UNIVERSITY OF NAIROBI

School of the Arts and Design

BDS 413: PROJECT PAPER

APPLICATION OF GREEN DESIGN TO AQUARIUM GUEST HOMES

Case study: Aquarium Guest Homes (Westlands)

By:

Daniel G. Ngoya – B05/30438/2009

Supervisor: Dr. Walter Onyango

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 the Nairobi

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Undergraduate degree of Bachelor of Arts (Interior Design)

Supervisor: Dr. W.H. Onyango

Assisted by: Munene

February 8, 2013

Nairobi, Kenya.
Dedication

To God, I never could have made it without you. my family for all of your unwavering support just to ensure I achieve academic excellence and my friends who were a great source of encouragement.
Declaration

I, Daniel Gachuru Ngoya, declare this work my own in originality and that it has not presented before in any other University for any awards in the Bachelor of Arts in design undergraduate degree.

Signed……………………………………………………………………

Date……………………………………………………………………

DANIEL GACHURU NGOYA

A Research Project submitted in partial fulfillment of the requirements for the award of the degree of Bachelor of Arts (Design) at the University of Nairobi.

SUPERVISOR

DR. WALTER ONYANGO

Signed……………………………………………………………………

Date……………………………………………………………………
Acknowledgement

I acknowledge God for granting me life and seeing me through the entire course. May your name be blessed. I must thank my parents and brothers, thank you for supporting me throughout the entire four years, Mum; you have been the best, thank you.

The preparation of this dissertation benefited from the invaluable contributions of a number of people. I would like to acknowledge Mrs. Lilac Osanjo, thanks for your insights, and the entire teaching staff. To my class friends, Innocent, Sydney, Nelson, Macharia thanks for your intuitions and inspirations.

I thank you all.
Acronyms

USGBC – U.S. Green Building Council

LEED – Leadership in Energy and Environmental Design

FSC - Forest Steward Council

HVAC - Heating, Ventilation and Air-Conditioning
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DEFINITION OF TERMS

Off-gasing: This is the evaporation of volatile chemicals in non-metallic materials at normal atmospheric pressure. This means that building materials can release chemicals into the air through evaporation.

Green company: A company that acts, or claims to act, in a way which minimises damage to the environment.

Guest homes: Also known as small hotels.
CHAPTER ONE

1.0 INTRODUCTION

1.1 Background to the study.

Clive Edward, 2011 states that interior design is a professionally conducted, practice-based process of planning and realization of interior spaces and the elements within. Interior design is concerned with the function and operation of the space, its safety and efficiency, its aesthetics and its sustainability. The work of an interior designer draws upon many other disciplines, such as environmental psychology, architecture, product design and, aesthetics, in relation to a wide range of building spaces including hotels, corporate and public spaces, schools, hospitals, private residences, shopping malls, restaurants, theaters and airport terminals.

Penny Bonda and Katie Sosnowchik, 2007 write that it is tempting to think about interior spaces separate and apart from buildings that house them and the land that they sit on and the planet they inhabit. Interior designers have traditionally distance themselves from the issues of land use and water and energy consumption. Even the use of materials and the interplay of conditions that define the indoor environment have been confined within the walls. The new paradigm requires that we think holistically as a member of not only a larger team, but of a larger world.

Thus an interior designer who has mastered the basic elements of interior design should be open to the eventual possibility that there is more to just designing a space. The world as we know it is constantly changing and we must use every possible opportunity to play our part in solving its problems. Taking responsibility for the continuing environmental degradation is part of this wider concern.
In the construction industry, green designed buildings have lately become a much talked-about subject in Kenya and the world-over, for a start, green building refers to the process of putting up structures using processes that are environmentally responsible and resource efficient right from the design stage to construction, maintenance and demolition.

Green construction interiors minimize energy consumption while maximizing the use of renewable energy particularly solar energy. Solar energy here entails more than the expensive panels that sit on building roofs. It also means investing in thick-paned, glazed windows as well as more complicated photovoltaic cells.

Instead of using costly hard-woods that destroy our forests, many green building developers have found cheaper and beautiful alternatives in bamboo and cork (both of which are easily replenished flooring materials). These materials are locally available and have low impact on the environment.

Green buildings have low-flow shower heads that can save up to half the water of a standard shower and waterless or low-flush compost toilet systems. They also have energy saving washers and dryers, gas stoves and sealed HVAC units among many other energy saving appliances. These structures are also built in a manner that minimizes heat gain while allowing for a natural cooling mechanism. They are, for example, fitted with large window-clad facades facing the North-South axis to minimize direct solar radiation, which subsequently minimizes the need for air-conditioning.

Green buildings and interiors make use of locally available non-toxic materials. They utilize recycled materials as well as materials manufactured using eco-friendly ingredients such as milk-based paints as green alternatives to oil and latex.

It is in this context that Architectural Salvage in Interior Design comes in. Architectural salvage refers to antique materials removed from old buildings and homes that are facing demolition. With the interest in recycled products, many fine old pieces of
hardware, tin ceiling panels, wood decorative elements, and ceramic tile can be found at salvage yards and junk stores.

1.2 The Problem Statement.

Green is a term used to describe products or practices that have little or no harmful effects to the environment or human health (Dennis 2010). Aquarium guest home in Westlands, currently has an absence of deliberate green design in most of its design even though it attempts to exhibit contemporary African art. Furniture used is modern and does not exhibit any green design or contemporary African art. Outside the reception area, an opportunity to create a garden feel is ineffectively utilized with just the few potted plants placed. The parking area has limited garden vegetation such as flowers due to the construction sand spread throughout. The Kitchen does not exhibit the general rules of public kitchen designs and lacks enough storage area for food and utensils. The facility generally lacks green design in most aspects in its interior design, exhibition and displays, landscaping and furniture design.

1.3 Aims and Objective of the Study.

1.3.1 Aims

To establish whether the researcher can combine Contemporary African art with modern green design, to successfully bring together materials, techniques, forms and functions employed in the design of green hotel interiors and landscaping.

1.3.2 Objectives

1.3.2.1 Main objective

To investigate ways in which green design and contemporary African art can be applied in the hotel’s design, analyse how Contemporary African art has been brought out through design, determine how green design has been currently applied
in the restaurant and to propose other ways in which Contemporary African art can be added in the green design of Aquarium guest home.

1.3.2.2 Specific objectives

i. To investigate different ways in which green design can be applied in design of Aquarium guest homes.

ii. To determine how green design has currently been applied in interior design, furniture design, landscaping and exhibition and displays in Aquarium guest home.

iii. To propose ways in which Contemporary African art can be applied in green design of Aquarium guest home, Westlands.

