. The camp also sources traditional attires and artifacts from the local communities that they sell at the camp's curio shop. These practices within Sweet Waters Serena greatly reduce the cost of operations within the camp. With the use of energy saving bulbs and recycling of grey water at Nairobi Serena, the cost of electricity and water has significantly gone down.

4.8 Peaceful co-existence

The relationship between the four (4) Serena hotels, lodges and resorts used in this research, the surrounding communities and the surrounding environment is very important. This is because these are major pillars in the peaceful co-existence of these premises with the environment they are found in. All the four (4) Serena hotels, lodges and resorts have had major impact on the communities and environments in which they are situated.

i.   *Nature and environment*

Support and care of the environments that the four (4) Serena hotels, Lodges and resorts find themselves in has being a core value in running the business. This is embedded in the Hotels, Lodges and Resorts' guiding environmental principle that states 'Ours is to conserve not to exploit'. The four (4) premises engage local communities in most of their

environmental conservation exercises in a bid to establish a peaceful coexistence with nature and surrounding environments.

Amboseli Serena engages the local Maasai community in tree planting exercises as a way of training and sensitizing them on the importance of environmental conservation. The lodge management built a community bathroom whose water is sourced from swamps within the park to avoid human- wildlife conflict. The community members were initially showering from swamps that animals were drinking water from leading to human-wildlife conflict. The community members are also involved in care of the eco system by being urged to use word of mouth to sensitize other community members.

Serena Mountain works with stakeholders and the local community in nature conservation exercises that mainly involve tree planting and sourcing of raw materials from the community around them. At Sweet Waters Serena trees that have fallen mainly due to acts of God like wind are left to wither and enrich the soil as a way of not interfering with the natural existence of the ecosystem. The camp engages the community in tree planting drives before the long rains in March. The staffs together with guests at the camp are also involved in waste collection exercises on the eighth (8th) of every month. Once in a while Nairobi Serena's management partners with the county government for tree planting exercises. These tree planting exercises are mainly within public parks within Nairobi County. They also engage in clean-up exercises that reduce non- biodegradable waste in the environment like plastics.

ii. Community

All the four (4) Serena Hotels, Lodges and Resorts have supported communities economically and socially for a very long time. This is a way of peacefully coexisting with their neighbors enabling them to run their businesses successfully. The premises are a source of employment and economic stimulation for the local communities.

Amboseli Serena buys artifacts from the local community and sells them at their gift shop. The lodge also engages local community in designing some artifacts used as

accessories in the lodge as an income generation venture. There is also a staff wellness program that spills to the neighboring community where the community is offered healthier and proper health treatments through the lodge's medical facility. The lodge through willing guests has dug a borehole to provide water for the community to reduce animal- wildlife conflict. Traditional cultural dancers sourced from the community have a monthly pay regardless of whether the lodge is busy or not to improve their livelihoods.

Serena Mountain works together with the neighboring community in reforestation exercises especially in their schools, hospitals and other institutions. Waste collection is also an area where the lodge engages the neighboring community in by allowing community members to collect kitchen waste to feed their pigs. Sweet Waters Serena engages the Samburu people in the thatching of the tents at different times of the year. The local Kikuyu people are used as performing artists for the guests. The camp also sources traditional attires and artifacts from the local communities that they sell to the guests at the camp's curio shop.

The Nairobi Serena's staff and management bought solar lamps for children within the Mara region in conjunction with Mara Serena in the year two thousand and fifteen (2015). This was done through a partnership with a solar company. Support from hotel guests has since improved the program enabling them to continuously buy more lamps for more school going children. Christmas decorations on the hotel building have been significantly reduced in the past years. The money from reducing these decorations is used to organize Christmas parties for the less fortunate within the neighboring communities. In the year two thousand and fifteen (2015) the hotel held a Christmas party for a school in Kawangware, a slum area in Nairobi. Through the party the school children received books, shoes, school uniforms and other Christmas goodies.

4.9 The design process

The design process of all the four (4) Serena establishments is mainly done at a central level. This is mainly done at the Serena Hotels and Lodges' head office situated in Nairobi. The idea to change, improve or develop design is normally born out of need.

This is mainly in line with current design and market trends, technology and the end user needs. An assessment is then carried out by all relevant stakeholders. This mainly involves a SWOT analysis (Strengths, Weaknesses, Opportunities, and Threats) of the proposed designs or the intended design. During this stage the communities within any proposed or existing locations any of the establishments, staff and guests are involved in the process.

Once a SWOT analysis has been successfully concluded consultative meetings on the design are held between the relevant stakeholders. The Serena Hotels Group is one of 96 companies that make up AKFED, the AKDN. The Group trades under the name TPS-Serena. These are the major stakeholders involved in the consultative and design stage. Other stakeholders that are indirectly involved are Nation Media Group, Diamond Trust Bank and Jubilee Insurance.

