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School of The Arts and Design

BDS 413: PROJECT PAPER

(Interior Design Specialization)

**INCORPORATING SUSTAINABLE MATERIALS INSPIRED BY THE GIRAFFE
FOR APPEALING CONTEMPORARY INTERIOR AND EXTERIOR RESORT
DESIGN.**

Taphe Guest Resort in Naivasha, Kenya

By:

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Project paper submitted in partial fulfilment of the requirement for the Bachelor of Art in
Design Degree submitted to the school of the Arts and Design, University of Nairobi.

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DECLARATION

I Muiruri Pinkett Wambui, hereby declare that this is my original piece of work and it has not been presented for the award of Degree in any other university. Where the supporting ideas of other scholars have been used, I have indicated in a customary standard way.

To the best of my knowledge, I have not committed any plagiarism or deliberate omission in the acknowledgement of original works by others.

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DEDICATION

This research paper is dedicated to the Almighty God for his grace, strength and for seeing me through all the milestones in life.

I also dedicate it to my parents and brother; I am entirely thankful for their deprivation and sacrifice so I could achieve my life goals. Your unconditional love and guidance have brought me this far.

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ABSTRACT

In today's world, Interior Designers are not only linked to the aesthetics of a space but are also expected to solve interior space problems with an emphasis on user needs in addition to social, environmental and sustainability considerations. This project paper focuses on sustainability as the main philosophy guiding the study, more specifically, the use of renewable materials and recycling in the focus of environmental conservation as the key element of sustainability. Use of Giraffe patterns, colour and features as an aspect of African design in contemporary context will be the supporting philosophy and source of inspiration in design. The research will also examine the ability of design to promote African culture appreciation and conservation of wildlife in the hotel industry by using sustainable materials and at the same time achieving aesthetically appealing and contemporary designs.

Our health is dependent on the environment in various ways. The relations between human health and the environment has been premeditated and environmental risks have been proven to significantly impact human health by directly exposing people to harmful agents and indirectly disrupting life-sustaining ecosystems (Remoundou and Koundouri, 2009). Environmental degradation can be defined as the deterioration of the surroundings through the depletion of natural resources such as air, water and soil; the annihilation of ecosystems and the extinction of wildlife. Environmental degradation can also be defined as any change or disruption to the environment perceived to be harmful or undesirable. The field of interior design as part of this industry can play a part in contributing to the quality of the built and natural environments through the use of sustainable design principles

This study employed a qualitative research method. Data collection techniques included non-participant observation, informal and formal interviews with semi-structured interview guides. Data analysis was undertaken using descriptive methods such as; narrative. Tables, pie charts and photographs were also presented to support some of the issues that are discovered. The research findings established that there are vast opportunities for the use of sustainable materials and incorporation of contemporary African design as a way of interior designers contributing to the reduction and elimination of environmental degradation.

This research paper is divided into five chapters. Chapter one covers the background leading to this study, research objectives and questions, the significance of the study and the scope of the research, as well as the limitations of the study.

Chapter two critically reviewed existing literature in line with the objectives of the study on sustainability, sustainable design and Contemporary African Design and how it has contributed to the appealing contemporary and sustainable interior design environment. Chapter three outlined the methodology applied in the study used by the researcher to collect, analyse and present data of this study. Qualitative analysis research, presentations and interpretation of findings is provided in chapter four. Chapter five interpreted the findings of the data from chapter four and analysed the researcher's recommendations on the four major areas of interior design for the resort concerning previously employed techniques by designers in the field of sustainable design and African design discussed in chapter two.

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List of abbreviations and acronyms

1. CBD - Central Business District
2. CO₂ - Carbon dioxide
3. D4S - Design for Sustainability
4. DfE - Design for the Environment
5. EMS - Environmental Management Systems.
6. EPA - Environment Protection Agency
7. INWENT - Internationale Weiterbildung und Entwicklung
8. LED - Light Emitting Diodes
9. MDF - Medium-density fibreboard
10. TNC - Transnational Company
11. UNEP-United Nations Environment Programme
12. UNIDO - United Nations Industrial Development Organization

Definition of Terms

1. Culture: Friedman, (1994) describes culture as the characteristic of a particular group of people, defined by entirety from language, religion, cuisine, social habits, music and arts. He refers to culture as a universal human capacity.
2. Contemporary: Friedman (1994) terms contemporary as modern-day characteristics associated with a particular trend in design, the lifestyle of a society or a group with a common interest.
3. Design Process: Frascara, (1997) defines the design process as a decision-making process that is involved in any design, whether architectural, graphic or something abstract like a business model or idea. He maintains that the ultimate goal of every design process is to meet the desired needs of a client and the end-user.
4. Environmental degradation: European Researcher (2014) any change or disturbance to the environment perceived to be harmful or undesirable.
5. Interior Design: Is defined as a multi-faceted profession in which creative and technical solutions are applied within a structure to achieve a built environment. These solutions enhance the quality of life and culture of the occupants and are aesthetically attractive (Gayle, 2011)
6. Sustainability: Meeting the needs of the present without conceding the ability of future generations to meet their own needs (Brundtland, 1987)
7. Sustainable design: Design that minimizes environmental impact by using methods, products and processes that are respectful to the earth's life cycles, reflects a collaborative interaction between people and the earth and conserves natural resources for current and future generations (Ryn, 2007).

CHAPTER ONE

1 INTRODUCTION

This research aims at studying how sustainable design inspired by animal patterns and colors can be absorbed effectively and efficiently into the design of hospitality spaces in Kenya in areas of; Interior Architecture, Furniture Design, Exhibition and Display and Landscape Design. The research will help the researcher understand the basic objective of sustainability, which is to solve environmental challenges by reducing consumption of non-renewable resources, minimizing waste and creating healthy, productive environments. The research has been prompted by the fact that most of the Sustainable Researchers have been typically focusing on climate change, water resource management, renewable energies, and other environmental issues without examining the direct impacts caused by the space on the user's health, loyalty to space and satisfaction. Sustainability assumes that resources are inadequate, and should be used conservatively and prudently with a view to long-term priorities and consequences of how resources are used." In simplest terms, sustainability is about our future generation, and the world we will leave them.

This chapter expounds on the background of this study, stating the problem statement of the research, underlining the general and specific objectives and research questions that will provide the researcher with a theoretical base thereafter to recommend a design solution for the defined problem. It will also look at the significance of the study to the researcher and the Taphe Guest Resort. Some of the limitations that the researcher encountered during the research will also be summarized. Lastly, the research will also go in-depth on the scope of the study in different contexts such as geographical, content and the concept scopes.

1.1 Background of the study

The world's population is growing rapidly and it is estimated that by 2056, the global population will have increased by over 50%, global economic activity will have increased by quintuple, global energy consumption will have increased and tripled the current level and the global manufacturing activity will have increased at least threefold (Matthews. E.2000). some of the major causes of the environmental pollution are modern development, industrial development, over-population growth, deforestation, etc. Environmental pollution is termed as the degradation of the quality and quantity of natural resources in human surroundings. Different kinds of human actions are the main causes of environmental degradation.

These have led to environmental fluctuations that have become destructive to all living beings. The fumes emitted by the vehicles and factories increases the percentage of lethal gases in the air. Mostly, we can see pollution in developing areas where the population is increasing rapidly. Globally, the building sector is arguably one of the most resource-intensive sectors. Compared to the other industries, the construction industry is the most rapidly growing world energy user and the use of finite fossil fuel resources has already raised concerns over supply difficulties and heavy environmental effects such as; the ozone layer depletion, global warming, climate change and carbon dioxide emissions (Oliveira, 2009). A building pollutes the environment and consumes energy in every stage of its development and existence starting from the material production; the construction phase and even operating a completed building all consume energy for heating, lighting, power and ventilation as discussed by Kukadia, (2004).

Eco-friendly interior design focuses on refining indoor air quality as well as reducing the impact that furniture consumptions have on the environment. Traditionally the design process is meant to be economical and only use 15% of the resources, it is surprising that this process is said to be responsible for most if not all environmental impacts. Products are seen to be essential and are therefore not considered as part of the environmental impacts by the Environmental Management Systems (EMS).

African culture has been the foundation of inspiration for African design for decades; where designers are consciously aware of African culture as a source of inspiration in their design process. The wildlife division is considered as part of the African culture as it is the home many wild animals such as elephants, zebras, giraffes and lions elephants roaming freely over huge savannahs. This paper focuses on how Art and design can communicate the beauty of nature and wildlife in such vibrant ways as well as promoting wildlife conservation in a time where poaching rates of both endangered species and other wild animals have increased.

The research includes exemplars in sustainability, such as the Kitengela Hot Glass in Kenya and the Pallet furniture Kenya; these companies have successfully implemented the concept in their work. This research will help towards the implementation of environmental preservations to tackle various design solutions interior design for the Taphe Guest Resort for the local and international tourists.

1.2 Problem statement

The overall design used in interior and exterior spaces of Taphe Guest Resort in terms of materials and finishes used such as plastic and leaded paint; is unsustainable and has contributed to environmental degradation through long term ecological effects and poses a threat to human health and the environment. The resort is also not based on any specific design theme thus diminishing its aesthetic appeal to tourists.

1.3 Research objectives

1.3.1 General Objective

To establish how sustainable materials and giraffe patterns and color can be incorporated to provide a space that is both sustainably hospitable and aesthetically appealing to tourists at the Taphe Guest Resort.

1.3.2 Specific Objectives

- i. To investigate and evaluate the current designs and materials of interior and exterior spaces at Taphe Resort.
- ii. To explore how renewable materials, recyclable materials and giraffe inspired designs have been applied in other restaurants Interior Design.
- iii. To understand the importance of the incorporation of sustainable materials in an interior or exterior space.
- iv. To propose the most effective, efficient and suitable technique of integrating Giraffe patterns and color with renewable and recyclable materials to create sustainable and aesthetically appealing interior space, exhibition and display space, furniture and landscape for the Taphe Guest Resort.

1.4 Research questions

1.4.1 Main Research Question

How can sustainable materials and giraffe patterns and color be incorporated to provide a space that is both sustainably hospitable and aesthetically appealing to tourists at the Taphe Guest Resort?

1.4.2 Specific Research Questions

- i. What are the current designs of interior and exterior spaces at Taphe Resort?
- ii. How have renewable materials, recycled material and giraffe patterns and color been applied in Interior Design?
- iii. What is the importance of the incorporation of sustainable materials in an interior or exterior space?
- iv. What are the most effective, efficient and suitable techniques of integrating giraffe patterns and color with renewable and recycled materials to create sustainable and aesthetically appealing interior space, exhibition and display space, furniture and landscape for the Taphe Guest Resort?

1.5 Significance of the study

The study helps the researcher study and evaluate sustainability as the main philosophy, focusing on how sustainable design seeks to reduce negative impacts on the environment, and the health and comfort of product users through the use of sustainable materials that are renewable and recyclable. And the application of sustainable materials in the creation of interior spaces, exhibition and display units, furniture and landscape design of the hospitality industries in Kenya. These materials include; bamboo, mango wood, glass, papyrus and wrought iron. In addition to that, the researcher develops an opportunity to explore the use of animal patterns and colors as a source of inspiration. Specifically what aspects or features the researcher can draw from the giraffe; may it be form, colors or patterns that can be applied to the Taphe Guest Resort. This will provide the researcher with a good theoretical base thereafter to propose the best and most suitable technique of integrating giraffe patterns and color with renewable and recycled materials to create trendy aesthetically appealing and sustainable spaces for the Taphe Guest Resort.

The significance of using the giraffe as inspiration is that is it among the major wildlife animals that are dominantly in existence in the Naivasha region and can be easily spotted. This contributes to the support of wildlife appreciation and conservation by revealing its beauty through design. This also creates more tourist attraction as foreigners and more appealed by African themed resorts that are unique in Kenya in contrast to basic common design.

It is also anticipated that through this research, the management of Taphe Guest Resort - in Naivasha sub-county will be able to value, appreciate and see the need of using giraffe inspired patterns and colors and sustainable materials in the creation of trendy aesthetically appealing and sustainable interior and exterior space for their hotel.

This study also enables the researcher as a potentials designer, to embrace the concept of sustainability or sustainable design in the built environment with all the cost and “design with nature” as encouraged to all interior designers and architects by McHarg, (1969) in his book, ‘Designing with Nature’.

1.6 Limitation of the study

The limitations of this study are the shortcomings encountered during the research period that diminishes the effectiveness of the study;

A major limitation would be time; the research project is carried out in a short period; hence not all areas and aspects of the site and the research philosophy will be explored, covered, analyzed and noted in the proposed designs’ recommendations by the researcher. As there is no form of sponsorship to carry out the research, all the costs incurred during the research such as the site visits, analysis, concept creations and presentations in form of prototypes and models are wholly reliant on the student’s financial capability. This study was also limited to the four thematic areas of study which constitute Interior Design, Landscaping and Human Environment, Furniture Design and Exhibition and Display Techniques. These four areas of interior design were applied and tackled separately in the area of the researcher’s interest that is Giraffe patterns and colors integrated with sustainable materials. Therefore, only techniques, methods, materials, exemplars, literature and giraffe art that follows the proposed design theme and philosophy will be focused on in this research.

1.7 Scope of the study

The scope of a study explains the extent to which the research area will be explored in the work and specifies the parameters within the study will be operating by defining what the study is going to cover and what it is focusing on.

1.7.1 Geographical scope

Taphe guest resort is built on a 1-acre piece of land along the Taphe Guest Resort road in Lakeview Sub County, Naivasha District, Nakuru County. The resort is 1.8 kilometers from Naivasha town and 72km from Nakuru town.

The resort is 90km, a 2-hour drive from Nairobi's Central Business District (CBD) using the A104 route. The resort is close to Lake Naivasha Panorama Park, 170 meters from the resort and 550 meters from the Naivasha Police station and is surrounded by several residential houses in lake view.

1.7.2 Conceptual scope

The study will be confined to the field of Interior Design with a concept of sustainable design through the use of renewable and recycled materials to achieve environmental conservation.

The materials will be inspired by giraffe patterns and colors to execute an interior and exterior space that is both sustainable and aesthetically appealing to tourists in the Taphe Guest Resort.

1.7.3 Contextual scope

The content scope of this research is comprised and confined by the information gained from primary and secondary sources of data. Primary sources of data will be collected from the site through interviews, non-participatory observation and taking of photographs while secondary data will be obtained from sources which include and not limited to; journals, books, scholarly articles, magazines, internet and all the materials effective and efficient in establishing the integration of Giraffe patterns with sustainable materials for a sustainable and aesthetically appealing space.

1.8 Conclusion

The chapter outlines both major and minor design philosophies and themes that will influence the study. It also states the primary problem of the study to be solved, as well as the main objectives and research questions that will guide the researcher on what is expected by the end of the study. This chapter also specifies the scope of the study and the limitations encountered during the study. This information will also help to determine the approach the researcher will undertake to provide a solution for the design problems at Taphe Guest Resort in Naivasha.

CHAPTER TWO

2 LITERATURE REVIEW

2.1 Introduction

This chapter will be a comprehensive summary of the existing literature on the main philosophy of the research, Sustainability. The literature review will narrow down the philosophy to its environmental elements such as the use of renewable materials and recycled materials. This chapter will also outline the role of design in sustainability, stating the main principles of sustainable design and their components in the context of the accommodation industry. The supporting philosophy philosophies such as; African design and contemporary design will also be highlighted. For African design, the researcher will focus on the Giraffe and how its pattern and color features can be included in the design as a source of inspiration to make a contemporary design. The design champions and exemplars in the field of sustainable design and an exemplary that incorporates giraffe inspired design into their works will also be studied.

2.2 Sustainability philosophy

The key elements of sustainability include; social, economic and environmental, on a systematic level, they are also referred to as people, planet and profit. This research focuses on the environmental element aspect of sustainability. Environmental impacts can be separated into three main categories: ecological damage, human health damage and resource exhaustion.

In the late 1980s and early 1990s, sustainability was largely an environmental concern. Initially, efforts concentrated on improving end-of-pipe technologies. The focus then advanced towards production improvements employing concepts such as clean technology, cleaner production, and Eco-efficiency. The next shift was on the product impacts, thereby taking into account the whole product life cycle. Concepts like Eco design and Design for the Environment (DfE) were developed and put into implementation. The increasing processes of globalization and trade liberalization, supported by the advances in information technologies, have profoundly changed the landscape of the private sector in all economies - developed and developing by providing new opportunities and challenges to improve sustainability.