1.4 Research Questions

How can green design with Contemporary African art inspirations be applied through landscaping design, furniture design, interior design and exhibition and display?

1.4.1 Other research questions

i. How can green design be applied in Aquarium guest home’s interior and furniture design?

ii. How can green design be applied in Aquarium guest home’s landscape design?

iii. How can green design be applied in Aquarium guest home’s exhibition and display design?

1.5 Hypothesis

i. Null: There is no opportunity for green design in interior design, furniture design, landscaping and exhibition and display in guest homes.

ii. Alternative: There is an opportunity for green design in interior design, furniture design, landscaping and exhibition and display in guest homes.
1.6 Assumptions

It is assumed that interior designers are not fully utilizing opportunities for green design, green technologies and green construction in interior design, landscaping design, furniture design and exhibition and display.

1.7 Significance of the study.

To provide guidelines to better innovation in the delivery of services at the accommodation to be studied and make it more relevant in as far as Green interior design is concerned. The findings of the study should go a long way in providing other accommodations with better and improved innovation and diversification of other services while acting as a reference point.

1.8 The limitation of the study.

i. Financial and other resources: - Not being able to employ some people to help in the collection of data/information. The money allocated may not be enough.

ii. Time is also a limiting factor gauging on the extensiveness of the research required.

iii. Sample size: - Not being able to have a large pool of sample size of the population as the researcher would want.

1.9 The scope of the study.

1.9.1 Concept

The study concentrated on application of Green design in guest homes with reference to furniture design, interior architecture, landscaping and human development and exhibition and display.

1.9.2 Content
The study relied mainly on primary sources. Additional information was acquired from secondary sources and ideas or concepts perceived were applied in the redesign of Aquarium Guest Homes, Westlands.

1.9.3 Geographical
The research was conducted in Nairobi and the case study was Aquarium Guest Homes in Westlands with the approval by the hotel’s management.

CHAPTER TWO
2.0 LITERATURE REVIEW
2.1 Introduction
Green is a term used to describe products or practices that have little or no harmful effects to the environment or human health. Green companies seek to find products that are derived from renewable sources with minimal impact on the location of extraction. Care is taken in the manufacturing of the product not to add toxic ingredients that are harmful to human health or the environment in production i.e. chemical additives that will be dumped into the nearby waterway or landfill. Consideration is given to using recycled materials in the product composition. The distance and method of shipping should be harmless as possible. When packaging a product, they choose environmentally friendly materials and use as little as possible to protect the consumer. Green products can also be made with regard to the end of their useful life and companies may give instructions how, why and where to recycle or dispose of them properly (Dennis, 2010).

Another aspect of a green company is what they do with their success. How are the employees treated? How are large profits divided? How does the community at large or the consumer who supports them benefit? The goals of a green product or manufacturer are to preserve and protect air, water, soil, wildlife, waterways, and food supplies by being conservative with natural resources and producing less toxins.
and waste. They also strive to improve human conditions by giving back part of the profits they generate to communities and people in need (Dennis, 2010).

Owing to rising public interest in sustainable and ecological solutions, the last few years have resulted in the establishment of numerous framework conditions that facilitate the use of energy saving technologies, energy sources that are easy on resources and sustainable products for the property sector (Michael Bauer, Peter Mösle, Michael Schwarz, 2009).

Ratings systems have been developed to measure the sustainability level of Green Buildings and provide best practice experience in their highest certification level. With the given benchmarks, design, construction and operation of sustainable buildings will be certified. Using several criteria complied in guidelines and checklists, building owners and operators are given a comprehensive measurable impact on their buildings’ performance (Michael Bauer, Peter Mösle, Michael Schwarz, 2009).

The U.S. Green Building Council (USGBC) is a non profit organization committed to a more sustainable way of building. It expands the use of green building techniques through the support, and through its LEED Green Building Rating System. LEED ratings, which can be applied to all types of building projects, break down into five major categories: sustainable site development, water savings, energy efficiency, materials and resources selection, and indoor environmental quality. The LEED rating system essentially works on credit system. You meet certain criteria developed by the USGBC in water-use reduction, materials reuse, energy optimization, indoor air quality, and site selection and get a certain number of points for each LEED credit (Meisel, 2010).

Interior designers are among those becoming LEED-accredited by passing the LEED Professional Accredited Examination, which establishes minimum competency in much the same way as the National Council for Interior Design Qualification and other professional exams (Binggeli, 2007).

In Kenya, establishment of frameworks in the building industry that support green interior design are not as advanced as those in the United States of America. In fact,
the current frameworks are targeted at improving other sectors e.g. the tourism sector and not specifically the construction or interior design industry. The eco-rating system only accredits specific facilities e.g. tourism accommodation facilities and leave out other buildings and their facilities such as office spaces.

Ecotourism Kenya promotes responsible tourism practices within the tourism industry. This entails encouraging the adoption of best practices in the use of tourism resources, working with local communities and managing wastes and emissions. The Eco-rating certification Scheme is a sustainable tourism certification program that aims to promote responsible tourism in Kenya. Launched in 2002 by Ecotourism Kenya in cooperation with tourism stakeholders in Kenya, the programs focus is to recognise best practices in environmental conservation, responsible resource use and socio-economic investment among tourism accommodation facilities by awarding qualified applicants assessed under the scheme with a Bronze, Silver or Gold eco-rating certification based on their performance (Eco-tourism Kenya).

**Targeted Resource Conservation**

**Water**

Despite the acute global water shortages and the critical need to conserve the use of potable water there are, admittedly, few ways in which to limit water use in commercial interiors project. Many of the water reduction strategies available to the designers and occupants of whole buildings are also unattainable to tenants, such as capturing rainwater or establishing gray water systems to use in toilets or toilets or to irrigate landscaping. However, the best that is currently achievable by commercial interiors projects is to reduce the amounts of potable water used as much as possible (Penny Bonda, Katie Sosnowchik, 2007).

**Energy**

For designers of whole buildings, the opportunities to reduce energy use-and the combustion of fossil fuels such as oil and coal-are numerous and are increasing as technologies advance (Penny Bonda, Katie Sosnowchik, 2007). According to Marcus
Sheffer in the book Sustainable Commercial Interiors, the greatest energy efficiency for most tenant spaces will be in the area of lighting design. Lighting he says, accounts for approximately 25 to 40 percent of total energy use in most commercial spaces. He further states that when purchasing equipment and appliances, consider the future operating costs; in many cases this cost will exceed the purchase price over time and that office equipment, in particular, can be a significant energy user in many leased facilities.