The designs are agreed upon and relevant approvals handled by relevant professionals and authorities before the commencement of the design job. The hotels, lodges and resorts mainly work with architects and designers from a company called Symbion Architects. Communities are also involved through their respective local authorities. This enables Serena Hotels' to be in harmony with neighboring communities ensuring that any of their future operations are peaceful. The execution of the design is then undertaken in which communities are also involved through offering skills and/or raw materials. Serena Hotels' embrace local communities and work towards improving livelihoods hence most of the raw materials for design and construction of any establishment are sourced locally. These design process is as summarized in chart 4.9a below.

Chart 4.9a; The design process followed by the Serena Hotels, Lodges and Resorts
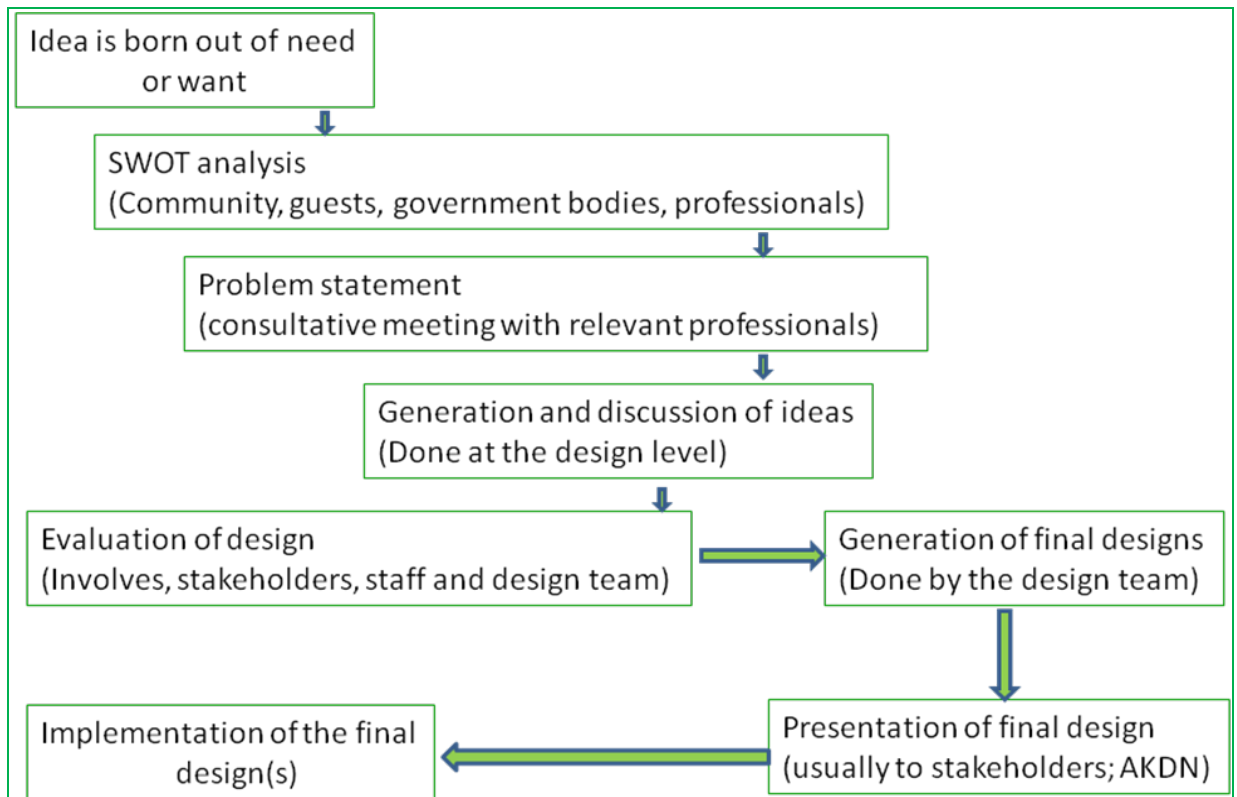
Source; Author

CHAPTER FIVE

5.1 CONCLUSION

Throughout the research the researcher's main guide was the primary research objective stated earlier in the introduction to the research. This main objective was to establish to what extent Serena Hotels have adopted green design in Kenya. Guided by this objective the researcher sought to investigate features of green design adaptable to the hospitality industry in Kenya. The researcher selected four (4) establishments within the chain of Serena Group of Hotels. The researcher interacted with both senior staff members and junior ones from these establishments. The researcher was also able to interact with various guests through participatory observations and interviews.