Companies, major and minor, have made impressive efforts to address sustainability problems with a bottom-line focus. Through supply chain organization, corporate reporting, and adopting related international standards, companies are improving the efficiency of current production and the design of new products and services to meet consumer needs.

Sustainability also requires taking into account the needs of future generations, meaning that current environmental impacts should be condensed as well as those impacts on future generations. Global environmental problems are directly related to the size of the population which outlines the level of consumption of each person, and the materials and energy efficiency that produces each 'unit' of consumption. Presently, it has been assessed that environmental pressure should be reduced by about half. Taking into account the progression rates of emerging economies, the efficiency of products and processes would need to be improved by a factor of 4. In a world with a population of 9 billion, and a consumption level that is much higher than it is now, this would indicate materials and energy improvements by a factor of 10 to 20!

Growing global concerns about environmental issues such as climate change, pollution and biodiversity loss and social problems related to poverty, health, working circumstances, safety and inequity, have adopted sustainability approaches for industry. In the international policy arena, as illustrated by the World Summit for Sustainable Development, governments, industry and civil society have adopted the term sustainable consumption and production. Improved product design which applies sustainability criteria - Design for Sustainability (D4S) - is one of the most useful tools available to enterprises and governments to deal with these environmental concerns. D4S includes the more limited concept of Ecodesign or Design for the Environment. In many established economies D4S is closely linked to broader concepts such as sustainable product-service systems, systems renovations and other life cycle based efforts. In unindustrialized economies, a lack of awareness remains a stumbling block.

A comprehensive definition of D4S would be that industries take environmental and social concerns as a basic element in their long-term product innovation approach. This indicates that companies integrate environmental and social factors into product development through the life cycle of the product, throughout the supply chain, and with reverence to their socio-economic environments (from the local community for a minor company to the global market for a Transnational company (TNC)).

In 1997 United Nations Environment Programme (UNEP), in collaboration with the Delft University of Technology and other experts in Ecodesign, published the ground-breaking manual “Ecodesign: A Promising Approach to Sustainable Production and Consumption.” The concept of product Eco-design has since then spread as seen in the number of manuals and sector-specific supporting materials that are available in many languages. UNEP’s activities in the D4S area vary. The key is the development of a new global guide for designers and industry providing sustenance and regulation on the evolved concept of D4S (Design for Sustainability: A Global Guide, UNEP 2006). It is useful to those new to Eco design as well as those interested in breakthrough innovation for sustainability. The guide is the result of the long-lasting cooperation of international D4S experts from the Netherlands, Sweden, Italy, Germany, Japan and Australia, United Nations Industrial Development Organization (UNIDO), the Swedish Environment Protection Agency (EPA) and Internationale Weiterbildung und Entwicklung (INWENT) Germany and reflects the evolution of the concept since the initial guide was produced in 1997.

On the other hand, McHarg, (1967), states that; considering the critical problems that face our planet today, most of which are caused by the irresponsible uptake of natural resources, designers are obliged to play a critical role in providing solutions to this problems and replacing obsolete and disused products with innovative, trendy and sustainable ones that are directed towards ensuring a lower consumption of resources and less waste.

Ortiz, (2009) affirms that a sustainable project is the one that is designed, built, renovated, operated or reused in an ecological and resource-efficient method and should meet several certain global goals such as resource and energy-efficient, Carbon dioxide (CO₂) emission reduction, pollution prevention, mitigation of noise, improved indoor air circulation quality and harmonization with the environment.

2.3 Sustainable design

McHarg, (1969); (a Scottish Interior Designer and Architect) understands sustainable design as a process of “Designing with nature.” According to McHarg Sustainability or sustainable design is a broad, complex and debatable concept that has grown to be one of the major issues affecting the built environment sector. The idea of sustainability simply involves enhancing the quality of life, hence allowing people to live in healthy humanitarian-made spaces with improved social, economic and environmental conditions.

Sustainable design is a combination of sustainability and design to come up with solutions to environmental problems incurred. Many definitions of sustainable design have been made by different designers, researchers, and architects. For some, it has many names such as ecological design, green design, eco-friendly design, and environmentally friendly design among others. According to Ryn and Cowan, 2007, it is any form of design that minimizes environmentally destructive impacts by integrating itself with the living process by minimizing resource depletion, minimizing energy and material use, reducing pollution and preserving habitats (Ryn, 2007). Since the environmental crisis is a design crisis, sustainable design is the best approach to solve unsustainability in the built environment.

Sustainable interior design requires re-thinking the status quo from the perspective of taste by mediating the tensions between cyclic fashion-responsive interiors and the reduction of waste. Sustainable interior design should be process-oriented, placing importance on the lifecycle of the interior (McLennan 2004). It redirects interior design from a product-driven approach to a holistic, process-oriented method. Following holistic thinking (McLennan 2004), the aim is to define broadly the connections between the design process and the physical built environment using interior design.

In Daly's book (1990), the rate of renewable resource harvest, pollution creation, and non-renewable resource depletion can be continued indefinitely. Daly further states that one of the early pioneers of ecological sustainability looked at the problem from the maintenance of natural capital viewpoint. He proposed that: for renewable resources, the rate of harvest should not exceed the rate of regeneration, that is, sustainable yield; For pollution, the rate of waste generation from projects should not exceed the assimilative capability of the environment, that is, sustainable waste disposal; and for non-renewable resources, the exhaustion of the non-renewable resources should require similar development of renewable substitutes for that resource. This list has been broadly accepted (Daly, 1990).

2.4 Role of Designer in Sustainability

According to Shu-Yang, Freedman and Cote (2004), points out that for a designer to consider sustainable design throughout his/her design process, several questions should be considered such as; the stages of the design process and design development that one may have to consider and manipulate to come up with a more ecological product. These critical factors and elements that are supposed to be considered are what they term as the Principles of Sustainable and Ecological Design.

Amid the numerous sustainability tools, techniques, global and local events, and corporate initiatives the product designer plays a crucial role. This person has an impact in the fundamental stage where decisions are made about what contributions are needed, how they must be processed, what the product lifecycle looks like, and what its end of life looks like. Engineering for sustainability early in the design process creates a course that can lock in the benefits from the beginning, however leaving environmental impact considerations for later stages creates expensive clean-up and accommodation efforts. For instance, a product designed for easy disassembly requires much less effort to convert into recyclable and reusable workings than one designed as a single component requiring energy-intensive end-of-life processing. The following graph replicates the benefits of making sustainability prevalence as early in the design process as possible.

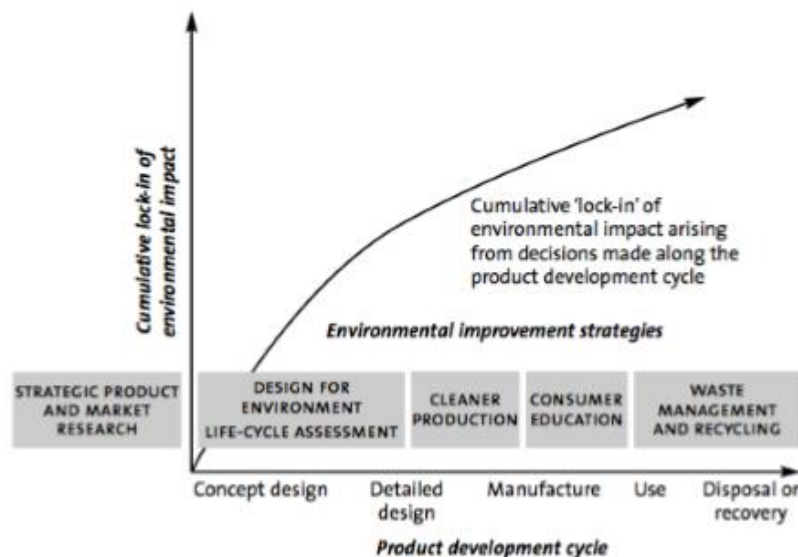


Figure 2.1: A graph showing the advantages of sustainability in the design process (Source: A Global Guide to Designing Greener Goods, 2001)

Instead of trying to undergo all of the aspects of sustainable design, describing functional units, midpoint categories, and so on, it is best to emphasize common values. For instance, it may make more sense for sustainable design to be recognized as a set of tools designed to identify and reduce waste. This waste can come in the form of excess energy, a waste product, material ending up in landfills, and other non-valuable by-products generated over the life cycle of an item.

2.5 Principles of sustainable design

Sustainable design is a major component of sustainable philosophy, so it has to undergo the fundamental conceptual principles of sustainable philosophy. In 2004, Jason F. McLennan introduced six major principles that connect in a way or another with principles of sustainability. Those principles were published in his book *The "Philosophy of Sustainable Design"*. The Principles are as follow:

The Respect for the Wisdom of Natural Systems - the Bio-mimicry principle: This principle can be described as "re-emerging" for people's implementation and behavior in design before the industrial age.

Where nature was treated as a guide and model. Pedersen Zari divided bio-mimicry levels of design into three levels; (Organism Level - Behaviour Level - Ecosystem Level), on the other hand, Franco Lodato classified types of mimicking nature into five basic categories, the classification was based on how nature is being mimicked. It can be Total, partial, functional, abstraction or inspirational type of mimicry.

The Respect for People - The human vitality principle: This principle signifies respect for people's unique needs. This means honoring and respecting the diversity found in individuals. This can be accomplished by giving control back to people for their environments and personal comfort.

The Respect for Place - The ecosystem principle: This principle seeks a responsible long-term planned design that respects the concept of regionalism. In addition, it respects all aspects of place (geographical aspects - land value - the culture of place) environments and personal comfort.

Respect for the Cycle of Life – The “Seven Generations” principle: This principle deals with the fact that we - as mankind - are just a part of a greater cycle in which we are playing a role that can disturb its balance. Everything human creates/produces will have a sort of influence on the cycle of life balance. So it means to create things that have a life expectancy fitting with the needed time for its use. Also, it assures product safety. For architecture, it is about the safety of the buildings in all means.

Respect for Energy and Natural Resources – The Conservation Principle: This principle emphasizes on energy and natural resources as two complementary elements. It assures that energy is precious which means that it should be used wisely and with responsibility. Technologies should maintain the little use of natural resources as much as possible.

Respect for Process – The Holistic Thinking Principle: This means change, and to change a result, the process by which such a result was produced should be first changed. The change will take place in behaviour, practice and response to problems.

From the six principles of sustainable design by McLennan, 2004, the fifth principle, the conservation principle, will be the focus of the research. The conservation principle is about respect for the energy and natural resources. It focuses on rapidly renewable materials and other renewable resources (McLennan, 2004). This principle will also be supported by the ecosystem principle by using locally available materials that belong in the category of sustainable materials.

2.6 Sustainable materials

This are materials that are used throughout the consumer and industrial economy that can be produced in required amount without depleting non-renewable resources and without distracting the steady-state equilibrium of the environment and key natural resource systems.

2.6.1 Renewable Materials

These renewable materials are well-defined as such since they are derived from plant-based sources. Renewable resources can be reproduced easily, at a rate similar or faster than its rate of consumption. Some are continuously accessible and their quantity is not affected by human consumption. Some renewable resources can be depleted by human use, but may also be replenished. The choice of material is a priority before function and shape while designing environmentally friendly products. The most important concern about the material choice is being least harmful to nature, using minimum energy and choosing useful materials. It is a crucial thing while choosing the material and producing it. Bamboo, mango wood and papyrus are among the few renewable materials that will be discussed in this chapter as proposed sustainable materials for redesigning the resort.

2.6.1.1 Mango Wood

Mango wood is the by-product of an already flourishing industry: Mango fruit.

Mango hardwood is characterized by very dense a grain that is durable, strong and not too hard on tools during woodworking. It can easily be cut and re-shaped into any form desired, which is not the case with other hardwoods. The fibre grains are packed closely to one another that the surface can obtain a very high level of polish that gives out the satisfying level of polish that is alike to many other exotic types of wood. Mango wood is also easy to wax and stain, making it admirable for use in the creation of furniture or other products (Bally, 2006) (Roberta, 2011).

When the trees get too tall to easily harvest the fruit or stop producing fruit altogether, they are harvested for timber and a new generation of trees is planted. Harvesting wood that was previously burnt or left to break down naturally provides furniture manufacturers with an affordable material that's easy to work with and can be made to bear a resemblance to wood choices like oak, maple and teak. Mango wood furniture is extremely durable and water-resistant.



Figure 2.2: Bedroom set made of Mango Wood (Source: Indiamart, 2019)

2.6.1.2 Papyrus

In Lake Naivasha, *Cyperus papyrus* is one of the most common wetland plants, papyrus is relatively small areas found in some cases as floating islands around the lake, or strips of vegetation close to its shoreline.

Because of the constant fluctuation of the water lake level its presence is characterized by a not permanent location. This makes papyrus a locally accessible and cheap material that can be used in some sectors of redesigning the resort such as in furniture design.

Exemplar

Wilson Onege

Mr. Onege is a papyrus furniture expert in Nakuru and his “inclusion” technique where he combines the rustic artistic texture of papyrus with modern materials such as metals making his furniture desirable by the locals.



Figure 2.3: Furniture made from papyrus reeds (Source: Mobilnation, 2019)

2.6.1.3 Bamboo

Bamboo plant as a resource is available in plenty and plays a great role in socio-economic development (Panda 2011; Yeasmin et al. 2015). Treated bamboo makes an exceedingly light and tough building material and can be used for scaffolding, fences, bridges, furniture, flooring and bricks. It is so strong that it is used in the tropics in place of steel strengthening rods in concrete. Bamboo as a raw material is an extraordinarily sustainable and versatile resource.



Figure 2.4: Furniture set made from Bamboo (Source: Decodesign, 2019)

2.6.2 Recyclable materials

Recycling is defined as the process of recovering material from waste and turning it into new products. (In this case, the original product is destroyed in this process, like through a melting process, but is used to form new products. Recyclable materials include; plastics, metals, glass, paper, E-waste and textiles (Gupta, 1995). The use of recyclable materials stresses that just in the same way Energy Conservation is put into thought in a sustainable industry, materials and finishes play an indispensable role as well, as far as sustainable products and concepts of sustainability are concerned. It challenges all designers to use and re-use materials that can be easily recycled or for which the planet can recreate in a short amount of time in all their products and processes. Over the past decade, many new recycling procedures for all types of materials have been innovated, while waste management has become a growing concern worldwide. Recycled materials include plastics, glass, metal, wood pallets and rubber that can be used in the renovation of the resort.

2.6.2.1 Pallets

A pallet is a flat transportation structure, which stably supports goods while being lifted by a forklift, a pallet jack, a front loader, a jacking device or a crane. Since it was invented in the twentieth century, its use has substituted other forms of crating as it works well with contemporary packaging like corrugated boxes and containers commonly used for bulk shipping.

They can be used in creating customized outdoor lounge tables, indoor coffee tables, storage furniture, desk-top surfaces, kitchen islands, soft structures and so many more (Dougherty, B. 2008). While some people go for them because they are affordable compared with readymade furniture, others opt for them because they are versatile, recyclable and can easily be assembled and dismantled. (Daily Nation, 2018).

Exemplar

Pallet Furniture Kenya.

Pallet Furniture Kenya is a small team with big furniture related ideas situated along the Eastern Bypass, Kenya. The options are when it comes to custom furniture be it beds, coffee tables, sofas, swing chairs, bookshelves and Television stands. Their aim is to provide a collection of homely furniture to suit every pocket and that will create an atmosphere of warmth for any setup.



Figure 2.5: Wooden pallet furniture designed by Pallet Furniture Kenya (Source: Pallet furniture Kenya, 2019)

2.6.2.2 Glass

According to the USA Environment Protection Agency (2013), glass, especially glass food and beverage containers, can be recycled repeatedly. In fact, 90 percent of recycled glass is recycled to make new containers. Recycled glass can be used in kitchen tiles, countertops for bar or restaurant areas, and as wall insulation. Glass recycling has grown substantially in recent years through increased collection through curbside recycling programs and glass manufacturers' increased demand for recycled glass.