**Lighting**

Lighting is arguably the single most important element in restaurant design because incorrect lighting can obviate the effectiveness of all the other elements. Lighting is a critical psychological component as well; more than any other design application, illumination creates mood. Lighting can make a room feel intimate or expansive, subdued or exciting, friendly or hostile, quite or full or electrifying energy. Not only is the intensity of the lighting important but also the light source, the quality of the lighting, and the contrast of the lighting levels in different areas. (Regina S. Baraban, Joseph F. Durocher, 2010)

Lighting comes from two primary sources, the sun and electric lighting. Our solar source is, of course, perpetual; our challenge is to learn how to effectively capture and use this free abundant resource that generates no waste and creates no pollution. When properly implemented, daylight not only lessens the need for electric lighting but also offers energy savings by reducing the heat gain generated by electric lamps. (Penny Bonda, Katie Sosnowchik, 2007)

For a successful lighting plan, there needs to be a good balance of ambient and task lighting. Indirect fluorescent lighting is great eco friendly, ambient source. Task lighting requires the lighting source to be directed precisely where it is needed. Frequently recessed or
under counter lighting are used as task lighting sources. With innovations in lighting these sources can now be florescent or LED instead of incandescent. (Dennis, 2010)

**Indoor Environment, Air**

Unhealthy air, aka indoor air pollution is more dangerous to human health than outdoor air pollution. Because bad air is strapped within the building, there is more concentrated pollutant exposure than generally found outside. Also, indoor air pollution is invincible, unlike the outdoor smog that periodically hangs over our big cities. (Penny Bonda, Katie Sosnowchik, 2007)

**Materials and Resources**

According to Penny Bonda and Katie Sosnowchik the first question to ask when considering materials selection for a sustainable interiors project is this: is the material or product essential to the success of the project? The problem facing many designers is determining which products are safe and which are to be avoided even though they have desirable attributes.

They continue to state that materials should further be evaluated under the following five main categories: Materials addressing issues such as environmental impacts, recycled content, recyclability, toxicity, renewable resource use, and volatile organic compounds. The manufacturing process addressing issues such as use of clean energy, waste reclamation, green house gas emissions, effluents, toxic chemical usage, waste usage, water usage and environmental impacts. Operational performance of installed product addresses energy efficiency, durability, and maintenance procedures of the finished product. Indoor environmental quality addresses positive or negative contributions to indoor air quality and corporate environmental policy. Address manufacturer’s written statements, packaging programs, end of life programs, and documentation to support environmental claims.

The materials and resources section of LEED for commercial interiors offers more points for use of materials on which focus is emphasized on: Reducing the environmental impacts of tenancy by the tenant committing to remain the in same
location for not less than ten years, construction waste management by redirecting
construction debris from the waste stream, resource reuse and recycling content,
locally sourced materials, the use of rapidly renewable materials. (Penny Bonda, Katie
Sosnowchik, 2007)

An example of green material is rapidly renewable wood that matures within fifteen
years; this includes bamboo, Eucalyptus, and cork or reclaimed wood from
demolished buildings. One can also get wood that is from sustainable forestry e.g. in
the U.S, forestry stewardship council (FSC) who certify wood from trees replaced by
multiple new ones. Other materials include Marmoleum made from saw dust and
other natural materials.

With this foundation in mind, an Interior designer will first meet the client and view
the existing site where the proposed renovations are to take place. The Interior
designer will initially seek to understand what the client wants to achieve on the site.
It is at this point that the Interior designer may come to an agreement with the client
if the said client commits to implementing strategies for green design.

One will then require to make a comprehensive checklist of the client or property
questions to help one to determine how best to design in an environmentally
friendly, health based way that addresses the client’s needs and allows them to live
well in their new space e.g. Client health, building design, materials, size, energy use,
water conservation, landscape. (Lori Dennis 2010)

2.2 Case Study Analysis

The Orchard Garden Hotel

Nestled in the heart of San Francisco, Orchard Garden Hotel is California’s first
generation of true eco-friendly hotels - built to the national standards for ‘green’
buildings developed by the U.S. Green Building Council (The Orchard Garden Hotel).

The 10-story, 86-room hotel, which opened in November 2006, was constructed to
meet green standards with: the selection of recycled products for many interior
finishes, the installation of energy-saving lighting and water-conserving plumbing
fixtures, enhanced air ventilation, the selection of sustainably grown wood for furniture, and the use of paints, glue, carpets and varnishes that are made of non-toxic materials and have reduced ‘off-gasing.’ The hotel has adopted operational policies, technologies, and supplier relationships that achieve green – and bottom-line-benefits. The hotel uses citrus based cleaning products which are just as effective as chemical-based products, but do not expose staff or guest to harsh chemicals, or dump those chemicals into the sewers. Each guestroom has recycling bins, and the hotel is 100 percent tobacco free (Joseph Chen, Philip Sloan, Willy Legrand, 2012).

**Figure 1: Inside the Roots Restaurant & Lounge / Bar at the Orchard garden Hotel**


**Landscaping the New United Nations Office at Nairobi**

When the United Nations outgrew the office accommodation at its 140-acre Gigiri compound in Nairobi, it was clear that any new building had to meet several challenges head-on. It needed to be energy and water efficient, to reduce and recycle, and to maximize sustainability without compromising the quality of the working environment.

From the outset considerable thought was given to the environment in which construction would take place. The building was deliberately sited in such a way that the maximum number of existing trees could be preserved, and those few – mostly
exotic species – that had to be removed were replaced elsewhere in the compound with indigenous varieties. Now the gently rolling land around the building is newly planted with more indigenous trees, which will grow to create valuable shade and encourage biodiversity while helping absorb CO2 from the atmosphere. Indigenous plants are also more drought-resistant and encourage birds and other smaller wildlife (Information, 2011).

Figure 2: Inside the atrium of the New United Nations Building, Nairobi.

Source: www.unep.org

**Sustainable furnishings and interiors**

Creative salvage is a 1980’s design style based on making items from Britain’s industrial leftovers. It was a kind of recycled skip culture and inspired a wave of metal furniture and objects from such designers as Ron Arad, Tom Dixon, Danny Lane and Jon Mills. In their hands, creative salvage was an urban-inspired rejection of Japanese, matt-black stereo systems and Milanese designer chic. Arad’s Gallery in Covent Garden had old walls, a concrete staircase and chairs made from old Rover car seats; Dixon opened a studio in Notting Hill Gate, where he welded metal furniture; and Lane made chairs from pieces of broken glass. In 1985 a group called Mutoid Waste started to put on performance pieces based on the new aesthetic, while Crucial, a well-known gallery in Notting Hill, started exhibiting and selling Creative Salvage
objects. Creative Salvage as a design process is still ongoing, but it is now integrated into sustainable design and recycling process (Catherine McDermott 2007).