Serena Hotels, Lodges and Resorts generate more waste than necessary. The group is but a small fraction of the hospitality industry in Kenya and is an indication that the industry too generates a lot of waste. These various types of waste lead to a lot of environmental degradation. The Lodging properties waste large amounts of goods and resources which could otherwise be recycled or reused. Large amounts of electricity and water are required to run operations within the Serena Hotels, Lodges and Resorts. While this is unavoidable the Serena Group has not fully embraced energy efficient practices in their operations. Small changes made within these operations could aid significantly in terms of minimizing adverse effects especially those made on the eco-system.

Through the research findings the researcher established that indeed there is awareness on green design practices and their impacts within the Serena Group. Approximately eighty three percent (83%) of all correspondents were aware of some if not all of the green design practices within the various establishments. This is a positive sign and a resource that can be tapped into in the establishment of guiding frameworks towards increased adoption of green design within the hospitality industry in Kenya. On the other hand the researcher established that environmental policies or certifications were not mandatory for the operations of hotels, lodges and resorts within the hospitality industry in Kenya

though Serena Group conforms to a number of them. The environmental policies and certifications should be put in place and followed strict in order to see to it that green design standards are met by industry players. The hotels, lodges and resorts' in the hospitality industry have enough room foster high levels of commitment to green design. Training and educating stakeholders, guests and employees and the importance of adopting green design and the effects of the same to the environment was considered very valuable. This is mainly because the training would lead to knowledge and awareness, positive attitudes and participation in adoption of green design practices within the industry.

The Serena Group's collection of hotels, lodges, and resorts spans across some of the most culturally rich, exotic, enchanting and evocative destinations in Kenya. These TPS-Serena properties enjoy an established reputation for the highest standards of comfort, service, and products. The TPS-Serena properties too have always emphasized on cultural and environmental sensitivity, for which they have received both local and international recognition. The establishments conform to some of the highest certification standards of green design within the hospitality industry both locally and internationally. The different establishments have continuously and over the years received different outstanding accolades for their deliberate efforts in green design.

Going green for the Serena Hotels, Lodges and Resorts is a way of life and operations within the establishments. The TPS-Serena properties are designed to have the highest standards of environmental appreciation while nurturing neighboring communities and cultures. The Group is a leading hospitality industry player in eco-policy implementation and in creating eco-awareness. This is done through the adoption of eco-friendly architecture and design, sustainable waste management practices, sourcing of materials locally, reduction of green house gas emissions and use of products that are environmental friendly in their various departments. Management of carbon emissions is mainly done through reforestation exercises.

The tourism sector in Kenya, within which the Serena Group operates, is the hub of the hospitality industry. Serena Hotels, Lodges and Resorts have been very deliberate and consistent in the adoption of green design. However a number of the hotels within this sector tend to employ environmentally harmful practices in their various activities such as; building construction, landscape designs, waste disposal, energy and water use among others. Incorporating green technology within these establishments is very expensive. The respondents in this research are convinced that in the long-term, the benefits of green design are positively tangible. The Serena Hotels, Lodges and Resorts are fortunate to have had a number of financial partners and agencies who have been more than willing to invest in their "green projects". Other players within the industry too stand a chance to partner with various stakeholders to invest in greening the industry.

TPS-Serena seeks to maximize to maximize the local communities' social-economic benefits while impacting the local environment. The group pays the highest regard to the environment through the design, building and construction, and the operations of its various establishments. TPS-Serena has a vested interest in the local population's interests which include developments, cultures and traditions and incorporates the same within their designs.

The training and sensitization of staff and guests has seen the Serena group of hotels grow in leaps and bounds in green design implementation. The training of staff during induction and as they continuously work within the establishments has become an essential part. For the trainings the company identifies and evaluates the environmental impacts of these activities to the environment. Systematic water and energy consumption and waste management are other areas where the group intensively trains the staff. Employees are also encouraged to adopt these green design practices in their homes.

The Serena hotels, lodges and resorts believe in leading from the front. This they do through taking part in environmental conscious activities in conjunction with community members in the company's CSR programs. The CSR programs go beyond donations and philanthropy to positively impacting stakeholders, guests and employees through the deliberate care of the eco-system and communities around them. Community involvement through local sourcing of materials and skills where necessary is a major

factor in their design implementations. This greatly reduces the costs of sourcing for these resources elsewhere. Through community involvement TPS-Serena has successfully been able to run its operations in harmony with the communities they are found in.

Approximately seventy percent (70%) of the correspondents were greatly satisfied with the efforts by Serena Hotels, Lodges and Resorts in implementing green design. About twenty five percent (25%) of the correspondents felt that although the efforts are very positive, a lot more could be done to improve. Approximately five percent (5%) of the correspondents however did not think adoption of green design to the hospitality industry really made a difference.   However, different establishments' correspondents had different views on the adoption of green design within the establishments.