Exemplar

Kitengela Hot Glass

Kitengela Hot Glass recycles and converts scrap material into objects & designs that are functional and aesthetically appealing. Their products also promote conservation of the environment through the use of scrap materials. Kitengela Hot Glass and Anselm create blown objects from scrap glass; Dalle de Verre, chandeliers, lamps, beads & pieces of beauty that are refashioned into stylish, functional art objects & inspired design. They are located on the Athi Kapiti plains in Kenya. Having a good working association with the environment is critical to the Kitengela Hot Glass ethos. They contribute to the wellbeing of the environment by regarding nature as a treasure and an inspiration to their products.



Figure 2.6: 'Ukuta' wall mural by Kitengela Hot Glass. (Source: Kitengela, 2019)

Murals are one of the main signatures of Kitengela Hot Glass – these are a flat sculptural extravaganza; with attached pieces of casted or blown glass, improved with different painting techniques, wallpaper, inlays, wood and metal & lighting - all of which make for a riot of brightness, color and texture.



Figure 2.7: Glass used to make Chandeliers (Source: Kitengela, 2019)

Recycled glass can also be used in Landscaping to create patios and outdoor lighting that is sustainable and aesthetically pleasing to the user.



Figure 2.8: Glass bottles used to make landscaping patios. (Source: Pinterest, 2019)

2.7 AFRICAN DESIGN

Design can be used to define and express the culture of an African community by use of elements that are used to identify a culture. Such as iconography, specific colors, personalities, etc. The researcher has narrowed down to the use of wildlife as a representation of the African heritage specifically the Giraffe. The animals of Africa are the central theme in Africa's artworks, designs and fabrics. This is mostly achieved through animal prints such as leopards, zebras and giraffes. The colors of these animals are also used as color schemes of the designs mostly grey, brown, black, white and beige.

The everyday reminders of these magnificent, animals conjure feelings of strength, power and virility (Afro Style Magazine, 2010).

2.7.1 GIRAFFE

The researcher draws inspiration from the African animal, Giraffe; patterns, features and color. Giraffes are the world's tallest mammals, thanks to their long legs and necks. These long legs allow giraffes to run as fast as 35 miles an hour over short distances and cruise comfortably at 10 miles an hour over longer distances. Up until recently, the consensus has only been one species of giraffe with multiple subspecies. According to the researcher of some scientists in 2016, they released a study that claims genetic differences among giraffe populations indicate the existence of four distinct giraffe species. The Giraffes have beautiful spotted coats. While no two individuals have the same pattern, giraffes from the same area appear similar and have parametric like pattern.



Figure 2.9: Giraffes. (Source: Pinterest, 2019)

The researcher intends on using the patterns and colors and features such as the neck and legs of a giraffe to design furniture which can be implemented by the upholstery with giraffe printed fabrics, gouging the pattern out or by laser cut method depending on the material and furniture being designed for the restaurant. The giraffe is among the major wildlife animals that are dominantly in existence in the Naivasha region and can be easily spotted. The use of the giraffe as inspiration contributes to the support of wildlife appreciation and conservation by revealing its beauty through design.

This also creates more tourist attraction as foreigners and more appealed by African themed resorts that are unique in Kenya in contrast to basic common design.



Figure 2.10: Giraffe coat pattern and colors (Source: Pinterest, 2019)

2.7.1.1 EXEMPLAR- NIGHT SAFARI

Night Safari s a family-themed bar & restaurant is located in Chiang Mai. The idea behind this brand identity design was “Adventurous fun with an African touch”. Since it’s the name of the restaurant, Giraffe was the main character. Therefore the giraffe skin pattern has been planning to match the print designs, visual elements and much of other objects. Moreover, the colors chosen represent sandy and dry geography for the color scheme throughout the design process.



Figure 2.11: Night Safari Safari inspired interiors (Source: Night Safari Hotel, 2019)



Figure 2.12: Giraffe inspired interiors (Source: Pinterest, 2019)



Figure 2.13: Giraffe inspired furniture (Source: Pinterest, 2019)

2.8 CONTEMPORARY DESIGN

The era we currently live in is categorized by a particular style or design in architecture, art, or paintings, which is recognized as contemporary design. Its key distinguishing characteristics are simplicity and cleanliness. Nonetheless, it does not mean that the simplicity of contemporary design makes it boring; it rather takes the route of simple lines and sets aside all the strange details that might be present in the other styles, such as DE constructivism, for example. The simplicity of contemporary design has two significant features: color and texture, which are capable of changing the appearance of the entire work. The qualities of the contemporary style can be identified in many forms of modern art from painting and sculpture, and to architecture, interior and to furniture design. (MoCoLoco, 2012).

The researcher recommends a contemporary style as it ensures to maintain a balance between the structural efficiency, aesthetic value, and design of the restaurant. Simplicity in association with other elements of contemporary styles, such as neutral colors, asymmetrical shapes, clean sleek lines and distinct textures makes contemporary designed objects beautiful, awesome, astonishing, and appealing. This type of modern design fills a particular item with the beauty and comfort of the furniture.

2.8.1 EXEMPLAR-JOSEPH DIRAND

Le Jardinier is the first New York City restaurant project designed by renowned French architect Joseph Dirand. The modern, light-filled space is a journey into a serene lush indoor garden. Interior elements are distinctive, with one of kind green-marble walls and floors, custom made furniture. The vegetable-driven menu matches the composition of plants and vertical louvers adorning the floor to ceiling windows. For the interiors, Dirand used ample amounts of marble for the floors, walls, dining tables, and bar. Grass green chairs and a multitude of plants soften the vibe, creating sophisticated scenery for artful dishes like heirloom tomatoes and stone fruits with burrata and French white asparagus with blood orange and buckwheat puff.

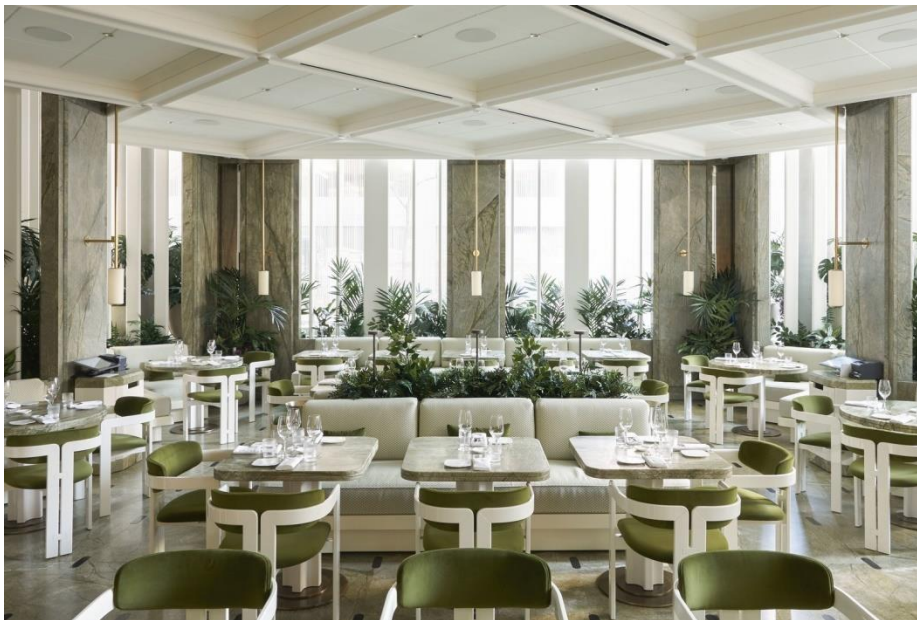


Figure 2.14: Le Jardinier restaurant by Joseph Dirand (Source: Le Jardinier, 2019)

2.9 The Interior Design Process

Frascara, (1997) defines design process as a decision-making process that surrounds any design, whether it is architectural, graphic or something abstract like a business model or idea. He maintains that the ultimate goal of every design process, however, is to meet the desired needs of a client and the end-user. This requires the establishment of a standard objective in addition to the project criteria. The process usually involves a series of logical steps and decisions which are followed by the designer results in a properly designed or redesigned product, service or system optimizing desired qualities such as safety, reliability, aesthetics, user-friendliness, environmental issues, functionality, durability and other costs. The design process starts with the analysis of the client's brief into a problem to be solved by the designer, collection of information, brainstorming and analyzing the ideas, develop possible solutions using bubble diagrams, develop design proposal, making of prototypes or models and finally implementing the design into the actual element. For a design to be good, both functions and aesthetics being considered there should be a good and well-organized design process. It involves the planning of routine steps of a process aside from the expected result like the end product of a design it is treated as a product of design and not the method of design (Design, 2012). Having studied this, the researcher employed the following processes to design the proposal she proposes in redesigning the Taphe resort.

Analyze the Brief and Define the Problem

The brief delivered by the client to the designer contains the needs and wants of the client based on the project. The designer carefully analyses the brief and identify the client's problem that is supposed to be solved by the designer at the end of the process. The problem that needs to be solved, its scope, nature and background need to be identified. Short notes are made giving the overall outline of the problem or need. It also involves necessities gathering where the designer creates an understanding and postulating the context of use. This involves fact findings where the problems are recognized and defined, gathering and analyzing the relevant data. A good brief, therefore, needs to be as detailed and project-specific as possible outlining all the client's requirements, specifications and a budget for the work and the time scale in which the project must be realized.

Research and Gather Information

The researcher needs to develop an understanding of the user's expectation through task scrutiny and other research based on the analysis of the client's brief. Application of methods of data collection such as interviews with those affected by the problem is important in getting the right information. All the information is collected according to the brief. The researcher/designer meets the client to seek some clarification on the client's specific preferences on the design. For an existing space, the designer does research and collects information through sketching, taking photographs for inspiration.

Conceptualization

All the ideas are sketched and the content is collected in relation to the entire space for the interior design at this stage. Conceptualization starts with bubble diagrams to sketches, presentation drawings and models for a more visual representation of the concepts. Bubble Diagram is a simple freehand illustrative drawing made by architects and interior designers to be used for space planning and organization at the preliminary stages of the design process. It aids the interior designer to relate the various spaces with their specific functions and proximity in the building. It is very important for the designs to successfully display the ideas in a way that the client can understand and visualize. (Cahill, 2016).

Brainstorm and Analyze Ideas

The designer compares the viability of the ideas in the whole space. For instance, if the brief is for the interior design of an entire house or office, the designer will brainstorm and analyze the living room design, dining room and kitchen designs. Constraints such as costs of materials, quantity and sizes are also established at this stage. Thereafter, the designer sets primary goals for a possible solution. A primary design brief is then drafted.

Identify Criteria and Specify Constraints

The desired elements and features of a product or system that relate to its functions are identified. Limitations such as cost and size are also established during this process. After these primary goals are set for the possible solutions, a preliminary design brief is then drafted.

Explore Possibilities

Alternative ideas are reconnoitred based on further knowledge and technologies. Ideas are then analyzed qualitatively and quantitatively. After this, an idea is selected usually through a consensus that best meets the criteria, fits within the constraints, and has the least number of negative characteristics.

Develop a Design Proposal

At this stage, the designer further explores the idea with interpreted sketches that may suit the client's specifications. The designer meets the client simply to get feedback and identify the interior design style that they prefer from modern interior design, contemporary interior design, minimalist interior design, classic interior design styles.

Make a Model or Prototype

This will help communicate the idea to the client using tangible elements. Tests studies are made on aspects such as performance, ergonomics, shape, form, fit or texture. Tests on the prototype are done in controlled environments making design changes and testing repeatedly until performance results are consistent. Update documentation to reflect changes.

Implementing the Design

This is the last and fun part of the interior design process. This involves realizing the design concept and seeing it come to life. Subsections of its own may also be included at this stage depending on the size of the project. The entire process is controlled by the designer's initial budget and time. The concept of actualization is developed from the model taking all the performance aspects such as functionality, ergonomics and the shape of the model into the actual design.

2.10 Conclusion

From the literature review, it emerged that there is need for designers to embrace the 'Design for Sustainability' initiative that is, use of sustainable materials and adoption of contemporary African Design in interior spaces, landscaping, exhibition and display sector and furniture design, hence addressing the issues of environmental degradation and cultural appreciation in the hospitality industry.

CHAPTER THREE

3 RESEARCH METHODOLOGY

3.1 Introduction

According to Kothari, (2004), Research Methodology is the third chapter of the research paper and it considers the justification behind the logic of the methods the researcher employed in the entire research. This section focused on the research methodology, the tools and instruments the researcher used for the study. The researcher also explained what research design was used for the study and why. The population used for the study aimed at indicating how the sample population was selected. There was use of qualitative methods of data collection. Bryman 2002, points out that qualitative research is often characterized by an emphasis on the context to achieve an understanding of the social phenomenon that you intend to study.

3.2 Research design

According to Yin, 2009, research design is a systematic method and procedure used in collecting and analyzing measures of the variables specified in the research problem. The qualitative research approach is most appropriate based on the objectives and research questions. The reason for using a qualitative approach was because its methods are more open and flexible and can be altered as the research goes on. They are less specific and precise. The main focus in qualitative research is to understand, explain, explore, discover and clarify situations, feelings, perceptions, attitudes, values, beliefs and experiences of a group of people (Kumar, 2011). The main objective of this research was to explore how the Sustainable materials can be integrated with giraffe patterns and colors to create a contemporary aesthetically appealing interior and exterior spaces in Taphe Guest Resort in Naivasha, Nakuru County as a Case Study.

The above made this research to adopt a Case Study Research Design, which according to Creswell (2014) is concerned with the intensive study of the background, current status and the environmental interaction and sustainability of a given institution, firm, business and social unit.

3.3 Target population

According to Osanjo (2004), a target population is the group of objects or people to whom the researcher wishes to generalize the results. When defining an accessible population one should not be influenced by convenience rather one should define the population as consistently as possible with the purpose of the study. Consistency supersedes convenience in research. There must be an underlying principle for defining and identifying the accessible population from the target population. The target population for this research comprised of the managers, customers, waiters/waitresses, chefs, security guards and the cleaners of all; races, tribes, age groups above 18 years, educational status, socio-economic status and residential areas.

3.4 Sample design

Sampling is the process of selecting a number of individuals for a study in such a way that the selected individuals represent the large group in which they were selected (Mugenda and Mugenda, 2003). The population is sometimes too big and so a sample population has to be chosen to represent the whole target population (Maina, 2012). Non-probability method of sampling was used to determine the sample population. The sample included; 1 Director (Owner of the hotel), 1 General Manager, 3 staff members, 10 residents from the area and 3 interior designers; as shown in Table 1 below. No person under the age of 18 years will be sampled to avoid any ambiguous and incomplete responses based on the interview guides. (Kombo and Tromp, 2006). The table below reflects the distribution of the sample.

Population Category	Frequency	Percentage %
Director	1	3.3
Manager	1	3.3
Staff	4	13.3
Customers	10	33.3
Residents of the area	10	33.3
Interior Designers	4	13.3
Total	30	100%

Table 3.1: Distribution of actual sample (Source: Author's construct, 2019)

3.5 Data collection methods

Kongmany (2009), confirms that data collection techniques allow the researcher to systematically collect information about objects of study (people, objects or phenomenon) and about the settings, pattern and design in which they occur. He advises that the researcher needs to be systematic in his/her data collection techniques since data collected haphazardly disqualifies the researcher's course of answering the research questions conclusively.

Raw data for this investigative research was informed by both primary and secondary sources of data. Qualitative Methods of Data Collection was the most suitable and preferred tools of data collection which according to Kothari, (2004) are subjected to the assessment of the attitude, opinion, behaviour and personal experience of the sampled population around Taphe Guest Resort. This enabled the researcher to generalize his insights and impressions about the design of the hotel and the sustainability of the materials used.

3.5.1 Secondary sources of data

3.5.1.1 Review of Existing Literature

Data from secondary sources was informed by reviewing literature from the existing documents, journals, thesis and artistic impressions/icons used on the site for a better and clear understanding of the site profile. Reviewing data on the existing literature leads to the generation of new insights from previous analyses (Fàbregues, 2013). Reanalyzing data can also lead to unexpected discoveries. The researcher reviewed existing literature from books and Journals on topics related to the study, such as Sustainability, contemporary design and African design. Online research and reviews of the resort profile were also considered by the researcher.

3.5.2 Primary sources of data

3.5.2.1 Photography

According to Leedy, (2005) says that photography provides a first-hand data that is untampered with. The researcher took photos of the existing interior structures of the hotel, exhibition and display areas, landscape and furniture of the hotel to capture and explore information that was not able to described explicitly in writing.