For 22 years Jeff Soderbergh has been creating award winning custom furnishings and sculpture for both residential and commercial clients and collectors. Out of his studio based in Newport, RI, Jeff Soderbergh has focused on each piece and exceptionally crafts using timeless woodworking joinery, the finest hand selected reclaimed materials and family friendly finishes for years of enjoyment and easy care. The different materials that he uses to date between 1500 and 1950 come from all over the world, and from many walks of life. His pieces include wood, metal, glass, textiles and stone. He sculpts designs and builds furniture and interiors because he believes in preserving the history of the unique surroundings in a tangible way that can be passed down through the generations. (www.jeffsoderbergh.com)

Figure 3: Table made from re-claimed vintage Southern Yellow Pine rafters and beams from the Vanderbilt family stable at Sandy Point Farm in Portsmouth, RI

2.3 Design Process

Orchard Garden Hotel

Source: http://www.jeffsoderbergh.com
At the Orchard Garden Hotel, the wall covering is primarily vinyl and the wood paneling is a photo plastic laminate (P-Lam) on top of recycled-content particle boards. Vinyl is not an environmentally sound product, but is still used by many in the hotel industry because of its durability. Orchard Garden, however, uses low VOC adhesives for the vinyl as well as for the P-Lam. Most of the carpet is Bentley Prince Street, which is made with its new non-adhesive technology for the carpet. The team also used recycled content for the carpet backing and pads (Michele L. Diener, Amisha Parekh, Jaclyn Pitera, 2008).

The project team selected Forest Steward Council (FSC) certified maple wood from Minnesota for 50% of the project need, including most of the hotel’s furniture (primarily guest room desks, headboards, sliding bathroom doors, night stands, side tables, and recycling bins), as well as for trim pieces. In lieu of purchasing chairs with FSC wood, the Orchard Garden Hotel was able to procure locally manufactured chairs with faux leather for durability and ease of maintenance. Chemicals are not required for cleaning these chairs. Other seating items, as well as the remaining doors, are not made with FSC wood because of market limitations (Michele L. Diener, Amisha Parekh, Jaclyn Pitera, 2008).

Although specifying fly ash in the concrete does not have a particular visual appeal, increasing the amount of fly ash in the construction materials does have significant environmental benefits. These include avoiding landfill disposal of the product and conserving the natural resources that would otherwise be used in concrete mixture. Additionally, fly ash helps reduce the damaging effects of thermal cracking of concrete while it is curing, which is a problem particularly in thicker pours. According to an article authored by Swinerton Builders, typical concrete specifications limit fly ash content to 25% by weight. However, by working closely with the concrete supplier, Swinerton Builders was able to use 30% fly ash content in the hotel’s 42-inch-thick concrete mat slab for the building foundation (Michele L. Diener, Amisha Parekh, Jaclyn Pitera, 2008).
Landscaping the New United Nations Office at Nairobi

Each of the four interior gardens is planted to represent a different climatic zone of Kenya, beginning with the coast at the eastern end of the building, and moving through desert, savannah, and eventually to high altitude forest at the western end. Fossilised coral, rocks lay out to simulate a dry river bed, the colourful blooms and myriad greens of a Nairobi garden, and exquisite indigenous orchids clinging to the clefts between branches, all help create the mood of each climatic area.

Each garden is watered by an automated irrigation system that can be programmed to give the appropriate amount of moisture for each area, and all are frugal in their water needs.

Bruce Hobson the landscape designer is quoted saying, “The planting in each of the areas reflects what you would find in the natural environment, in that a mixture of ground cover, short, medium height and tall plants all grow together. Since each garden is a captive area, a micro-ecosystem is created whereby the moisture produced by plants’ natural transpiration is absorbed by other plants, encouraging growth and further reducing the amount of watering they need.”

A majority of plants indigenous to Kenya have been mixed with others indigenous to Africa and elsewhere to show the staggering variety of plants that thrive in Kenya. Within a year the gardens will be fully established, and within five years all the indigenous trees will have grown to their mature shape, many of them reaching towards the sunny vault of the atrium roof. Butterflies and other visitors will come in, increasing biodiversity and further beautifying the outlook from the offices that overlook the atrium (Information, 2011).

Creative Salvage Furniture

Jeff Soderbergh is quoted as saying "My goal is to create a piece of art which will become an intimate part of your personal surroundings." As a client: “You can either choose to be involved in the development or simply offer guidelines and taste. The process can incorporate some personal materials you might already possess (for example a door or a piece of marble from a house you once lived in) or we can start from scratch with just a simple idea." The commission process is actually quite
enjoyable, and clients are often surprised at their level of excitement.” Materials: “I have a large selection of antique architectural inventory on hand to choose from. However, if you are looking for something in particular, we can work with you to accommodate your specific needs.” Availability: “Available for commission, all works are one of a kind offered at retail prices only. A discount may be available to the trade industry, or on orders placed with quantities of 6 or more. (jeffsoderbergh Web Site)

**Contemporary African Art**

There seems to be no particular or specific definition of contemporary African art due to the different influences and its historical background as perceived by different people from different parts of Africa. However, different scholars have attempted to give definitions.

Contemporary African artists are the product of a post-colonial, post apartheid and post-modern society, as much influenced by the process of globalization, the media, American television and films, music and technology (iPods, Apple computers and DVDs), brand labels, McDonald’s and the Internet, as their western counterparts. (Njami Simon, Lucy Duran, 2007)

The contemporary art of Africa eludes generalized description. Artists have utilized various mediums, from oils to silk screening, and methods varying from brass casting by the ancient lost wax process to welding tin cans and other metals into sculpture. Traditionalists like Lamidi Fakeye produce sculpture and wood carvings based on classical African designs. A larger group works in the more modern styles of cubism, expressionism, and surrealism, while others seek a purely personal style. Many African artists were trained at European and American schools; others feel that they can achieve truly African expression only in their native surroundings. Thus a contemporary artwork is classified as African purely on the basis of the artist's nationality, rather than according to a peculiar style, subject, purpose, or medium. (The U.S. National Archives)

**2.4 Summary**
From literature review, it emerged that a lot of waste is generated through various means without the regard of the impact to future generations. It is important for stakeholders in the construction and interior design industry to apply and use green design in their projects through re-use of reclaimed materials or substantial use of sustainable products and concepts. This will not only lower but will also assist in minimizing environmental degradation and at the same time act in preserving our environment.