Five (5) out of the six (6) correspondents at Amboseli Serena felt that the lodge has done a lot but could also improve on the implementation of conservation policies with increased financing. They also felt that government policies need to be established with proper infrastructure in place. For example recycling could become very limited as NEMA is proposing that waste management is dealt with within the counties. Most counties however do not have the relevant infrastructure and transporting them to Nairobi is better that burning them or throwing them. The correspondents felt that the lodge has a very big potential of recycling water just like Kilaguni Serena does but that has not being tapped yet. Plans are however underway for the same. All the correspondents at Amboseli Serena felt that there is need for the lodge to connect to the national grid or better still embrace solar power to reduce carbon emission through the power generators. Pooled transport, according to them, is also another way that carbon emissions could be greatly reduced if tour companies came together to transport guests together instead of using too many vehicles that emit carbon to transport few guests.

In regards to environment conservation three (3) out of the six (6) correspondents at Serena Mountain felt that the lodge has being doing well but there is still room for improvement. They also felt like the lodge is not tapping rain water as much as they should in order to completely sustain themselves when it comes to water use yet the rain

water is readily available. One of the correspondents also felt that although eco-tourism is very expensive, the lodge can do more especially by investing in a lagoon system for waste management. The correspondent felt that more funds should be directed towards conservation and eco-tourism to earn the lodge a gold rating.

The naturalist at Sweet Waters Serena commended the research saying that it would go a long way in increasing the uptake of green design practices in the hospitality industry if adopted. He also requested to have a report and or work together with the researcher in improving eco-tourism especially within the Serena Group of Hotels and Lodges. The naturalist also went on to note that green design is expensive and therefore sensitization on the importance of the same is important in increasing its uptake in the industry.

All the correspondents at the Nairobi Serena felt that the hotel should make sure to follow up on the school children they help. They also felt that the culture of paper especially in accounting and receipts needs to be changed to online documentation to help save trees where papers come from. Four (4) out of the six (6) correspondents at the hotel felt that most hotels are modernizing the hospitality industry which is not good. This is because the authenticity of designs in hotels should be maintained as this helps in resource efficiency. This, they said, should be done by tapping the resources within the country and not borrowing from the West. There is also need to collect rain water which can be used in the lavatories and also in watering plants.

Improving and increasing the adoption of green design within the hospitality industry is indeed attainable. This research showed that indeed the benefits of adopting green design within the industry greatly outweigh the disadvantages. There's however need to develop a framework which can be used by all industry players as a guide towards attaining the same.

5.2 RECOMMENDATIONS

Arising from the conclusions above, the researcher proposes a green design framework (GDF). This framework will act as a guide/model to be used in increasing the adoption of green design within the hospitality industry in Kenya. The framework would require the collaboration of relevant stakeholders and the community for the effective greening of the hospitality industry to be achieved.

The researcher in proposing this framework (as shown in chart 5.2a below) hopes that it would lead to an increase in the uptake of green design practices. This would translate to better sales and growth for various hospitality industry establishments and the industry as a whole and most importantly the care of the environment.

Chart 5.2a; The proposed green design framework (GDF)
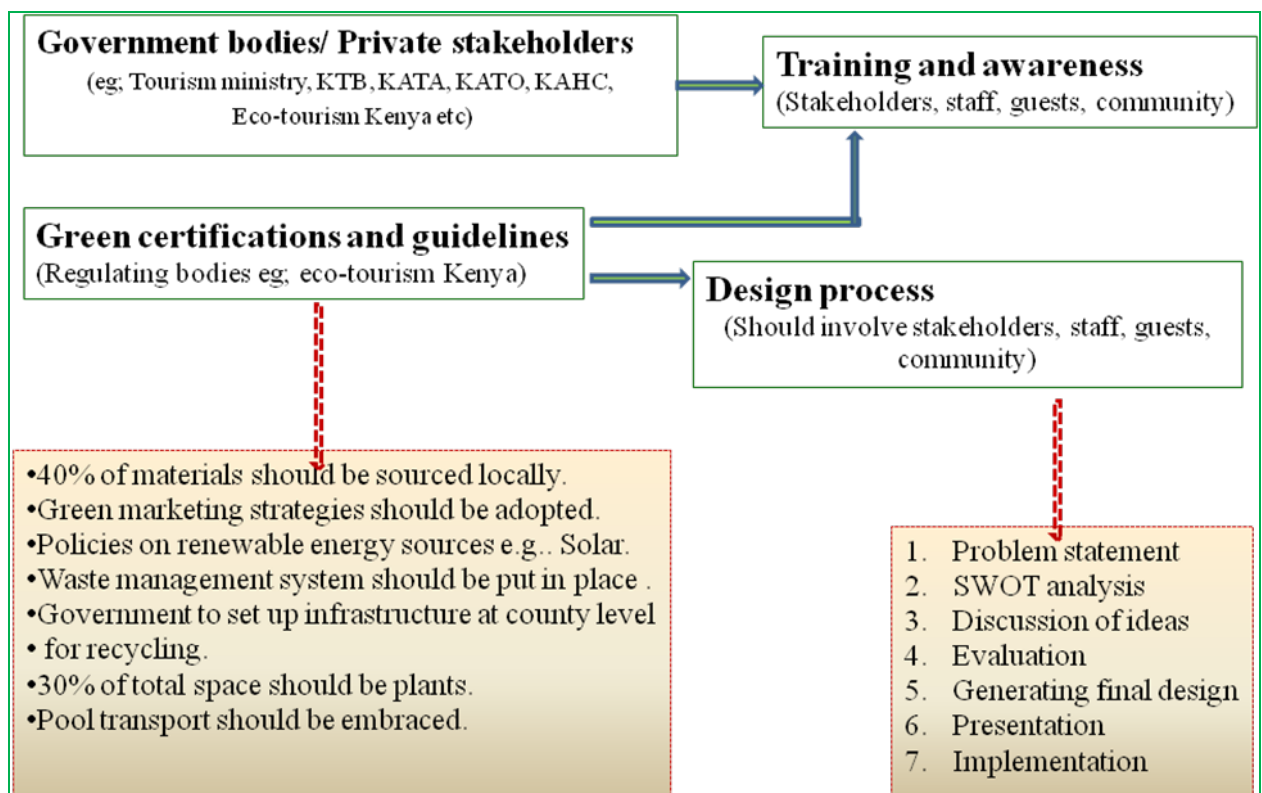
Source; Author