The researcher also requested to use some of the photographs provided by the hotel in the confidential areas of the hotel whose accessibility will be out of reach.

3.5.2.2 Non- Participant Observation

According to Marshall and Rossman (1989), observation is a systemic description of events, behaviours and artifacts in the social setting of the study. The researcher did not participate in the interactions but studied a group by immersing herself in the day-to-day activities of the group, for example, the case study here being Taphe resort and observed and recorded well-defined events. The advantage was that there was access to the situation and people where questionnaires as interviews were impossible and inappropriate to use.

3.5.2.3 Interviews

According to Leedy, (2005), this method of primary data collection enables the researcher to establish a rapport with the respondents hence enjoying their maximum participation since they feel like s/he is one of their own. Semi-structured interview guides with open-ended questions were administered by the researcher alongside this method as a research tool for data collection. Managers, customers, chefs, cleaners, waiters/waitresses and the security guard were questioned to get quick and direct unbiased responses as to the current state of the resort. Interviews are classified into different categories according to this degree of flexibility and so the researcher will use either structured and open interviews depending on the content being collected or the respondent (Leedy and Ormrod 2013).

Follow-up questions were considered by the researcher in search of clarity, expound and clear up some arguable ambiguous responses. With this method, the researcher was able to probe for an explanation of responses given by the respondents in search of clarity.

3.6 Data analysis tools

The term analysis refers to the computation of certain measures along with searching for patterns of relationships that exist among data groups (Kothari 2004). Data analysis begins informally during interviews or observations and endures throughout the transcription process when repetitive themes, configurations, and categories become evident. Once written records are accessible, analysis involving the coding of data and the identification of salient points or structures are put into practice.

Accordingly, the analysis of data in the present study was classified through qualitative analysis of the data obtained through document analysis, interviews. For this research, the researcher used; typology, photographic analysis, interpretive analysis, site analysis and semantic analysis.

Typology was the first step of the Interim Analysis Process (IAP) whereby the researcher divided the data into thematic groups based on their collection methods. The researcher thereafter did a comparative analysis assessing any form of relation and correlation on the data. Basing on the existing literature on the research problem, the researcher used the feedback from the interview guides to do a logical analysis and then deduce with tentative logical reasons possible for certain outcomes and weaknesses of the study.

Interpretive analysis means interpreting the collected data which may be in the form of written notes. Narrative Analysis is transcribing experiences that have been described or said during interviews. A narrative aspect was present in every interview or observation in the research process. The researcher's role is to sort out and reflect upon the interviews, enhance them and present them in a revised format to the research audience (Longhofer and Hoy, 2014) (Miles and Saldana, 2014).

Content analysis is the process for categorizing verbal and behavioural data for classification, summarization and tabulation. It is simply the forms and formats, the representation and presentation of visual data that have evolved over these decades (Miles & Saldaña, 2014). Content analysis can be done on two levels which are in Descriptive analysis which means describing what the data is like in describing photographs and the information that the photos carry. The researcher analyzed the visual that was in photographs. The researcher interpreted the visual and concluded the task merits analytic methods and strategies that do not apply to language-based data.

Site Analysis was used to analyze data collected using the case study method. Site analysis gave a better understanding of the site in easy ways like drawings and tables. This will provide an in-depth understanding of the case and develop an in-depth description and analysis of the case (Creswell 2009).

Finally, the researcher did a **Semiotic analysis** of African art, specifically Giraffe art and their application in the interior design of the resort using data from participatory observation.

The researcher also analyzed data from behavioural to psychological change of the response given by the management and the users of the Taphe Guest Resort. All the analysis were done narratively.

3.7 Data presentation methods

This is a demonstration of findings obtained from the research conclusions transferability of findings and appendices. The overall presentation was narrated and written. The technique, tool and method of presentation depended entirely on the nature and the source of data, the method used to collect and analyze that particular data. For instance:

3.7.1 Photographic Representation

The primary data collected by the use of photographs were presented photographically and complimented by descriptions underneath every photo to give a clear, comprehensive and detailed pictorial nature and state of the site and their relevance to the research. The researcher used pictures to capture and highlight information on the site that may not have been exploited and described in writing.

3.7.2 Tabulations

This deals with presenting data in tabular form. A table is an array of data in rows and columns (Adedayo, 2000). Tabulation summarizes a large mass of data and conveys the diverse pattern in data in an attractive form. It enabled comparison to be made easily among classes of data and took up less space than data presented in narrative form.

A table has the following contents: a title at the top describing the content of the table; the caption column heading; the sub- rows headings; footnote- brief explanatory information about the table, which is not self-evident; units of measurements (Maina, 2012).

3.7.3 Narrative Presentation.

The secondary data reviewed from the existing literature: books, articles, journals, thesis and magazines in the area of study were analyzed and presented in narrative form. Field notes from face-to-face interviews were also be narratively presented, clustered and transcribed under various specific thematic subheadings based on the researcher's objectives and research questions.

3.7.4 Graphs and Pie Charts

Data informed by face-to-face interviews were presented by the use of bar graphs and line graphs. Using graphs, one can compare data directly, easily evaluate and even know the trend of the data he/she is processing and analyzing (Maina, 2012).

Pie charts were used to show the variation and relation in the responses given by the users of the resort based on their emotions, personal tastes, preferences and behaviour as far as the nature type and sustainability status of materials used in designing the hotel is concerned.

3.8 Logical framework

Objective 1: To investigate and evaluate the current designs and materials of interior and exterior spaces at Taphe Resort.				
Data Needs	Data Source	Data Collection tool	Analysis method	Expected output
Exploring the current designs at Taphe resort and analyze the materials used if they are sustainable with an African theme.	Manager, Site	Interview Non-participant Photography Observation	Typology analysis Interpretive analysis Narrative analysis Content analysis Site analysis	Factual Information about the existing design of Taphe resort and highlighting the problems that need to be solved
Objective 2: To explore how renewable materials, recyclable materials and giraffe inspired designs have been applied in other restaurants Interior Design				
Data Needs	Data Source	Data Collection tool	Analysis method	Expected output
Study on sustainable materials on and giraffe inspired designs and contemporary design.	Books, thesis and journals.	Literature review	Content analysis	Secure an understanding of how sustainable materials inspired by the giraffe can be applied.
Objective 3 : To understand the importance of the incorporation of sustainable materials in an interior or exterior space.				

Data Needs	Data Source	Data Collection tool	Analysis method	Expected output
Study the importance of incorporating sustainable materials in the design of exterior and interior spaces.	Books and journals	Literature review	Content analysis	To understand the importance of sustainable materials in the design of exterior and interior space.
Objective 4: To propose the most effective, efficient and suitable technique of integrating Giraffe patterns and color with renewable and recyclable materials to create sustainable and aesthetically appealing interior space, exhibition and display space, furniture and landscape for the Taphe Guest Resort.				
Data Needs	Data Source	Data Collection tool	Analysis method	Expected output
Collect data on opportunities available for sustainable materials and giraffe inspired designs for the resort.	Interior designers Manager Customers Staff Residents	Interviews	Typology Interpretive analysis	To acquire possible applicable suggestions for sustainable materials and giraffe inspired designs for the resort.

Table 3.2: Logical Framework (Source: Authors construct, 2019)

3.9 Conclusion

The research methods considered aided the researcher in effectively collecting the data and analyzing it accordingly. It also included the research methods focused on a qualitative approach to its methodology that will aid the researcher in efficiently collecting the data and analyzing it most effectively. The researcher was also able to maximize the resources that were available and planned well to work around the expected limitations efficiently.

CHAPTER FOUR

4 SITE ANALYSIS, PRESENTATION AND INTERPRETATION OF FINDINGS.

4.1 Introduction

This chapter will entail analysis, presentation and interpretation of the collected data. It will begin with the qualitative site analysis, including the geographical analysis of the site, resort structure, climatic conditions, topography and vegetation cover of the site. The chapter will also include a descriptive and interpretive analysis of the data collected through photography and observation focusing on the four areas of interior design; Landscaping, Interior Architecture, Furniture and the Exhibition and Display. Findings from interviews will also be analyzed in this chapter through narrative analysis followed with the presentation of the findings.

4.2 Qualitative site analysis

4.2.1 Geographical Location

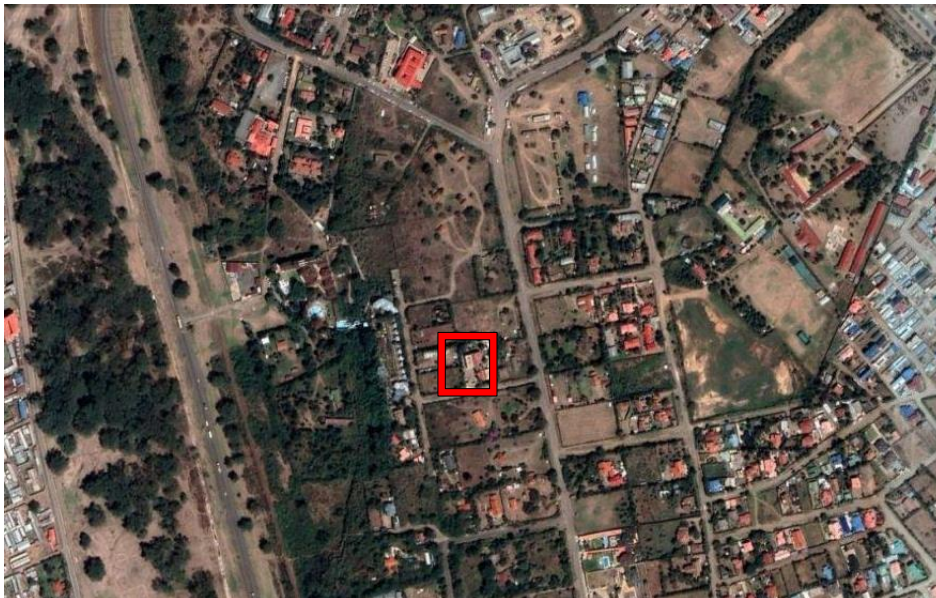


Figure 4.1: Map showing the location of Taphe guest resort (Source: Googlemaps, 2019)

Taphe guest resort is built on a 1-acre piece of land along the Taphe Guest Resort road in Lakeview Sub County, Naivasha District, Nakuru County.

The resort is 1.8 kilometers from Naivasha town and 72km from Nakuru town. The resort is 90km, a 2-hour drive from Nairobi's Central Business District (CBD) using the A104 route.

The resort is near Lake Naivasha Panorama Park, 170 meters from the resort and 550 meters from the Naivasha Police station and is surrounded by several residential houses in lake view.

4.2.2 Hotel Structure

Based on research, Taphe guest resort is one among four resorts built in Lakeview sub-location. It is a three-storey building with an indoor restaurant, outdoor garden, and kitchen area and lobby and guest rooms. The ground floor is occupied by the restaurant, lobby and a few guest rooms. The other two upper floors are occupied by other guestrooms. The reception area is from the left of the main entrance, separate from the resort building. In this research, the researcher covered the ground floor which houses the restaurant, kitchen area, lobby, washrooms and the resort's exhibition and display areas including both the indoor and outdoor furniture the landscape.

The hotel is built with a modern structure and design with the basic materials used in the construction being: wood, metal, plastic, concrete blocks and glass. The furniture used varies in material and style both indoors and outdoors. An extension of the resort is currently underway on the left lobby side of the building.

4.2.3 Climate Condition

Taphe guest resort adapts the climate of Naivasha District which experiences a typical equatorial climate with its characteristic high irradiance and high potential evaporation all year 'round, mitigated by its moderately high altitude, which can be felt during typically cool early mornings (8-10°C). The daily temperature can be relatively high when not alleviated by trees, with early afternoon highest reaching over 28°C. In Naivasha, the summers last for a short period, warm, and gloomy and the winters are short, cool, dry, and partly cloudy. Over the year, the temperature typically fluctuates from 52°F to 79°F and is rarely below 48°F or above 82°F.

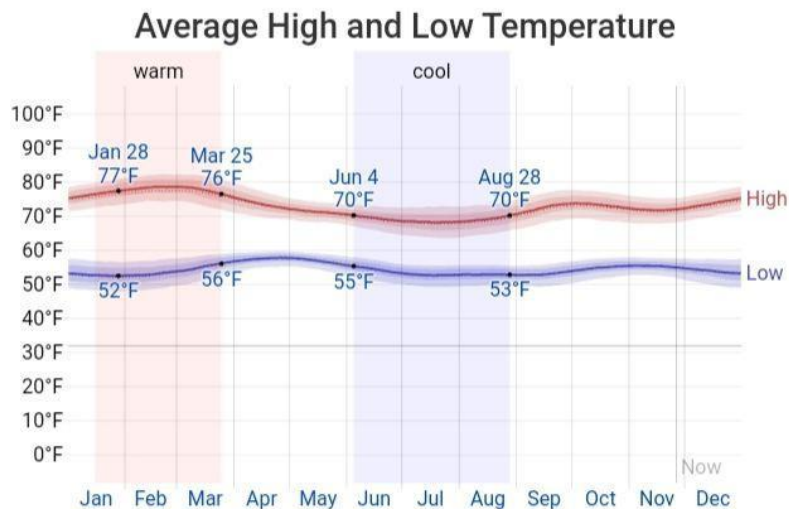


Figure 4.2: A graph showing the average temperature of Naivasha (Source: Weatherspark, 2019)

Rainfall: The rainfall over the greater part of the Naivasha area is poor—it is very local, with irregular periods of precipitation. Rainfall distribution happens in two main seasons: the Long rains between March-May and the Short rains between September-October. Naivasha experiences extreme seasonal variation in periodic rainfall. Rain falls throughout the year in Naivasha. The most rain falls during the 31 days centred on April 24, with an average total accumulation of 5.7 inches. The minimum rain falls around July 8, with an average total of 0.7 inches.

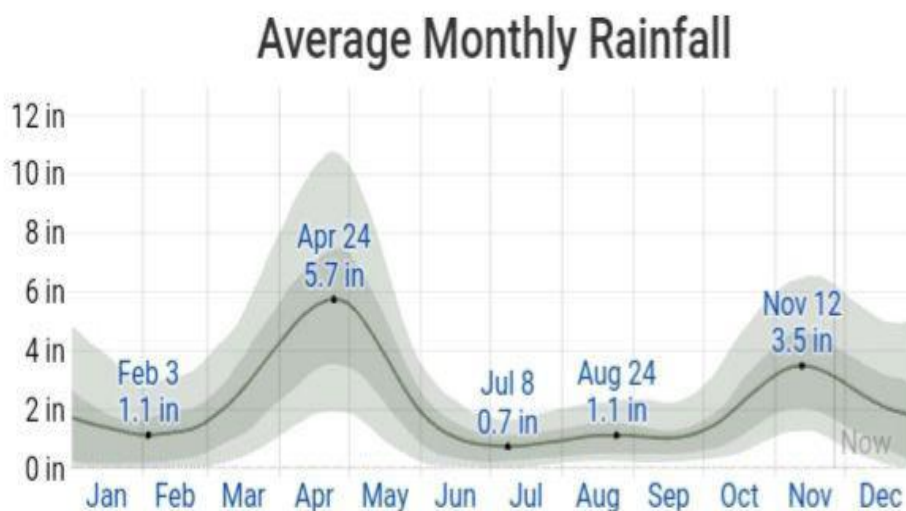


Figure 4.3: A graph showing average monthly rainfall of Naivasha (Source; Weatherspark, 2019)

Cloud cover; the average percentage of the sky covered by clouds experiences significant seasonal variation over the course of the year. The clearer part of the year in Naivasha begins around July 1 and lasts for 3.4 months, ending around October 14. On September 2, the clearest day of the year, the sky is clear, mostly clear, or partly cloudy 48% of the time, and overcast or mostly cloudy 52% of the time. The cloudier part of the year starts around October 14 and ends around July 1. The cloudiest day of the year in Naivasha is twentieth April, when the sky is mostly cloudy 80% of the time, and partly cloudy 20% of the time.