2.5 Theoretical / Conceptual Framework

Figure 4: Conceptual framework.

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Dependent variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furniture design</td>
<td>Restaurant/ hotel interior design</td>
</tr>
<tr>
<td>Landscaping and Human</td>
<td></td>
</tr>
<tr>
<td>Interior</td>
<td></td>
</tr>
<tr>
<td>Exhibition and</td>
<td></td>
</tr>
</tbody>
</table>

Source Author, 2013
CHAPTER THREE

3.0 RESEARCH DESIGN AND METHODOLOGY

3.1 Overview

This research intended to investigate ways in which green design can be applied in the Aquarium guest home design, analyze how Contemporary African art has been brought out through design, determine how green design has been currently applied in the restaurant and to propose other ways in which Contemporary African art can be incorporated in the green design of Aquarium guest homes.

3.2 Sources of data

The researcher collected data from three main sources: Primary sources: interviews, questionnaires and observation. Secondary sources: research from former students, books, journals, newspaper research, videos and e-books. Tertiary sources: internet research. The primary data was derived from the answers the respondents gave in the questionnaire prepared by the researcher. More so, the information obtained from the interviews also provided primary research data that supported the study. The secondary data on the other hand, was derived from the findings stated in published documents and literatures related to the research problem.

3.4 Research design

Researcher intends to use action research methodology since it not only identifies a problem but goes further to help in presenting probable solution. Clarke, R J states in a HDR seminar series on Research Models and Methodologies, that action research
involves small scale interventions in the functioning of the real world and a close examination of the effects of such an intervention.

The researcher collected qualitative data. The qualitative data contained personal accounts, observations, description and individual insights of the interviewees.

3.3 **Modes of data collection**

During the course of this study the research used three instruments to collect data and investigate ways in which green design can be applied. These research instruments included the use of natural observation methods, the survey method and the experimental method.

Natural method: involves the use of observation by the researcher to identify the general visitor flow, age, gender and social status of customers and clients who frequent the facility.

Survey method: Use of interviews as a method of collecting data from waiters, cleaners, security guards and the manager. This allowed the researcher to get a deeper sense of the personal experience of the staff in relation to the overall design of the guest home.

Experimental method: The researcher brought a group of people to the facility so as to get their point of view on their experience eating in the restaurant and gauge the ability of Aquarium guest homes in displaying Green design in its design.

3.4 **Population and sample**

As the population of people using the space per day is high, the researcher found it useful to use sampling. This helped narrow down the population of a previously estimated 250 persons who visit the facility in a week. Random sampling is selected so that all samples of the same size have an equal chance of being selected from the entire population thus it is the best way to ensure that results are unbiased. The researcher will however ensure that there is a balance in gender, age and users of the space in his selected sample.

Table 1: Target population
### Population Category Frequencies

<table>
<thead>
<tr>
<th>Population Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customers</td>
<td>15</td>
<td>62.5</td>
</tr>
<tr>
<td>Manager</td>
<td>1</td>
<td>4.2</td>
</tr>
<tr>
<td>Waiters</td>
<td>5</td>
<td>20.8</td>
</tr>
<tr>
<td>Chefs</td>
<td>1</td>
<td>4.2</td>
</tr>
<tr>
<td>Security Guards</td>
<td>1</td>
<td>4.2</td>
</tr>
<tr>
<td>Cleaners</td>
<td>1</td>
<td>4.2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>24</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Source: Author, 2013

#### 3.4 Data collection methods and procedures

During this study three research instruments were used to collect data namely observation /survey, interview methods and experimental method.

**Observation /survey method:** The observation method involves the researcher visiting the facility observing the traffic flow of people around the restaurant and guest house. This enabled the researcher determine characteristics of the type of customers frequenting the facility. Such characteristics include but are not limited to age and observed clients social status.

**Survey method:** The researcher used interviews and questionnaire as methods of collecting data, questionnaire were issued and interviews were conducted on the customers and staff of Aquarium guest homes, Westlands. The interviews were the most effective since the goal of the researcher was to gain insight into the opinions of the interviewee on current and anticipated interior design of the restaurant.

**Experimental method:** By introducing a group of people to eat in the restaurant the researcher was able to get first hand perspective of their experience. Using the acquired data, the results of the observation, interview method and experimentation method were finally compared.

#### 3.5 Data analysis methods

This is a process of systematically applying statistical and/or logical techniques to describe and illustrate, condense and recap, and evaluate data. The researcher will presents the analyzed data in different forms to show his findings, technique such as
CHAPTER FOUR
4.0 SITE ANALYSIS, PRESENTATION AND INTERPRETATION OF FINDINGS

4.1 Introduction
Aquarium Guest Home is a newly opened guest house which operates under the brand name of the Aquarium Guest Resort Limited which also owns and manages the Aquarium Telagen Hotel along the Airport Road. Aquarium Guest Resort Limited is a subsidiary and wholly owned by the holding group company, Windsor Homes.

The group is a housing, accommodation and home solution in Nairobi, with services extended to high class budget hotel accommodation, executive and exclusive guest house stay, full furnished rental apartments ranging from 1 bedroom to selling houses.

From research, Aquarium Guest Home’s design does not adequately exhibit green design through its interiors, furniture, exhibition and display and landscaping.

4.2 Analysis (Pictorial and Theoretical)
4.2.1 Site location
The facility is located in Westlands, along Westlands Roads between CFC Bank and the Standard Bank headquarters and in the neighbourhood of African union regional office.

Its location and proximity to prime amenities and major Nairobi’s attraction like the all major international banking institutions, the museum, snake park, bureaus de change, shopping malls – the Sarit Centre – the Westgate and Nakumatt, cinema halls,
entertainment joints and eating places and availability of taxi services makes it a convenient accommodation for any visitor.

Figure 4: Front view.

[Image of the front view of Aquarium Guest Home]

Source: Author 2013

Figure 5: Map to Aquarium Guest Home

[Map of Aquarium Guest Home]

Source: (Aquarium Guest Home)

4.2.2 Facilities

The guest home covers an area surrounded by plenty of dominating structural features. The facility is divided into two areas;
The restaurant: which comprises of a sixty seater capacity garden restaurant, a bar and choma zone.
The accommodation block - with both deluxe double rooms and deluxe family rooms
Other amenities include a barber shop and a parking area situated next to the accommodation block.