From the research it is quite evident that the adoption of green design in the hospitality industry in Kenya would be an advantage both to the industry and consumers. It is also evident that there are not set guidelines or frameworks that govern or encourage the adoption of the same within the industry.

Some of the highlights of this framework (GDF) proposed in the research are;

1. The realization of the GDF depends on the collaboration between various stakeholders. These stakeholders include but are not limited to relevant government bodies and stakeholders like the environment and tourism ministries; tourism bodies like KATO, KATA, Magical Kenya, Eco-tourism Kenya, and KAHC among others. The media too is a major stakeholder that would play a very vital role in ensuring that through the various communication mediums relevant players are well informed on the GDF. The media can use means such as television and newspaper advertisements, articles and documentaries, social media channels and word of mouth for the same.

2. The research recommends that training and sensitization on the importance of adoption of green design within the hospitality industry is carried out. The training would involve stakeholders within the industry both current and prospective, members of staff, guests and customers of the industry. Communities found in areas where these establishments are to be put up should also be trained as they play a major role in ensuring that adoption of green design practices is successful. This they do mainly through being a source or labor, skill and raw materials and also through collaborative green practices with the establishments. Training not only on the importance of adopting green design but also of the benefits that each sector or person stands to gain from the same ensures that the concept of green design is owned by each individual. This would translate to a more willing people and one that makes adoption of green design within the industry a priority.

3. Proper guidelines and/or policies should be put in place and properly followed as part of the GDF. This would ensure that minimum standards are set and adhered

to before operations of any establishment within the hospitality industry. These standards would involve approvals by set bodies in charge of the realization of the GDF. Green audits should also be introduced either bi-annually or annually. This will keep the industry players in check and ensure they maintain green standards in the establishments. The success of a green hospitality industry would not only benefit the industry but the country as whole. Involving the community in coming up with these guidelines and policies would greatly increase the receptiveness and acceptability of green designs within the various establishments.

Within the guidelines the researcher recommends that one of the key factors to be considered in designing should be the community. Hotels would then be required to source a minimum of forty percent (40%) of their labor and materials from within the communities they are established. This would greatly reduce the cost of transportation and subsequently environmental degradation through carbon emissions from transportation of the same.

Green marketing strategies should also be part of the guidelines put in place to encourage the hospitality industry players to adopt green design. This they can do by use of recycled material for marketing. The industry players could also be encouraged to use the green strategies that they adopt at their respective establishments as a marketing tool. This can be encouraged through various incentives like awards or recognitions by relevant bodies to industry players doing the same.

Within the guiding framework a policy should be put in place on renewable energy systems. This is especially because renewable energy like solar is readily available in Kenya as the country experiences sunshine throughout the year. This therefore should inform a guideline and regulation that requires all hospitality industry players to adopt solar powered water heating systems within their establishments. This is already a regulation within the construction industry in Kenya and therefore would just needs to be strengthened within the hospitality industry. Solar lighting systems should also be a requirements especially in establishment located within areas experiencing good sunshine.