Figure 4.4: A graph showing average cloud cover of Naivasha (Source: Meteoblue, 2019)

Wind: This section discusses the average wind vector that is; speed and direction of wind at 10 meters above the ground. The wind experienced at any given location is dependent on local topography and other factors, and wind speed and direction vary more widely than hourly averages. The average hourly wind speed in Naivasha experiences mild seasonal variation over the course of the year. The windier part of the year lasts from September 19 to May 21, with average wind speeds of more than 7.3 miles per hour. The windiest day of the year is October 22, with an average hourly wind speed of 8.7 miles per hour. The calmer time of year lasts for 3.9 months, between May 21 to September 19. The calmest day of the year is June 18, with an average hourly wind speed of 6.0 miles per hour.

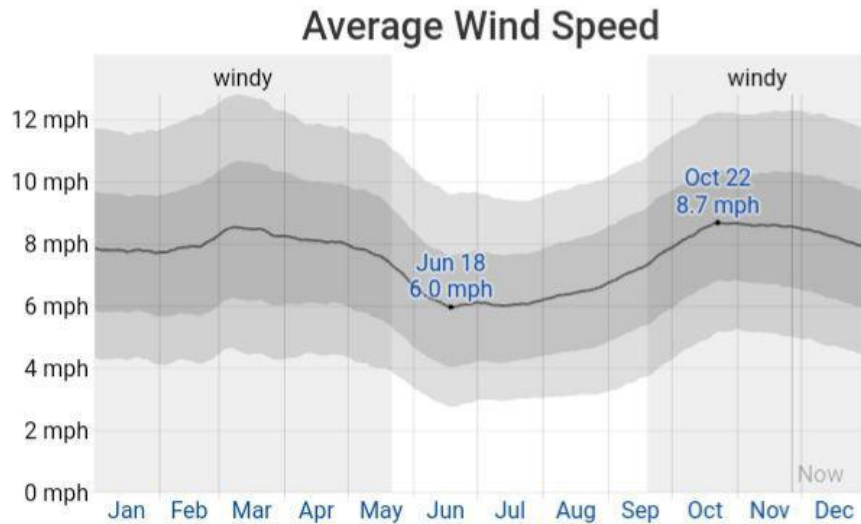


Figure 4. 5: A graph showing the average wind speed of Naivasha (Source: Meteoblue, 2019)

Vegetation

The resort is suited in a semi-arid zone and consist of diverse types of trees such as the Naivasha Thorn or Yellow Fever tree (Acacia), Pine trees, palm tree and flowerbeds, shrubs and grass. The rocks of the area fall into two main groups; lavas and pyroclastics and lacustrine deposits. The lavas range from under saturated basic rocks (tephrites) to acid rocks (rhyolites and obsidians) with numerous gradations in between.

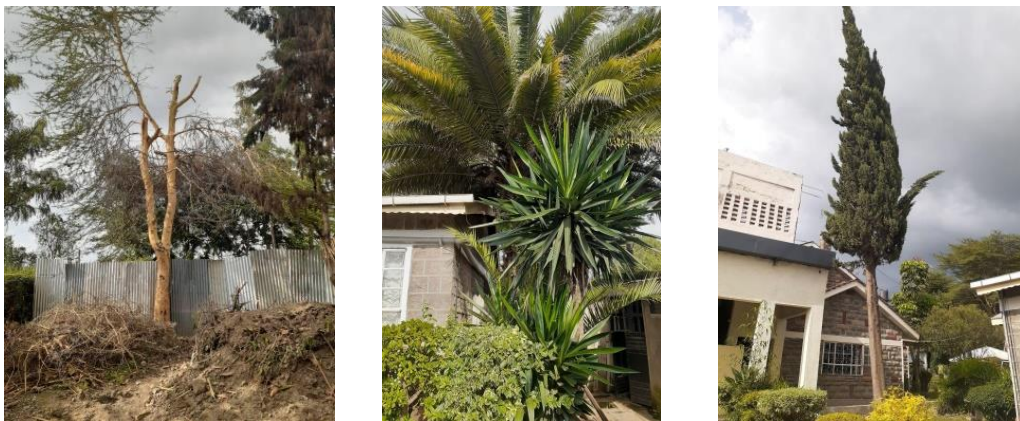


Figure 4.6: Trees in the resort landscape (Source: Author, 2019)



Figure 4.7: Grass and potted plants as soft landscapes (Source: Author, 2019)

4.2.4 Topography

Taphe resort site lies at an elevation of 20oS and 20oE. The site is fairly flat-lying at an elevation of 1936m to 1944m above the sea level.

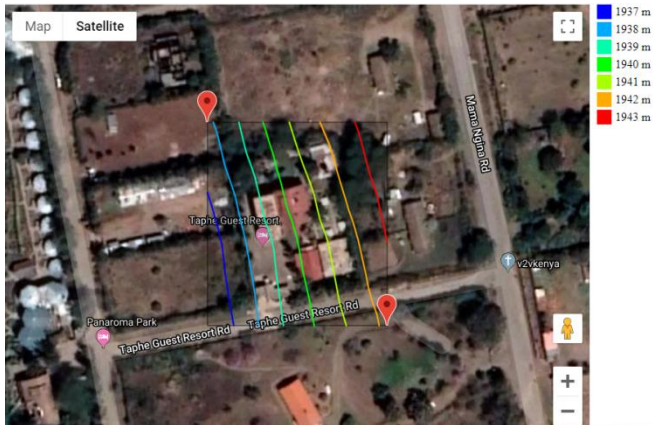


Figure 4.8: Map showing the contours of Taphe resort site (Source: Contour map creator, 2019)

4.3 Descriptive and Interpretive Analysis

Descriptive analysis has been used to analyze photographs taken and interpretive analysis to evaluate observations made during the research period. From the data collected from the interviews and through observation, it is accurate to state that there was an attempt to apply sustainable design to the resort. Through observation, it can be concluded that the attempt has proven to be ineffective than expected to be over some time. This is seen from the general landscape and furniture design of Taphe resort. In addition to that, it is also observed that there was an attempt to maintain an aesthetic appeal to the interior architecture by minimal use of African printed fabrics as upholstery. By observation, this attempt is unproductive and negatively contributes to the interior design of the hotel.

4.3.1 Landscape analysis

The Taphe guest resort can be accessed through only one main entry point 30 meters off the Taphe Guest road. The landscape in front of the hotel serves as a parking lot and a passageway for vehicles and people respectively. The parking lot ground is bare and dusty; which worsens during the windy weather.

This can cause health complications to hotel staff/ consumers. The second phase of the landscape is the recreational garden that is to the right of the hotel accessed through a rough concrete pathway. The space consists of gazebos with outdoor furniture all sectioned on a soft landscaping material. The landscape is surrounded with flowers/ plants in plastic buckets or plastic bags. Most of the buckets are broken and chipped and can pose danger to customers moving around. The buckets also make the place look unattractive to the eye.



Figure 4.9: Bare ground parking lot and un-landscaped grounds respectively (Source: Author, 2019)

The Taphe guest resort site lacks some of the basic elements of landscape architecture such as:

Lack of proper signage; as seen from the picture above, the landscape lacks proper signage as it doesn't have billboards at the entrance, with the basic directional signs such as Entry and Exit points.

Soft Landscape Materials: The hotel garden design was poorly done. The vegetative material (grass, flowers and lawn) are all planted unsuccessfully with no design consideration, the vessels used to hold the plants are made of poor material (plastic).

The pavements which separate the soft and hard landscape are made of bare rough concrete which can pose a threat to children while playing.



Figure 4.10: Plants in plastic vessels (Source: Author, 2019)

Outdoor Lighting: The hotel lacks adequate outdoor lighting essential for illuminating pavements, corridors and the entrance. The only lighting present is on a tree in the garden area. Outdoor lights would help define an area with a surrounding glow that draws guests in as it gives a dramatic effect.



Figure 4.11: Outdoor lighting on a tree (Source: Author, 2019)

Lack of Recreational Facilities: The design of the facilities currently available such as the gazebos, outdoor furniture are both below par; they are not aesthetically appealing and are not sustainable for use. The garden area lacks basic recreational facilities such as; swimming pool, a swing for children and a fountain.

4.3.2 Interior Architecture Analysis

This section provides an evaluation of the interior space of the three-story building with indoor restaurant, kitchen area, lobby and guest rooms. The general interior design is the same for all the floors.



Figure 4.12: Interior of the restaurant (Source: Author, 2019)

Ceiling; White MDF board is used as ceiling material in every room, the material is not durable and has worn out with time. The original color has changed to off white and has visible brown stains caused by rain leaking through the ceiling.

Further damage poses danger to the electricity pendants hanging and the health of staff and customers. The cornice connecting the ceiling and wall is made up of the MDF board.



Figure 4.13: Stained MDF ceiling and MDF cornice respectively (Source: Author, 2019)

Wall; The walls are painted with a cream color that contains lead oxide that's harmful to the human nervous system according to the Center for Disease Control, (2007) report. The paint is not oil-based, making it hard to clean out stains, the top and bottom ends of the walls are peeling off, creating a toxic and unpleasant environment for users.

The walls also have poorly mounted lights that have caused cracks on the walls. The skirting connecting the wall and floor is made of concrete.



Figure 4.14: Edges of flacking walls and concrete skirting (Source: Author, 2019)

Floor; the restaurant floors are covered with thin blue vinyl tiles that chip off easily. The kitchen floor is covered by a terrazzo floor that is made from recycled materials with a few star and flower patterns to add an aesthetic look to it.

The lobby and reception are covered with ceramic tiles which are sustainable but not neatly placed as there are some cracked tiles caused by expanding air that is trapped between the tiles and the floor. The ceramic tiles are also used as a skirting in the reception and lobby room.

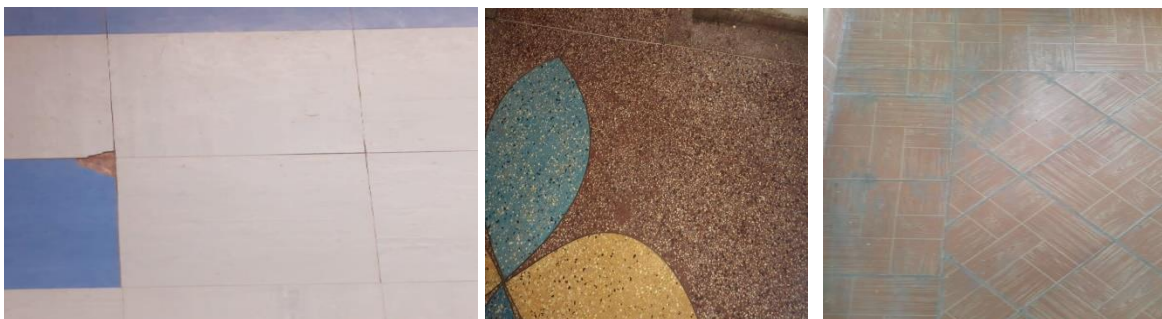


Figure 4.15: vinyl tiles, terrazzo kitchen floor and lobby ceramic tiles respectively (Source: Author, 2019)

Lighting; the resort installed incandescent bulbs that produce a soft white light. The bulbs use a lot of energy and have a short life span of 1 to 2 years. The bulbs are lit open with no shade, this makes the rooms look plain and unaesthetic.

The lighting provided by the bulbs is inadequate and can be a health hazard as it causes users to strain their eyes. Some bulbs are not well maintained such as on mounted on the wall of the restaurant. The restaurant has three bar grilled windows that provide inadequate natural lighting during the day.



Figure 4.16: Incandescent bulbs on the ceiling and wall respectively (Source: Author, 2019)



Figure 4.17: Natural lighting from windows (Source: Author, 2019)

4.3.3 Furniture Inventory and Analysis

The Resort has different types of furniture ranging from bar stools, tables, dining chairs and counters and most of them are ready-made furniture with different designs themes and styles hence the resort lacks a unique corporate identity. Most of this furniture is made of synthetic fabric, non-recyclable cushions and non- biodegradable materials. The banquet chairs used in the restaurant are made of steel metal frames, painted black, fixed cushions upholstery with a clear plastic paper. There are leather seats in the lounge area. The tables in the restaurants are made with wood with steel metal frames covers with cotton table cloths, the coffee table is made from sisal weaved on metal frames for support. The reception furniture includes a U shaped leather upholstery seat with a laminated table.

The conference room furniture is similar to the ones in the restaurant with a common layout; arranged in columns. There is conflict in colors and materials used thus disregarding the aspect of harmony. The furniture used outdoors are majorly non-biodegradable, unstable plastic chairs that are too weak to meet their function and recycled wooden cable rolls, that have been infested with termites and other insects. The furniture also lacks good durable finishes and is not aesthetically appealing.



Figure 4.18: Tables from the resort (Source: Author, 2019)



Figure 4.19: Banquet and leather seats from the restaurant respectively (Source: Author, 2019)



Figure 4.20: Plastic chair and recycled cable roll (Source: Author, 2019)



Figure 4.21: Outdoor furniture (Source: Author, 2019)

4.3.4 Exhibition and display Analysis

The only signage that shows the direction to the resort is not displayed openly, the wooden signage is infested with termites and falling apart. There are handwritten signage with marker pens on the doors resort, they do not last long and have to be rewritten from time to time. The walls of the restaurant are plain with no decorations. The reception area is a square room directly opposite the restaurant and conference building with leather seats and a laminated table, with ceramic tiles. The countertop is made of smaller white ceramic tiles with a metal bar grills. The reception is not aesthetically appealing to potential and does not say anything about the resort.



Figure 4. 22: Direction and door signage respectively (Source: Author, 2019)



Figure 4.23: Reception area (Source: Author, 2019)

4.4 Quantitative Analysis of Response

The researcher compiled a narrative form based on the interview questions structured for the sample population for the research. The sample population comprises of 30 people; the hotel manager, director, customers, residents and practicing interior designers. The research was based on the main research questions and objectives that relate to the renovation of the resort in every area of interior design. The researcher noted down the response rate to give the readers better insight into the findings. It was more efficient for the researcher to conduct interviews on practicing interior designers and hoteliers first due to their busy schedule since it is hard for them to fit one in their schedule.

The manager, Mr. Ezekiel was asked what his inspiration behind the current design of the resort. His response concluded that he did not have any specific theme for the resort during the design. From the photos and observation taken during the research, it was evident that there was an attempt to include an African aspect in his resort even though the efforts were minimal.

The photos from the research were thoroughly reviewed by the rest of the sample population which confirmed that the current design of the exterior and interior spaces of the resort did not adhere to any design theme or form of inspiration. Out of the 30 respondents, only 4 were able to associate the resort design to have applied a specific theme or inspiration.

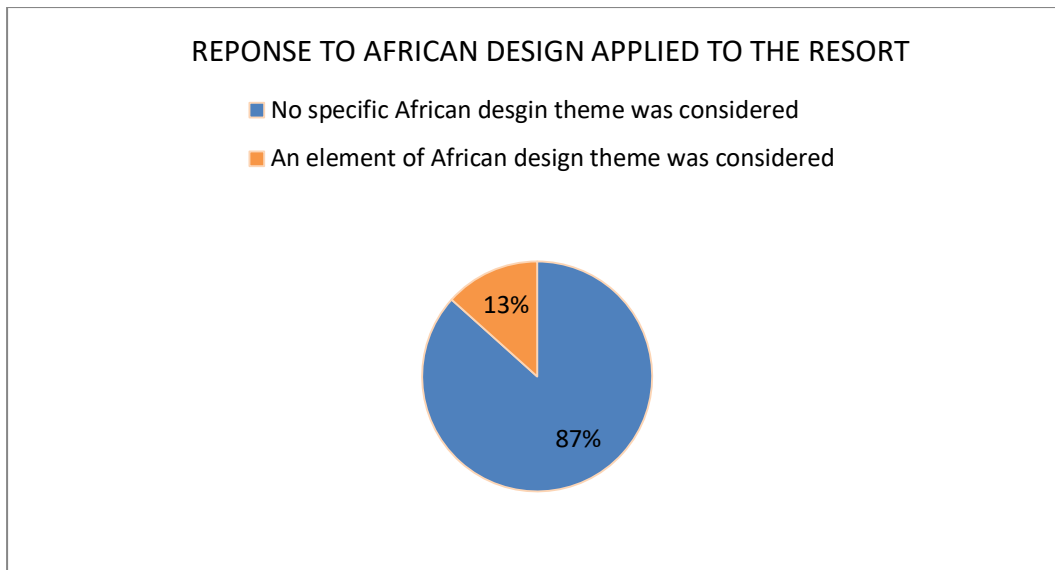


Figure 4.24: Pie-chart showing response to Application of African Design (Source: Author's construct, 2019)

The sample population also gave their response to their view on whether the resort had any aspect of sustainability that was applied to the resort, based on photos and observation from the research. Out of the 30 respondents, 2 associated the resort to have applied sustainability.