Figure 6: Aquarium Guest Home facilities

![Entrance to restaurant](image1.png) ![Entrance to Reception](image2.png)

Source: Author 2013

4.2.3 Interior Design

The reception and reception

This area is totally wanting in many respects and does not portray a welcoming and inviting feeling towards a client. To start with, the first thing that grabs the attention of a client walking in through the main door is the three posters displaying the availability services of a local telecommunications company. The opportunity of positioning and enhancing the facilities brand recognition is dented as there are no more display materials supporting the facilities logo. Further, the reception has inadequate spacing requirements to cater for high traffic due to the number of people expected to walking past the reception, walking out from the rooms heading out and those seeking to wait at the lounge. Lounge area is mostly unused and there are no paraphernalia that seek to promote other services that may
be available within the facility and or the Mentor Group. A T.V. has also been placed just next to the main exit door raising concerns on safety from head injuries. Behind the reception area is an area partitioned off to make room for the manager’s office using ply wood. The office has in turn created the sense of a small and squeezed reception space.

Figure 7:
Lounge and reception area

Source: Author

Figure 8: Reception

Source: Author

**The garden restaurant and bar**

The walls of the garden restaurant have an orange paint finish with dark brown markings closely similar to strips of a zebra. The strips create a pattern repeated
throughout the walls that are adjacent to the accommodation block. On the other end, the wall is not painted possibly because the wall is also part of a perimeter fence. The ceiling of the restaurant has a white canvass helping to allow passing of sunlight.

Figure 9: The interiors of the garden restaurant

Source: Author 2013

Figure 10: restaurant roofing/ ceiling

Source: Author 2013

The bar is well stocked with beers and soft drinks served to customers. The general materials used to construct the bar counter are building stone and tiles with barstools arranged around it. The bar has arc like designed structures placed at the upper part of the bar for beauty with the major colours being red and white. However the spacing within the counter is small especially with unpacked beer crates thus restricting free movement.
4.2.4 Exhibition and display

Normally displays are targeted at the clients that visits the guest homes but there is inadequate display within the facility to promote the facility and the available displays are of third party companies i.e. soft drinks and alcoholic beverages. An entrance sign at the main gate is lacking while directional signs normally placed outside pointing to various areas e.g. to the barber shop are missing. An attempt at contemporary African art is made by having what looks like strips of a zebra on the wall.

The bar also has fridges branded by various companies that are used to cool various drinks. There is provision for the display of various drinks with a permanently built in wall mounted cabinet. The shelves are wooden with glass at back so that a seemingly
endless reflection of bottles can be seen. At edges of the shelves there are red wooden frames with assorted decorations. The work top is wooden with a clear varnish finish leaving the brown colour of wood visible.

Figure 13: T.V display

Source: Author 2013

The guest home has several televisions within the facility, three in the garden restaurant, two at the barber shop and one each in every deluxe room and reception. The televisions are large flat screens in the garden restaurant and normal 14 inch sets in other areas placed up the wall making it uncomfortable for customers especially in the rooms. At the lounge area, relaxing visitors are completely unable to view the television.

Figure 14: Room tags

Source: Author 2013

Bronze plated signs are used at the doors and hallways.
Bronze coated frames are also used for indoor paintings seemingly showing little evidence of green design.

Metal has been used for this soft drink sticker's background which also serves to hold a mirror on the other side.

### 4.2.5 Furniture

Aquarium guest home has different types of furniture that vary from tables and chairs to wardrobes and kitchen cabinets depending on where and how they are used. There are furniture for the rooms, barber shop, reception and the deluxe rooms. The general materials used to make the furniture are wood, plastic and metal.
Figure 17: a section of restaurant furniture

Source: Author 2013

This table seats up to four people on a normal meal. The table is cream with a black metallic support. A different type of seat is also shown in figure 17. These types of seats have cream metal frames a distinctive pattern created on sitting and leaning areas made of a hard plastic.

Figure 18: a section of bar furniture in use

Source: Author 2013

Another set of furniture is to be found at the bar section of the Aquarium guest home garden restaurant. In this case the table is made of a wine making barrel made mostly of wood and a strap of sheet metal. However the barrel is constricting in usage. This is especially since it cannot hold as many items on its surface as compared to an ordinary table. Also a person seating on the barstools around the barrel cannot rest
on the barrel as one would on the bar counter while engaging in a conversation with another person. Lastly a person’s knee would keep on bumping on to the protruding mid section while bending the knee in a resting position when the foot is on the barstool.

Figure 19: outdoor restaurant furniture

Source: Author 2013

This is a type of table is found at the open end of the garden restaurant adjacent to the accommodation. Since their surface is made of a hard type of plastic, poor maintenance and exposure to extreme changes in weather patterns over time will cause a decrease of the furniture’s lifespan. The table seats up to 4 people using white plastic seats. The plastic seats are sustainable since they are water resistant and their thickness allows for recycling hence suitable for outdoor furniture.

Figure 20: Disorganized appearance of the staff kitchen area.
The staff kitchen area leaves a lot to be desired because the space is small and with utensils all over. The area is covered with wall tiles just around the sink with yellow paint on its walls. The walls are also full of dust especially towards the ceiling thus becoming aesthetically un-appealing. The window is also small and does not allow adequate natural sunlight for lighting purposes during the day and adequate aeration of the room. The kitchen has inadequate storage facilities and lacks even a fridge for storage of perishable foods and a dry room.

Source: Author 2013

Figure 21: room furniture

Inside the rooms, there are inbuilt wardrobes which are un-appealing to the eye especially since this is a deluxe room. The wardrobes are made of wood painted with white glossy paint. The interior is susceptible to dirt especially the bottom and will eventually turn brown in a short period of time, this is not sustainable. They also lack a sense of privacy because there is no provision for opening doors. This is further compounded by the lack of adequate hangers or none at all.
Figure 22: lounge furniture

Source: Author 2013

As earlier mentioned, this space lacks proper space planning according to acceptable standards. The space is rarely occupied and the television placed up on the wall next to the exit does not help matters either. A person or persons seating on the lounge chair is unable to properly see the screen. Further there is a potential for injury especially for tall person’s head bumping onto the television set. The lounge table is small and seems to serve decorative purposes only.