Waste management systems should also be introduced as some of the major regulations and guidelines to be adhered to within the industry. This would especially be so for grey water and food waste which can be recycled and reused for other beneficial purposes. The researcher recommends that industry players introduce treatment systems to treat grey water and recycle it within their premises either in the lavatories or in watering plants.

Recyclables like plastics should also have proper management procedures that are followed and seen to fruition. This may not necessarily translate to the recyclables been recycled. The government is also proposing that different counties manage their waste independently to avoid transporting them to different areas for the same. Proper recycling infrastructure and resources have however not been put in place in most counties. The researcher recommends that through community involvement proper recycling and other waste management infrastructure to be put in place in county levels to aid in reduction of carbon emissions as waste is transported to other areas for the recycling.

Planting of trees and an introduction of shambas where possible should be embraced as a way of dealing with carbon emissions. Trees and other plants are used as carbon intakes within the ecosystem and would go a long way in ensuring that air circulation is optimal within the establishments in the hospitality industry. Within the framework a provision of approximately thirty percent (30%) of the total space of any establishment should be dedicated to any form of gardening. According to Tijana Blanusa (2011), a plant cover of between twenty five (25) and thirty percent (30) percent of any space or area reduces carbon emissions within the environment by approximately seventy (70%). Some establishments may have the advantage of having enough ground space while others may not have enough. However for those with less ground space green roofs could be introduced for the same purposes. Green roofs would also add a cooling effect to the building reduced energy in running the cooling systems.

In cases where back up sources of energy like the diesel powered generators are used regulations should be put in place to ensure that the generators are 'eco-friendly'. This can be done by ensuring that emissions from the generators go through filter pipes and absorbents in their chimneys to ensure that the carbon effect is managed before being released into the atmosphere. This helps reduce the impact of carbon to the environment.

The researcher recommends that pooled transportation is embraced within the industry. Tour companies and other stakeholders can develop a van-pooling system and transport guests together instead of using too many vehicles that emit carbon to transport few guests. Shuttle services should also be established within the industry for guests who would otherwise use private vehicles to visit various destinations. This shuttles could be used to transport guests to respective destinations, be used to take guests on tours within the various destinations and also for staff transport.

4. The research recommends that a design process is followed to achieve this GDF. The design process would act as a guide on the steps to be followed in achieving the green design practices set within the policies and guidelines of the GDF. This design process is as shown chart 5.2 (b) below.

Chart 5.2b; The proposed design process

Problem statement

SWOT analysis

Generating ideas

Final designs

Implementation of design
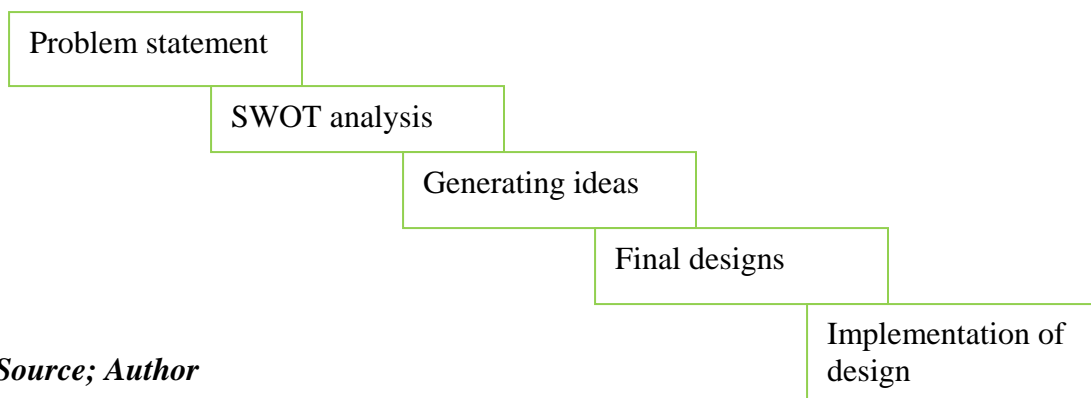
*Source; Author*

The researcher proposes that a problem statement is defined once a need or want for design arises either from guests, staff or investor. The definition of the problem statement should greatly involve sensitizing the communities on the stakeholders'/ investor's

intentions to design or develop. This would then lead to a SWOT (Strength, Weakness, Opportunity and Threat) analysis in which the community, professionals (architects and designers), guests and staff are involved. The involvement of all these stakeholders would lead to a better understanding of the advantages and disadvantages of the adoption of the green designs and the effects on the same to the environment. It is also aimed at enabling the owning of these practices by these different stakeholders.

The researcher proposes that once a SWOT analysis has been carried out the relevant professionals (designers and architects) generate different ideas. The ideas should then be discussed with the client (investor/ establishment) and evaluated to come up with a final environmentally friendly design. This final design should then be presented to the staff and management of the establishment intending to adopt the green designs. The presentation should also involve the community, staff and in cases where possible the consumer before the final design is implemented in order for them to 'own' these green design practices.