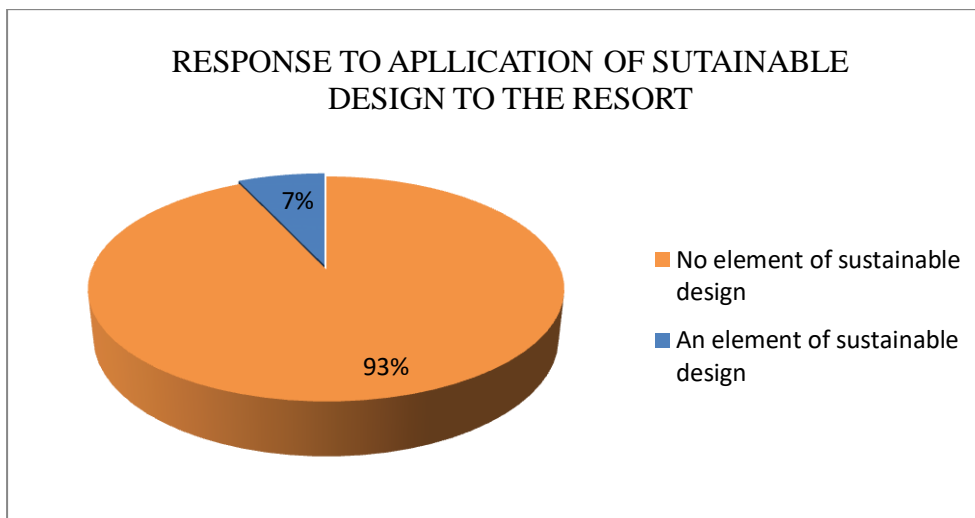


Figure 4.25: Pie-chart showing response to Application of sustainable design (Source: Author's construct, 2019)

The researcher explained how sustainability can be applied by incorporating African design to improve the interior and exterior spaces of the resort.

It was briefly explained to them how renewable materials and giraffe patterns can be used to improve the resort by showing images of examples of giraffe designed spaces and others with sustainable materials; to have an idea of the expected outcome. Majority of the respondents were supportive of the idea especially the manager as it will make the resort more interesting and inviting to tourist as well as the use of locally available materials that are sustainable to the user and environment. 2 respondents were not supportive in defence that as long as the resort meets the needs of the user there was no reason to change the design; other 1 respondent was not sure as they were not used to change, the other 27 were fully supportive of the idea.

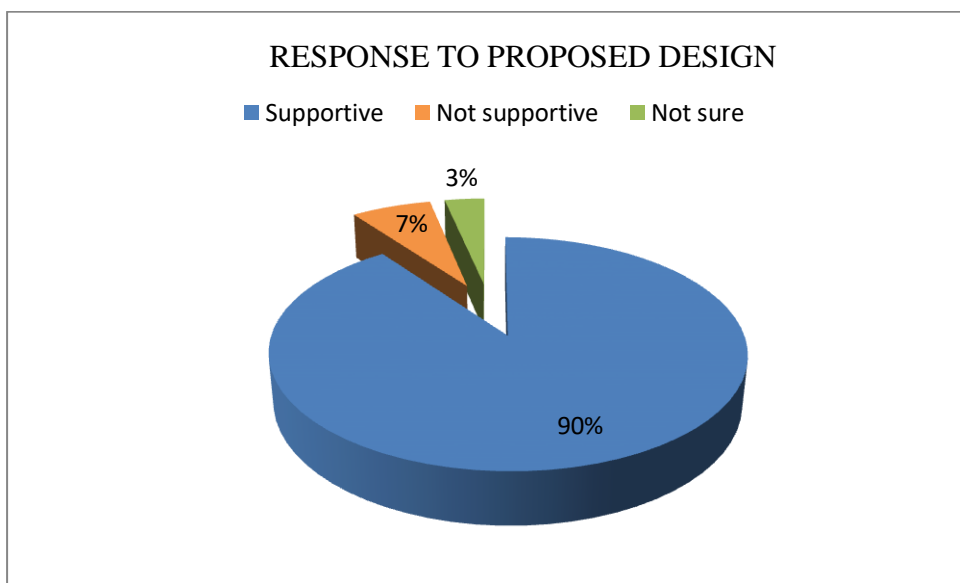


Figure 4.26: Pie-chart showing response to proposed design (Source: Author's construct, 2019)

4.4.1 Areas That Require To Be Renovated

The areas suggested for the renovation were based on data obtained by the researcher from interviews, an observation made during the research and agreed on by 90% of the respondents. The remodeling is meant to positively affect the four areas of interior design; Interior Architecture, Landscaping, Furniture and Exhibition and Display. The changes would apply the use of sustainable materials and inspired by giraffe patterns and colors to result in contemporary, aesthetically appealing spaces for tourists in the Taphe Guest Resort.

The use of sustainable materials would be in support of reducing the environmental degradation caused by non-sustainable materials such as plastics.

The use of the giraffe as a source of inspiration would contribute to the appreciation of African wildlife as a culture by the local and international tourist.

The customers and managers were in support of remodeling the interior architecture in terms of finishes done in the restaurant, conference room and reception area. This includes the change of floor tiling to a more sustainable and affordable material from the breaking vinyl and ceramic tiles. The peeling painting on the ceiling and walls which has proven to pose harm to human health would also need a revamp. The tile skirting and Medium-density fibreboard (MDF) cornice used in rooms are also to be replaced with a suitable efficient material. The lighting in the rooms would also change to use of lightings that save energy and still effectively light the room. The researcher also suggested a change in furniture layout by including different areas for different activities in the restaurant, such as; a bar area, coffee area, a fireplace and 2 to 6 people dining area.

The landscaping will be redesigned with a specific theme that is inspired by giraffe patterns and the use of sustainable materials where applicable as agreed by 90% of the respondents. The parking lot area will be covered by a material that prevents dust from rising. The compound will also be surrounded by trees to serve as a windbreaker given that Naivasha is a windy area and the soil is loose enough to be raised. An alternative material will be applied to the hard concrete landscapes that serve as pathways and designed to a more aesthetic look that still serves its function. The plants and flowers in broken plastic containers will be replaced by sustainable material that contributes to the aesthetics of the landscapes. The ineffective outdoor lighting can be replaced by solar-powered lighting on the side of the pathways and parking lot.

Furniture redesign will be determined by the user and the ergonomic element and principles of design will be considered when coming up with new designs. Different furniture will be designed for different functions. The majority of the furniture in the restaurant is common and outdated, new furniture will be designed by the use of sustainable materials such as mango wood and bamboo-inspired by the giraffe to a modern unique look. This will apply to the furniture in the reception area and outdoor furniture.

Lastly, the reception area that is the main Exhibition display area needs to be redesigned by using a unique theme that gives the resort an identity. This can be achieved by using furniture and finishes inspired by giraffe patterns.

Absence of a billboard at the entrance to clarify the type of services and facilities they offer to their potential customers. 27 respondents out of the 30 suggested that there was a need for the design of a clearly labelled billboard at the entrance and other areas such as the washroom parking area. This represented 72% of the respondents.

A summary of the response as far as the renovation of the four areas of interior design is represented below in a bar graph.

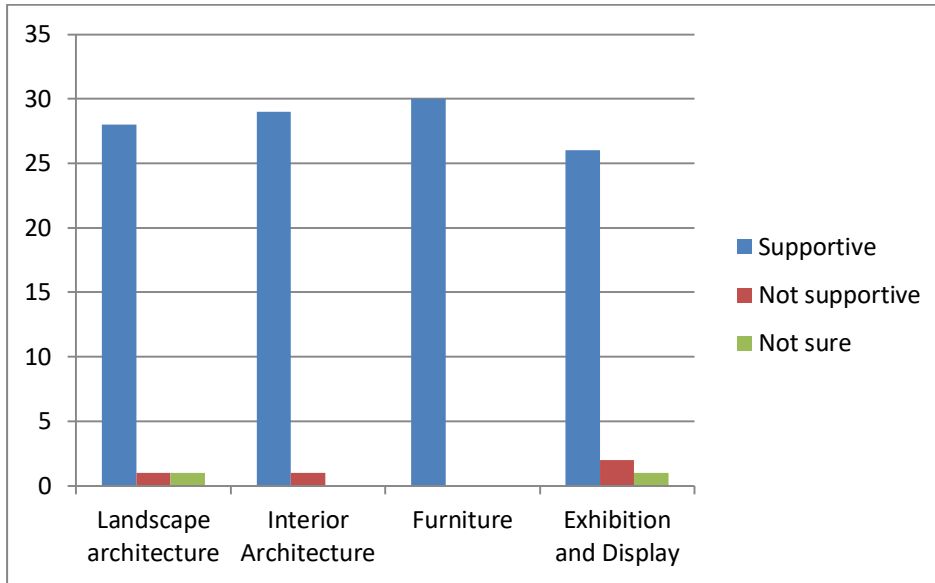


Figure 4.27: Graph on the response to areas to be redesigned (Source: Author’s construct, 2019)

4.5 Conclusion

Based on the analysis, it is accurate to conclude that Taphe Guest Resort was not founded on any design theme, inspiration or philosophy. This fault created an opportunity for the researcher to improve the resort in all the areas of interior design using renewable materials and giraffe patterns to create a contemporary yet sustainable design space for tourists.

CHAPTER FIVE

5 SUMMARY FINDINGS CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

Chapter Five of this research is a summary of the critical analysis of the site and data collected by the researcher as far as the research objectives are concerned. This summary will be informed by the literature reviewed earlier in chapter two. The literature review will enable the researcher to come up with satisfactory and proper recommendations that can be implemented to the Interior Architecture, Landscape Architecture, and Furniture Design, Exhibition and Display of Taphe Guest Resort to ensure application of sustainability and enhancement in aesthetics. The recommendations will be based on facts established by the researcher from the research methodology process followed as indicated in chapter three in line with the sustainability aspects established in chapter two. The recommendations will give a clear and practical illustration of using renewable and recycled materials inspired by Giraffe patterns and colours to create a contemporary space that is aesthetically appealing and sustainably hospitable to tourists visiting the Taphe Guest Resort in Naivasha. This chapter will also give a conclusive summary of the research. The researcher will also suggest for further study and research for the exhaustiveness of the concept of Sustainable Design in the hospitality industry.

5.2 Summary of Data Analysis and Findings

From the research, it was established that there is a need for designers in every field to understand the importance of sustainability as a philosophy in the design industry and how its principles can effectively be implemented by merging it with design elements to improve the end product. This knowledge also greatly applies to owners and stakeholders in the building industry; this research focuses on the hospitality industry and how owners can contribute to the reduction of environmental degradation by the use of renewable and recycled materials in their building projects. The literature review helped the researcher propose the most effective way of implementing sustainability, by integrating a contemporary African element with sustainable materials in the hotel's interior architecture, landscaping, furniture designs and exhibition and display to result to a space that is both sustainably hospitable and aesthetically pleasing to the users.

Based on data analysis and findings in chapter four, the researcher was confident to conclude that the area in study, Taphe Guest Resort was not founded on any design philosophy or theme. This is observed from the resort's entire physical environment, interior spaces, color scheme, materials used in the furniture designs and layout and the exhibition and display. This was confirmed by the quantitative analysis of the findings, where 93% of respondents from the sample population of 30 people, that there was no element of sustainability and 83% that there was no element of African design applied.

From the interview guide, the researcher had asked for the user's suggestions on the specific areas of the hotel that are supposed to be remodeled, all the four areas of the resort's physical environment; landscape, interior architecture, exhibition spaces and the furniture were suggested for remodeling. The researcher took into consideration the hotel users' suggestions and opinion as far as the level of sustainability of the interior finishes is concerned and its consequential effects on the users' health.

In respect to the findings from the literature reviewed by the researcher in chapter two of this research, it can be concluded that African cultural aspects of sustainable interior design are not appreciated in the built environment. As an alternative, most Kenyan hospitality industries seek out inspiration from Western cultures and use cheaper building materials that are not sustainable misguided by the misconception that these Western themes are more superior, appealing and fit for user consumption than sustainable African inspired contemporary Design. This has resulted in exterior and interior spaces that contribute to the environmental degradation that pose a threat to human health as well as ignorance in showing appreciation of aspects of African culture.

5.3 Recommendations

5.3.1 Interior Architecture

The elements of interior architecture considered are walls, floor, ceilings, lighting, interior textiles and color schemes. The interior spaces will be inspired by Giraffe patterns and colors to achieve an African contemporary design as well as sustainable materials such as renewable and recycled materials for areas where applicable.

Wall finishes and Colour scheme recommendations; The existing walls of the interior spaces are painted with a cream color that contains lead oxide that's harmful to the human nervous system and the environment.

The researcher recommended the application of textured walls using decorative paint to make giraffe patterns, use of brown, golden and white colors, the golden African color, which is obtained from yellow; signifies wealth in several forms, namely high status, monetary wealth and royalty, but also fertility and spiritual purity. Yellow: similar to the attributes associated with gold, but also including beauty and preciousness. The colors reflect the colors on the giraffe coat and are creating a sense of harmony when used together. The researcher proposed water-based paints as they use water as a solvent hence they have a low VOC emission which makes them environmentally and user friendly as opposed to lead oxide paints. The paint is also sustainable as it can be recycled and re-used just by diluting with water in case they dry out before being used.



Figure 5.1: interior walls with golden and white colors (Source; Pinterest.com, 2019)



Figure 5.2: Textured wall and giraffe pattern roller (Source; Pinterest.com, 2019)

Flooring Recommendations; The current restaurant floors are covered with thin blue vinyl tiles that chip off easily. The kitchen floor is covered by a terrazzo floor that is made from recycled materials with a few star and flower pattern to add an aesthetic look to it. The lobby is covered with ceramic tiles that are sustainable but not neatly placed as there are some cracked tiles caused by expanding air that is trapped between the tiles and the floor. The researcher recommended Bamboo flooring for the restaurant and lobby area as it is ecologically friendly to the users and environment, renewable and recyclable material. It is also aesthetically appealing and elevates the elegance of a space as it is durable and versatile. Another suitable option would be wooden laminate flooring it is made from pressed wood; it is more durable and resists scratches, moisture and wear and tear. Laminate flooring is also easier to clean. Carpets or rugs with giraffe patterns can be used as soft furnishing and adds a warm and African ambiance to the room.



Figure 5.3: Bamboo flooring (Source; Pinterest.com, 2019)



Figure 5.4: Wooden laminate flooring (Source; Pinterest.com, 2019)



Figure 5.5: Giraffe print carpet (Source; Pinterest.com, 2019)

Ceiling and lighting recommendations; The existing white MDF board used as ceiling material in every room is not durable and has worn out with time. The original color has changed to off white and has visible brown stains caused by rain leaking through the ceiling. The resort has also installed incandescent bulbs that produce a soft white light. The bulbs are lit open with no shade, this makes the rooms look plain and unaesthetic. For the ceiling material, the researcher recommends using laser-cut suspended from the cemented ceiling made from wrought iron inspired by giraffe pattern and color. The ceiling will be painted white water-based paint. A more neutral color has been proposed to draw emphasis on the aesthetics of the laser cut paneling.