4.2.6 Landscaping

4.2.6.1 Climatic and general environment analysis

Nairobi lies on an altitude of 1,700 metres or 5500 feet above sea level and its climatic zone is typical of the tropics and is best described as monsoonal as it is affected by both the north-east and south east-monsoons. In general, there are four distinct seasons. Warm dry season: from January to late March. This season has light rainfall, with Nairobi averaging some 80 mm per month with extremes of up to 250 mm. Nairobi is quite cool and dry with minimum and maximum temperatures of 12°C and 25°C respectively with a midday relative humidity of only 46 per cent. Long rainy season: late March to early June. During this season, rainfall amounts are high but it is frequently warm and sunny for part of the day and often may not rain at all for two or three days at a time. Cool dry season: mid-June to early October gives way to the driest season. Low-level moisture, however, ensures there are a lot of clouds, and often in Nairobi the sun may not be seen for days. In contrast, the nights are clear. Short rainy season between mid-October to mid-December. Sunshine
averages 7 hours per day compared with the 4 hours that accompany the dry months of June, July and August. The area consists of paths, parking and walls while plants are mainly potted, fencing plants and trees. Trees also add to the garden shade and prevent direct sunlight especially around the parking area. Aquarium Guest Homes is in an area that is surrounded by buildings with mixed use type of occupation.

4.2.6.2 Site inventory

Figure 23: Parking.

Source: Author 2013

There is designated parking area although there seems to be inadequate room for more parking spaces due to the high demand for parking spaces around the area. There is also a telecommunication mast at the far end of the parking area.

Figure 24: tree surrounded by construction waste

Source: Author 2013
Figure 24 shows a tree surrounded by construction waste namely chipped of building stone, a pile of sand and un-used drums probably put here after the facilities last renovations. This rather aesthetically un-appealing and screams of environmental mismanagement. The area poses a risk to members of the public and the waste interferes with the drainage of the parking area.

Figure 25: Wall mounted plants

Source: Author 2013

Wall mounted plants are a commendable way of enhancing the green design of Aquarium Guest Homes and go a long way in increasing the vegetation in the facility especially with the limited ground cover available for landscaping. However further progress can be added by ensuring that there is minimal lose of water from the water fountain behind the plants.

Figure 26: Potted plants

Source: Author 2013

These potted plants probably represent the only other notable attempt at intentionally greening the reception and indeed the entire guest home. The use of
colour to create shapes also enhances the contemporary African art found on the adjacent zebra striped walls.

Figure 27: garden plants

Source: Author 2013

The Duranta erecta is a tropical shrub that is normally grown by landscape designers in a bid to create or show a border especially along the edges of a landscape. With constant pruning and good care it is aesthetically pleasing to the eye.

4.3 Presentation of findings

4.3.1 Introduction

From research, the green design of a guest home greatly affects the operations of guest homes by the staff members. Further, overall aesthetic appeal of a guest home will also greatly influence the guest home’s Interior design, landscaping design, exhibition and display and furniture design can be used to display contemporary African art.

4.3.2 General analysis

A total population sample of 24 persons was selected to carry out interviews and fill out questionnaires. A population of 15 clients was randomly selected and questionnaires issued. The researcher hoped to know factors that influence choice of Guest Home by visitors and possible opportunities for targeted resource conservation in Guest Homes.

4.3.3 Opportunity for contemporary African Art

The pie chart below displays the results from the research.
Graph 1: Bar graph showing factors that influence choice of a Guest Home by visitors

Source: Author 2013

4.3.4 Opportunity for targeted resource conservation

The pie chart below displays the results from the research.

Chart 1: Pie chart showing opportunity for targeted resource conservation

Source: Author 2013

From the research it is evident that the members of staff determined that Energy and Water consumption was high and these led to conclusions that these areas presented the best opportunities for intervention. The two best points of intervention are as follows:-

Energy management: in this category lighting played a major role as there was constant need to have adequate lighting in the garden restaurant, reception, security
lighting, room lighting and at barber shop. Further consumption of electricity for preparation of meals, water heating and powering various electrical components was raised by the staff members.

Water Efficiency: in this category water consumption for various uses was the main point presented to the researcher. This included mostly water for washing and preparation of meals.

4.4 Summary of data analysis/ findings

As identified by the researcher, aquarium guest home has paid attention to a certain degree to African contemporary art. However the authenticity of the African contemporary art used is still in question and is probably left to the discerning eye of the target audience to decide. In the case of applying green design, it is now clear that indeed there has not been enough energy and effort put in place so that clients, staff, management and share holders can benefit from green design concepts and ideas. A lot of room thus remains for intentional implementation of green design in Aquarium Guest home, Westlands as far as Interior design, landscaping design, exhibition and display and furniture design is concerned.
CHAPTER FIVE

5.0 SUMMARY OF FINDING, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction
In this chapter, the researcher outlines major recommendations that would allow Aquarium guest home to exhibit deliberate green design in most of its design together with contemporary African art. Green design and contemporary African art should be effectively be implemented in the guest home’s Interior design, landscaping design, exhibition and display and furniture design. The implementation of these recommendations will go a long way in benefiting the clients, staff and share holders of Aquarium guest home.

5.2 Summary of findings
After collecting data through different kinds of research methodologies and analysing the said data, the researcher was able and confidently so, to get an insight concerning the problem statement and come up with conclusions.

5.3 Conclusions
The researcher was able to confirm the alternative hypothesis that there is an opportunity for green design in interior design, furniture design, landscaping and exhibition and display in luxury hotels. From this conclusion the researcher has recommended use of green materials and concepts in helping to contribute to the world’s environmental protection.

5.4 Recommendations

5.4.1 Interior Architecture
5.4.1.1 The reception and the lounge
The researcher proposes that since the reception is the first port of call for customers seeking accommodation or clarification, it should be used as such so that it stands out as one enters the facility. To do this the researcher recommends the use of high quality finishes that will leave a lasting impression of what is to expected of the guest home’s other services. The use of lighting to set the mood will usher in a relaxed but classy feeling. The use of different tones of brown which is the guest home’s corporate
colour and use of African artifacts as centre pieces will give the theme of contemporary African art. The researcher recommends that the office behind the reception desk be demolished so as to give more spacing for the reception and lounge area. He further recommends that the wall behind the reception desk be used to place the guest home’s logo and trade mark probably embossed on sustainable wood or other materials that can enhance the contemporary African art theme.

Lounges should be aesthetically appealing, relaxing but not congested, secluded but not hidden, therefore, the distraction caused by the movements from the guest rooms should be minimized. This should be done by having the lounge area extended towards the patio. The lounge should have paraphernalia such as brochures, magazines, newspapers among others that help the waiting visitor relax while still marketing the guest home’s other related services.

More potted plant are also suggested around the lounge area to further helps to give a secluded feeling and blocks the eye from noticing the people moving past the reception area.