Involving the community and consumers in the adoption of green design enhances authenticity and the aesthetic appeal of any establishment within the industry. This would mainly through sourcing of various unique materials and skills for the same and generation of ideas to achieve these green designs. By involving the consumers the establishments also creates a sense of ownership and loyalty with the consumers.

5.3 Contributions to knowledge

The main objective of the research was to establish to what extent Serena hotels have adopted green design in Kenya. The researcher mainly used a qualitative approach in the research assisted by a survey approach. Through engaging directly with different subjects in various activities within the various Serena establishments, the researcher was able to better understand the green practices already in practice and those still to be adopted. The research also aimed at proposing a model or framework of increasing the uptake and adoption of green design in the hospitality industry in Kenya.

Through the research a number of contributions to knowledge were achieved among them being;

1. There being little research that highlight green design practices within the hospitality industry in Kenya, the research provides new information on the same that had not been available before. Through this research information on the various green practices that have being adopted, the drivers of these practices, their benefits and challenges facing their adoption has been highlighted.

2. Information on gaps in the implementation of government policies that would otherwise lead to an increased uptake of green design within the hospitality industry has also being highlighted.

3. The research also develops a green design framework (GDF) that can be applied in increasing the uptake and adoption of green design within the hospitality industry in Kenya. This framework provides a new approach that can be successfully adopted to increase the uptake of green design with the collaboration of relevant stakeholders and following a design process also highlighted in the research.

4. The research also provides substantial data that updates existing literature and provides a basis for further research. The research provides a basis for further research cutting across various design principles like social design, training, policies and government and institutional linkages.

5.4 Areas of further research

The research identifies various areas and fields that need further research including effectiveness of the proposed GDF, government and institutional linkages and support in realizing the frameworks proposed, training and sensitization and the GDF design process.

1. Further research to determine the effectiveness of the proposed green design framework (GDF) is needed. The GDF proposes a design process to be followed once guidelines and policies have been establishment on the adoption of green design in the hospitality industry. The research also proposes the collaboration of various stakeholders in coming up with these policies and guidelines and in

training communities and industry players on the same. Research is therefore required to establish the effectiveness of the GDF in successfully leading to an increase in the adoption of green design in the hospitality industry in Kenya or any other industry.

2. The research only focused on Serena hotels, lodges and resorts. There are however many hotels and players within the hospitality industry in Kenya whose green design practices have not been establishment. This is an area that requires further research.

3. The research established various collaborations between the Serena establishments and the communities in their bid to co-exist. These collaborations as cited in the research have led to community development. Sustainable community development through tourism and or social design is an area of research that can be explored further.

This list is however not exhaustive as the research provides a vast array of data that can be explored further. Waste management policies, sustainable energy systems and green marketing strategies are other areas of interest brought out in the research that can be researched further.

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APPENDICES

Appendix A; Questionnaire to staff at Serena Hotels, Lodges and Resorts

THIS QUESTIONNAIRE IS PURELY FOR ACADEMIC PURPOSES.

If you would be so kind in to fill it out in your spare time, it would prove to be an invaluable resource in my thesis research.

(PS; There's no right or wrong answer in research)

1. Does consumer perspective influence the design of the hotel?

   Yes; ………….   No; ………

   Kindly expound;

   ………………………………………………………………………………………………

   ………………………………………………………………………………………………

   ………………

2. What inspired the design of the hotel?

   ………………………………………………………………………………………………

   ………………………………………………………………………………………………

   ………………………………………………………………………………………………

   …………………….

3. Do you adopt any green marketing strategies for the hotel?

   Yes; ………….   No; ………

    Kindly expound;

   ………………………………………………………………………………………………

   ………………………………………………………………………………………………

   ………………………………………………………………………………………………

   …………………….

4. Support and care of the eco-system.

   a. How do you handle green house gas emission from;

      i. Generators

………………………………………………………………………………………………………
………………………………………………………………………………………………………
………………………………………………………………………………………………………
……………………….

      ii. Car engines

………………………………………………………………………………………………………
………………………………………………………………………………………………………
………………

      iii. Any other

………………………………………………………………………………………………………
………………………………………………………………………………………………………
………………

      iv. Any reforestation exercises being adopted?

Yes; ………….   No; ………

 Kindly expound;

………………………………………………………………………………………………………
………………………………………………………………………………………………………
………………

   b. Are you aware of any recycling practices at the hotel?

Yes; ………….   No; ………

 Kindly expound;

………………………………………………………………………………………………………
………………………………………………………………………………………………………
………………………………………………………………………………………………………
……………………….

      i. Does the hotel use artifacts and accessories from recycled products?