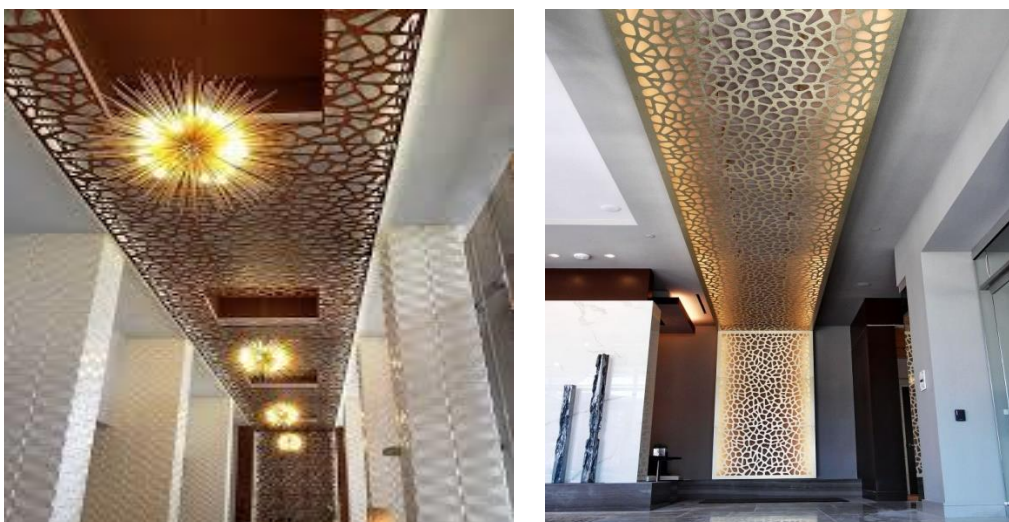


Figure 5.6: Laser cut ceiling installation with giraffe patterns (Source; Pinterest.com, 2019)

As opposed to plain bulb lighting, the researcher has proposed the use of recycled wine glasses which create ambient environments and also create therapeutic illuminations in the bar counter and lobby area. Lampshades made from papyrus would also be suitable as it is a renewable material.



Figure 5.7: Recycled wine bottles for lighting (Source; Pinterest.com, 2019)



Figure 5.8: Lampshades made from papyrus (Source; Pinterest.com, 2019)

Color scheme; The choice of color will also be significant as color psychology plays a significant role in the effect on mood, perception, and likes and dislikes. The researcher recommends a selection of colors from the African color pallet ranging from shades and tints of yellow, brown and those of those present on the coat of the giraffe.

5.3.2 Landscaping and Human Environment Recommendations

Landscape Lighting; Exterior lighting adds both aesthetic and functional benefits to the resort. Landscape lighting ranges from small solar lights that need no wiring to wall-mounted lights that are hardwired into your home's electrical system. Landscape lighting increases the functionality of your outdoor spaces. It is essential for security reasons as it will deter intruders and ensure visibility for all.

The researcher proposed Light Emitting Diodes (LED) and Solar powered Landscape Lighting system lamps to illuminate the outdoors of the resort. The lamps are energy efficient and provide a modern look to the resort would be suitable for the pavements, swimming pools, gazebos and shadowy corners of the resort's outdoor environment. Giraffe patterns can be used as inspiration to make the solar lanterns.



Figure 5.9: Outdoor lighting (Source; Pinterest.com,2019)

Benefits of using LED lighting;

Brighter light: LEDs are a brighter white than traditional halide street lamps, helping better illuminate streets, sidewalks and parking lots.

Longer life: LEDs, depending on their usage, can last up to 50,000 hours. That's the early 25 years! This means less burnt out street lights.

Energy savings: LEDs offer more lumens per watt, meaning they shine brighter than halide or incandescent lights while using significantly less energy.

Instant-on: Traditional lighting takes time and heat to warm up and turn on. This can prove difficult when used in cold, outdoor lighting environments. As LED lights need little heat to operate, they are always instant-on, even in below-freezing weather.

Durability: Unlike other outdoor lighting, LEDs are manufactured with durable materials such as plastic, not glass. They can handle harsh weather conditions much better than traditional bulbs.

Flexibility: You can find outdoor LED lights in various forms; street lighting, wall-mounted fixtures, motion sensor security lights and much more.

Hard Landscape Materials; The researcher proposed interlocking permeable Concrete paving blocks, commonly known as Cabro in Kenya to be used on car parks and pathways within the landscaped compounds. Concrete paved surfaces can withstand abuse and last for generations. The cost of concrete pavers is much less compared to any other concrete product as they are manufactured using machines, unlike other products that are naturally produced.



Figure 5.10: parking ground and pathways respectively (Source; Pinterest.com,2019)

Soft Landscape Materials; As seen in Chapter 4, the vegetation cover of Taphe Guest resort is inadequate and poorly maintained with plastic containers as vessels for flowers and other plants. The researcher proposed the resort to be surrounded by trees eg. Pine trees to serve as windbreakers and provide shade. The sides of pathways to be covered by grass to prevent soil erosion and improve the aesthetics of the landscape. The art of landscape gardening will involve considering the total environment of any new development and then shaping it using natural elements such as landform, trees, shrubs, and water to form a pleasing harmony.

This can make a constructive contribution to the improvement rather than the destruction of the environment. Plants that form an important element in landscape design aid in reducing the pollution of the environment and minimizing some of the effects of heat, sound, wind, air, etc.



Figure 5.11: Grass, flowers, and trees in landscaping (Source; Pinterest.com,2019)

As inspiration by Giraffe patterns, landscape plants can be manicured and planted to form geometric shapes

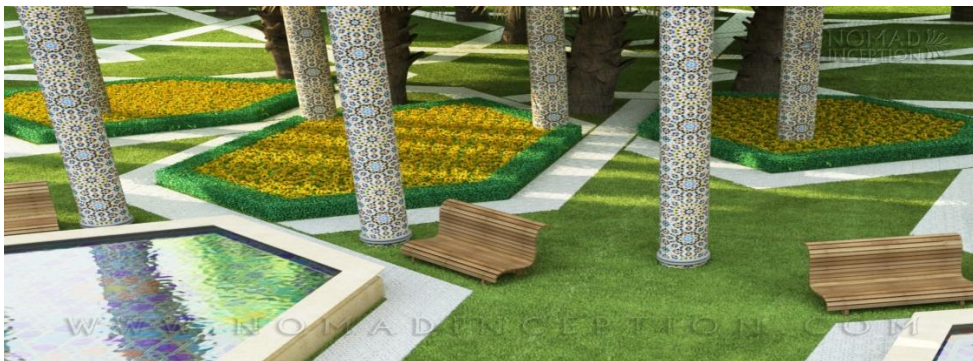


Figure 5.12: Patterned landscaping (Source; Pinterest.com,2019)

Recreational Facilities; The researcher recommends the application of outdoor recreational facilities such as a swimming pool and fountains which creates a cooling effect in the landscape inclusive of different layouts for resting such as gazebos and pergolas.



Figure 5.13: Swimming area (Source; Pinterest.com, 2019)



Figure 5.14: Outdoor Gazebos (Source; Pinterest.com, 2019)

5.3.3 Furniture Design recommendations

The furniture in the interior space of the restaurant will be designed for tourists comprised of both adults and children. The function is dependent on the type of furniture in the room; inclusive of coffee tables, dining chairs, bars stools, resting chairs and dining table. The furniture is meant to be both functional and decorative and maximize comfort.

This will be achieved by the use of sustainable materials inspired by the giraffe pattern to create contemporary furniture for the interior spaces. Application of principles of Design and Principles of sustainability will aid achieve the proposed furniture designs.

Sustainability will be impacted by the use of renewable resources; this includes bamboo, mango wood, sisal and papyrus where applicable. There will also be the use of recycled materials such as recycled wood, wrought iron, recycled glass and steel. Cotton; a sustainable material, can be used to make upholstery fabrics for the furniture where applicable.



Figure 5.15: Furniture made from bamboo (Source; Pinterest.com,2019)



Figure 5.16: Furniture made from mango wood (Source; pintrest.com, 2019)



Figure 5.17: interior space with furniture made from papyrus (Source; pintrest.com,2019)

The researcher draws inspiration from the African animal, Giraffe; patterns and color. The parametric pattern can be used to design contemporary furniture which can be implemented by the upholstery with giraffe printed fabrics, gouging the pattern out or by laser cut method depending on the material and furniture being designed for the restaurant.

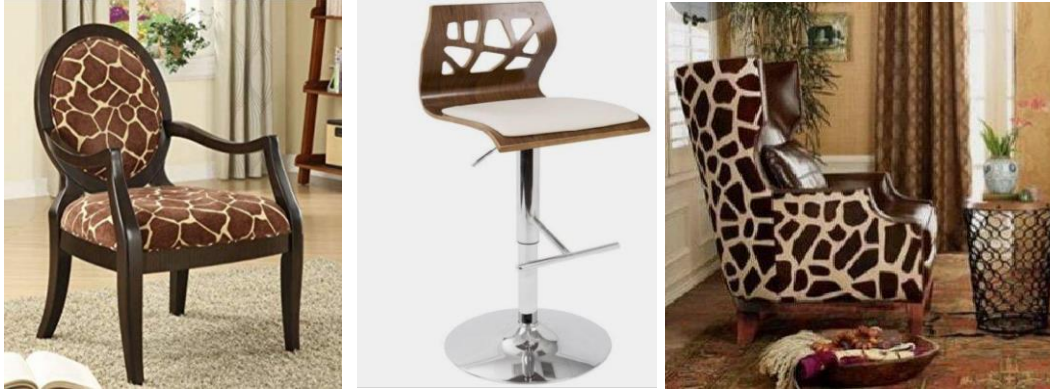


Figure 5.18: Giraffe inspired seats (Source; pintrest.com,2019)

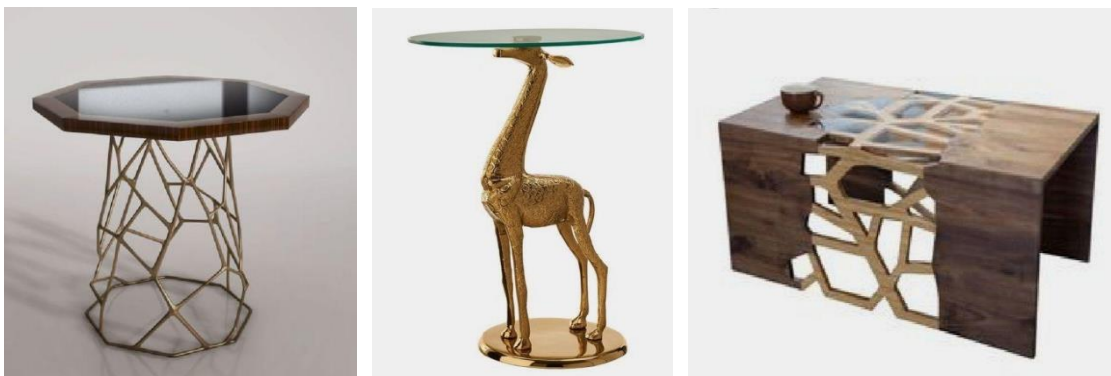


Figure 5.19: Giraffe inspired tables (Source; pintrest.com,2019)



Figure 5.20: interior space with giraffe inspired furniture (Source; pintrest.com,2019)

5.3.4 Exhibition and Display recommendations

The researcher recommended modern methods of installation and showcasing to be used and should be executed with respect to the chosen concepts:

Lighting: This will be executed by use of LED lighting for display, drop-down ceilings with striplights

Walls: Laser cut materials on the walls and of the reception area and counter area. The materials and finishes suggested are sustainable, eg. Wrought iron inspired by the Giraffe in terms of patterns and color.

The researcher also recommended the use of African animal masks mounted on the walls of the spaces as well as the use of wall rugs and paintings of animals preferably giraffe prints. Decorative Water-based paint with texture will be used in various colors such as white, tints and shades of brown and offwhite.

Ceilings: Parts of the ceiling will be installed with gypsum cut out into giraffe patterns with striplights installation. The display and exhibition will be inspired by the Giraffe in aspects of patterns and color to give it an African theme.

Floor: the researcher recommends use wooden flooring laminate as well as the use of giraffe printed soft furnishing on the floor eg. Carpets.



Figure 5.21: strip lights in the ceiling and laser cut wall and ceiling installation with giraffe patterns (Source; pintrest.com)



Figure 5.22: textured wall (Source; [pinterest.com](https://www.pinterest.com),2020)



Figure 5.23: a well-lit modern reception area (Source; [pinterest.com](https://www.pinterest.com),2020)



Figure 5.24: Wall décor of masks and wall rugs respectively (Source; [pinterest.com](https://www.pinterest.com),2020)



Figure 5.25: Wooden laminate flooring (Source; pintrest.com,2020)



Figure 5.26: Soft floor furnishing;Carpet.(Source; pintrest.com,2020)

5.4 Conceptualization

The recommendations made by the researcher will be based on African inspired concepts; specifically the Giraffe. The giraffe patterns and colors will be used to come up with contemporary African designs that use sustainable materials in support of reducing the degradation of the environment.

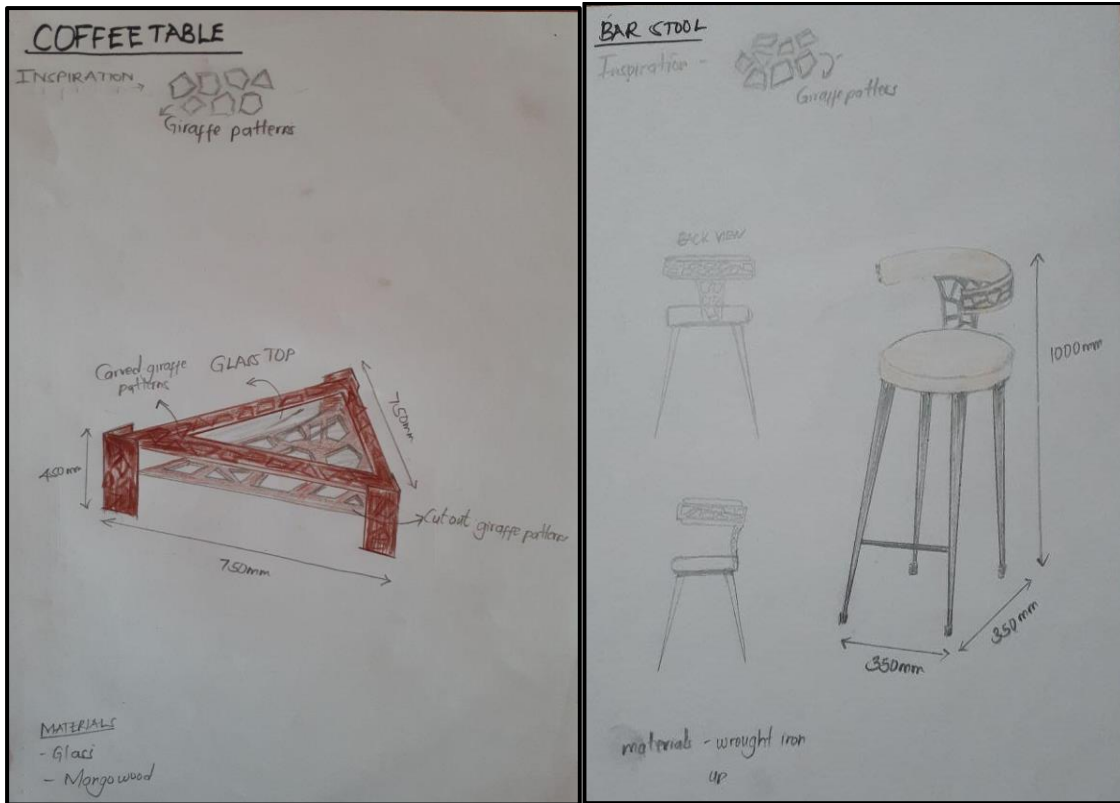


Figure 5.27: Furniture sketches, (Source: Author's construct, 2020)

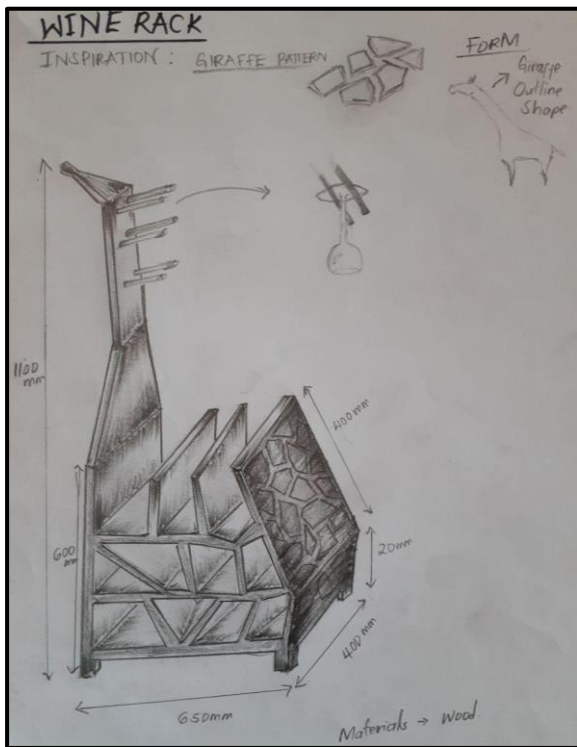


Figure 5.28: Furniture sketch (Source: Author's construct, 2020)