5.4.1.2 Lighting

Guest homes often have multiple types of lighting fixtures to help create different atmospheres and thus bring out the desired design style. Lighting may be used either incandescent or indirect in lobbies and to intentionally accentuate areas such as center pieces and other artworks. During the day time the researcher recommends that the management installs daylight driven dimming or on/off control of systems for areas such as the garden restaurant and reception. During the night the researcher recommends the management install ceiling mounted occupancy sensors while ensuring minor motions will be detected in all desired locations. Motion sensors will help by turning on the lights when there is lots of activity in a room and turn off when there is no one in a room.

5.4.1.3 Water

Guest homes often have water fixtures for multiple uses and to help conserve this resource. Specific areas such as the kitchen or washrooms that commonly use or consume large amounts also produce large amounts of waste water. The researcher
recommends the installation of the following: installation of dual flush toilets that have two buttons, one for solid and one for liquid. Since liquid requires less force to flush thus use less water. Purchasing a loaded dishwasher since it will use less water than hand washing dishes and installing water filters for drinking and bathing water eliminating chlorine from water, making it safer to drink especially for staff members.

**5.4.1.4 Flooring**

The researcher recommends the use of Bamboo for the floors. Bamboo is an attractive alternative for flooring because of its physical similarities to hardwoods. Its strength and durability as well as its resistance to insects and moisture, and the fact that bamboo grows much faster than wood make it very sustainable.

*Figure 28: Bamboo floor*

Source: [www.allcabinetsandfloors.com](http://www.allcabinetsandfloors.com)

**5.4.1.5 Layout and Spacing**

The dining rooms and bars in restaurants must be efficiently planned to optimize revenue. Upscale restaurants generally require more space between tables for privacy. (Binggeli, *Interior Graphic Standards: Student Edition, 2012*) The kitchen has to have adequate space for employees to work.

**5.4.2 Furniture**

The researcher recommends that the current furniture be maintained but redesigned to incorporate contemporary African art. The garden restaurant furniture is easy to keep clean. If well maintained, the items will last longer. The barrel should also be redesigned to conform to ergonomic standards for people sitting on barstools and
tables. Inside the accommodation area, the wardrobe should be fitted with doors and enough hangers should be available for the visitors use.

Figure 29: Wardrobe made of bamboo

Source: www.balibamboocreations.com

5.4.3 Landscaping

Despite there being little surface cover especially due to the need for visitors parking at the front of the facility, there is still room landscaping. To start with, a proper parking should be paved with kerbs that prevent cars going over growing plants. The parking should be constructed with paving stones as there are durable and thus sustainable. An example of this is shown on figure 30. The paving construction should consider the drainage pattern of the area and it should not interfere with the existing vegetation such as the tree at the parking bay close to the perimeter wall. Parking will also be limited to 6 cars only at any one given time.
Within the garden restaurant, a wall planted garden can be extended to cover a larger area. Live green plants are aesthetically pleasing to the eye as they give a uniqueness, freshness and naturalness in the garden restaurants interior. These plants may be ordinary flowers, such as ivy and succulents that do not require too much care, they can also be exotic green plants, which at the proper temperature, moderate fertilization, and watering will be great to decorate with such as the Hedera helix plant.

The researcher also recommends the duranta erecta plant be planted around the proposed paved parking especially where there would be no need to walk through.
When properly planted, trimmed and maintained it acts as a kind of a natural signage to show direction. Excess or unused drain storm water from the facilities roof tops can be stored and used during dry periods of the year thus helping conserve water.

5.4.4 Exhibition and Display

Exhibition and display in Aquarium Guest Homes provides a platform to further two main points. It assists in the presentation of Contemporary African art within the guest home by acting as a background to certain artworks or centre pieces. By creating an atmosphere such as on figure 32, the intended mood is then relayed to the intended audience. Secondly exhibition and display can be used to further entrench a brand in the mind of an audience.

Figure 32: Texture walls

Source: www.pambaboma.com

In figure 33, signage is used to further the identity of an organization. The researcher recommends that the use of this kind of signage in majorly two areas: the reception and the garden reception. At the reception area the signage should portray the names of the guest home “Aquarium Guest Homes” while in the restaurant the name “Aquarium Restaurant”.

Figure 34, shows an example of how the various pieces of art have been arranged and how the wall acts as a background to accentuate the overall feel of an contemporary African feeling.
5.5 Suggestion for further study
The researcher recommends that a study of what makes a work of art “authentic” especially concerning Contemporary African art be undertaken. This will help set a measurable standard that can be recognised across the world of art knowledge.
Bibliography


QUESTIONNAIRE TO THE GUEST

Thank you for taking time to fill in this questionnaire. The information given will be used solely for academic purposes by a design student at the University of Nairobi.

1. On a scale of 1-10, how do you rate the services you were offered? (10 for distinction and 1 for poor)

2. What areas of aquarium guest resort do your believe need improvement?
   a) Food
   b) Service
   c) Décor
   d) Environmentally friendly design
   e) Other (specify)

3. What factors influence your choice of restaurants and or hotels?
   a) Food   b) Décor   c) service   d) environmentally friendly design   e) Other (specify)

4. Do you think the facility is eco- friendly in its operations?
   State why?   A) Yes b) No
   Why?

5. Do you think the facility has incorporated African art concepts in its design?
   A) Yes   b) No

6. Would you recommend Aquarium guest home to a friend?
   A) Yes   b) No
INTERVIEW GUIDE FOR THE SUPPORT STAFF

The information given will be used solely for academic purposes by a design student at the University of Nairobi.

1. What is the general behavior of your visitors?

2. What food and drinks are available at your resort?

3. What do they mostly enjoy?

4. How many visitors do you receive on an average day?

5. What are your main attractions?

6. What following areas (Water, Waste management, Energy, Materials & Indoor Environment) require a lot of attention (in terms of money or manpower) during regular cleaning/maintenance?
8. Would you consider implementing an environmentally friendly strategy within the facility e.g. switching off un-necessary lighting, using less toxic materials etc?

9. What tasks consume a lot of energy and time in your line of work?

INTERVIEW GUIDE FOR THE MANAGEMENT

*The information given will be used solely for academic purposes by a design student at the University of Nairobi.*

1. Do you target a particular group of visitors? If so why?

2. Have you studied why visitors come to your resort? What were the outcomes?

3. What are your current marketing efforts?

4. Do you have active partnerships with the tourism industry?

5. How many visitors visit the facility on an average day?

6. What following areas (Water, Waste management, Energy, Materials & Indoor Environment) require a lot of attention (in terms of money or manpower) during regular cleaning/maintenance?
7. Do you consider the use of green product and concepts in your facility as being good for business?

8. Would you consider implementing a long term environmentally friendly strategy encompassing the facility, the employees and the business?

9. What areas of the facilities operation would you want to enhance cost reductions and thus resource savings?