Yes; ………….   No; ………

 Kindly expound;

………
………
………
…………………….

    c. Does the hotel adopt any organic gardening exercises?

Yes; ………….   No; ………

Kindly expound;

………
………
………
…………………….

    d. Are there any renewable sources of energy in use at the hotel?

Yes; ………….   No; ………

Kindly expound;

………
………
………
…………………….

5. Do you train guests and staff on support and care of the ecosystem?

Yes; ………….   No; ………

Kindly expound;

………
………
………
…………………….

6. Resource efficiency;

    a. Are there any energy efficient practices being adopted in the hotel?

………
………

……
…………………….

    b. How does the hotel manage black water (from lavatories)?

……

……

……

…………………….

    c. How does the hotel manage grey water (from the kitchen)?

……

……

……

…………………….

    d. How does the hotel manage kitchen waste (food and other kitchen products)?

……

……

……

…………………….

    e. Does resource efficiency within the hotel reduce any operation costs?

      Yes; ………….   No; ………

      If yes, explain;

……

……

……

…………………….

7. Are there any green certifications, either locally or internationally required for operations within hotels in Kenya?   Yes; ………….   No;
………

If yes which ones?

…………………………………………………………………………………………………

…………………………………………………………………………………………………

…………………………………………………………………………………………………

…………………….

    a.   Which green certifications has the hotel conformed to?

………………………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………………………

…………….

8. Are there any activities to either conserve the environment or help communities the hotel engages with the local community? Yes; ………….

      No; ………

If yes which ones and how is it done?

…………………………………………………………………………………………………

…………………………………………………………………………………………………

…………………………………………………………………………………………………

……………………

THANK YOU SO MUCH FOR YOUR TIME.

Appendix B; Certificate of participation in tree planting exercise to researcher

AMBOSELI SERENA
SAFARI LODGE

AMBOSELI SERENA REFORESTATION PROJECT

This is to certify that

Mr/Mrs/Miss ___ Kevin & Pauline ___

Planted ___ Acacia xanthophloea ___ On ___ 12/2/2016 ___

The Serena Hotels Group is taking a leading role in environmental protection and preservation with a comprehensive action programme throughout its establishments. The first, most established and reputable exercise is the re-afforestation programme at Amboseli Serena Safari Lodge which has cost millions of Kenya Shillings.

The tree planting project was started in 1990 by Shadrack Karabilo, former General Manager, Lodges. This conservation scheme encourages guests at the Lodge and other interested partners/ groups to participate and plant "their" own trees. All the trees planted are indigenous species that consists of specifically drought resistant species such as *Acacia spp, Melia, Croton and Commiphora.*

"Kenya Wildlife Service and other conservation partners fully support the habitat restoration undertaken by Serena Hotels in Amboseli N. Park. Such concern and action is the foundation of conservation.
Dr. David Western, Former Director, Kenya Wildlife Service.

Signature

P. O. Box 48690 – 00100, Nairobi, Kenya Tel: (+254 45 622 361, +254 735 522 361), Website: www.serenahotels.com

SERENA HOTELS

Appendix C; Research budget

	Details	Ksh.
	Details	Ksh.
1	Printing and stationery	20,000
2	Internet	10,000
3	Data collection tools	25,000
4	Transport and accommodation	43,250
5	Meals	12,500
6	Miscellaneous	15,000
	GRAND TOTAL	**125,750**

Appendix D; Research schedule

N0	DATE	ITEM	MODE	RECIPIENT
1.	7th- 30th September 2015	Title and Concept Paper Development	Document &Power Point presentation	School of the Arts and Design postgraduate panel.
2.	5th October - 2nd December 2015	Proposal Development, Reconnaissance & Overview of Research Methodology	Desk critics, Expert Advice, Seminar Presentation and Class Presentations	- Supervisor. - School of the Arts and Design postgraduate panel.
3.	8th December 2015	Preliminary Proposal Presentation	Document &Power Point presentation	- Supervisor. - School of the Arts and Design postgraduate panel.
	20th January 2016	Final Proposal Presentation	Document &Power Point presentation	School of the Arts and Design postgraduate panel.
4.	28thJanuary 2016-	Field Work	As in Research Methodology	Researcher
5.	30thMarch 2016	Presentation of Research Findings	Document &Power Point presentation	- Supervisor. - School of the Arts and Design postgraduate panel.

6.	30thMarch 2016- 12thApril 2016	Review, Editing	Desk critics	Supervisor
7.	8thJune 2016	Final Presentation	Document &Power Point presentation	- Supervisor. - School of the Arts and Design postgraduate panel.
8.	15thJune 2016	Handing in of final report	Document to University Regulations	School of the Arts and Design