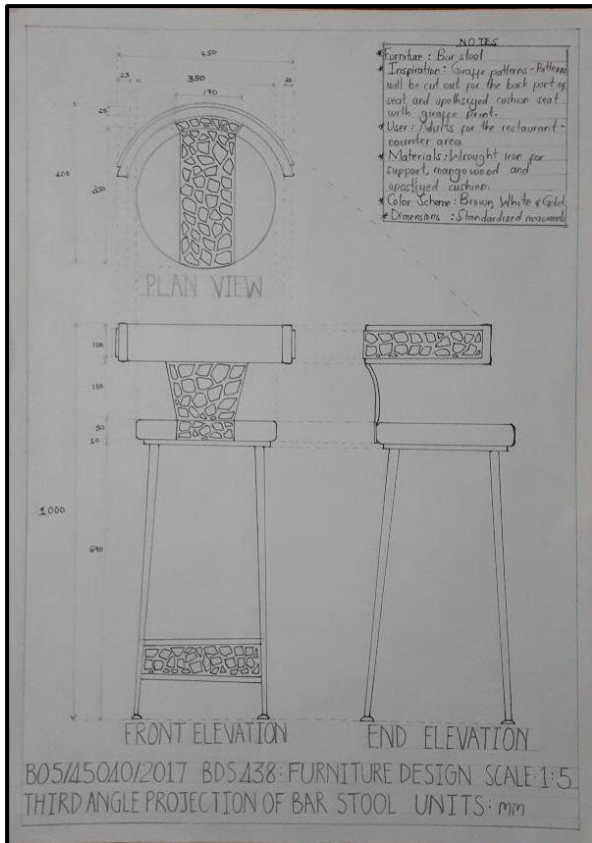


Figure 5.29: Orthographic projection of bar stool (Source: Author's construct, 2020)

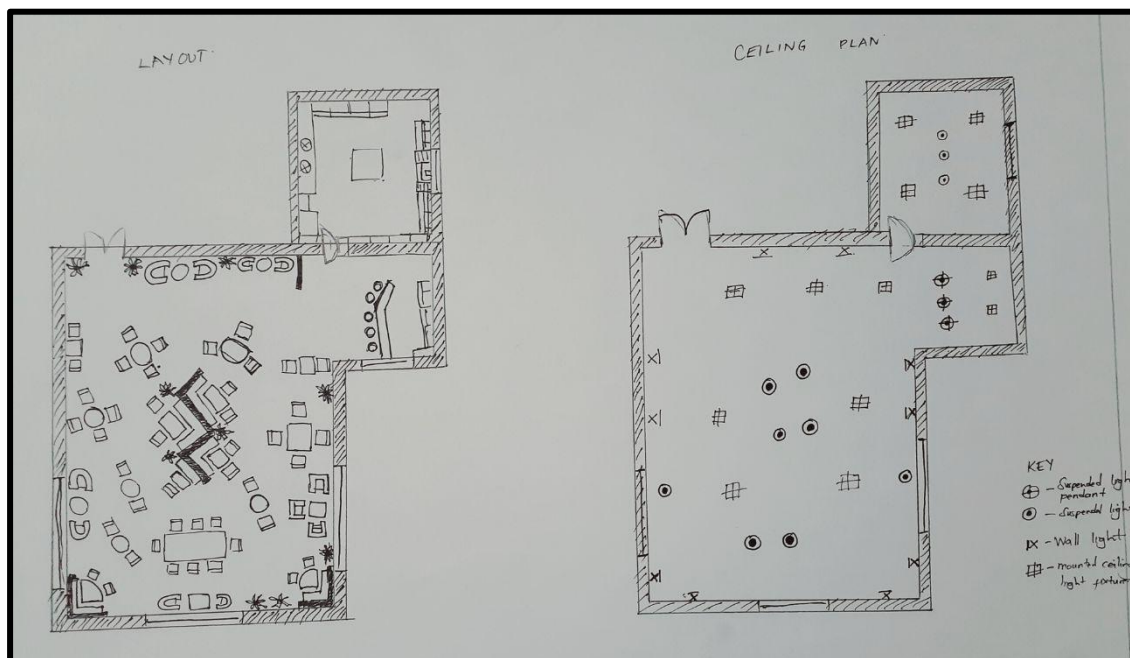


Figure 5.30: Proposed interior orthographic sketch, restaurant (Source: Author's construct, 2020)

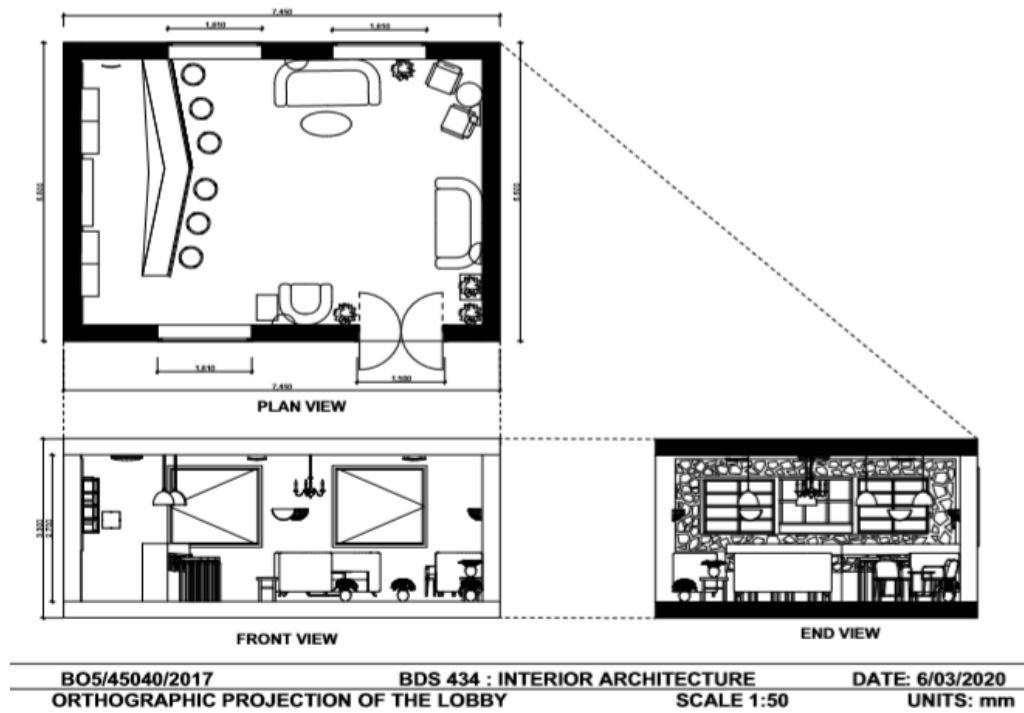


Figure 5.31: Orthographic projection of Interior space, Lobby (Source: Author's construct, 2020)

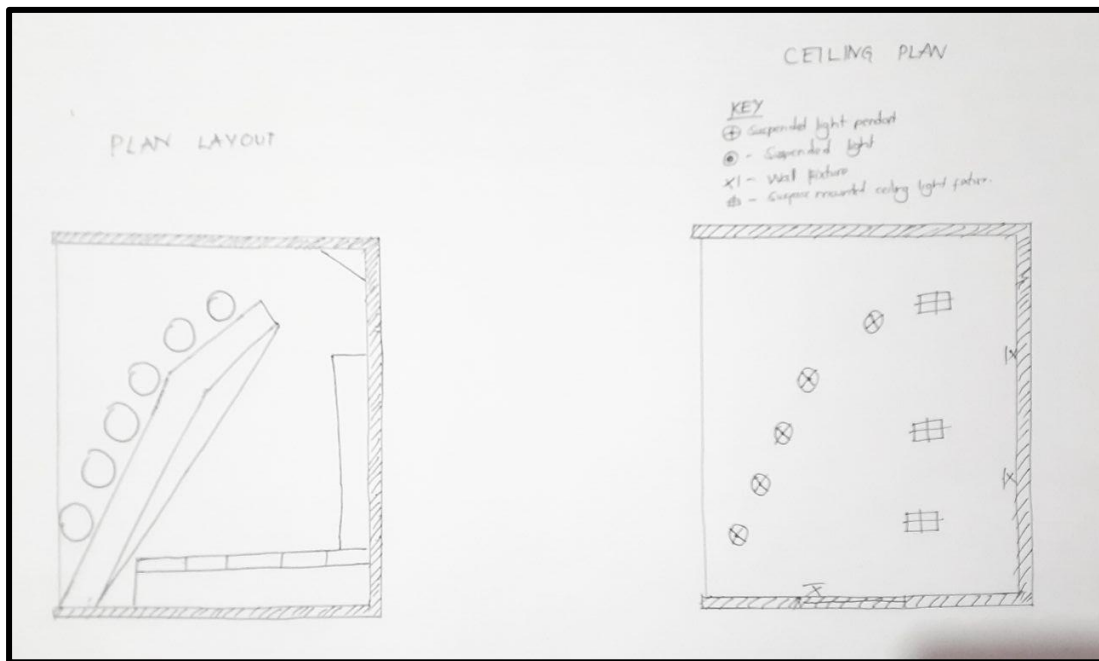


Figure 5.32: Proposed Exhibition and display orthographic sketch, Counter area (Source: Author's construct, 2020)

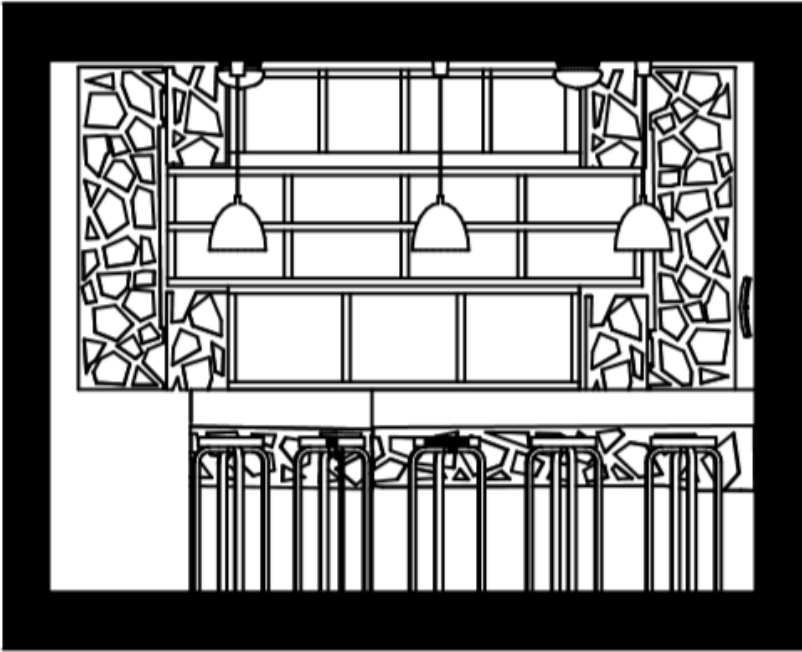


Figure 5.33: Section of Exhibition space, Counter area (Source: Author's construct, 2020)



Figure 5. 34: Landscaping sketch. (Source: Author's construct, 2020)

5.5 Conclusion

Based on the researcher's finding, there is a critical need for the redesign of the Taphe Guest Resort imposed by the responses in the form of opinions and recommendations made from the data analysis. In the existing design of the resort, the materials used do not take into consideration the approach of sustainable design using sustainable materials integrated with an African element. This chapter has depicted how sustainable materials that are renewable and recyclable can be inspired by Giraffe patterns and colors, as an African aspect to improve all the fields in interior design to a sustainably hospitable aesthetically appealing contemporary space to tourist.

5.6 Suggestions for Further Study

Due to the time limitation factor, this research was in no way exhaustive as far as the concepts of sustainability and contemporary African art are concerned. This research focuses on the environmental element of sustainability; hence it did not cover all the concept approaches involved in sustainability, all its elements and principles. The same applies to the cultural elements of the use of Giraffe prints in a contemporary approach, which is just a minor scope from the African design as so many approaches of this exist.

Due to the geographical scope constrains, the research did not cover the whole Kenyan hotel industry hence some elements of the industry were not fully explored.

Nonetheless, this research has established that there are vast opportunities for use of renewable and recyclable materials inspired by giraffe patterns and colors, to create contemporary African and sustainable spaces in the Interior Architecture, Furniture Design, E exhibition, and display units and Landscape areas in the hotel industry as well as fulfilling their customers' satisfaction, aesthetics and environmental concerns.

The data used in this study is viable based on the number of respondents interviewed. Therefore the researcher suggests thorough, comprehensive and exhaustive research to be done in the following areas as a continuation of the current research:

- An extensive exploration of the elements (environmental, economic and social) and principles of sustainability in the built environment sector in Interior Design in Hotels. This is because the study only focused on the element of environmental sustainability, which can be achieved through the use of renewable and recyclable materials.
- A comprehensive study on elements in animal prints and how they can be incorporated in the design and their cultural and aesthetic contribution in the built environment.
- A study exploring the opportunities, effects and barriers to use renewable materials such as papyrus reeds and bamboo in the interior spaces.
- Lastly, A thorough study on the level of sustainability of hotels and restaurants and its effects on the customers' behavior, holistic interior design and satisfaction.

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APPENDICES

APPENDIX 1: INTERVIEW GUIDE.

UNIVERSITY OF NAIROBI



College of Architecture & Engineering

School of the Arts & Design

Section A: Hotel Management.

- 1) What was the inspiration behind Taphe Guest Resort design?
- 2) What is your take on sustainability and has it been applied in the Resort's design in any way?
- 3) What factors influenced the choice of the current materials used to design the resort?
- 4) How often and which specific areas of the resort are often redesigned? And why?
- 5) After a brief introduction to sustainable materials and giraffe art, would you recommend for the renovation of the resort with sustainable materials inspired by giraffe patterns and colors? If yes, which specific areas of the resort would you recommend for the renovation?

Section B: Customers.

- 1) What are your opinions on the interior design, furniture design, exhibition and display and the general landscape of the resort?
- 2) What are some of the challenges you encounter while in the resort?
- 3) What is your take on the level of sustainability and aesthetic appeal applied in the resort's design?
- 4) After a brief introduction to sustainable materials and giraffe art, would you recommend for the renovation of the resort with sustainable materials inspired by giraffe patterns and colors?
- 5) Which specific areas of the resort would you recommend for the renovation?

Section C: Staff Members

- 1) What are your views on the current state and the design of the resort?
- 2) Which challenges do you normally experience with during your day to day chores?
How have these materials affected the environment?
- 3) What design-related feedbacks are normally given by your customers?
- 4) Which areas of the hotel would you like to be redesigned and why?
- 5) In your opinion what are your suggestions towards enhancing an efficient working environment design?
- 6) After a brief introduction to sustainable materials and giraffe art, would you recommend for the renovation of the resort's interior architecture, furniture design, exhibition and display units and the general landscape with sustainable materials inspired by giraffe patterns and colors?

Section D: Interior Designers

- 1) What are your views on the current state and the design of the resort?
- 2) What is your take on the level of sustainability and aesthetic appeal applied in the design of the resort?
- 3) What design considerations should be made during the renovation of the resort?
- 4) What type and nature of materials would you recommend for the hotel's landscape, interior design, furniture and the exhibition and display space? And why?
- 5) After a brief introduction to the proposed design, would you recommend for the renovation of the resort's interior architecture, furniture design, exhibition and display units and the general landscape with sustainable materials inspired by giraffe patterns and colors?
- 6) Which specific areas of the resort would you recommend for the renovation?

APPENDIX 2: OBSERVATION GUIDE

- 1) What neighbouring facilities are present on the site?
- 2) What construction materials have been used in the building site?
- 3) What are the strengths and weaknesses of the site?
- 4) What kinds of materials are most suitable for designing the interiors of the resort?
- 5) What are the current design and state of the interior architecture, furniture design, exhibition and display units and the general landscape of the resort?